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ANGINA PECTORIS *

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I do not know of any greater service I can render the fellows of this institute and the public than by considering, from a very intimate acquaintance, the time-worn affection that forms the subject of this article. I cannot hope to add much that is new, but I confidently hope to call attention to vital points that may have been overlooked by some practitioners, though of the highest importance to sufferers from this malady.

Just at the beginning of the world war, Sir Clifford Allbutt published an exhaustive work on diseases of the arteries and angina pectoris, in which he presents many arguments against some of the long-accepted views on these subjects. But the very comprehensiveness of the two large volumes places the matter far beyond the time limit of the average practitioner, and almost beyond that of the specialist devoted to diseases of the circulatory organs. A careful study of Allbutt's work and an analysis of sixty histories of angina pectoris, out of the 1,396 cases of heart disease that I find among my records of private patients (exclusive of all dispensary and hospital cases) has considerably modified the views I formerly held on this subject. Many of the patients were seen in consultations with other physicians or came to me from a distance, so that I saw them only once or twice. In most of them I did not learn of the final result, and in very few, because of their being private patients, have I been able to see the pathologic changes. Allbutt has been able to make extensive studies of pathologic changes in this disease; therefore I cannot speak with assurance on points when my former impressions do not coincide with his; but from the clinical standpoint alone I feel confidence in my own observations, and the views I shall present in this paper seem to me sustained by the facts.

SUBJECT AND DEFINITION

Angina pectoris is a paroxysmal painful disease of the circulatory organs in which the pain is usually located near the base of the heart, over the large

arteries and in the shoulders, neck and arms, most frequently confined to the left side, but often in the right side. It is often attended by dyspnea and commonly by mental depression or a sense of impending death, which must not be confounded with fear. It is questioned whether the group of symptoms attending angina pectoris should be dignified as a distinct disease, especially since the pathologic findings vary in different cases; yet the variation is much less than in many other affections recognized as morbid entities, so called.

Most authors also recognize pseudo, false or mock angina, which is of nervous origin and commonly associated with intercostal neuralgia. This is much more common in young people than in old, and more frequent in women than in men, although only three fifths of my series of cases were in women, which is a much smaller proportion than I had supposed. It is not a serious affection, although the symptoms are not very different from those of true angina. A careful distinction must be made between these purely neurotic manifestations and mild attacks of true angina associated with diseases of the arteries or of the heart. The neurotic or vasovagal cases are not angina pectoris, although many cases commonly classified under this head are really true angina. Indeed, most cases of so-called pseudo-angina are manifestations of the true disease. Out of sixty cases I observed, twenty-eight were classified as pseudo-angina and thirty-two as true angina; but in the absence of pathologic demonstrations I am inclined to think that in some of them my diagnosis was at fault and that they should have been classed as angina minor, that is, mild attacks of the true angina. Pseudo-angina thus appears to be much less frequent than was formerly supposed.

Many authorities recognize angina sine dolore, which is accompanied by paroxysms of cardiac dyspnea, and is usually quickly fatal, but not attended by pain, or at least, not by severe pain. This is quite different in its manifestations from the angina with which we are most familiar. It is considered by Balfour as one of the manifestations of true angina pectoris; and its frequent appearance in persons who at times suffer from severe paroxysms of cardiac pain with a sense of impending death, together with pathologic findings, support Balfour's view.

The commonly accepted views of the frequency, etiology and prognosis of pseudo-angina, true angina and angina sine dolore, I think, would be changed by a careful study of the evidence presented in this work. Such a study, I feel, would make clinicians more careful in their diagnosis and more helpful in their treatment of patients. M

* Read before the Institute of Medicine of Chicago, March 28, 1918.

† The material for this paper was gathered by Dr. Ingals during the past summer; but on his becoming exhausted and being required to take a complete rest, he secured the assistance of Mr. Meeker, who arranged the material in readable form.

MORBID ANATOMY AND PATHOLOGY

True angina is generally supposed to depend on disease of the coronary arteries, causing their contraction or obliteration and thus interfering with the nutrition of the myocardium. But if, as held by some observers, it more commonly results from disease of the aorta or possibly of some of the other arteries, we can more readily understand the diverse seats of pain and we can better realize why very often the heart is not at all disturbed even by most severe attacks. Myocardial disease is not essential to angina pectoris, although it is present in many cases. It also seems proved that angina does not occur in the majority of cases of coronary occlusion.

As for the mechanism by which the pain is brought on, it is probably due to excitation of the nerve end organs in the sheath of the ascending aorta and other large arteries. It is the kind of pain that belongs to fibrous tissues.

PREDISPOSING CAUSES

In my series of thirty-two cases, four were under 30 years; five between 30 and 40; six between 40 and 50; seven between 50 and 60; seven between 60 and 70; two between 70 and 80, and one of more than 80 years. It is thus more common between the ages of 50 and 70. It is more common in men, as may be seen by my series which included twenty men and eleven women. The use of alcoholics, tobacco and coffee predisposes.

It is asserted that syphilis is a factor, especially in those under 45 years old. Typhoid, rheumatism, gout and influenza predispose in patients of more than 45. In some mild cases in which the patients seem to be benefited by exercise, it is probably of gouty origin. In those past 50 years of age, arteriosclerosis and high blood pressure, especially if associated with diseases of the aorta, are etiologic factors. It also occurs with mitral stenosis, thrombosis and pericarditis. Angina pectoris and aneurysm are often coincident, but the angina frequently appears a long time before the discovery of the aneurysm.

Occupation.—It is a curious fact that out of thirty-two cases classified as true angina pectoris, nine were in physicians, or nearly 30 per cent. I saw two others that were not included in the list because they were not my patients. I attach no significance to these figures because I do not know why I was consulted by so many physicians; but they serve to emphasize the danger of drawing conclusions from incomplete statistics, and are at least suggestive as to syphilis as an etiologic factor.

EXCITING CAUSES

Some vasomotor disturbance, worry, muscular effort, or annoyance of any kind may bring on an attack. Pain frequently comes on during or after a meal, especially breakfast. Minor attacks of angina are brought on in the same way as the more severe. Only a few cases seem due to a single effort, but two of my cases certainly started in this way, and in X, whose history follows, the first distinct substernal pain was brought on by a rapid walk.

Among the various hypotheses regarding the origin of angina pectoris are distention of the ventricles, cramp of the heart muscle, myocardial ischemia, obstruction and spasm of the coronary arteries, and neuralgia, or vasomotor storm.

The coronary disease is considered a cause by most physicians, but it has been found that a large percentage of those with coronary obstruction have not

suffered from angina pectoris. If the process is gradual, a patient may live with 75 per cent. of the coronary lumen occluded, or even with complete obliteration. The spasm hypothesis also seems untenable, though a sudden obstruction of the coronary arteries may cause pain like angina pectoris. In many cases, even though the coronaries may be obstructed, the myocardium remains practically normal. Blocking of the coronary arteries causes dyspnea but often no pain. In a large proportion of fatal cases of angina pectoris, no obstruction of the coronaries is found; but in most fatal cases there is some change in the coronary arteries and myocardial degeneration. These changes, however, are not the cause of the pain, but are one of the chief factors of death during the disease. Often the rhythm of the heart is unchanged and the blood pressure is not affected by the painful attacks.

As to the immediate cause of the pain, there are convincing arguments to show that it is not due to cramp of the heart, to distention of the left ventricle, or to undue systolic effort. The experience of X leads me to coincide fully with these views. The pains seem to result from an exalted state of the sensory paths, which appear to be along the aorta and larger arteries. Arteries, whether inflamed or not, are capable of pain, as shown in embolism and on compression for aneurysms, and angina is usually the result of inflammation in the aorta and larger arteries. From his own sensation, X feels that much of his pain comes from this source, as indicated by the sudden feeling of distention and by the location of the pain. The suprasigmoid portion of the aorta is probably the most sensitive, angina resulting when the fibrous outer investment is reached. The fact that the use of iodids sometimes stops the horrible pain of aneurysm, and also often stops pain in angina, indicates that the pain in these two affections may be due to the same cause. Tension of fibrous structures in any part of the body may cause pain, and this tension is the principal factor in angina pectoris. At the base of the heart there is most likely a point of exalted sensibility to blood pressure. Perhaps all arteries have their degrees of sensibility to blood pressure.

If, as maintained by some, the disease results from an affection of the coronary arteries with degeneration of the myocardium, it is difficult to understand why the heart's action is commonly almost normal, and why the pain usually referred to the precordial region is commonly felt over the aorta and radiates along the course of the larger arteries. The theory that the real seat of the disease is usually in the arterial walls and often in the external coat accounts for the incidence of the pain much better than the older theory.

SYMPTOMATOLOGY

The physical signs are not characteristic, but often there is moderate enlargement of the aorta and enlargement of the heart in many cases. There may be an aortic murmur and the rhythm of the heart may be affected, but all these symptoms may be absent.

The blood pressure may be excessive, but usually it is not affected. The pulse commonly remains nearly normal, but often, although regular, it may run as low as 40 or 50, and it has been observed as low as 21 per minute. I recall three cases of abnormally slow pulse seen at nearly the same time with nothing in common but the pain.

Profuse sweating is not an uncommon symptom, and salivation occasionally occurs.

Fever may sometimes be present from the acute aortitis. The face may be pale, flushed or normal. There may be restlessness and tremors.

Flatulence and gaseous eructations are generally present.

Dyspnea is not a characteristic feature, but when the heart muscle is weak, it is likely to be present.

The pain in angina is usually paroxysmal, rarely a steady grind. It may increase from slight to extreme anguish. It may be short and sharp for an instant only, but it usually lasts from several minutes to half an hour or more, and occasionally continues much of the time for days. Sometimes it is confined to the chest; at other times it radiates to one or the other arm, rarely to the thigh. It is located sometimes in the neck and occasionally in the throat or larynx. It is sometimes felt on the radial side of the arms and may run down to the thumb. In some erratic cases, the pain may be confined to the periphery, as to the palm of the hand, or to a finger, and in one of my cases it was often felt in the rim of the ears. It may also be felt in the epigastrium, the apex of the heart or the abdomen. There are some cases in which the patient has a horror but an absence of pain. Angina without pain (*angina sine dolore*) is comparatively rare, but may be the cause of death in many of those who die suddenly without symptoms.

The heart pain in angina pectoris is usually said to be precordial; but in reality it is nearly always felt at the upper part of the sternum over the aorta. In one case that I have observed, it started in the region of the left subclavian and was so constant that the patient, a physician, believed there was an aneurysm of this artery. With X it usually started over the brachial artery in the middle of the right arm.

When the aorta is the seat of the lesion, the pain on exertion is likely to radiate to the shoulders, and it generally extends down the left arm, the reason for which proceeding is not apparent. It is sometimes relieved by eructations of gas, and such cases are very likely to be attributed to indigestion. In a few instances paresthesia or even paralysis of the arm follows the attack.

Immobility from a fear to move, or a feeling that one cannot move, is a common symptom. The feeling of impending death or of horror is not a reasonable apprehension, nor yet a fright, but an organic sensation, a feeling as though everything was going and nothing mattered. It may occur in only one or a few of the attacks, and sometimes is altogether absent.

The history of a single case illustrates most of the features of this disease so well that I will present it briefly at this point.

REPORT OF CASE

When 63 years of age, Dr. X suffered a comparatively mild attack of typhoid fever in which the temperature never exceeded 103.5 F. He was not delirious, lost only about 30 pounds in weight, and was confined to his home only three months. He had suffered from no infection nor sickness of any kind for forty years, although since boyhood he had often had rheumatic pains on exposure, and for about fifteen years had gouty pains with enlargements of the joints in one finger after another, each joint remaining tender for about eighteen months. This was a hereditary condition. His parents lived well on into the eighties, and of five brothers and sisters of which he was one, all are still living, the youngest being 55 and the oldest 72 years of age; and all are well except for a chronic gouty condition of the fingers.

Three or four days after leaving his room, he was able to go to his office for an hour daily. For several months he was troubled a good deal with dyspnea, on walking or attempting to carry even light weights. Gradually he regained strength and experienced no pain in the chest until after a brisk walk of about 500 yards in the autumn when he was 64 years of age. When he rested a little and walked slowly this pain subsided, but did not disappear for about twenty minutes. For several years he suffered frequent pains at the middle of the arms directly over the brachial artery, usually on the right side, and occasionally an aching pain in the elbow. The one in the right arm was especially severe sometimes shortly after breakfast or after exercise. These pains he attributed to rheumatism, as they usually occurred with changing weather or whenever he was chilled. He worked hard, but was very temperate in his habits, using no alcoholics, tobacco or coffee, and very little tea. His appetite and digestion were good, and he regulated the amount he ate so as to keep his weight down to the average for his size. He had no pain that he recognized as angina pectoris until the middle of May, 1913, when 64 years of age. For a few days he had found himself getting out of breath easily, and one night while in bed he had a distinct attack of angina pectoris, though not severe enough so that he called any one.

After this, the pain over the aorta came with increasing frequency and severity, so that within a couple of weeks he decided to go to Nauheim, Germany. But while waiting for a steamer he went daily to his office, where he lay on a couch most of the time directing the work of his assistants, unable to walk more than 4 or 5 paces without bringing on the pain. During these four weeks he at times took aspirin to relieve the pain, and several times tried nitroglycerin, but without any relief, probably on account of the fact that the preparation was too old. He also tried amyl nitrite, but without much satisfaction. He took no opiates, as they always disturbed his digestion.

He arrived at Nauheim very weak and unable to walk for more than a few yards without pain. There he took the regular cure of baths, went about all the time for six weeks in a wheel chair, rested an hour and a half or more every day, and had gentle massage of evenings. He felt so cold most of the time that he wore a heavy ulster and was wrapped in blankets all summer long, whenever he was outdoors. After his six weeks' course of treatment, he could walk slowly about 50 feet before the pain would compel him to stop, and after a few minutes could repeat the exertion. He gradually regained strength, so that on his return in the fall he could walk slowly for from 50 to 75 yards on a level, according to the weather, the temperature, etc. A few months later he discovered that fresh hypodermic tablets of nitroglycerin dissolved on the tongue would relieve the pain in two or three minutes, although they might cause dizziness and headache. The same tablets swallowed would not give relief for about ten minutes, and then only about half as much as when dissolved in the mouth. As sodium nitrite and erythrol tetranitrate quickly caused disturbance of his stomach, they could not be taken. At Nauheim he was advised to take theobromin, 15 grains, three times a day; but as he was very sensitive to all medicines, he took only 5-grain doses, and this only five or six times, as it greatly increased the heart pulsations and intermissions. Caffein appeared to make him worse. Strychnin or nux vomica kept him awake, and doses of digitalis sufficient to reduce the pulse to normal seemed to make his pains worse after a short time.

During this period the heart intermitted several times a minute, and the pulse usually ran from 85 to 120. The blood pressure was about 130 to 140 and never was found more than 148.

In the beginning of the disease, X, judging from the suddenness and location of the pain and from the feeling of distention, felt that the trouble must be in the arteries, although he found no confirmation of this theory until he read Allbutt's work four years later. Allbutt argues that pressure on an artery, as in treating aneurysm or an embolus, causes acute pain. X found that after sleeping for an hour or two

on the right side he would sometimes waken with acute pain in the right arm, which would quickly be relieved by his taking nitroglycerin. This seems to support the arterial theory, for there had been nothing during this sleep to disturb the heart except the weight of the body pressing on the right arm. The excessive fatigue which he experienced at times, however, even with no unusual exertion, points sharply to myocardial degeneration.

As the anginous pains came just as the thumb joints were recovering, he suspected that they were of gouty origin, and therefore, for about two years, gave up the use of meat almost completely. Frequent experiments convinced him that the white meat of fowl was to him as injurious as beefsteak or roast beef. Later, on account of the weak myocardium, he returned to the use of meat in moderation.

The pains in this case were brought on by a variety of conditions, such as walking at an ordinary gait on a level, climbing a very slight grade, going up four or five steps, or feeling moderate excitement, pleasurable, or more particularly annoying. A moderately full meal or the act of putting on his shoes after eating, or even of brushing his teeth, or of reaching up to take down his overcoat, or of being in the slightest hurry were all followed by pain.

The sufferer from repeated attacks of angina is usually worse in cold or stormy weather. The latter is not necessarily the result of chilling, for it may and often does occur while the patient is in bed in a warm room. It is apparently due to the subtle meteorological conditions heralded by the pains in chronic rheumatism for hours before an approaching storm.

In the case of X, attacks were brought on by a chilling of the surface, by even slight changes of weather, and once by a wind storm that he encountered when traveling in a warm car. During the blizzard early in January, 1918, X suffered continually for about forty-eight hours with severe angina pains in or under the lower part of the sternum, and in the stomach and arms, when he was not under the influence of large and frequently repeated doses of nitroglycerin. The remedy seemed to be losing its effects, but these pains finally subsided under the influence of heat applied by means of an electric pad, which was kept hot for about twelve hours. During this time, it was sometimes necessary for him to take three or four doses of the nitroglycerin in the course of fifteen minutes, in order to be able to eat even a very light meal. The pain did not return with any severity for several weeks. It often came on while he was eating or addressing a company of his fellows. Indeed, almost anything that increased the rate of the pulse for a few seconds seemed sufficient to cause the pain in the arms or through the shoulders. The same exciting factor carried a trifle further brought the pain over the aorta, or if carried still further, brought on that awful horror which is spoken of as the sense of impending death.

During the pain, even though it was not very severe, he was afraid to move lest it be greatly increased, and once although the nitroglycerin was only 4 or 5 feet away, he hesitated some minutes before he could nerve himself to get it. He carried the tablets in a closely stoppered half-dram bottle in the pockets of every suit, and always had a bottle within easy reach of his bed.

By riding a light motor wheel, he was able to play golf during part of each of the last three summers; but on the days he played, he had to take from ten to twelve $\frac{1}{100}$ grain tablets in the course of a couple of hours. He found that frequently on the day after playing, he had no pain, whereas usually he had it several times a day.

In two years, he took three courses of saline baths of the same content as the bath most used at Nauheim. The most important feature of his treatment was an afternoon rest in bed for about two hours daily, with from eight to nine hours' rest at night, his daily work being limited to five or six hours. After the trial of many medicines, he settled down to nitroglycerin as often as needed, taking usually four to ten doses a day, and twice daily arsenous oxid, $\frac{1}{24}$ grain

with extract of digitalis, $\frac{1}{4}$ grain, extract of nux vomica, $\frac{1}{4}$ grain, and $1\frac{1}{8}$ grains of chlorbutanol to prevent insomnia. On this plan he has been able to continue his work in the past two years. He feels the pain often and has to take rather more of the nitroglycerin than formerly, but thus far he has found that it relieves the pain very soon if used in sufficient quantities. Recently, apparently on account of an unusual strain for a few seconds, the heart compensation broke, and he was obliged to take a prolonged rest. In spite of the rest, the pains have increased in frequency.

DIAGNOSIS

The diagnosis is usually based on substernal pain radiating to the arm, shoulders or neck, accompanied by a peculiar mental depression or a sense of impending death, aggravated by exertion or even by slight movements; but it may come on, as in the case of X, even during sleep. We should always suspect angina pectoris when pains result from exertion, no matter what their seat, especially in the aged or the syphilitic. The pain is often attributed to indigestion, but we must be suspicious if it is excited by exertion. I have known several men about 65 years old who, while apparently in excellent health, have been suddenly attacked with what the first physician to arrive termed acute indigestion; yet within a few minutes or at most a few hours, they were dead of angina pectoris. I have observed similar cases in which life has been saved by prompt and judicious treatment. When physicians realize that the pain of angina is seldom in the heart as usually described, but that it is commonly under the sternum or along the course of the larger arteries, so that it may even be in the stomach or bowels or other remote parts of the body, such errors and catastrophes will be much less frequent. If we have been taught to expect pain only over the precordia and down the left arm, we are apt to miss the significance of a pain over the upper part of the sternum and in the right arm, and we are much more liable not to recognize the disease when the pain happens to be centered in the epigastrium or even over the lower part of the abdomen.

The relief of pains by nitrites is considered a diagnostic feature; but this is not necessarily the case, for the nitrites do not always give relief, even under the best conditions. It must also be remembered that the nitrites are not effective when the preparation is old. The pains of pseudo-angina are relieved by the nitrites, and it is probable that still other pains may be relieved by these remedies, just as bronchial asthma is often promptly relieved.

It is asserted that angina pectoris in persons under 45 is usually of syphilitic origin. Possibly this is the explanation for the benefit that has sometimes been obtained from arsenic and the iodids. The value of a syphilitic history as a diagnostic point, however, cannot generally be relied on, as very few private patients will admit that they have had the disease if they can avoid the admission.

In pseudo-angina, the symptoms are much like those of the real disease; but the jactitation and absence of that awful feeling of impending death (I do not mean fear of death), together with the history and the position of the pain, usually make a diagnosis reasonably certain. I think that with many of us the crucial test has been found in the result. We have been accustomed to consider that the patient who recovered had an attack of pseudo-angina, whereas we are ready to admit that the one who died had the real thing.

PROGNOSIS

In the milder forms of the disease, suitable care and treatment may prolong life possibly for many years. For myself I know that I had come to think that with real angina pectoris, the first, second or third attack was almost sure to be fatal; but a careful analysis of my own sixty private cases and especially the experience of X, who, several times a day for four and a half years, has suffered more or less severe attacks, many of which might have been serious but for the means of prompt relief, have greatly modified this view. I unfortunately have not the end-results in many of my cases; but of the twenty-eight cases that I classified as pseudo-angina, three patients had already lived four years when my last notes were entered. Of the thirty-one cases in which I had no doubt about the reality of the disease, two patients had lived from one to two years; 3, two years; 4, three years; 4, from three to four years; 1, five years; 1, eight years; 1, twelve years; 1, fifteen years, and 1, thirty years. This would seem to indicate that those with true angina had outlived the pseudo-angina; but as I have records of death in only four cases with true angina and none in pseudo-angina, the figures have no significance as to end-results. They do show, however, that true angina is not nearly as hopeless as we are wont to believe, and that not a few may live to comparatively old age.

Allbutt makes a more hopeful prognosis than most authorities. This should be comforting to those who have experienced the pains and the awful mental depression that accompanies them. He thinks there is no close relation between the danger and the severity of the pain, but the degree of "angor" is the most ominous symptom. Without angor, angina minor may last for years or may even disappear. One of our fellows who had the pains often a few years ago is now quite free of them, although not young, and is very active in his profession. I have seen cases that lasted more than ten years, and I knew intimately one woman who suffered for thirty years, having at times very severe attacks. The celebrated John Hunter suffered from angina pectoris for twenty years before he finally died in an attack. During the four years, X has improved much in some respects, and if he can maintain a corresponding rate of gain for the next fifteen or twenty years, he hopes to be well.

In the majority of fatal cases, death is due to inhibition of the vagus, stung by pain. A fall in blood pressure resulting from mitral disease or from administration of nitrites relieves the vagus and saves life. An aortic murmur in syphilitic cases is of grave importance, indicating rapidly progressing changes. There are no physical signs that aid much in determining the probable duration, except that weakness of the heart sounds is indicative of myocardial changes, which add greatly to the danger. A sound heart can free itself from vagus arrest, but an enfeebled heart may fail. Chronic aortitis may suddenly end in angina pectoris.

TREATMENT

Nitrites are among the most valuable remedies, but they are commonly given in insufficient doses. X found the most satisfactory preparation a hypodermic tablet of nitroglycerin of $\frac{1}{100}$ grain, which was found to act more promptly and effectively than otherwise, when allowed to dissolve on or beneath the tongue. In this way its full effects were experienced

in from one to three minutes, whereas, if it had been taken into the stomach, only about half the efficiency was experienced, and it did not appear for about ten minutes. Frequently two or more of these tablets were taken at once, and they were repeated every few minutes until the desired effect was obtained. Often as many as ten or a dozen were taken in two or three hours. As much as 15 to 20 hundredths of a grain three times a day has been recommended in severe cases. A physician told me of one patient who took 100 of the $\frac{1}{100}$ grain nitroglycerin tablets in one day with the effect of relieving a severe angina, and at that time he said the pain had not returned for three years. X usually took four or five of the tablets daily, and when the pain was worse or more persistent, ten or twelve. Frequently after these larger doses he would be entirely free from pain all the next day. From my personal observation, I think these large doses are often needed; and if the physician feels his way with gradually increasing doses, no harm will come from them unless they cause too much headache. Osler thinks nitroglycerin is too timidly used and is then abandoned as ineffective. The preparation should be reasonably fresh, and prescribed in the original package. It may be carried in a small closely stoppered bottle to prevent evaporation, and renewed from the original package every week or two. The patient should be warned of the possible dizziness, the flushing of the face and the headache resulting from its use, and should be assured that these disorders will do no harm. I have found it a good plan to give the patient $\frac{1}{100}$ grain or more at once, so as to learn its effects before he leaves my office. After the susceptibility has been determined, it is best to give a full dose when attacks come on. It may be repeated as often as necessary to accomplish the result, except when it causes too much headache. The headache is sometimes relieved by repeating the dose. This remedy does no harm even from prolonged use. It is of doubtful utility when given only three times a day in the conventional dose of $\frac{1}{100}$ grain.

X did not like amyl nitrite because of its odor, and also because during an attack he found it difficult to dispose of the glass. It is asserted that although this remedy acts quickly it is not as certain as nitroglycerin. The few times that X used it, its effects were practically nil.

Sodium nitrite disturbed his stomach, by the time two or three doses had been taken. This drug seems to have some toxic property. Erythrol tetranitrate caused more headache and did not relieve the pain as promptly as the nitroglycerin, although some patients have found it more satisfactory because of longer duration of its effects.

The heart may be protected against inhibition shock by more or less continuous use of atropin. The dose employed is often too small. As much as 2 mg. or $\frac{3}{100}$ grain may be needed with some adults. In cases of extremely slow pulse, atropin has quickly relieved the inhibition. Calcium lactate is mentioned by some authors as a possible aid to check inhibition.

It is important to inquire into the cause; and if there has been syphilis, the proper treatment should be adopted, as potassium iodid and the arsenical preparations. Arsenic has been used since 1879, and is recommended in small or large doses to forestall the pain. The prolonged use of potassium iodid is said by some to be very effective. I myself have not seen much benefit from these remedies; but in view of the

contention that nearly all cases of angina pectoris in persons less than 45 years old are syphilitic, it is possible that many of them might be benefited by these remedies.

During the attack, if prolonged and severe, morphin, or morphin and atropin, given together hypodermically, are the most common remedies. They are undoubtedly necessary in many cases, but they usually disturb the digestion and make the patient feel bad for two or three days, so that it is much better to give the nitrites first and rely on them when they will answer the purpose. Whisky in quantities of about 3 ounces will also give relief. Hot applications over the sternum, as an electric pad, are sometimes helpful in relieving pain. Balfour recommended chloroform to be inhaled from a wide-mouthed bottle in which about a dram had been placed on a sponge. The bottle was to be held in the patient's hand so that, as he came under the influence of the anesthetic, the bottle would drop and roll away. Allbutt considers chloroform dangerous. I do not know its value from personal experience in angina pectoris, but have found this method of administration very effective and safe in some other painful conditions.

On account of its reputed effect in contracting the arterioles, digitalis is not suited to relieve an acute attack. In those cases in which the heart's action remains practically normal, it is distinctly contraindicated. When the heart's action is feeble, however, this remedy and nux vomica are indicated. The two together will often yield results that cannot be obtained by either one given alone. X tried digitalis repeatedly, but became convinced that at times it made him worse, although he never had high blood pressure. In sixty cases I observed, in which the condition of the heart and pulse was recorded, the heart was apparently normal in thirty-six cases, and the pulse did not exceed 85 in twenty-six cases. In only eleven cases did the myocardium or valves appear to be involved, in only nineteen did the pulse run from 85 to 90, and in only twelve did it run higher than 90 at the time of my examination.

To prevent the attacks, it is of first importance that the patient live a regular life, and avoid over-exertion, mental excitement, chilling of the surface and, indeed, anything that brings on the pain.

Moderation in eating should be enjoined, especially on those who are overweight, and mild measures for reducing the obesity should be instituted. Tobacco, coffee and sometimes even tea should be avoided. Flatulence should be relieved by such remedies as rhubarb, gentian, and the carminatives, as peppermint, cardamom and ginger. The *Bacillus bulgaricus* has been quite effective in preventing flatulence in some persons. The secretions must be free and the bowels must be kept open.

Rest, especially in the early stages or when the attacks recur frequently, is of the utmost importance; but the patient's temperament must be considered, and the physician must not demand what to the patient seems impossible. I am impressed with the idea that rest and diversion with graduated exercise are the greatest factors in the beneficent effects of baths of the type given at Nauheim. Essentially the same baths may be given at home, by adding 9 pounds of sea salt and 10 ounces of commercial calcium chlorid to 40 gallons of water with or without carbonic acid gas. Calcium chlorid is probably the most essential ingredient. The carbonic acid gas appears to me neg-

ligible except for its psychic effect. As already pointed out, X improved markedly during his six weeks of treatment at Nauheim, and has continued to improve since. This case yields a hopeful aspect in prognosis and, I think, illustrates some important facts in treatment, the outstanding features of which are avoidance of exciting causes, heart tonics when needed, nitrites given freely to relieve pain, regular temperate habits, and abundant rest. I believe his improvement is due first to the free use of nitroglycerin, partly to the heart tonics he has taken almost continuously, partly to the care in diet, and largely to the hour and a half or two hours' rest every afternoon, added to the eight hours at night.

SUMMARY

The pain in angina pectoris is not usually in the heart and the left arm, but rather along the course of the aorta and larger arteries.

The pain appears, at least in many cases, to have no relation to the condition of the myocardium or to the obstruction of the coronary arteries.

A more hopeful prognosis than that of the usual conception of this disease may be assured under proper care and treatment, *a very important part of which is abundant rest with heart tonics as needed.*

The sublingual administration of fresh hypodermic tablets of nitroglycerin in large amounts to relieve pain is of great value. The failure of nitroglycerin is most often due to the wrong mode of administration, deterioration of the preparation, and inadequacy of the amount.

104 South Michigan Avenue.

PATHOLOGY OF ANGINA PECTORIS *

E. R. LeCOUNT, M.D.

CHICAGO

When sudden occlusion takes place in an artery supplying blood to a place which no other artery can adequately supply, because anastomosis with neighboring arteries is not sufficient, the process is called infarction and the name is generally applied also to the changes which result in the region having its blood supply so interfered with; the lesion produced is an infarct.

There are very few if any arteries which in a strict sense are terminal, that is to say, so terminal that the entire tissue supplied by them must of necessity die when their circulation is obstructed.

Many so-called terminal arteries are so in only a small degree, which means that only part of the region they supply undergoes death by anemic necrosis when they are abruptly occluded. Indeed, the existence of so many different degrees of terminality, if such an expression is allowable, has resulted in a great deal of contention between those who have maintained that arteries for some part of the human body were "end" vessels, and others who with equal vigor have insisted that they are not. Naturally these differences of view have led to experiments of one sort or another, to estimate in some precise way the extent to which the normal circulation in some of these terminal arteries is essential to the healthy life of the region supplied.

Unfortunately for many of these experiments, lower animals have been used; and the conditions for

* Read before the Institute of Medicine of Chicago, March 28, 1918.

some organs at least, only approximate those in the corresponding human organ.

Exception may be taken also to the conclusions founded on conditions ascertained by anatomic studies, the injection of arteries supposed to be terminal to ascertain the extent such injection-masses may be made to penetrate the capillary bed and larger branches of neighboring arteries; for, valuable as these studies are, they do not measure the functional compensation possible by means of such anatomically demonstrable collateral anastomosis; in other words, proof by such methods of collateral communication is not a measure of the degree to which the vessels in question are functionally terminal.

The coronary arteries are virtually the sole route by which arterial blood is supplied to the heart. Because they possess some collateral circulation, and also of course because the maintenance of an adequate supply of blood by these arteries is necessary for life to continue, the amount of such collateral circulation in the human heart, and especially its ability to functionate in a compensatory way, has been subjected to extensive study.

Reference has been made thus far only to sudden occlusion; and it is worthy of comment at this time that experiments with the coronary arteries have practically all dealt with the consequences of obstructing the circulation in one or both of these vessels or their branches, by methods which have abruptly interfered with the circulation.

The relation impaired circulation in the coronary arteries is supposed to have to angina pectoris is, however, not limited to simply sudden or acute obstruction, but is believed to apply equally well to a gradual hindrance extending at times over many years.

It is generally believed that somewhere between sudden occlusion and its results, and such slowly developing obstruction that few or no symptoms develop, lie the lesions responsible for angina pectoris; and because of this I propose to discuss briefly such details as I possess regarding sixty deaths from difficulties with the circulation of blood in the coronary arteries or with lesions generally regarded as caused by such difficulty. These are in two groups: thirty-four deaths from fibrous myocarditis with sclerosis of the coronary arteries, and twenty-six of more or less acute occlusion.

FIBROUS MYOCARDITIS

Only four of thirty-four persons whose deaths from the postmortem examination were found to be due to fibrous myocarditis were in a hospital for any time and ill from heart disease; one for eight hours, with a clinical diagnosis of acute dilatation of the heart; one for 8.50 hours, with a diagnosis of pulmonary tuberculosis; a third, 17.40 hours, with a diagnosis of asthma, and the fourth for 27.50 hours, with a diagnosis of delirium tremens.

Twenty-eight of these thirty-four patients were men and six were women. Three under treatment for other illness and convalescent died suddenly and unexpectedly, eight died en route to the hospital, and eighteen were found dead; and of these last, four fell dead on the street and seven were found dead in bed.

In five of the thirty-four hearts the scars were of such size in the heart muscle that pouching outward had taken place—the so-called chronic parietal aneurysms. In a few the scars replaced so little of the myocardium that, in addition to other examinations, a chemical examination was made for poisons.

In four of the thirty-four bodies, gross indications of syphilis were present, in four others there was pulmonary emphysema of the hypertrophic variety, in two the kidneys were markedly diseased—"small red granular kidneys." There was some anasarca or hydrops or both in eight of the thirty-four, obesity in one, and two hearts possessed anomalies, a two-cusped aortic outlet in one and absence of a circumflex branch of the right coronary artery in the other, the corresponding branch of the left coronary being large.

Four of the thirty-four patients were between 30 and 40 years old, eight between 40 and 50, thirteen between 50 and 60, six between 60 and 70, and one over 80 years. It will be noted that the decade for the greatest number was between 50 and 60.

One man, a pedler, aged about 60, came into a saloon and said he wished to rest, and later was found dead in the back room on a couch where he had lain down. The man in the hospital for 8.50 hours said he had been ill for three days, unable to retain anything on his stomach, but also unable to attribute this to any indiscretion in diet. Another was under treatment in the hospital for urethral stricture, went to the toilet, and on returning dropped dead at the bedside.

Another found sick on the street by a policeman died soon after being taken into a barber shop. Another dropped dead shoveling sand; one died suddenly in a police cell; one of the six women dropped dead when prepared to leave her work in the Psychopathic Hospital, where she worked nights; she had just dressed to leave. Another woman fell dead on the street, and a third woman died suddenly in a drug-store.

ACUTE CORONARY OBSTRUCTION

Of twenty-six persons who died with acute or suddenly developing obstruction of the coronary arteries, eighteen were men and eight women. Of these the age of the greatest number in any single period of ten years is two decades earlier than those with the fibrous myocarditis, one being in the 20 to 30 decade, eight between 30 and 40, six between 40 and 50, six also between 50 and 60, three between 60 and 70, and two 71 years old or over. This earlier age for the largest number in any one decade is no doubt connected with syphilis, for in eleven of the twenty-six bodies, changes usually regarded as indicative of syphilis were found, whereas with the thirty-four deaths from fibrous myocarditis, only four were of persons whose bodies possessed such alterations. Of the twenty-six patients, five died in the examining room, five were found dead, and one died en route to the hospital.

The obstruction of the coronary circulation of these twenty-six persons was in most instances thrombosis; in one instance embolism was associated with thrombo-ulcerative mitral endocarditis, and embolic hemorrhages were present in the skin and bowel as well. In another heart acute dissection of the wall of the circumflex branch of the left coronary artery was associated with a minute sacculated aneurysm at the same place. In a third the coronary artery broke open and the blood from it found at the postmortem examination in the pericardial sac weighed 560 gm. In four others, syphilis of the root of the aorta had obstructed the coronary circulation at the mouths of the arteries. One of these was interesting in that a small globular clot formed where the intima of the aortic root was altered from syphilis, had obstructed the mouth of the

left coronary artery completely. Another concerned a pregnant housewife only 21 years of age.

In another heart the obstruction was apparently due to calcareous masses which were partly loosened in the channel by softening of patches of atheroma of which they were a part. This man, aged 60, had become acutely ill, and was on his way to the hospital without aid. He had almost arrived when overcome. He died in the examining room. In addition to the obstruction with loose lime masses and the infarction of the myocardium, the anterior papillary muscle was found greatly atrophied and shrunken, there was some fibrous myocarditis, and the heart weighed 455 gm.

Mention has been made of a small saccular aneurysm of the branch of the left coronary artery, which runs around the heart referred to here as the circumflex branch, and its association with acute dissection of the artery wall at the same site. In two other hearts the obstruction was similarly located, once in the left circumflex branch and once in the right.

The regions of infarction in these hearts were for the most part large and easily found; many were, as is commonly known to be the case, considerable distances away from the place where the artery was occluded or the circulation otherwise interfered with. Infarcts of the myocardium are frequently multiple, and sometimes small and widely scattered.

In one of these twenty-six hearts the place softened by anemic necrosis broke so that the pericardial sac filled with blood; in several, acute outpouching in varying degrees was present; in many, mural thrombi had formed on the necrotic lining. Small, delicate deposits of fibrin on or in the epicardium of the place infarcted was not uncommon.

These twenty-six deaths from more or less acute obstruction of the coronary circulation are the only ones of 175 deaths from heart disease with which I have found associated symptoms suggestive of angina pectoris.¹ Fifteen of the twenty-six were patients for a short time. The shortest period under observation was 1.15 hours, and the longest, 52.20 hours.

The diagnoses made in these short periods are of interest. Twice the diagnosis of angina pectoris was made; for two others, acute dilatation of the heart; for one, edema of the lungs; for two, lobar pneumonia; and once each, pulmonary tuberculosis, acute gastritis, intestinal obstruction and carcinoma of the stomach.

One of these acute coronary obstructions had to do with the heart of a man found dead seated in a chair. He had been ill two months and under the care of a surgeon well known to us all whose diagnosis of gallstones I have in a letter in answer to one of inquiry sent him. I found no gallstones, and there had been no operation. The following are brief synopses of single cases:

Time under observation, 26.10 hours. An elevator man, aged 61. Illness began five days before entrance with a sudden pain in the chest which spread to each side and was increased by deep inspiration. There was vomiting at intervals during these five days.

Time under observation, 16.20 hours. Age, 30; Italian. Three days before death there was pain in the lower chest and abdomen with vomiting. The respirations were from 32 to 40. The pulse was too fast to count. The clinical diagnosis was lobar pneumonia.

Time under observation, 52.20 hours. A German woman, aged 43, a nurse. Illness began two and a half days before

death with pain of the back of the neck, front of the neck and across the chest pronounced neuralgia by one physician, and heart disease by another. In the hospital the pain was all on the left side and involved the neck, both extremities and the left side of the chest. The clinical diagnosis was angina pectoris.

Time under observation, 28.15 hours. Woman, aged 50, housewife. Illness began five days before with vomiting once and a half hours after eating a heavy meal, and severe cramp-like pains of the epigastrium persisting during the five days.

Time under observation, 8.30 hours. Man, aged 35, became ill twenty-two days before death after working fourteen hours without food in a brickyard, with pain in the chest and shortness of breath, and vomiting for several days shortly after eating. When in the hospital he did not have much pain, but spat up a blood-stained froth and was very cyanotic. The clinical diagnosis was edema of the lungs.

Time in the hospital, 20.15 hours. Man, aged 53, telegraph operator. While walking two weeks before death his illness began suddenly with a severe pain in the chest, and he was obliged to stand still or lean against something for support and gasp for breath. This lasted only a few minutes, but was repeated three or four times in walking a block. Four days before coming to the hospital he had a similar attack in bed, and a physician came and gave him a hypodermic and he had suffered but little pain since; but the shortness of breath persisted and remained worse on slight exertion during all the two weeks. The clinical diagnosis was angina pectoris.

COMMENT

It may be assumed that none of these sixty persons suffered from angina pectoris, that there are no reliable accounts of the *angor* said to be associated with a sense of impending death or that many were examples of pseudo or mock angina. I have no answer to such assertions unless it be to state that in all likelihood many die from true angina in a first attack and that some people with true angina suffer as others do but without any realization that death is at hand; no doubt people vary as to their ability to discriminate with regard to the likelihood of death ending their distress and with regard to their fear of death.

As to the contention by Allbutt that the lesions are not located in the coronary arteries but in either functional or structural alterations of the aorta, I may remind you that anatomists have always debated somewhat as to where the heart ends and the aorta begins, where the boundary line between them lies.

Since the lower part of the aorta as well as of the pulmonary artery receives its blood supply from small branches of the coronary arteries, which, passing up, anastomose with similar vasa vasorum from the bronchial and pericardial arteries, it perhaps may be best to regard the proximal few centimeters of both of these large arterial trunks as a portion of the heart.

It is not unlikely that with sclerosis of the coronary arteries a difficulty exists in maintaining an adequate supply of arterial blood to the proximal parts of these arteries, a difficulty which is concerned with insufficient anastomosis with the other vasa vasorum which come down from the bronchial and pericardial arteries; indeed, these last vessels may also be the seat of sclerosis.

With these conditions in mind, it is easy to conceive of these branches of the coronary arteries which supply arterial blood to the roots of the pulmonary artery and aorta as end arteries in much the same way as their chief branches to the myocardium are terminal, and to remember that, although a collateral anastomosis exists in the heart between the two coronary arteries and also between the coronary vasa vasorum of the aorta and other vasa vasorum to the

1. These 175 necropsies were all medico-legal, a part of inquiries necessary because the deaths were unexpected, or because of an absence of medical attention sufficient to ascertain the nature of the illness.

aorta from the pericardial and bronchial arteries, with sclerosis or with more acutely developing obstruction from other causes, the compensatory circulation may prove inadequate or may not be promptly enough established to prevent either angina pectoris with death, or death so unexpectedly that there is no opportunity to determine whether symptoms of angina did or did not occur.

[NOTE.—This and the paper by Dr. Ingals which precedes it are part of a symposium on angina pectoris read before the Institute of Medicine of Chicago. Abstracts of the remaining papers appear in the society proceedings in this issue of THE JOURNAL.—ED.]

ARE DIPHTHEROIDS A FACTOR IN FEMALE STERILITY?

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PHILADELPHIA

The problem of sterility is of great importance to the human race. This is especially true at the present time when the flower of manhood and womanhood is being destroyed or maimed by war. We believe that the question of sterility does not receive sufficient study from investigators. With the dawn of peace will come the problem of the rehabilitation of mankind, and we feel that any procedure that offers assistance to humanity should be discussed. On matters of such magnitude as generation, we believe we shall be pardoned if we submit a single rather striking case for consideration. We aim to place before the profession a clinicolaboratory experience, hoping thereby to induce investigators of greater ability to study along this line. Valuable work has been done on the bacterial flora of the female genitalia. Little, if any, appears to have been done to ascertain the possible effects of such flora on procreation.

It is with the foregoing ideas that we report this case, presenting apparently important phases.

In the fall of 1916, Dr. X, a dentist, presented himself for study as to the cause of an anterior urethral discharge. In the history he stated that he had been married seven years, during which period he had never had any urethral discharge, nor had there been any extramarital exposure.

A study of his discharge showed it to be very largely composed of pus cells and epithelial elements. The only bacterium present was of the Hoffmann type of the pseudodiphtheria bacillus. This was obtained in pure culture from the anterior discharge and also from the prostatic secretion. He was given the usual routine local treatment for such conditions. He improved and the anterior discharge became scanty and at times disappeared. The prostatic secretion, however, still presented numerous leukocytes and organisms. The condition of the prostatic secretion and its tendency to remain in statu quo led us to reinforce our local treatment by an autogenous vaccine. Under the added impulse of vaccine therapy, the prostatic secretion became normal. At the time of making the vaccine, we deemed it wise to study the bacterial flora of the wife's genital tract with a view to determining the source of his infection and thereby obviating the possibility of future attacks. This study particularly appealed to us because of the fact that, some time previous, she had been under the care of an eminent gynecologist for a year and a half, for the purpose of correcting an apparent sterility. During this period, she had been given

intravaginal medication, dilatation and curettage, and had undergone an abdominal operation for the correction of a malposed uterus. These procedures, however, failed to bring about conception, though the husband's seminal fluid contained countless numbers of very motile spermatozoa.

Our study showed that there was a complete absence of vaginal discharge. Cultures were taken from the wife's genital tract. Those from the vaginal vault presented the usual flora, with a preponderance of diphtheroids.

The cultures from the cervical canal proved to be purely diphtheroids. From a five-day growth of these bacilli, it was possible to demonstrate almost all the Westbrook types of the diphtheria bacillus, with many striking metachromatic forms. Separate autogenous vaccines were made and used on the husband and wife. Both patients convalesced promptly with a virtual disappearance of the diphtheroids.

About three months after their dismissal, the husband returned for examination and was found free from his former infection. He was gratified to relate that he thought his wife was two months pregnant and wished us to refer him to an obstetrician for confirmation of the surmise. This was done and a positive report returned. Nov. 20, 1917, she gave birth to a healthy girl baby.

We have since had an opportunity to study bacteriologically two cases of female sterility. In one of them a pure culture of diphtheroids was obtained from the cervical canal. In the other, studied for Dr. Alexander Randall, there was a mixed culture in which diphtheroids predominated. These patients are now under treatment with autogenous vaccines in distant cities, but it is as yet too early to make a further report on their progress. We know that we have proved nothing by our meager experience, but we feel that it may encourage further study.

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THE FORMATION AND COMPOSITION OF THE CEREBROSPINAL FLUID

A SIMPLE METHOD OF DETECTING ACIDOSIS AND DETERMINING HYDROGEN ION CONCENTRATION *

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MINNEAPOLIS

THE CEREBROSPINAL FLUID

The view has been repeatedly expressed that the spinal fluid is a secretion and its composition more or less independent of the composition of the blood, but the experiments described in this paper do not favor this view. The spinal fluid is not an ordinary filtrate, such as lymph, since it is almost free from proteins, in health. It may be, however, an ultrafiltrate. Bechhold impregnated filters with colloids so that they became impermeable to proteins, and he called the apparatus an ultrafilter since it filtered out ultra-microscopic colloid particles. It seemed advisable to compare the ultrafiltrate of blood plasma with spinal fluid. The apparatus was prepared as follows: An alundum extraction shell of the finest grade was heated in a blast lamp to remove all organic matter and washed in distilled water several days to remove soluble substances. It was dried, and a perforated rubber stopper was inserted in the open end. The shell and part of the rubber stopper were coated with a solution of collodion and rotated until the smell of ether was faint, and then placed in distilled water until needed. The ultrafilter thus formed was drained and immersed

* From the Physiological Laboratory of the University of Minnesota Medical School.

in dog's oxalated plasma, and the perforation in the rubber stopper was connected with a suction pump and a pressure of about 380 mm. was applied. After a few cubic centimeters of filtrate had collected inside the filter, it was removed through the perforation in the stopper and the filtration continued.

The plasma had been diluted with potassium oxalate solution, and its alkaline reserve was 0.018 normal as determined by titration in the rotating hydrogen electrode.¹ The alkaline reserve of the ultrafiltrate was 0.016 normal by the same method, or roughly 10 per cent. less. The alkaline reserve of the spinal fluid was found to be about 10 per cent. less than that of undiluted plasma. The possible explanation of this difference is that 10 per cent. of the alkaline reserve of plasma is in the form of sodium albuminate, which will not pass the filter, and 90 per cent. in the form of sodium bicarbonate, which passes freely.

The freezing point of the plasma was $-0.66^{\circ}\text{C}.$, and of the filtrate $-0.62^{\circ}\text{C}.$, or a difference of 0.04° degree, which corresponds to a difference in osmotic pressure of 380 mm., which was the difference in pressure on the two sides of the filter membrane. If the spinal fluid is an ultrafiltrate, the difference in pressure on the two sides of the filter membrane is the difference

TABLE 1.—COMPARISON OF THE CONTENT OF THE SPINAL FLUID AND THE PLASMA

Substance	Parts per Thousand in Spinal Fluid	Blood Plasma
Glucose	1.3 to 2 (Mott)	0.6 to 2
Urea	About 0.4	About 0.4
Total inorganic salts.	8.78 (Halliburton)	8.574 (Carl Schmidt)
Sodium chlorid	7 (Harding and Mason)	6 (Harding and Mason)
Potassium chlorid ...	0.28 (Halliburton)	.....
Diffusible calcium ...	0.05 (Halverson and Bergeim)	0.07 (Rona)
(Alkaline reserve) ..	(0.0275 normal)	(0.03 normal)
Calculate sodium bicarbonate	2.3	2.3
Total carbon dioxid..	About 600 (Mott)	About 600
(Oxygen tension) ...	(27 to 115 mm. calc. from Mott)	(40 to 115 mm.)

between the capillary blood pressure and the pressure of the spinal fluid, and is very small. In support of this supposition is the fact that the difference between the freezing points of human blood and spinal fluid is very small. The freezing point of human blood is usually $-0.56^{\circ}\text{C}.$, but may vary from -0.48° to -0.62° . I found the freezing point of one sample of human spinal fluid to be -0.56° , and Mott found variations from -0.51° to -0.56° . If the spinal fluid is an ultrafiltrate of blood plasma, the concentration of sugar, urea and diffusible salts should be the same in each at the place of formation; but subsequently, sugar might be decreased and urea increased in the spinal fluid, as a result of metabolism of nerve tissue. This condition seems to exist, as shown by Table 1, which also shows that the dissolved gases are similar in concentration.

It seems probable, therefore, that the spinal fluid is formed primarily by ultrafiltration, and that to this filtrate the secretions of cells may be added. The high protein content in disease may be explained by the supposition that the disease causes leakage of the filter, thus allowing protein, and sometimes cells, to pass through. The pressure of the spinal fluid might indicate whether or not the leakage came partly from the arterioles.

If the spinal fluid is an ultrafiltrate of the blood, or is in diffusible relation with it, any change in the alkaline reserve of the blood plasma should cause a change, in the same direction, in the spinal fluid. To test this, two normal dogs were etherized and into one of them hydrochloric acid was injected intravenously until death occurred. The skulls of the dogs were opened and spinal fluid taken from the region of the fourth ventricle. The alkaline reserve of the spinal fluid of

TABLE 2.—CHANGES IN ALKALINE RESERVE OF SPINAL FLUID OF DOGS

Method Used to Quiet Dog	Alkaline Reserve of Spinal Fluid
Morphin	0.026
Curare	0.022
Death by bleeding	0.023

the normal dog was 0.0225 normal and that of the dog in experimental acidosis, 0.02 normal. Since a lowering of the alkaline reserve of the blood plasma lowers that of the spinal fluid, how much more easily must it lower that of the lymph and the tissue fluids. The alkaline reserve of the cells of the body may be lowered also. The injected dog weighed about 26 kg. Let us assume that the volume of the dog was 25 liters. It was injected with 500 c.c. of tenth-normal hydrochloric acid (in physiologic sodium chlorid solution) and 250 c.c. of 0.2 normal hydrochloric acid (in the same solvent), or the equivalent of one liter tenth-normal hydrochloric acid. This should have lowered the alkaline reserve of its body 0.004 normal. The alkaline reserve of the spinal fluid was lowered 0.0025 normal, but if the dog had lived until a more perfect equilibrium was established between blood and spinal fluid, the lowering of the alkaline reserve in the latter would probably have been much greater. The dog died about one hour after the injection was begun.

It has been stated by Henderson and Cannon that the alkaline reserve of the blood plasma is changed by drugs and by shock, and Cavazzani found similar changes in the alkaline reserve of spinal fluid of dogs as set forth in Table 2.

He found the alkaline reserve of spinal fluid of rabbits to be from 0.021 to 0.025, and of an ox, 0.026.

TABLE 3.—DETERMINATIONS OF ALKALINE RESERVES IN THE SPINAL FLUID OF PATIENTS

Case No.	Alkaline Reserve	Diagnosis
1	0.015	Diabetes
2	0.023	Tabes dorsalis
3	0.025	Sciatica
4	0.026	Myasthenia gravis
5	0.026	Cerebrospinal syphilis
6	0.027	Hysteria
7	0.027	Syphilis (Wassermann negative on spinal fluid)
8	0.027	Nephritis
9	0.027	Neurosis
10	0.027	Neurasthenia
11	0.0275	Nephritis
12	0.0275	Tabes dorsalis
12	0.0275	Tabes dorsalis
2	0.0275	Tabes dorsalis
13	0.0275	Mitral stenosis
14	0.028	Epilepsy
15	0.030	Diabetes

Mott found that the alkaline reserve of human spinal fluid was usually 0.0275.

My determinations of the alkaline reserve of the spinal fluid of patients in the University Hospital are shown in Table 3. It may be noted that nearly all cases show that the alkaline reserve is 0.027 or 0.0275 without reference to disease. The few cases of dia-

1. McCleendon, J. F.: Jour. Biol. Chem., 1917, 30, 265.

betes do not admit of certain conclusions except that the alkaline reserve was very variable. This was also shown in alveolar carbon dioxide and blood plasma combined carbon dioxide.

METHOD OF TITRATION OF CEREBROSPINAL FLUID,
AND OTHER METHODS FOR DETECTION
OF ACIDOSIS

Since a lowering of the alkaline reserve of the blood causes a lowering of that of the spinal fluid, any dangerous degree of acidosis, that is, the lowering of the alkaline reserve of the whole body, should cause a noticeable change in the spinal fluid. Cavazzani and Mott titrated the spinal fluid and at least their later titrations were probably done properly, but they do not make it clear that errors due to proteins or to carbon dioxide were avoided.

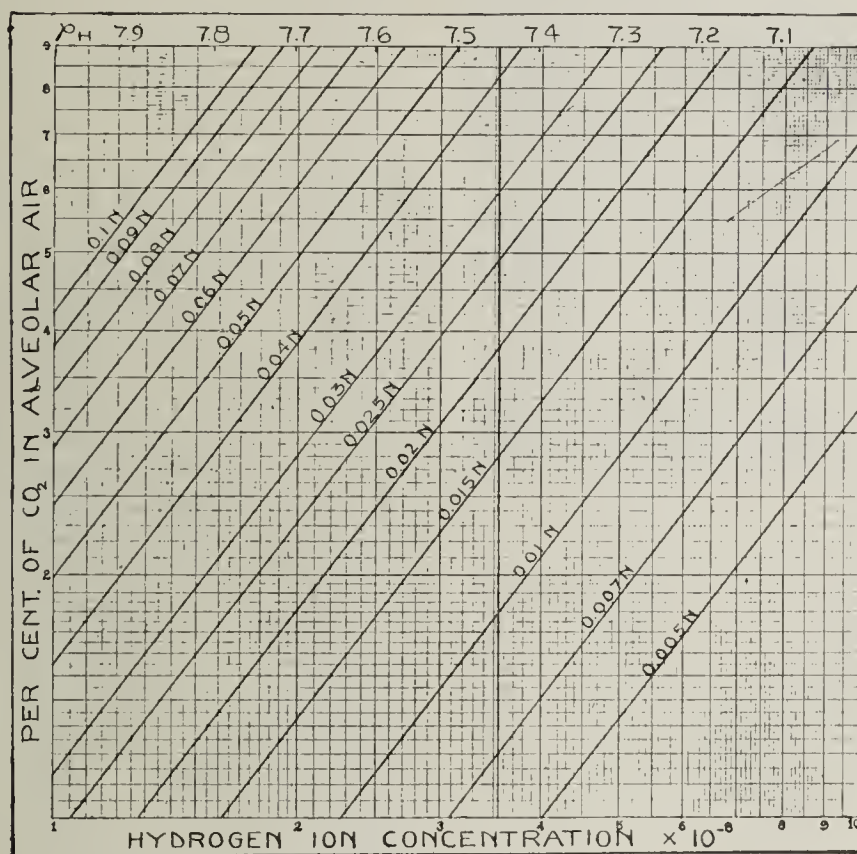
I developed an electrometric method for titrating the alkaline reserve of blood plasma.² In applying this method to the spinal fluid, I found that the proteins are so low in concentration that it is possible to titrate the fluid with a suitable indicator. The indicator chosen must show a sharp color change at a reaction just on the acid side of the neutral point, in order to be sensitive and avoid any errors due to carbon dioxide, and must be relatively little affected by proteins and other substances. It is, however, impossible to find an indicator that is not rendered worthless by as large an amount of protein as occurs in the blood plasma. It was found that dibromorthocresolsulphonephthalein is admirable in the titration of spinal fluid into which no hemorrhage has taken place, whereas it is worthless in the titration of blood plasma. The method is as follows:

One c.c. of spinal fluid is carefully measured in a volumetric pipet and run into a porcelain dish. Enough of an alcoholic solution of the indicator is added to turn it a distinct purple. The buret is improvised out of a 1 c.c. pipet, graduated in hundredths of a cubic centimeter. To the lower end of the pipet is attached a short piece of rubber tubing of 1 mm. bore. Into the lower end of the rubber tubing a piece of small glass tubing is inserted. The glass tubing is drawn out in a flame to a capillary tip. The rubber tubing is closed by means of a small clip, of the type of crossed forceps or the bull dog or the Langenbeck clip. When the titration is made the buret is filled with tenth-normal hydrochloric acid. The acid is run in, a small portion at a time, and is mixed with the spinal fluid by being shaken in the porcelain dish until the color changes to yellow. It will be noted that the purple color may return on further agitation and that

the end-point is reached only when the purple fails to return. In order to reach the end-point exactly, I find it necessary to split drops. That is to say, the drops that fall by gravity are too large; and when a very small drop of hydrochloric acid is allowed to form on the tip of the glass tubing, it is transferred by touching the porcelain dish a short distance above the surface of the spinal fluid, and then is thoroughly mixed by agitation of the dish.

The results are put down as in the ordinary titration of an alkali with tenth-normal hydrochloric acid; for instance, ordinarily 1 c.c. of spinal fluid requires 0.275 c.c. of tenth-normal hydrochloric acid. In other words, the spinal fluid is 0.0275 normal in "alkalinity" or, as is more properly stated, in "alkaline reserve." This alkali exists almost entirely in the form of sodium bicarbonate, and therefore during the titration, the fluid must be agitated until the carbon dioxide is expelled before the titration is complete. It is unnecessary, however, to boil in order to expel carbon dioxide.

There are several methods of determining the alkaline reserve of body fluids containing protein. The titration method² gives results in the same terms as those given in the foregoing. The method of Van Slyke gives the results in terms of combined carbon dioxide. In order to reduce these results to normality (N) of bicarbonate, it is only necessary to know that the carbon dioxide combined in 1 c.c. of a normal (1 N) solution of sodium bicarbonate occupies 22.4 c.c. at standard temperature and pressure. When the Van Slyke apparatus is used, however, it is possible to determine either the combined or the total carbon



Conversion table.

dioxide in the blood plasma or other fluid. These differ slightly from one another (by about 4 c.c.). Table 4 may be used to give the results obtained by the different methods in terms of one another. In the first column are given the results by the titration method, in the second column, the so-called combined carbon dioxide, and in the third column, the total carbon dioxide after saturation at 42 mm. partial pressure and 20 C.

Table 4 is supposed to be correct within 10 per cent. As stated in the foregoing, the sodium bicarbonate of plasma and the spinal fluid seem to be the same, but the plasma seems to have 10 per cent. more reserve in the form of sodium albuminate. This would cause the carbon dioxide of the plasma to be 10 per cent. less than that of spinal fluid of the same alkaline reserve, but this seems not to be the case. I have found the alkaline reserve of plasma to be about 0.03 normal (corresponding to 67 c.c. of combined carbon dioxide), and Van Slyke states that the combined carbon dioxide of plasma is 65 per cent. instead of 61 per cent., as would be expected. It seems possible that about 3 per cent. of the carbon dioxide is loosely combined with

colloids of the plasma by adsorption or loose chemical union. Because of technical errors in the methods, separate tables for spinal fluid and plasma are hardly worth while.

HYDROGEN ION CONCENTRATION

Owing to the frequency of technical errors in taking samples or determining hydrogen ion concentration of blood or spinal fluid, the results very seldom have anything like the accuracy that is possible if unlimited time is taken to achieve the greatest accuracy. I have found that the use of the conversion table shown in the accompanying chart gives much more reliable results than those usually obtained by any direct method. The table is not absolutely correct. If it were correct in one part for blood plasma, it would not be absolutely correct for spinal fluid; but the difference would be less than the error, often vitiating direct determinations.

The method is based on the assumption that the hydrogen ion concentration of blood and spinal fluid is the same as that of a solution of sodium chlorid and sodium bicarbonate of the same osmotic pressure, alkaline reserve and carbon dioxid tension as the blood or the spinal fluid. The peculiar form of the conversion table was arrived at empirically after a prolonged study of bicarbonate solutions,¹ and was adapted empirically to blood plasma.³ The fact that it holds for spinal fluid within 10 per cent. error in alkaline reserve and technical errors in the hydrogen ion deter-

in making the standard, greater than 0.1. It seems evident that the difference in the reports of the p_H of blood and spinal fluid is within the limits of error where no corrections have been applied.

In using the conversion table shown in the chart, it is assumed that the carbon dioxid tension of the blood and the spinal fluid is the same as that of the alveolar air as determined by any method that may be chosen. The alkaline reserve is determined by titrating the spinal fluid and the diagonal of this alkaline reserve found in the chart. The alveolar carbon dioxid is measured on the ordinate with a pair of dividers, which are moved to the right until their upper point falls on the alkaline reserve diagonal. At their lower point, the hydrogen ion concentration of spinal fluid (and blood) may be read off. The p_H may be found by following the vertical line from the hydrogen ion concentration to the top of the page.⁵

A CASE OF TIN POISONING*

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Jan. 29, 1917, H. M., a traveling salesman, aged 59, consulted me on account of a feeling of coldness or chilliness and sore throat. He said that he had felt chilly for a week or more. His temperature was 102.5, and his throat was red. His tongue was very much coated. He had a full upper and lower set of false teeth. The physical examination was otherwise negative. I sent him home and told him to go to bed. The following day I called on him. His temperature was still over 102, and both tonsils were covered with white spots. A diagnosis of acute tonsillitis was made at this time. In four days his temperature was normal, his throat had cleared up, and I discharged him as cured.

February 21, or three weeks later, he again consulted me, saying that he was not a bit better and that he had had to discontinue his business trip because he felt bad. He still felt chilly. This chilly feeling would be relieved occasionally by hot flashes. On arising in the morning, he said that he felt as if he were stepping into a tub of ice-water. His throat also continued to annoy him. He had indefinite, vague pains in his extremities and the back of his head. The examination of his throat was negative. He said that this feeling of coldness was so persistent and annoying that he was unable to eat, sleep or attend to his business. His tongue was still heavily coated. His blood showed 3,500,000 reds, 6,200 whites, and 70 per cent. hemoglobin, but there were no morphologic changes. Repeated examination failed to reveal anything outside of this slight anemia. The Wassermann and Hecht-Weinberg tests were negative.

March 3, Dr. Roger S. Morris saw him in consultation, and was unable to throw any further light on the case. We both agreed that the condition was one of simple anemia following the attack of fever and sore throat in January, and advised that he go to Old Point Comfort for a rest. He did not go, but continued to consult me daily or oftener. His chief complaints were the feeling of coldness and the soreness in his throat. Drs. Iglauer and Allen both examined his throat, and their findings were negative. His temperature was always normal.

March 22, he returned with the same complaints, coldness, irritation or pain in his throat, and indefinite pains in his legs, arms and head. I examined his throat again but found

TABLE 4.—ALKALINE RESERVE (BICARBONATE)

Titration Normal	Volume Per Cent.	
	Total Carbon Dioxid	Combined Carbon Dioxid
0.010	27	22
0.012	31	27
0.014	35	31
0.016	40	36
0.018	45	40
0.020	49	45
0.022	53	49
0.024	58	54
0.026	62	58
0.028	67	63
0.030	71	67
0.032	76	72
0.034	80	76
0.036	84	81
0.038	89	85
0.040	93	90

mination follows for the reason that the alkaline reserve, carbon dioxid tension, and hydrogen ion concentration of blood plasma and spinal fluid in the same person are practically the same; or more definitely, the alkaline reserve differs by about 10 per cent. The carbon dioxid tension is about the same, since the alkaline reserve is about the same and the total carbon dioxid about the same. The hydrogen ion concentration can be calculated from the p_H (—log hydrogen ion concentration) and since the p_H is about the same for spinal fluid and blood, the hydrogen ion concentration is about the same. The p_H of blood is about 7.45. Felton, Hussey and Bayne-Jones,⁴ using the colorimetric method, found the p_H of spinal fluid to vary between 7.4 and 7.6. If this method is used with spinal fluid, 0.1 should be subtracted from the reading on account of salt error, and a further subtraction would be desirable on account of protein error, and loss of carbon dioxid from the spinal fluid. The error in reading the color may be nearly 0.1, and the error

3. McClendon, J. F.; Shedlov, A., and Thomson, W.: Jour. Biol. Chem., 1917, **31**, 519.

4. Felton, L. D.; Hussey, R. G., and Bayne-Jones, S.: The Reaction of the Cerebrospinal Fluid, Arch. Int. Med., June, 1917, p. 1085.

5. In addition to the references already given, the following will be found of interest:

Cavazzani: Arch. Ital. Biol., 1902, **37**, 30.
Cullen and Ellis: Jour. Biol. Chem., 1915, **20**, 511.
Harding and Mason: Jour. Biol. Chem., 1917, **31**, 55.
Hurwitz, S. H., and Tranter, C. L.: On the Reaction of the Cerebrospinal Fluid, Arch. Int. Med., May, 1916, p. 828.
Rona: Biochem. Ztschr., 1913, **49**, 370.

* Read before the Academy of Medicine, Cincinnati, Feb. 25, 1918.

nothing. I told him, however, that I would touch his throat up with some silver nitrate. He then took out his lower set of teeth and, seeing that they attracted my attention, he said that the teeth were set in tin. This statement was confirmed by his dentist, who stated that the plate was made of Watt's metal, which is two-thirds tin and one-third bismuth. Immediately the possibility that the case was one of tin poisoning flashed through my mind, although I had never heard of such a case. I reasoned, however, that if other heavy metals could produce poisoning, possibly tin also could do so. The patient had been wearing this lower set since Dec. 11, 1916, or about one month before the symptoms began. I told him not to wear the lower set of teeth, which showed evidence of corrosion in spots, until I had had an opportunity of looking up the literature on the subject.

The literature abounds in references to so-called tin poisoning in which tinned foods were partaken of. The symptoms in these cases were confined to the gastro-intestinal tract and were those of an acute poisoning. I was able to find references to only two cases in which tin had been absorbed and had given rise to constitutional disturbances, and one of these was reported by Jolles¹ in 1901. His patient showed constitutional disturbances due to wearing silk stockings impregnated with tin salts. In this case the predominating, outstanding symptom was this feeling of coldness which my patient complained of. Jolles proved that his was a true case of tin poisoning by finding tin in the urine of his patient.

In my own patient the urine passed on the day following the discontinuance of the wearing of the plate contained traces of tin. No other specimens of the urine showed any traces. The patient was placed on a diet free from canned foods, and a few days later the stool was examined. Approximately 5 gm. of dried stool contained 0.0021 gm. of metallic tin. Several subsequent examinations of the stool showed the presence of tin.

April 6, 1917, or fifteen days after the patient had discontinued wearing the plate, 13 c.c. of the blood contained 0.0015 gm. of tin. No other foreign metals were found in the blood. The patient still complained of the same symptoms, although they had ameliorated somewhat. The coating from his tongue had almost disappeared. Considering the marked affinity of tin for proteins, it is not remarkable that the symptoms continued. I prescribed potassium iodid then, and on the 13th of April, or one week later, 20 c.c. of his blood contained only 0.0005 gm. of tin, showing that more than two thirds of the tin had been eliminated during the week. No subsequent examination of the blood, urine or feces showed any traces of tin. The anemia gradually cleared up.

The chemical analyses in this case were made by Mr. F. C. Broeman, consulting chemist, and also by Mr. Clarence Bahlman of the Cincinnati Department of Health. They made their tests independently, using parts of the same specimens, with identical results.

Considerable experimental work has been done with regard to the effects of tin salts when administered to animals. Salant, Rieger and Trenthardt² showed that after subcutaneous injections of soluble tin salts, tin was found in the urine, feces, skin and liver. The gastro-intestinal tract was shown to be the chief organ for the elimination of tin.

Ungar and Bodlander³ and Lehman⁴ showed that repeated injections of small quantities of tin into animals, over prolonged periods, resulted in the death of the animals. The effects were manifested in the alimentary tract, the general nutrition and, above all, in the central nervous system. Paralysis of the extremities were frequently observed.

In an experiment conducted by Schryver,⁵ a dog, weighing 8.5 kg., was given 20 mg. of tin subcuta-

neously in the course of several days, and the animal was then killed. The brain and cord of this animal weighed 65 gm. Twenty gm. were submitted to examination and contained 1.5 mg. of tin.

It is apparent from the foregoing that tin must have a rather strong affinity for nervous tissue.

I lost sight of the patient, and did not see him again until Sept. 14, 1917. He came to me complaining of the same symptoms, but in a milder form. He said that he had been under the care of Dr. Marion Whitacre, by whom he had been sent to Dr. Mithoefer who, July 12, 1917, removed his tonsils and reported both badly diseased. I saw the patient again, October 17 and November 1, and he was still complaining of the same symptoms. He was, however, attending to his business and his appetite was normal.

This patient has since passed from under my care, and the last I heard of him he was making the "rounds" from one physician to the other still complaining of his "hots and colds," although he is now able to attend to business.

The onset of the symptoms within a few weeks of the patient's starting to wear the Watt's metal plate, and the finding of the tin repeatedly in the blood, stool and urine by two chemists working independently of each other, and then the disappearance of the tin from the blood after the patient discontinued the wearing of the plate are to my mind incontrovertible evidence in support of my diagnosis. His symptoms were almost identical with those of Jolles' patient.

In view of the experiments quoted above, in which so much tin was found in the nervous system, I feel reasonably certain that this man's nervous system suffered severely, and possibly permanently, which accounts for the persistence of his symptoms.

SURGICAL TREATMENT OF EPIDIDYMITIS *

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Major, M. R. C., U. S. Army

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The question of venereal disease in the Army since the outbreak of the present war has been an all absorbing one. Special attention has been paid to cleaning up the various training centers, and this has accomplished a great deal; but we still have the acute gonorrheal infection with its complications.

In this brief paper, I am going to deal only with the acute and subacute gonorrheal epididymitis. I have had the opportunity of observing and operating on 276 patients since entering on my duties at Fort Sam Houston as chief of the genito-urinary service.

There are many advocates of the nonoperative treatment, which utilizes only palliative measures and in no way cures the condition. It is advanced that men can be returned to duty sooner; but I do not agree with this, as I have returned them to duty as soon as the stitches were removed. The average time in the hospital on account of the operation has been less than ten days. There is often some induration which remains for a longer period, but it does not incapacitate. I have had no recurrences, but have had a number of soldiers, suffering great pain, report for a second operation several weeks later, this time

1. Jolles: Wien. med. Presse, 1901, **42**, 496-500.

2. Salant, W.; Rieger, J. B., and Trenthardt, E. L. P.: Jour. Biol. Chem., 1913-1914, **17**, 265.

3. Ungar and Bodlander: Ztschr. f. Hyg., 1887, **11**, 241.

4. Lehman: Arch. f. Hyg., 1902, **45**, 88.

5. Schryver: Jour. Hyg., 1909, **9**, 262.

* From Base Hospital No. 1, Fort Sam Houston, Texas.

on the other testicle. This goes to show that the almost immediate relief from pain following the operation makes the procedure justifiable. Not only does it relieve the pain, but also there is, as a rule, a beginning hydrocele, which is cured at the same time. There has been no proof obtainable, but the conclusion is drawn that an epididymis operated on, with evacuation of pus, which occurred in 33 per cent. of the cases is much more apt to function than one allowed to resolve partially through applications of ice and support. Those subacute cases in which operation has been performed are always indurated, and the tail of the epididymis is much enlarged. Of course, the question of preventing any loss of function in these cases is questionable, the pus is often found and the destruction is certainly diminished. The patients give a history of numerous attacks, with pain and swelling, which are relieved by palliative measures.

The breaking up of the adhesions to the parietal layer of the tunica vaginalis is most essential. This is best done with the finger and a piece of gauze. Any lymph collecting between the layers of the tunica vaginalis should be removed with gauze.

TECHNIC OF OPERATION

After the parts have been shaved, three coats of 3.5 per cent. iodine are applied, each coat being fanned dry. This is essential, as it in a measure prevents blistering. The incision, about 2 inches long, is made rather to the outer lateral aspect of the affected side and high up. I find that in this location the skin heals more rapidly. The incision should extend through the skin only, and this dissected back for a quarter of an inch to give room for the mattress sutures. The dartos, cremasteric fascia and muscle are now opened down to the parietal layer of the tunica vaginalis, and the edges are caught in clamps. With the finger, any adhesions between these layers and the tunica are broken up; then the testicle with its tunica covering is peeled out intact, care being taken to free all adhesions up to the cord structures. The cavity of the dartos is packed with gauze to control any oozing. The tunica is opened and the old bottle operation done, care being taken not to strangulate the cord structures. The globus minor is punctured in several places with a cataract knife. If pus appears, the opening is enlarged with fine pointed forceps, and a drain consisting of a piece of rubber tissue sewed to make a tube is inserted in the hole and held in place with forceps, which will aid in replacing the testicle, the forceps to be removed after closure of the dartos. The gauze is removed from the cavity of the dartos and the testicle is replaced, the drain coming out at the upper end of the wound. The dartos and the cremasteric structures are closed with continuous plain catgut. The closure of the skin I consider quite important. This is done by mattress sutures of silkworm-gut about one-quarter inch from the margin of the wound and pulled up tight. Two sutures are usually sufficient. The drain is removed in from forty-eight to seventy-two hours, and the stitches are taken out in six or seven days. In dressing, one should not attempt to irrigate through the drain. Gentle pressure from below will get rid of any accumulation. A suspensory bandage is worn for several weeks.

RESULTS

The results have been so uniformly good and the recoveries so rapid that I believe the operation should be done in all cases, and I suggest the following of the technic as given.

I have had only one case of epididymitis referred to me since being here that could not be traced to gonorrheal origin. The pus at operation, and subsequently, showed by culture *Staphylococcus aureus* infection, the source of which could not be determined.

TUBERCULIN AS A DIAGNOSTIC TEST OF TUBERCULOSIS IN MAN

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When one delves into the vast amount of bewildering literature that represents the present day knowledge of tuberculins, one is apt to emerge with a chaotic idea, if any at all, of the entire matter. From this literature I have made selections, and have arranged the matter in the way in which it makes the subject clearest to me. I present it here as it applies to diagnostic tests.

Before taking up the subject matter I will give some definitions of terms used, in accordance with my plan:

Antituberculin.—A substance found in the blood and tissues (Ludke, 1907) of a tuberculous person after being treated with tuberculin. In this connection this would also be called *substance sensibilitrice*, antibody or amboceptor.

Antigen.—The exciting agent—in this case, the injected or applied tuberculin.

Complement.—A protective substance found in normal blood serum. Its union with the foregoing factors has been found to be necessary to produce the bacteriolysis, a step, a factor, perhaps the essential factor to the production of immunity.

Tuberculin.—A substance consisting of the culture fluid in which tubercle bacilli have grown, of ground up tubercle bacilli or of extracts of their bodies, and of both combined.

The tubercle bacillus, as other bacteria, claims two different poisonous substances: (1) exotoxins, or poisons secreted by the organisms into the culture medium, and (2) endotoxins, or poisons contained in the living protoplasm of the organism, and liberated only by their disintegration. Tuberculins, whether from the filtrate or the bacillary body, always produce essentially the same effects, there being differences in the degree, but never in the character of the reactions. They act as the living tubercle bacilli minus the power of growth and reproduction. The tuberculins from human and bovine bacilli are practically the same in their action on infected animals (Weber and Dieterlen).

THE TUBERCULIN REACTION

This is manifested in three ways: local, at point of injection; focal, at location of diseased area, and constitutional, or general body phenomena.

The tuberculin test, in the absence of complete evidence, probably owes its activity to the presence of a specific protein of the tubercle bacillus, either in solution, as bacillary bodies, or as particles of such. In the broad sense, then, tuberculin hypersensitiveness is undoubtedly closely related to the phenomenon of protein hypersensitiveness or anaphylaxis.

Wassermann and Bruck, modifying a theory of Ehrlich's on the *modus operandi* of the tuberculin reaction, have advanced the following view:

They look on the reaction as depending on a union in the lesion of the injected tuberculin with a substance they call antituberculin. The combination anchors a large amount of complement, which acts as a ferment on the surrounding tissue, causing the inflammatory changes characteristic of the focal reaction, these in turn determining the fever and other constitutional symptoms.

The failure of a tuberculous person to react after receiving a large dose of tuberculin may, therefore, be explained in one of two ways, dependent in part on the stage and character of the disease: (1) In mild cases it is presumed that sufficient antituberculin is present in the serum to unite immediately with the tuberculin injected, the speedy combination preventing the local disturbance and keeping the tuberculin from reaching the tuberculous focus. (2) In advanced or severe cases, it is assumed that, owing to the exhaustion following on long stimulation, the cells can no longer furnish the antibodies.

In the same manner, in a latent case there may be a better reaction to a second test than to the first one,¹ and, on the other hand, in a severe case a better reaction to the first one. The following formulas illustrate the working of the theory:

1. Reaction = tuberculin plus antituberculin at focus.
2. No reaction (severe cases) = tuberculin plus no antituberculin at focus.
3. Reaction at first test and better reaction at second = Tuberculin plus plenty of antituberculin at focus; more antituberculin formed as a result of the first dose.
4. Reaction at first test and none at second = tuberculin plus no antituberculin at focus.
5. Tuberculin tolerance (no reaction) = speedy uniting of tuberculin and antituberculin before reaching focus.

The Wolff-Eisner theory explaining the tuberculin reaction is also very ingenious. According to this view, abundant specific lysins are elaborated in a stimulated tuberculous individual. These lysins disintegrate any tubercle bacillus protein later introduced into the individual. In the disintegration process he holds that endotoxins are set free which act as poisons on the tissue cells exposed.

Working with this theory, one would account for the local disturbance or reaction as similar to that occurring in the focus. Hamman and Wolman believe that profound changes exist in all cells of the body of a tuberculous individual. The only remaining factors, then, in the production of the local reaction would be the traumatism to the body cells at the point of application of the tuberculin, and the fact that the tuberculin is concentrated on the same cells. This view is supported by the fact that at the site of the local reaction the tissues show the histologic picture of a tubercle.

COMPARATIVE DIAGNOSTIC TESTS IN MAN

In order of efficiency, these are generally accepted as follows:

1. Intracutaneous: 0.05 c.c. of old tuberculin in a dilution of from 1:1,000,000 to 1:100, if necessary.
2. Subcutaneous: local (old tuberculin).
3. Cutaneous (von Pirquet): 90 per cent. efficiency.
4. Subcutaneous.
5. Percutaneous: old tuberculin and lanolin (Moro test); 83 per cent. efficiency.
6. Conjunctival: 1 per cent. old tuberculin; less efficient than the Moro test.

If we realize that the intracutaneous and subcutaneous tests require absolutely perfect technic and are rather harder to perform and take more time, it would leave by elimination Test 3, the cutaneous, as being the most practical. If, again, we may do anything to make the cutaneous test still more efficient, it will certainly be the most practical.

Detre, in 1908, described his modification of the von Pirquet test, and it is with this that I wish to deal. The tuberculins that he employed were (1) human old tuberculin (H. O. T); (2) human bouillon filtrate (H. B. F.), and (3) bovine bouillon filtrate (B. B. F.).

He employed a small, dull instrument like a jeweler's screw driver, rotated it, made four abrasions on the inner side of the upper arm, and inoculated the three solutions into three of the abrasions, leaving the fourth sterile for control. His idea was that, performed as outlined, it would be a differential diagnostic test, and as such it is known and marketed here and abroad.

This test is supposed to show seven important things in addition to the von Pirquet test: whether the lesion is acute or chronic, active or latent, and whether the infection is of the human or bovine type, or both mixed. By measuring the resultant papules in both diameters in millimeters, he asserts that he is able to judge accurately the process to be determined. His theory is that a person infected with the bovine infection will react more strongly to the bovine filtrates than to the human, and vice versa. Also, a person with the active form of the disease will yield to the filtrate a papule as large as or larger than it will to the old tuberculin, and vice versa with the latent cases.

That the human type may give a predominant reaction, and the bovine some reaction, he attributes to certain of the similar characters of both bacilli, as I have mentioned before. He believes that the predominance of the reaction to the filtrate in active cases is due to the presence in the filtrate of a thermolabile substance that is destroyed in the reduction by heat in the manufacturing of old tuberculin. The body is quickly sensitized to this substance, which is a toxin during the progress of a lesion, and with its arrest auto-immunization to this toxin occurs. He considers auto-immunization to the protein bodies of the old tuberculin a rarer and more difficult occurrence. Many competent observers have tried out his method, and their results are not in harmony. The majority of those who employ or try out this method make a still further modification of Detre's original method. They add the bovine old tuberculin, which, with the control, makes a five abrasion test. They place all cases in eight groups as follows:

Group 1. Human old tuberculin papule positive; others slight or negative (old human lesion).

Group 2. Human old tuberculin papule more marked than human bouillon filtrate papule (old human lesion).

Group 3. Human bouillon filtrate papule more marked than human tuberculin papule (active human lesion).

Group 4. Bovine old tuberculin and bovine bouillon filtrate papules positive, bovine old tuberculin papule more so; others slight or negative (old bovine lesion).

Group 5. Same as Group 4, but bovine bouillon filtrate papule more marked than bovine old tuberculin papule (active bone lesion).

Group 6. Human old tuberculin and bovine old tuberculin papules equal and more marked than human bouillon and bovine bouillon filtrate papules (old mixed lesion).

Group 7. Human bouillon filtrate and bovine bouillon filtrate papules equal but more intense than human old tuberculin and bovine old tuberculin papules (active mixed lesion).

Group 8. All papules approximately alike.

Hamman and Wolman² and others have not been able to substantiate this finely drawn classification.

1. In a series of 129 children, Lindenberg recently found that 33 per cent. reacted better to the second test than to the first one. This majority consisted mostly of latent cases.

2. Hamman, Louis, and Wolman, Samuel: *Tuberculin in Diagnosis and Treatment*, New York, D. Appleton & Co., 1912.

I myself do not believe that Detre's grouping, even with the modification by addition of the bovine old tuberculin, can be substantiated. Also, I am in some doubt as to whether a patient reacting only to the bovine tuberculins necessarily has a bovine infection. However, the test is generally acknowledged to be fairly accurate in determining whether or not a tuberculous infection, which may be only a trace, is present (accuracy above 90 per cent.); furthermore, if the inoculations are made with the four tuberculins mentioned below, I believe the test can be shown to have much value from a practical standpoint, (1) in detecting the presence of active or clinical tuberculosis; (2) in determining the amount of resistance of the patient, and (3) in offering aid in the treatment.

METHOD OF APPLICATION

The arm, preferably the external surface of the upper arm, is cleansed with ethyl alcohol. Through the superficial part of the skin, five abrasions are made, deep enough to remove the skin, but not to draw blood. These abrasions are made with a small instrument similar to a jeweler's screw driver, by lightly boring with it into the skin. The abrasions should be about three-fourths inch apart and range in a longitudinal straight line parallel with the long axis of the humerus.

After the alcohol is thoroughly dried on the arm, the points are treated from above downward in the following or any similar order one may wish to devise to use as a systematic method:

1. Human old tuberculin.
2. Human bouillon filtrate.
3. Bovine old tuberculin.
4. Bovine bouillon filtrate.
5. Not inoculated; kept as control.

After two or three minutes the excess tuberculin is blotted off with a piece of sterile gauze and the sleeve pulled down without the application of any dressing.

The various tuberculins enumerated may be best purchased in 1 c.c. vials from some standard maker of biologic products. For ease of application, a small glass rod may be shoved through each cork. In the process of inoculation, the abrasions are merely touched, each with the individual tuberculin, enough being placed on to cover, but not to run and contaminate the tests. To avoid contamination of the solutions, the glass rod should be sterilized in a flame after each inoculation.

AFTER-APPEARANCE OF TEST POINTS

Soon after the boring, a small mechanical wheal forms. Within from four to twenty-four hours in most cases after inoculation, a small red papule forms at the various areas in which the reaction will take place. These, in the more severe reactions, advance to the vesicular stage.

In some cases the point of reaction does not reach its greatest size for forty-eight hours or more. From then on there is a gradual diminution of size and fading of color of the papule, until at the end of approximately a week a small bluish mark is all that remains.

Constitutional symptoms are rare.

Of course, in the use of this test, as in others, nearly all persons will react after thirty-six hours (the so-called latent cases of tuberculosis). It would

seem, therefore, that the importance of this test depends on the amount of reaction within the first thirty-six hours. One soon becomes accustomed to various sized papules as depending on the amount of reaction and the supposed amount of activity of the disease that causes them.

AMOUNT OF REACTION

Detre used a measurement of 5 mm. in each diameter or over in the size of the papule as meaning a positive reaction. It would seem that the size and field of the scarifier would enter into this so largely that such a classification could not be accurate. The following classification seems more practical:

Any redness more than control, +.

More redness with some infiltration, ++.

More redness yet and a wide area of infiltration, cases that go on to vesiculation, +++.

The tuberculin test is specific. Persons who do not have tuberculosis will not react to tuberculin. This has been proved finally after many investigators were ready to discard the test as an inaccurate procedure, undoubtedly because of their contrariness of technic and interpretation of experiments.

There are conditions of tuberculin insensitiveness in which tuberculosis is present and the test shows negative:

1. In conditions in which there is great toxemia and consequently no antibodies, the test will show as a negative. This condition is perhaps the one encountered most often giving a negative, yet this happens rarely, considering the number of cases in which there is a reaction. It will depend a great deal on the source of the cases. In some county and state institutions, it may be as high as 10 per cent. or more; but as a rule 2 per cent. will cover it.

2. Completely healed lesions will not react.

3. Often pneumonia, diphtheria, scarlet fever, or cerebrospinal meningitis may mask a tuberculous condition that may also be present.

4. In very acute tuberculous infections, as acute miliary tuberculosis, tuberculous meningitis, or very rapidly progressing pulmonary tuberculosis, the test may be negative.

5. Errors in technic should be very rare with the modified Detre test.

6. Tuberculin treatment produces, if successful, a condition of antianaphylaxis.

ADVANTAGES

This test, which is largely in use in this section of the country, should be used in every examination made to discover the presence of active tuberculosis.

1. It is easy in application.

2. It is of some value in prognosis. Its absence in a case of known tuberculosis would indicate considerable doubt as to the recovery of the patient. Of course, this does not mean that every patient who reacts will recover. In a very latent case there is only a slight reaction. A case with a marked reaction would tend to show, taken with other signs and symptoms, a marked resistance, although also showing marked activity. These points in prognosis I merely mention as examples, and in this paper I cannot elaborate them.

3. Constitutional disturbances accompanying the test are very rare.

4. Its efficiency might be thus elaborated: Many observers say that an exclusively bovine reaction means a bovine infection. They bring in findings of this in from 0.6 to 25 per cent. of their cases, depending greatly on the localities. We could safely substantiate 4 per cent. in our large cities of the South-western States.

A certain percentage also show filtrates positive when the old tuberculin are negative.

In Dr. Browning's series at the Los Angeles County Hospital, in 1,482 cases up to the spring of 1917, there were 781 positive reactions to human old tuberculin; 725 to human bouillon filtrate; 722 to bovine old tuberculin, and 691 to bovine bouillon filtrate. Less than 200 did not react. This quantity is easily explained by the class of cases as a rule in such institutions. As Dr. Browning says:

Unless all are used [meaning modified Detre] certain cases will be met with in which the desired information would not be obtained, as evidenced by the difference between the 781 H. O. T., which is the von Pirquet test, and the 1,482 less the number which was 200 or less, which did not react to either.

If the various statistics will give the von Pirquet or our No. 1 of this modified Detre 90 per cent. efficiency, and to this we add the cases responding only to the bovine tuberculin and filtrates, it would seem that



Appearance of arm with test applied; strongest reaction at third scarification, the predominant reaction in this type of case to bovine old tuberculin.

this test would be just about as efficient as the subcutaneous local or the intracutaneous test; and when we consider the ease of application with the much lessened chance of technical errors, I believe that this is our best tuberculin test that has been worked out to date.³

3. In addition to the references already given, the following will be found of interest:

Pottenger, F. M.: *Clinical Tuberculosis*, St. Louis, C. V. Mosby Company, 1917.

Bonney, S. G.: *Pulmonary Tuberculosis and Its Complications*, Philadelphia, W. B. Saunders Company, 1910.

Bandalier and Roepke: *Clinical System of Tuberculosis (all forms)*, New York, William Wood & Co., 1913.

Trap Shooting as a Recreation for Physicians.—Dr. Leroy A. Newton recommends trapshooting as a recreation for physicians—perhaps as a substitute for golf. Among the unassailable reasons why this form of outdoor sport is peculiarly adapted to physicians he enumerates the following: Trapshooting and sociability are inseparable, and the one great thing that elevates man above the other animals is sociability; it takes the physician away from all business and affords complete relaxation from professional cares; it is an outdoor game with a goodly amount of exercise connected with it; it will make a man cut out bad habits, as trapshooting and bad habits cannot go together; many men train for a tournament as carefully as does the prizefighter, leaving off tea and coffee, alcohol and tobacco, eating plain food and paying attention to proper elimination. Age is no bar. It will keep the devotee physically fit, Newton says, and make a better man of him in every respect.

OBSTRUCTIVE DYSMENORRHEA AND STERILITY

A NEW OPERATION

JACOB FRANK, M.D.,

CHICAGO

Obstructive dysmenorrhea and sterility most commonly depend on a pathologic ante flexion of the

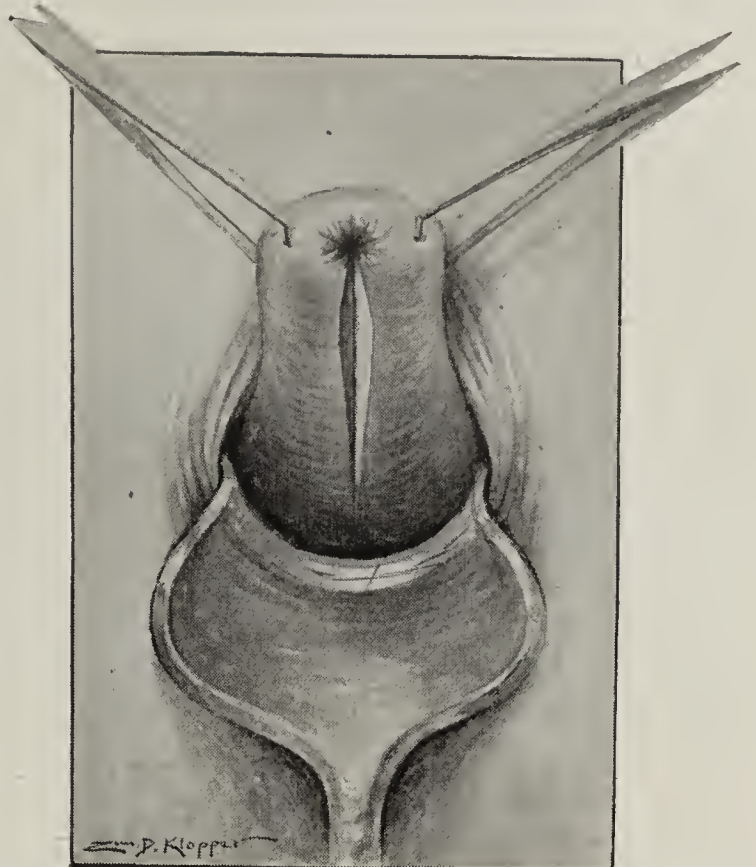


Fig. 1.—Uterus brought forward and upward; posterior incision begun.

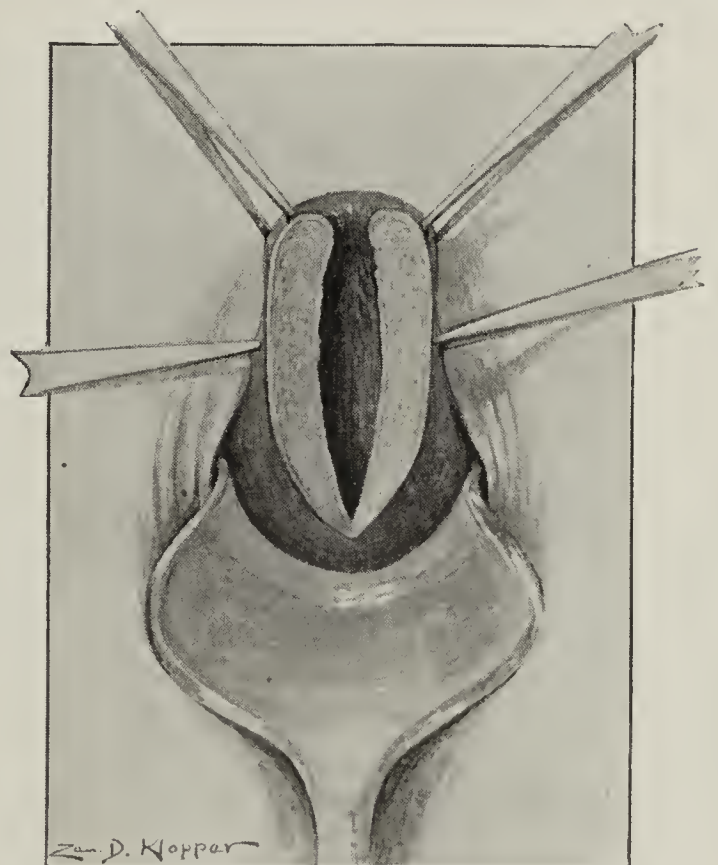


Fig. 2.—Incision completed, showing two lateral raw surfaces.

uterus. One must lay emphasis on and distinguish such an ante flexion, as opposed to the physiologic ante flexion of the normal uterus, if one is to get successful results from any corrective measures that may be instituted. With the distinction between the physiologic and pathologic ante flexions clearly in mind, I wish to present an operation for the correction of the

latter, an operation that has successfully corrected the dysmenorrhea in all properly selected cases. It has frequently ended a long period of sterility, and the resulting pregnancy has been terminated in two cases by comparatively easy labors, the maternal passages (particularly the effacement of the cervical canal and the dilatation of the os) acting like those of a multipara.

It was long ago determined that mere dilatation of the cervix was ephemeral in its effects. To this procedure was soon added the bilateral section of Sims. But this was discarded as being insufficient, in the first place, the resulting scar increasing the stenosed condition for which the operation was performed, and dangerous, in the second place, for often the exposed raw surfaces acted as an atrium of infection with subsequent lymphangitis involving the pelvic cellular tissues and frequently the tubes. And thus again, one of the objects of the operation, the correction of the sterility, was defeated.

In 1910, Pozzi presented his operation for dysmenorrhea and sterility before the American Gynecological Society. This attempts to correct the so-called "pin-hole os," in which there is a slight dilatation of the cervical canal, with accumulation of secre-

cervical incision, originally introduced by Sims, plus the removal of small wedges of the whole cervical thickness from both sides in such a manner as to bring the external os directly backward when the cut surface is folded on itself by a single silkworm-gut suture. Several interrupted sutures are added for safety.

The operation I wish to present recognizes the value of the posterior incision in straightening out the cervical canal and so correcting the stenosis at the internal os. The cervix is grasped at the uterovaginal junction with small uterine tenaculum forceps, one on each side, and pulled outward and upward. An incision is made in the middle of the posterior lip extending well up to and past the flexion. The tenacula are then removed and used to spread apart the two halves of the posterior lip. With a very small-bladed, spear-shaped knife, made on the Catlin order, wedges of tissue are removed from the two raw surfaces of the posterior lip, leaving a trough. Just enough tissue is removed to allow easy

and exact approximation of the entire cervical and vaginal surfaces. The first suture is commenced at the angle of the posterior incision and extreme care

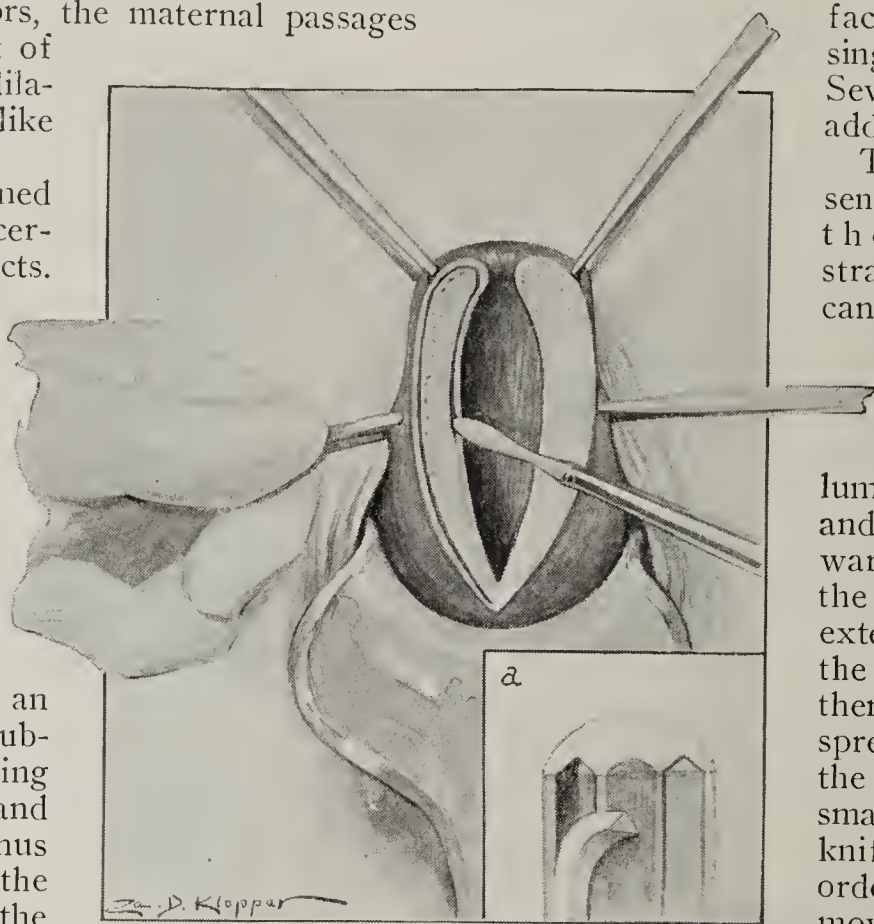


Fig. 3.—Removal of the wedge-shaped tissue; a, wedge when removed, leaving trough-shaped cavity.

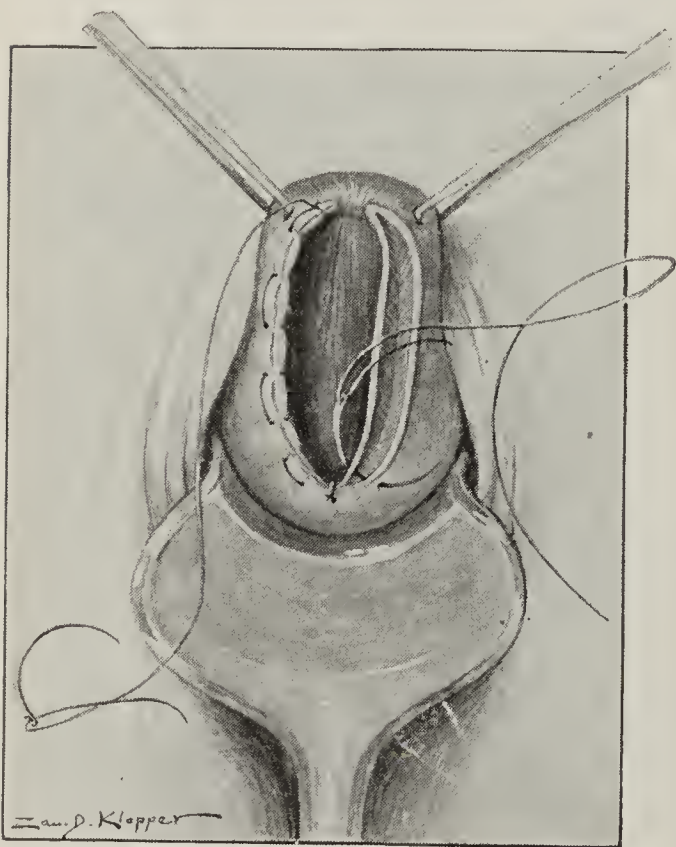


Fig. 4.—Suture commencing at the most dependent part of incision, approximating the uterine and vaginal mucosa.

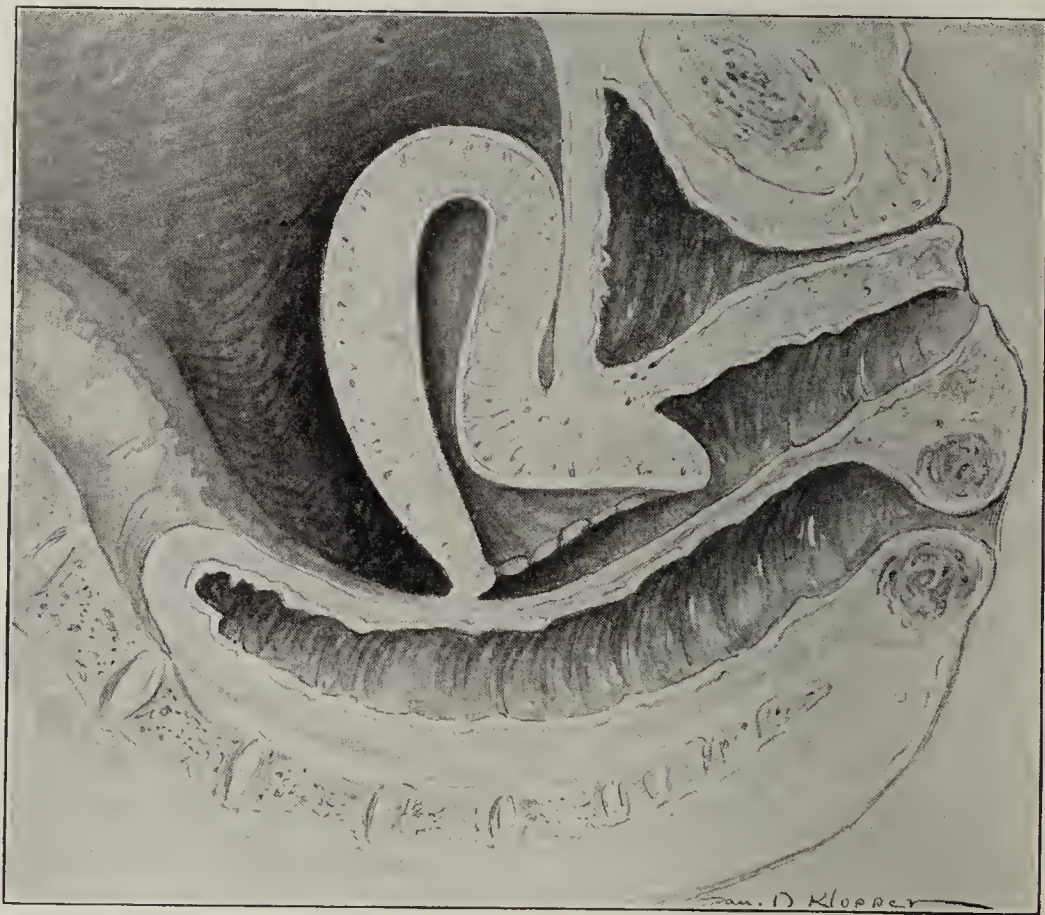


Fig. 5.—Lateral section, showing the straightened uterine canal.

tion in the canal, as a result of the external cervical stenosis.

Dudley, as long ago as 1891, published a description of his "plastic operation designed to straighten the anteflexed uterus." This consisted of the posterior

taken to approximate accurately the internal cervical and the vaginal mucosa at this point. This is important, to avoid healing by granulation and so secondary contraction. Twenty or forty day No. 1 chromic gut is used in a continuous or interrupted suture.

The original Pozzi operation is ideal in cases of true "pin-hole os," that is, for obstruction at the external os. But in many cases the dysmenorrhea and sterility result from angulation of the uterocervical canal at or near the internal os. And my experience leads me to believe that angulation never takes place above the internal os. This angulation is completely done away with by the operation described, by eliminating entirely the canal below the angulation, as the posterior incision extends up to and beyond this point.

I would not hesitate to apply the principle of this operation for retroflexion of the uterus producing symptoms, should the proper case present itself.

25 East Washington Street.

ELEPHANTIASIS

REPORT OF A CASE

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AND

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ST. LOUIS

Cases of elephantiasis are sufficiently rare in this climate to warrant the reporting of all observed cases. It is for this reason that we submit the following case report:

REPORT OF CASE

History.—Miss C., aged 40, a domestic, born in southern Germany, her name indicating French descent, had come to this country in early childhood and had lived in St. Louis without intermission since. She had the usual diseases of childhood, but otherwise had enjoyed good health.

At an early age, her mother experienced increasing difficulty in fitting her right shoe, the right foot being apparently somewhat swollen.

Since then the right foot had progressively enlarged, the swelling gradually affecting the leg. She was placed under the care of Dr. H. H. Summa, who had since had her under observation. He made the diagnosis of elephantiasis of unknown origin, and tried various methods of combating it, among them bandaging with elastic bandages and potassium iodid. The condition became gradually worse, it became increasingly difficult to have proper footwear fitted, the muscles became progressively weaker and, with the increasing weight of the tumor, locomotion became difficult. Therefore, physician and patient agreed on amputation.



Fig. 1.—Elephantiasis.

Operation and Result.—While various operations for resection of the diseased tissue (decortication) with plastic reconstruction of the soft parts have been proposed, with apparently fair success, the extent of the trouble and the involvement of the musculature seemed to rule out this mode of procedure. Ligation of the femoral artery did not seem to promise any great relief. Hence we did an amputation high enough to

get into healthy tissue. Five years have now elapsed, and there has been no extension of the process. The patient walks around well on her artificial leg, and is happy to have been relieved of her tumor mass.

EXAMINATION OF SPECIMEN, BY DR. OPIE

Gross.—The specimen consisted of the lower leg amputated just below the tubercle of the tibia. The leg was deformed by a pendulous mass

occupying the entire calf, heel and sole of the foot to within 10 cm. of the toes. The lower part of the leg and the foot, except the toes, were obscured by a mass which, over the lower third of the leg, completely surrounded the bones. The tissue was nodular and soft, and the dependent part appeared to be edematous. The skin was soft and freely movable over the underlying constrictions. On section through the calf, extended into the pendulous tissue about the heel, it was found that the enlargement was due to the presence of a mass of white tissue which was tough and fibrous. Ill defined nodules were visible and palpable within it. The gastrocnemius muscle was pale and marked with opaque striations. The mass over the heel was of the same structure. The white fibrous tissue invaded the fat over the heel and the sole of the foot. It was intimately bound to the periosteum of the os calcis. The tumor seemed almost completely to have replaced the gastrocnemius. Red muscle of fairly normal appearance was reached only when the section had penetrated through the calf to the bones. In places, what appeared to be blood vessels were surrounded by an unusually firm layer of fibrous tissue.



Fig. 2.—Elephantiasis.

Microscopic.—On section through the skin the corium was occupied by a dense, fibrous, scarlike tissue, continuous with the underlying subcutaneous tissue, which had in many places been converted into dense fibrous tissue poor in cells; but immediately above the blood vessels, it contained numerous cells of the connective tissue type. Mononuclear eosinophil cells were fairly numerous. The tissue underlying the skin for a distance of more than 2 cm. consisted of islands of fat surrounded by dense fibrous tissue. Around the blood vessels, new formed tissue was often especially dense. The intima was greatly thickened, and the media was traversed by fibrous tissue.

Sections from many parts of the leg were examined. They consisted of dense fibrous tissue, in a few places containing cells in abundance. A section from the voluntary muscle showed that it was being replaced by a new formed fibrous tissue. In some places, muscle cells were replaced by fat; in others, by masses of fibrous tissue.

The diagnosis was elephantiasis.

Comment.—The section offered no explanation of the cause of the condition. The lymphatic vessels showed no dilatation, and were inconspicuous in the section. The lesion may be classed as elephantiasis dura.

Apparatus for Artificial Respiration.—A. L. da Cunha gives an illustrated description in the *Revista Medico-Cirurgica do Brasil*, 1917, 25, 276, of an electric device for artificial respiration. It combines rhythmical traction of the tongue with intratracheal insufflation of oxygen.

THE USE OF CELLULOID IN THE CORRECTION OF NASAL DEFORMITIES *

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For many years it has been the general practice to use a piece of bone from the tibia, rib or scapula, or a piece of cartilage from a rib, for an autogenous transplant in the correction of deformities of the nose resulting from trauma or syphilis. In carrying out this method the wound necessarily made where the transplant is taken causes more inconvenience to the patient than does the nasal wound.



Fig. 1 (Dog B 684).—Piece of celluloid unaltered after being in tissue over dog's nose for one year.

During the past year I have used celluloid as an implant into the tissue over the nose in a series of dogs, and in five cases in man. The results have been so satisfactory that the use of celluloid seems preferable to that of cartilage or bone. The necessity of taking a transplant is thereby eliminated and the operation simplified.

In 1908, Koschier¹ reported two cases of nasal deformity in which he used thin celluloid plates, and he believes that this is the best heteroplastic material for the purpose. Koschier followed the method suggested by Föderl,² who reported two cases in 1903 in which this material had been used. In 1916, Higgins³

cases. He has used a fluid preparation of celluloid in elevating deep scars. Thompson,⁴ also in 1916, in an article on the use of celluloid in surgery, mentions the fact that it is of great value in cosmetic surgery of the nose.

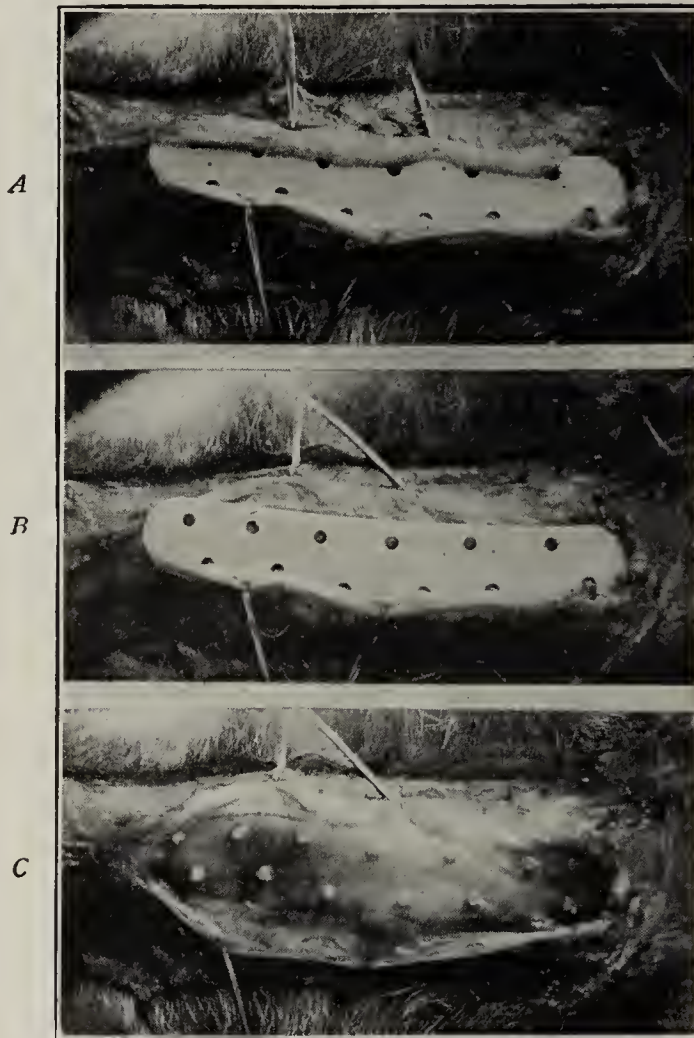


Fig. 3 (Dog B 684).—A, tissue covering celluloid incised and retracted with sutures; note tissue extending down into perforations in the celluloid. B, margin of implant exposed by cutting tissue extending into perforations; note clean-cut margin of celluloid and tissue in perforations. C, surface left after removal of celluloid; note impression in bone at upper extremity where celluloid rested, and stumps of tissue which were in perforations.



Fig. 2 (Dog B 684).—Celluloid in situ over dog's nose covered by subcutaneous tissue. Small area of celluloid exposed.

recommended the use of celluloid in plastic surgery of the face. He has built up three noses with good results, and believes celluloid ideal material in such



Fig. 4 (Dog B 684).—Note stumps of tissue which had extended completely through perforations in implant.

I have not been able, however, to find any reference to the use of celluloid in plastic surgery of the nose, in this country, during the last ten years. In order to determine the advisability of its use in the correction of deformities of the nose, I inserted pieces of cellu-

* From the Mayo Clinic.

1. Koschier, H.: Ueber Nasen plastiken, Wien. klin. Wehnschr., 1908, 21, 1734-1736.

2. Föderl, O.: Ueber Knochen- und Knorpelersatz, Wien. klin. Wehnschr., 1903, 16, 1424-1429.

3. Higgins, C.: A Note on the Use of Celluloid in Plastic Surgery, Lancet, London, 1916, 2, 643-644.

4. Thompson, G. S.: Some of the Surgical Uses of Celluloid, Together with Remarks on the Technique of Fracture Operations, Brit. Jour. Surg., 1915-1916, 3, 696-707.

loid into the tissue over the nose in six dogs. The celluloid was obtained from a celluloid soap dish, and the pieces measured 6.3 by 1.2 cm., and varied in thickness from 2 to 2.5 mm. Several holes measuring 1.5 mm. in diameter were made in each piece. The celluloid was boiled for ten minutes for sterilization. Under ether anesthesia an incision was made down to the bone across the bridge of the dog's nose. With blunt dissecting scissors the tissues were elevated to make a pocket for the insertion of the piece of celluloid, which was placed in the pocket and the wound closed with silk sutures. In two of the six dogs the wounds became infected, and in the other four they healed nicely with practically no reaction, the celluloid acting as an ideal implant.

In the five cases in man the celluloid was obtained in a block about a foot square and three-eighths inch

down to the bone is made across the nose between the eyes where the bridge of a pair of glasses would rest. With small, blunt, curved eye scissors a pocket is made in the midline of the nose down to the tip. Care must be taken to keep the pocket in the midline and not to enter the nasal cavity. The piece of celluloid which will best correct the deformity is selected from those previously prepared, and if any trimming is needed, it is placed in hot water, when it may be cut with a knife as readily as cartilage; on cooling it becomes hard again. If it is necessary to curve the implant, placing it in hot water makes this possible, and it should be held in the required position until it is cooled.

After the celluloid has been shaped, it is inserted down to the tip of the nose; the wound is closed with horsehair and sealed with tincture of ben-



Fig. 5 (185775).—Before insertion of celluloid into tissue over the nose.



Fig. 6 (185775).—After insertion of celluloid into tissue over the nose.

thick and sawed into pieces as needed by means of a "fret" saw. Several pieces, approximately what would be required, were shaped with a file before each operation, and then perforated with small holes about 1.5 mm. in diameter by means of a drill. Pieces varying from 2 to 4 mm. in thickness have been used; they also are boiled ten minutes for sterilization.

The technic of inserting the implant is that in general use by men doing this work. It was recently described by the late Dr. E. H. Beckman⁵ for the use of cartilage from a rib. A curved incision extending

zoin compound. A thin copper splint is applied externally and held in place by adhesive plaster. In all the five cases the wounds healed primarily with practically no reaction. The implants have remained in position and have given no trouble; some of them have been in place for more than a year. I have not had an opportunity to use celluloid in a flap operation, but see no reason why it could not be thus used.

CONCLUSIONS

It would seem from my experience with these cases that celluloid has several advantages as an implant in the correction of nasal deformities.

RESULTS OF EXPERIMENTS

Experiment	Dog	Series No.	Time After Operation	Results
75-17	B-512	1	138 days	On palpation the celluloid could be felt in position and could not be displaced; when the celluloid was exposed it was found to occupy a definite pocket, but organization had not completely taken place through the perforations; the celluloid was easily removed; the tissue about the celluloid showed no inflammatory reaction; the implant was not altered in any way
76-17	B-530	2	168 day	The celluloid was still in position, but was surrounded with pus; the material itself appeared to be the same as when embedded
77-17	B-684	3	365 days	On palpation the celluloid could be felt in position, but could not be displaced; when the celluloid was exposed it was found to occupy a definite pocket, and its upper end was embedded in bone; the tissue over the celluloid was incised, and definite finger-like processes of tissue were found to extend through each perforation; the implant could not be removed until these were cut; the tissue about the celluloid showed no inflammatory reaction, and the implant was not altered in any way
392-17	B-980	4	Unknown, at least 120 days	The site of the implant became infected, and the celluloid came out
393-17	B-981	5	211 days	On palpation, the celluloid could be felt in position and could not be displaced; when the celluloid was exposed, it was found to occupy a definite pocket, but organization had not completely taken place through the perforations; the celluloid was easily removed; the tissue about the celluloid showed no inflammatory reaction; the implant was not altered in any way
394-17	B-982	6	219 days	On palpation, the celluloid could be felt in position and could not be displaced; when the celluloid was exposed, it was found to occupy a definite pocket, but organization had not completely taken place through the perforations; the celluloid was easily removed; the tissue about the celluloid showed no inflammatory reaction; the implant was not altered in any way

5. Beckman, E. H.: Correction of Depressed Fractures of the Nose by Transplant of Cartilage, Surg., Gynec. and Obst., 1915, 21, 694-696.

1. It eliminates the necessity of taking an autogenous transplant.
2. It causes practically no reaction when inserted in the tissues, and apparently is not affected by them.
3. It may be readily trimmed or curved when placed in hot water.
4. It remains stiff even when trimmed quite thin.

Military Medicine and Surgery

A SIMPLE FACE MASK FOR USE BY CONTAGIOUS DISEASE ATTENDANTS

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First Lieutenant M. R. C., U. S. Army

CAMP JACKSON, COLUMBIA, S. C.

Modern scientific investigation has definitely established that the most frequent mode of transmission of infectious diseases is through droplet infection from

ure 1 are for the average male face. The edge of the mask is bound by adhesive plaster to protect the face from the wire points that are present. A piece of tape is then sewed in the center of both sides directly through the wire and adhesive binding.

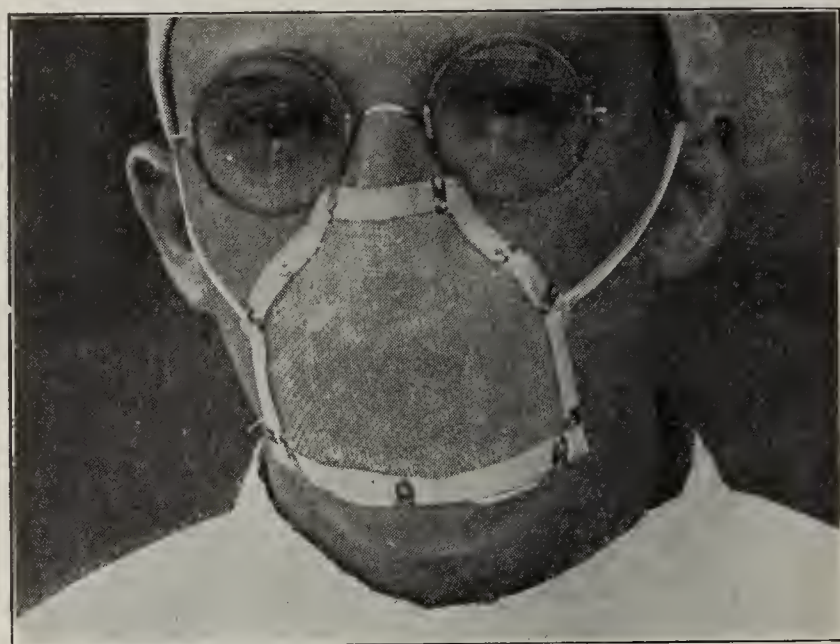


Fig. 2.—Front view of face mask.

Gauze, usually of double thickness, is cut one-quarter inch larger than the mask and placed on the latter with its edges turned under to prevent fraying. The gauze is then sewed either directly to the mask, or fastened by means of brass paper clips. The clips permit rapid replacement of the gauze when necessary. The mask is then molded to fit comfortably over the nose and mouth, and is held in position by the pieces of tape, which are brought over the ears and tied under the occiput.

To facilitate the putting on of the mask, its quick removal, or its better adjustment on the face, an elastic tape may be used in lieu of the nonelastic one.

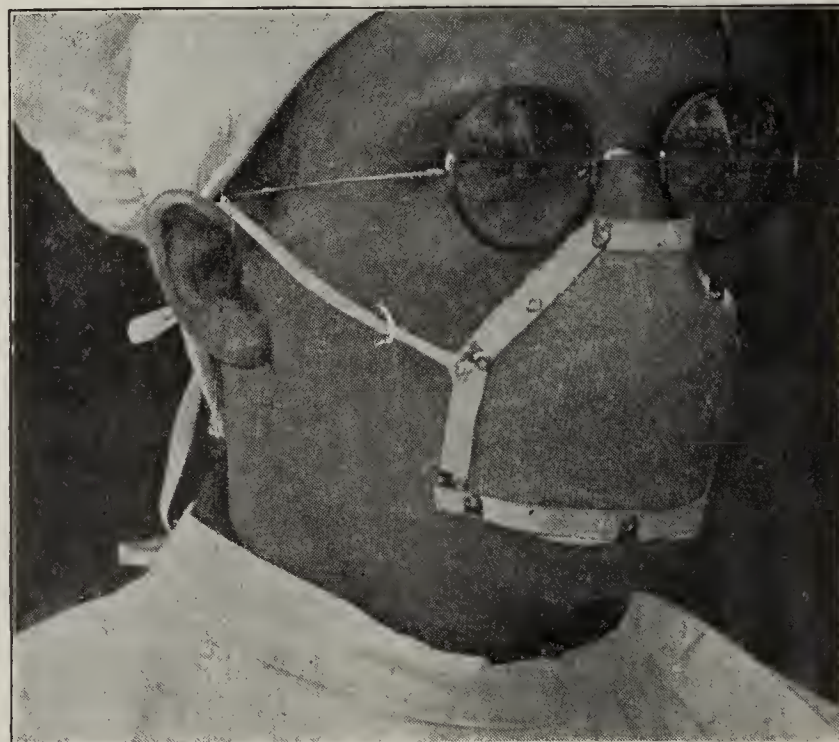


Fig. 3.—Side view of face mask.

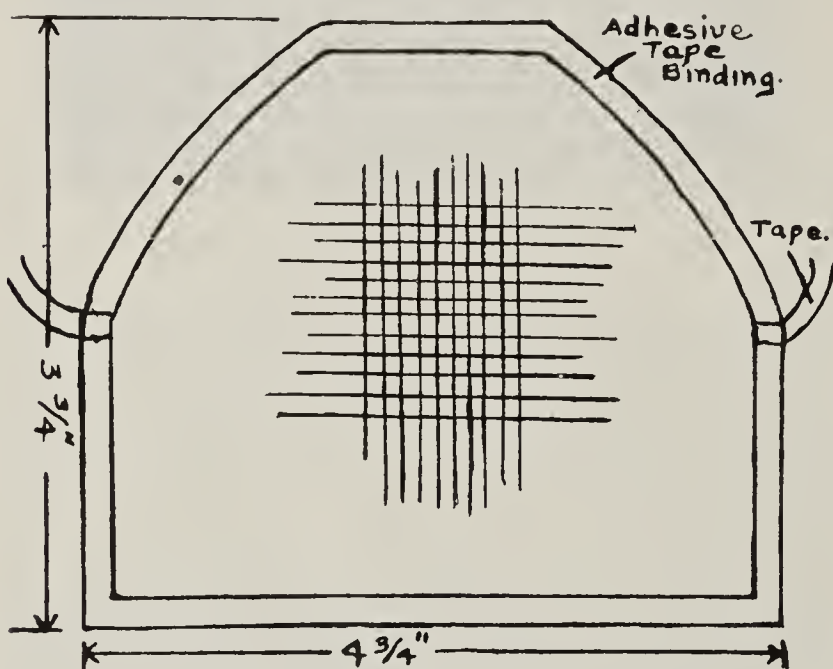


Fig. 1.—Diagram for construction of face mask.

the oral and nasal passages of the infected persons or unrecognized carriers of the infectious organisms. A recognition of this fact has caused the adoption at the base hospital, Camp Jackson, S. C., particularly by the physicians and other attendants of the cerebrospinal meningitis patients, of various forms of protective face masks. The one most commonly used is a gauze strip, made either of several layers of gauze bandage or more frequently of a gauze dressing roll, which covers the nose and mouth and is held in place at the occiput by a pin or a knot.

This method entails the use of large quantities of gauze, and has proved generally unsatisfactory since it is uncomfortable, rarely remains in position, and causes foginess of the eyeglasses.

In recognition of the limitations of the gauze strip, a simple mask meeting every requirement of protection and comfort was designed.

It is made as follows:

A piece of galvanized wire mesh, generally used for screening purposes, is cut as in Figure 1. The size varies with the requirements of the individual physiognomy. The measurements indicated in Fig-

The advantages of this mask are: (1) complete protection; (2) simplicity; (3) ease of manufacture; (4) economy in the use of gauze; (5) ability to wear it without the eyeglasses becoming foggy, and (6) permanence of position on the face.

VISUAL FACTORS IN EQUILIBRATION,
ESPECIALLY AVIATION

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NEW YORK

The great importance of aerial flight in modern warfare, and the need of full information as to the functional integrity of aviators, has shown how a practical demand in medical science can almost immediately produce a supply in the standardization and application of labyrinthine tests which until comparatively recently were, if not quite theoretical, at least not applied so uniformly, generally and accurately as to become a routine measure of value. At present, the rotational tests can be carried out in less than a half hour, and the vertigo, past pointing and falling, in fact, the entire labyrinthine reaction, determined and recorded. This is due largely to the use of a standard chair that can be stopped on the second and rotated evenly at a given speed, and to the control of all tests with the stop watch. It has generally been assumed that a normal labyrinth is the *sine qua non* and the only essential for equilibration. It seems to me that this is a one sided point of view, that there are other important factors of equilibrium, and that visual factors, particularly, have been overlooked and merit attention in the determination of physical fitness of applicants for positions in the flying corps.

Without any intention of denying the importance of labyrinthine integrity or of belittling the practical tests of function by rotation, I believe it is timely to sound a note of warning against the neglect of other factors in balance and vertigo, and to call attention to the practical significance of clear vision and normal ocular muscle balance in aviators and military recruits. The labyrinthine tests refer, naturally, to rotational vertigo alone, and the fallacy to which I wish to call attention is the view that all vertigo is rotational and, so, labyrinthine. As a matter of fact, we must recognize, as did Nagel years ago, that there is a continuous series of vertigo forms ranging from the purely labyrinthine, due to rotation, to the purely visual without any motion or rotation component whatsoever, and that all of these forms are of practical importance as they equally interfere with balance and direction control and with full and undisturbed consciousness. Forms of dizziness that may make one faint or unable to control an aeroplane are commonly found in neurasthenia, anemia, chronic alcoholism, malaria, chronic nicotin poisoning, and many other toxic states, as well as in chronic intestinal indigestion, lead intoxication, and in convalescence from various diseases. Aside from these illnesses, apparently healthy subjects complain of dizziness due to various ocular anomalies, among which I may cite mixed astigmatism, accommodation spasm and paresis, ocular motor imbalance, retinal hyperesthesia, and asthenopic strain from whatever cause, functional, organic or, finally, exterior, as defective or improper illumination, position or work. Faulty or ill fitting glasses, especially prisms or cylinders, are quite sufficient to cause dizziness of incapacitating degree.

Labyrinthine disease is not common, even in hospitals devoted to the ear. Probably only a very small percentage of all mastoid operations involves the inner

ear. The patients with labyrinthine involvement are generally critically ill. At least we may be safe in saying that they are not going about in search of positions in the flying corps. The same may be said of dead labyrinths. Their unfortunate possessors are not apt to try lofty flights, ideal or actual; and nowadays that the mastoid operation is performed early and often, the dead labyrinth, generally a result and residuum of neglected chronic labyrinthitis, is becoming progressively rarer. Reference has been made to unexplained falls from flying machines, and it is taken for granted that these accidents have happened to aviators with defective labyrinths, and that they might have been avoided by previous rotational tests.

I think these assumptions quite gratuitous. In the first place, such defective labyrinths would have been detected in the course of instruction over the aviation field, or, at least, during the first trial flights. Again, the assumption ignores the possible effects of altitude and temperature on normal but susceptible organisms—not alone the labyrinth—and the natural possibility, amounting to a great probability, that any one of a dozen factors, such as those enumerated above, and including, besides, cardiac syncope, embarrassed respiration or circulation, and panic fear, could easily cause an aviator to lose control of his machine and come crashing to earth. There must be a great variation in the reaction of normal subjects to the extreme changes of position and balance inseparable from aviation. Looking down from an extreme height, especially when insecurely placed, as on a church steeple or a precipice, and even when on secure footing, as a bridge, and viewing objects in rapid or irregular motion, such as storm-driven clouds, waves, masses of water tumbling over a fall or pouring through a flume, frequently cause dizziness to the point of complete lack of balance and loss of consciousness (German, *Hoehen-Schwindel*).

Extreme or irregular stimulation of the organ of vision, dazzling or blinding, again, may cause similar symptoms, and we know well that there are certain physico-mental states, such as retinal asthenopia, in which even slightly increased stimuli produce markedly abnormal irritation. Irregular illumination and motion of objects alone may cause dizziness and confusions, as seen in the common or field variety of "movie" headache and dizziness. A swinging mirror may cause a most marked sea-sickness, which, itself, the classical example of vertigo, is often relieved most effectually by excluding visual impressions, merely by closing the eyes. It cannot be too often repeated with emphasis that vertigo is a disturbance or partial loss of consciousness due to incongruous reactions, whether of labyrinth, muscle-sense or vision.

Our sense of balance, like our sense of space, is a conception based on complex data; an impression founded on sensory percepts, from three main sources. Confusion, evinced as dizziness or terminating in loss of balance, is the result of incongruity or misinterpretation of the total impression, though not necessarily of the falsity, however striking, of a single factor. Thus, seeing the world upside down or reversed in a mirror, does not disturb our sense of balance or our ideas of space, as we unconsciously make allowance for the new point of view. Compare with this the confusion that follows when we attempt to carry out or control even the simplest motions doubly reflected in a glass instead of under the direct guidance of the eye. It is the discrepancy between the messages from

eye, labyrinth and the pressure sense that causes confused states.

As normal labyrinths merely supply the possibility of vertigo and false sensations of direction and space (falling and past pointing), one might even venture the paradox that the safest aviators would be those with dead labyrinths. If we do not seriously go to this length, we at least may call attention to the lack of accurate data as to the nature of body balance under all conditions of rest and motion, and the rôle of the different senses, especially of vision, in its maintenance. Coming down to practical tests, just how much of a handicap is a dead labyrinth for accurate and delicate balancing? The absence of past pointing and of falling would indicate that it is an advantage rather than a drawback. Von Cyon showed, many years ago, that it was absurd to claim that the inner ear gives us accurate information regarding our relation to the vertical or as to our relative position in space. He gives numerous examples of illusions of position in space when we are not corrected by visual, musculocutaneous or splanchnic pressure sensations. The illusion of inclination of external objects viewed from a train when tipping on a curve, or from the inclined plane of a switchback gravity railway, are cases in point. The labyrinth does not teach the average subject when he is holding his head straight, that is, vertical, and the careful observer will note an inclination of from 2 or 3 to nearly 10 degrees in normal persons. The moment they are called on to adjust this error by visual impressions, the head assumes the correct vertical position. In other words, the body position is brought into correspondence with a *visually* sensed standard, in this case a vertical line, or what is just as good for practical correction, one at right angles to it, that is, horizontal. If the standard chosen is false, if the line is not exactly vertical, error will still be manifested. In other words, the labyrinth does not help a bit. In the absence of visual standards for correction, there is no doubt that pressure sensations, especially those in the cervical and lumbar vertebrae, and tonus or innervation stress in the muscles of the neck and back, are constant if almost subconscious data of balance and position. These factors, too, have been almost entirely neglected in favor of a one sided and exclusive attribution to the labyrinth of balance control functions.

Another point as to our instinctive concepts of balance: On terra firma, our changes in position take place in a horizontal plane, our usual balance is lateral, from side to side, and rarely fails. Forward and backward equilibrium is much less secure, and when we fall it is generally in one or the other of these senses. It is in accordance with these sensations that balance confusion or dizziness is usually attributed to false horizontal motion in the subject as well as in the outer world. Our sense of the vertical, it would seem, is called on in a greater degree in aviation. Possibly, also, the vertical semicircular canal plays a more important rôle. It would be instructive to learn whether there is such a thing as rotational vertigo in a vertical, instead of a horizontal, plane. Tumblers and acrobats, as well as bird-men, should be able to tell us something about it.

Within the last few days (from February 10 to 15), a number of aviators have lost their lives at various training camps by falls during trial flights. Undoubtedly these accidents, too, will be attributed to defective labyrinths, although it is to be assumed that by

this time all applicants for the flying corps have been examined and put through rotational tests. As there is at least a question whether these tests are sufficient, it might be well to make practical observations of the conditions in flying and their reactions thereto, visual, as well as labyrinthine.

After all, an ounce of practice is worth a pound of theory, and the proof of the pudding is in the eating. In this connection, interest attaches to a letter,¹ from an American aviator in France, describing his own sensations in flight when unable to see, and dependent only on his labyrinthine "balance sense":

While in the air at about 700 meters some low hanging clouds blew down, enveloping me completely and likewise losing me completely. For a half hour I wandered around, vainly trying to get my bearings. . . . When you get into very thick clouds it is impossible to tell whether you are in *ligne de vol*, that is, flying level, for there is no horizon visible to gaze on. Frequently, an aviator will come out into clear space and find himself on the verge of a wing slip.²

The American method of learning to fly always includes double control. The student rides with the instructor, who can take control away at any time. Therefore they go into the air at once. Under such conditions it should be easy for a trained observer to make notes—if only mental notes—of the pupil's reaction to unusual visual conditions.

While nothing has been said about vision in its relation to flying, a word as to this function may not be amiss. Normal distant vision, determined by test card, as expressed in the formula $\frac{20}{20}$, is, of course, a sensible requirement. There are, however, other factors to be considered, all of which are introduced into the practical problem of aviation, by the fact that sight must be used under very unusual conditions. Thus the question of hypersensitiveness to bright light, the sharpness of the sense of motion—a function of the periphery of the retina that has been studied but little—the acuity of vision in lowered illumination, the appreciation of contrast in form, color and light, all of which have an important bearing on the recognition of distant objects, especially those seen at unfamiliar angles which have no associations in shadow or relief, the rapid and accurate judgment of distance, direction, size, and depending on all of these, pace, make an interesting and practical problem.

1. New York Sun, Feb. 13, 1918.

2. In other words, his labyrinth was useless as an organ for balance and sense of space.

Inferior Pennyroyal Leaves.—Examination of samples of pennyroyal leaves, *Hedeoma pulegioides* (Linne) has disclosed that in a large number of instances, the product has been very carelessly collected and frequently contains large amounts of sand, stems and other foreign material. From the data at hand, the food and drugs bureau, United States Department of Agriculture, is of the opinion that properly collected pennyroyal leaves should contain not more than 10 per cent. of stems, not more than 16 per cent. of total ash and not more than 6 per cent. of acid insoluble ash (sand). The bureau, therefore, will consider as adulterated, under the Food and Drugs Act, any material which does not meet the demands of these figures. Further investigation may reveal the necessity of establishing a more rigid requirement, in which case due notice will be given. The Department of Agriculture proposes to issue the foregoing service and regulatory announcement concerning pennyroyal, but before doing so asks the opinions of interested persons as to the fairness of the ruling.

GENERAL ANALGESIA BY ORAL
ADMINISTRATION *

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AND

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FRANCE

This report is in the nature of a preliminary communication based on animal experiments and a sufficient number of clinical cases to support the conclusions of the animal work. It will be seen that general analgesia in which there is loss of sensation, with or without loss of consciousness, can be established for otherwise painful dressings and for short operations. The desirability of such a procedure becomes apparent immediately on entering a military hospital, and it has also a definite place in civil surgery.

Many war wounds are accompanied by fractures of bones, and the importance of keeping such patients quiet is universally recognized. If the dressing of such a wound is accompanied by severe pain, it is customary at this base to produce nitrous oxid-oxygen or light ether anesthesia for at least the first few dressings, necessitating in most cases, because of limitation of apparatus, removal of the patient to the operating room. This usually means pain and the danger of misplacing the bone fragments before and after dressings, as well as loss of time to surgeons, nurses and orderlies. General analgesia, produced simply and quietly without taking the patient from his bed, is the logical solution of this difficulty, and the technic evolved as the result of this study makes it possible to administer the analgesic by mouth in perfect safety. It is, of course, applicable to practically all forms of painful dressings, and is being developed to embrace short surgical operations, such as resection of a rib, removal of foreign bodies, and revision of wounds. In such operations, however, it may be necessary to supplement the analgesia with procain (novocain) for the skin incisions, a hypodermic injection of morphin, or even by light inhalation anesthesia.

Local conditions made it seem advisable to select rabbits as the animals for the preliminary work. The various substances were given by a stomach tube, after which the animals were immediately released and placed under observation.

It must be borne in mind that the experiments outlined in Table 1 were not conducted as experiments on the detailed physiology of analgesia, but simply for the purpose of demonstrating that analgesia can be produced by oral administration of proper agents. As will be seen, various combinations of drugs were not especially successful, and in rabbits the best results were obtained by the use of ether in oil. It was found, however, that this mixture produced an acute gastritis in the animals, but further investigation showed that olive oil alone produced quite as severe a gastritis as when combined with ether. Since olive oil is practically nonirritant to the human stomach, it was considered safe to proceed with the investigation on man. It was thought, however, that liquid petrolatum might be even less irritant in man, and accordingly the menstruum was changed to liquid petrolatum. The fact that there are said to be ether drinkers in Ireland and France, who apparently suffer no more than alcoholics,

made it seem additionally safe to try the mixture of the two for clinical work. Additional support was adduced from the fact that in many hospitals ether is

TABLE 1.—RESULTS OF EXPERIMENTS

QUININ AND UREA HYDROCHLORID		
Weight of Animal Gm.	Amount C.c.	Result
2,200	4	No systemic effect.
2,105	8	
2,250	16	
1,795	30	Unable to stand after 10 minutes, and died in 8 to 17 hours.
2,215	60	

TRIONAL (DISSOLVED IN ALCOHOL, 1 GRAIN TO 1.5 C.C.)		
Weight of Animal Gm.	Amount Gr.	Result
2,230	1	Reflexes active
2,470	3	Reflexes abolished in 1 hour; still on feet
2,175	6	Reflexes abolished in 45 minutes, remaining so for 5½ hours; full recovery in 8 hours
2,460	9 c.c. alcohol	Reflexes partly abolished (control)

MORPHIN TARTRATE (IN WATER)		
Weight of Animal Gm.	Amount Gr.	Result
1,810	1	No appreciable effect
2,560	2	
2,000	3	
2,050	4	

PARALDEHYD		
Weight of Animal Gm.	Amount C.c.	Result
1,710	2	Dropped in 15 min.; slept 4 hrs.; no analgesia
2,220	4	Dropped in 15 min.; analgesic 6 hrs.; complete recovery
	6	Died in 15 hours

ETHER IN OLIVE OIL, 50 PER CENT.		
Weight of Animal Gm.	Amount C.c.	Result
2,430	5	Reflexes only partially inhibited; never off feet
2,170	15	Reflexes partially inhibited
2,420	30	Reflexes completely abolished, apparently full recovery; on repetition of dose next day, animal died in 30 minutes; necropsy revealed dilated stomach with congestion, erosion and submucous petechiae
2,060	20	Reflexes abolished in 6 minutes; apparently complete recovery in 1 hour 16 minutes; killed after 24 hours; necropsy revealed same findings as in preceding animal
2,095	25	Reflexes abolished in 5 minutes; apparently complete recovery in 2 hours; killed after 24 hours, with same result as in preceding animal.
.....	30	Olive oil without ether; no effect; killed after 24 hours; same condition in stomach as preceding animal

ETHER IN OLIVE OIL, 25 PER CENT.		
Animal	Amount C.c.	Result
No. 1	30	Down in 12 minutes; reflexes not abolished
No. 2	20	Incoordinate
No. 3	10	No apparent effect

All three animals were killed after 24 hours; stomach not dilated, fundus much congested and covered with much adherent mucus.

PARALDEHYD PLUS 25 PER CENT. ETHER IN OLIVE OIL		
Weight of Animal Gm.	Amount	Result
2,100	1 c.c. paraldehyd	No effect
1,880	10 c.c. ether in olive oil	Down in 5 minutes; reflexes partially inhibited; practically restored in 10 minutes; recovery in 25 minutes
2,170	Combination of foregoing	Down in 5 minutes; reflexes abolished in 10 minutes; recovery in 30 minutes
1,950	Paraldehyd 2 c.c. and 25 per cent. ether in olive oil 20 c.c.	Down in 5 minutes; slept for nearly 2 hours
2,060	25 per cent. ether in olive oil 20 c.c.	Down in 5 minutes; slept for 1 hour

OTHER COMBINATIONS		
Weight of Animal Gm.	Amount	Result
2,000	Morphin tartrate 1 grain Ether 2.5 c.c. Liquid petrolatum 7.5 c.c.	All incoordinate, but no other effect
1,965	Morphin tartrate 1 grain Paraldehyd 1 c.c. Liquid petrolatum 2 c.c.	
2,010	Paraldehyd 1 c.c. Ether 3.75 c.c. Liquid petrolatum.... 11.25 c.c.	

* Aided by grants from the American Red Cross.

being applied as a local dressing without deleterious results. Finally, a 65 per cent. solution of ether in oil has been used in many thousands of cases of oil-ether colonic anesthesia without any sign of local irritation to rectum or colon, which has been proved by proc-

TABLE 2.—COMBINATIONS TRIED CLINICALLY

Formula 1:	
Ether	4 fluidrams
Liquid petrolatum	4 fluidrams
Peppermint water	5 minims
Formula 2:	
Paraldehyd	1 to 3 fluidrams
Ether	
Liquid petrolatum, equal parts, enough to make.....	1 fluidounce
Peppermint water	5 minims
Formula 3:	
Ether	3½ fluidrams
Liquid petrolatum	4 fluidrams
Peppermint water	5 minims

tologic examination, as well as by the fact that no case of dysentery or bloody diarrhea has been observed.

CLINICAL DATA

The combinations given in Table 2 have been tried clinically. The mixtures containing paraldehyd were disagreeable to the taste and smell, the ether-oil very much less so; but the difficulty was soon overcome by

TABLE 3.—REPORT OF OTHER DRESSINGS

Nature of Dressing	Time of Administration P. M.	Time of Dressing P. M.	Result	Pulse		Respiration		Pupils	After-Effects
				Before	After	Before	After		
Deep wounds of both legs; deep drains	2:32	2:50	Good	84	84	Normal		No effect	None
Large, excised, painful back wound	2:32	2:48	No pain	92	112	Normal		No effect	Nauseated and vomited
Stump, adherent dressings (3 times)	3:03	3:30	.....	120	100	32	20	No effect	None
Through and through wound of leg, with drain	10:00	10:20	Good	No change		No change		No effect	None
Abscess of leg; multiple incision	10:00	10:20	Good	No change		No change		No effect	Patient cried out but remained flaccid; had little pain
Through and through drain; leg	11:00	11:15	Poor	No change		No change		No effect	Only half dose given; patient jumped and had pain
Stump dressing	11:15	11:30	Fair	90	99	No change		No effect	Patient cried out, but had less pain than when done before
Drains; foot			One-half fluidram had no effect whatever.						

following a suggestion by Major W. E. Lower. An ounce of port wine is placed in one glass and the analgesic in another glass. The patient takes a mouthful of wine, holds it for about thirty seconds, rinsing the mouth so as to get the aroma in the upper air passages and the taste well established, and then swallows the wine. The ether mixture is then taken and is followed *immediately* by the remainder of the wine. Several wines and liquors were tried, but the port wine was found to be the most satisfactory. One of us (J. T. G.) and several other physicians have taken this "Lower sandwich" and have found it not to be disagreeable and to produce analgesia. As will be seen from the case reports, numerous patients have been given it with excellent results. Only one patient has been nauseated, a man who was violently opposed to taking the wine. In contrast to that case, it was given to another man, who had repeated attacks of vomiting, immediately after an attack. His dressing was done without pain, and his vomiting ceased permanently. All the patients have been able to take food and water shortly afterward, and even in patients much exhausted by infection, there have been no deleterious after-effects. It was soon found that the paraldehyd served no useful purpose, and most of the dressings have been done with Formula 1. While it is well not to give the analgesic immediately after a

meal, no especial preparation of the stomach is necessary.

Under the general direction of Major W. E. Lower, the following cases were dressed in No. 9 (Lakeside, U. S. A.) General Hospital, American and British Expeditionary Forces, by Lieutenants B. I. Harrison and W. R. Barney. All dressings were done without the removal of the patient from the ward.

REPORT OF CASES

CASE 1.—A soldier, aged 36, who had received a gunshot wound of the right thigh, and had an infected, compound, comminuted fracture of the femur, had found previous dressings very painful, and the splint could not be changed without general inhalation anesthesia. He was given paraldehyd, 1 fluidram; ether, 3 fluidrams, and liquid petrolatum, 4 fluidrams. In fifteen minutes he fell into a light sleep. The wound was dressed, the splint removed, the through and through wound irrigated with ether, a gauze drain inserted down to the femur and a Thomas splint applied with extension. The patient talked during the dressing, felt practically no pain, and suffered no nausea or other unpleasant after-effects. The dressing was repeated in a similar manner every other day for four dressings, and in none of them was there pain or any alteration of pulse or respiration.

CASE 2.—A soldier, aged 28, who had a gunshot wound of the left thigh, with a compound comminuted fracture of the femur, was given the same mixture as in Case 1. He fell asleep after twelve minutes. The Thomas splint was removed and replaced, the gauze packing removed, the wound irrigated with ether, and another gauze pack reinserted. The patient groaned when the pack was reinserted, but after regaining complete consciousness he said that he had felt no pain during the dressing. Three subsequent dressings were done on alternate days with no nausea or other after-effects nor alteration of pulse or respiration. The patient complained of the taste of the mixture, but said it was far to be preferred to the extreme pain of the dressings.

CASE 3.—A soldier, aged 23, with gunshot wound of the left leg, a compound comminuted fracture of the tibia and fibula, a through and through infected wound, was given the same mixture. He fell asleep after fifteen minutes and slept for thirty minutes during which the dressings were done. The Thomas splint was repadded, the packing was removed and reinserted, and ether irrigation was done. Two dressings were done without ill after-effects.

CASE 4.—A soldier, aged 39, who had sustained a gunshot wound of the left thigh, through and through, with a compound comminuted fracture of the head of the femur, had found all previous dressings extremely painful. He was given paraldehyd, 2 fluidrams; ether, 3 fluidrams, and liquid petrolatum, 3 fluidrams. The wound was cleansed, and the packing removed and reinserted. The patient groaned at one time, but had no later recollection of having had pain. The pulse increased from 108 to 110, and the respiration from 26 to 28. There was no nausea. Three subsequent dressings

on alternate days were equally painless and without ill after-effects.

CASE 5.—A soldier, aged 23, who had received a gunshot wound of the right leg, with an infected, compound comminuted fracture of the tibia, and had found dressings very painful, was given the same mixture as in Case 1. Dressing was done with much less pain than before. The pulse rose from 100 to 116, and respiration from 24 to 26. A few days later the dose was repeated, and the patient slept through the dressing. There were no ill after-effects.

CASE 6.—A soldier, aged 27, with a gunshot wound of the thigh and a streptococcus infection, but no fracture, was given morphin tartrate,¹ ¼ grain; ether, 3 fluidrams; liquid petrolatum, 3 fluidrams, and paraldehyd, 2 fluidrams. Multiple superficial incisions were made for drainage with very slight pain, probably because of the dressing following too soon after administration of the mixture. The pulse rose from 110 to 120. The patient was vomiting before the mixture was given, but retained it and did not vomit afterward.

Several other dressings are briefly summarized in Table 3.

Following these experiments, one of us (J. T. G.) was ordered to a casualty clearing station. The following cases from the service of Captain D. C. Taylor, R. A. M. C., illustrate some of the possibilities of the method. Two almost parallel cases of penetrating wounds of the knee occurred, November 15.

Patient 1 was given the usual inhalation ether anesthesia with the Shipway apparatus. Patient 2 was given 1 ounce of 50 per cent. ether in liquid petrolatum. Thirty minutes later a supplementary 2 drams of chloroform were given by inhalation during the operation. The knee joint was opened, pieces of comminuted patella removed, and the joint was irrigated with saline solution and closed. Both patients rested quietly for one hour after operation. Patient 1 then complained and required a hypodermic injection of morphin for the control of restlessness and pain. About the same time Patient 2 awakened, drank some milk, and fell asleep again. Both patients slept until breakfast time. Patient 1 drank some tea, but refused other food. Patient 2 had tea, porridge, bread and butter. Neither patient vomited afterward, and both were evacuated to a base hospital in about four hours. Two other patients of Captain Taylor's were given each a double dose of the mixture (2 ounces of 50 per cent. ether in liquid petrolatum). Each required only a few additional drops of inhalation anesthesia. The resultant analgesia after operation was a little more prolonged than with inhalation anesthesia. One of these patients was ready for operation in ninety seconds and required 1 dram of chloroform given drop by drop to "carry on" an operation lasting thirty minutes.

The substitution of chloroform for paraldehyd has been found to make even a more satisfactory mixture than the preceding. The following formula has been used in approximately thirty cases: chloroform, from ½ to 1 fluidram; ether, 3½ fluidrams; liquid petrolatum, 3½ fluidrams. It is not recommended at the present time to exceed this. It is our opinion that the toxic effect of this small amount of chloroform can be disregarded in military surgery.

COMMENT

The physiology of "general analgesia" by oral administration has not been subjected to an exhaustive investigation, but certain important facts should be borne in mind by those who contemplate using the method outlined. The oil and ether mix perfectly and do not separate into layers. Baskerville has shown the rate of evaporation from minute to minute to be

constant so as to form a straight oblique line when plotted out. This holds true with different percentages of ether in the oil, in all cases assuming a constant temperature and exposed surface. It is impossible, therefore, for the patient to get an overdose at one time and an insufficient amount at another time. The total amount is not absorbed at one time; if it were, the administration of 2 ounces of 50 per cent. ether in oil would produce complete anesthesia, as there would be liberated 1 ounce of ether. Only a light analgesia is obtained which, for operative procedures, must usually be supplemented in some way. Naturally, the surface for evaporation is greater in the stomach than is the case in the colonic method, and the absorption of ether is more rapid. The total amount that may be given with safety by this method has not yet been determined. It is considered advisable for the present to supplement the method either by local anesthesia or the administration of small amounts of anesthetic by inhalation. But it is important to remember that the patient is as safe by this method as if the ether were in a container outside the body. All anesthetics are analgesics, and before the danger zone is reached, the patient must become anesthetized; hence the patient in the analgesic stage is separated from the danger zone by the period of anesthesia. We consider analgesia by this method as safer than any method of anesthesia. If the anesthetist carries his patient to the "blear-eyed" snoring stage, he defeats the object for which this special method was devised, the object being to take advantage of the analgesic stage of any and all anesthetics used. If adopted, it would release from the routine of administration of anesthetics a certain number of physicians who now, in military hospitals, devote their entire time to that work.

CONCLUSIONS

It is felt that so far as one can do so in a preliminary communication of this sort, the following conclusions are justified:

1. General analgesia is safer than general anesthesia.
2. Fifty per cent. ether in liquid petrolatum or other bland oil is probably the safest general analgesic, has apparently no deleterious effect on the stomach, and is not followed by the nausea and vomiting that frequently accompany inhalation anesthesia. It may be given without unpleasant taste when "sandwiched" between mouthfuls of port wine.
3. The method is especially indicated during the dressing of painful wounds without taking the patient from his bed or ward, and when supplemented, can be employed for surgical operations.

Scientific Adulteration.—The amount of detail work required in making analyses of foods and drugs is increasing greatly. The manufacturing firms practicing the more skillful forms of adulteration often have experts who sophisticate scientifically. The finished product is so artfully adulterated that it is sometimes very difficult for the analyst to detect the fraud with certainty. Often it is necessary to make many analyses of products of known purity in order to determine the maximum limit of the variation of certain constituents. Again, an inspection of the materials at the source of production is needed. For instance, water is the cheapest and most readily available adulterant for use in sophisticating foodstuffs, and by the addition of a small per cent. in excess to a canned fruit or vegetable, an increased profit is assured and detection is often difficult.—Report of Food and Drug Department, Kentucky.

1. Morphine tartrate is official in the British Pharmacopoeia. Its action and dosage is the same as morphine sulphate.

SANITATION OF THE MARINE BARRACKS, QUANTICO, VA.

WITH SPECIAL REFERENCE TO THE METHODS
OF CONSERVANCY EMPLOYED

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QUANTICO, VA.

The medical officer, for obvious reasons, was the first of the military personnel to report on this station; about 200 laborers, arriving a few days before, had arranged for the pit system of latrines. On account of the potential menace of these fecal pits and the possibilities of their being dug up by pipe laying, road building, etc., they were ordered filled and the pail system of latrines substituted.

In a few days, Marines began to arrive, and in such numbers as to somewhat tax the sanitary service. On recommendations of the medical officer, by maintaining several hundred laborers working night and day,

equipped, organized, and occupied in the short period of forty-three days.

The post surgeon was appointed special health officer by the state board of health. This gave him the necessary authority to clean up the municipality and enforce such sanitary regulations as were deemed necessary.

The proximity to Washington enabled this station to secure the best of expert advice on subjects directly or indirectly connected with sanitation.

This station has had a maximum personnel of about 7,000 Marines, and it is estimated that about 15,000 have been stationed here at some time or another in the first six months of its occupation. During this period the following results may be noted:¹

1. There has been no death from illness.
2. No epidemic tendency of the infectious diseases has occurred.
3. There has been an absence of any cases of serious illness, such as typhoid, meningitis and pneumonia.
4. The daily morbidity rate of malaria figures about 0.004 for the military personnel, although the malaria season was somewhat advanced before the completion of the measures adopted for mosquito control.

CONSERVANCY

The methods of conservancy employed may be conveniently divided into temporary, semipermanent and permanent procedures.

Temporary.—During the stress of the first few days, the sanitary laborers were instructed to remove and burn all excremental and garbage refuse. They were found later to have inaugurated a system of refuse incineration that was so simple, and worked so admirably, that no attempt at building regular incinerators was started until about six weeks later, when the removal of the place of incineration was necessitated by the proximity of the buildings under construction.

This method of garbage destruction consisted of a series of six parallel natural ravines located on the south side of a 15-foot bluff which had a declination of from 50 to 60 degrees. Two of the ravines were used each day, one for the kitchen and one for the excremental refuse. The garbage wagon drove up to the end of the bluff and dumped the refuse on a small pile of brushwood, which acted as a strainer to retain the solids, allowing the liquid to be partly absorbed while the excess drained downward and was collected immediately beneath the brushwood in a series of small pools 2 or 3 feet in diameter. These pools were increased in size and number as the necessity demanded. The fire was started below the lowest collection of liquid and was then gradually built upward. It was found that the lowest collection of liquid received the maximum heat, being nearest the fire, and tended to evaporate first. Consequently, after from one to two hours, it was possible to pile fuel upward gradually and to consume completely the dry and semicarbonized matter remaining at the upper portion of the ravine, leaving the soil hard, dry and sterile. At the close of each day these ravines were easily cleaned by raking the debris downward, using the tin cans and the ashes to fill up small swamps.

Subsequent information on the subject shows that this method of incineration is somewhat similar in

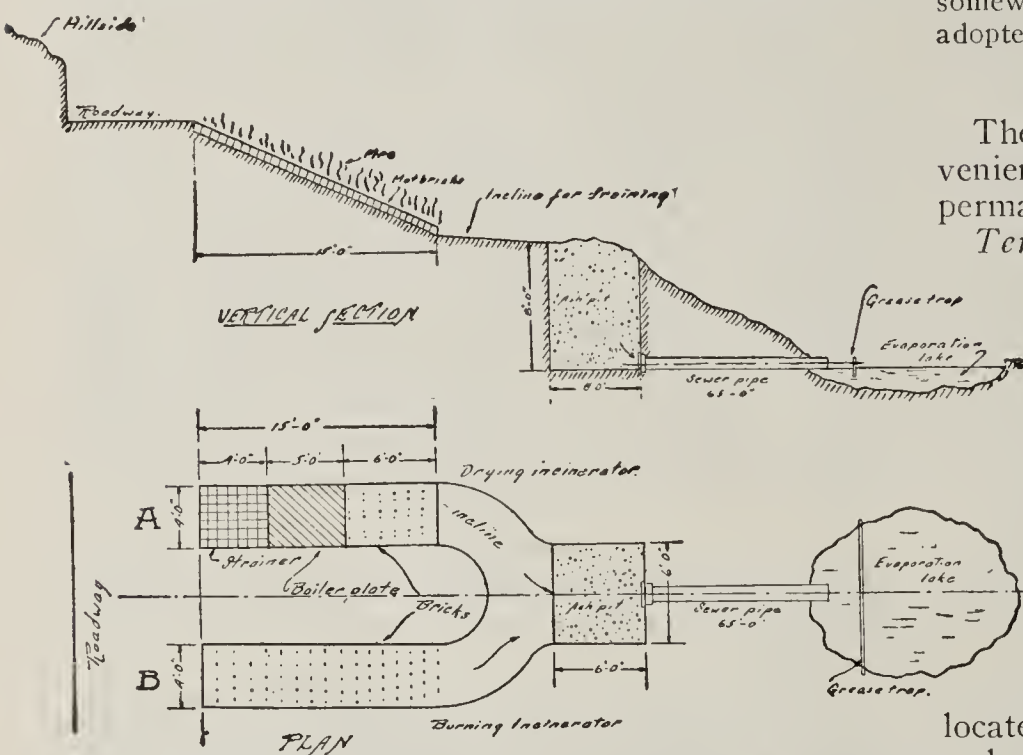


Fig. 1.—Semipermanent incinerator: The incinerators are built on the side of a hill with a slope of about 45 degrees. The garbage is emptied on strainers in Incinerator A. The use of boiler plate insures draft and prompt drying of the solids. The solids are then shoveled into Incinerator B and burned. The liquids run to the bottom of the incinerator and are sterilized and partly evaporated by the hot bricks. They then percolate through 8 feet of ashes, and are then conducted through a 6-inch sewer pipe to the evaporation lake, which is periodically burned over with crude oil. This system may appear complicated, but simpler methods of disposal were insufficient.

it was possible to complete the water carriage sewerage system in five weeks. The original estimate for this was from three to four months.

The camp site was found to be well situated, with the exception of marshes and swamps existing in proximity. This objection, however, was remediable; about 300 acres of swamps have since been drained. Quantico, according to the local physicians, had the reputation of being the "worst place on the Potomac for malaria."

The living quarters are of one story, are well ventilated and are built on the unit system, in accordance with recommendations of the Bureau of Medicine and Surgery. Their limited capacity (forty occupants) minimizes the possibility of a spread of infections.

The hospital for the station consists of six wards with a capacity of about 200 beds. This was built,

1. This article was written, Dec. 1, 1917.

principle to the inclined plane incinerators described by Lelean² in his "Sanitation in War." As the heat penetrates only 2 or 3 inches of the soil, a portion of the infected fluid may escape this sterilizing action of the heat. This, however, depends on the permeability of the soil (here it is clay), and the rapidity with which the fire is built upwards.

This mode of disposal has the following advantages:

1. Simplicity: One Virginia negro effectively and efficiently disposed of the excremental and garbage refuse of 2,000 persons.
2. Availability: Almost every terrain contains a sloping hillside or small embankment that may be utilized.
3. It requires a minimum amount of fuel, as the fire is below and the heated air rises and comes in direct contact with the liquid and semisolids.
4. The square area of surface of the fluid which is exposed to the heat is greatly increased, because of the earth's absorption, and this facilitates rapid evaporation.

Semipermanent.—It was at first possible to dispose of all liquid waste by evaporation; but shortly after-

lection, storage and transportation of the garbage, by permitting immediate destruction in situ. Theoretically, the idea is excellent, but it has been our experience that these incinerators are not economical in fuel and that their efficiency varies and is dependent, in a large measure, on the personal equation of their operators.

Recently a large central waste destructor has been built. This requires a minimum amount of fuel, and the burning garbage automatically furnishes sufficient hot water for cleaning the cans. The "two can system" allows the truck on each trip to replace the used cans with cleaned receptacles.

The application of a well known principle causes the operation of this incinerator to be nonodorous. It is a device patented by the corporation selling it. Briefly, the green garbage is charged through hoppers into the "evaporation chamber." Here the garbage is partly dehydrated, and by removal of the handle bars the garbage is then thrown into the "distillation chamber." The heat here is sufficient to drive off the

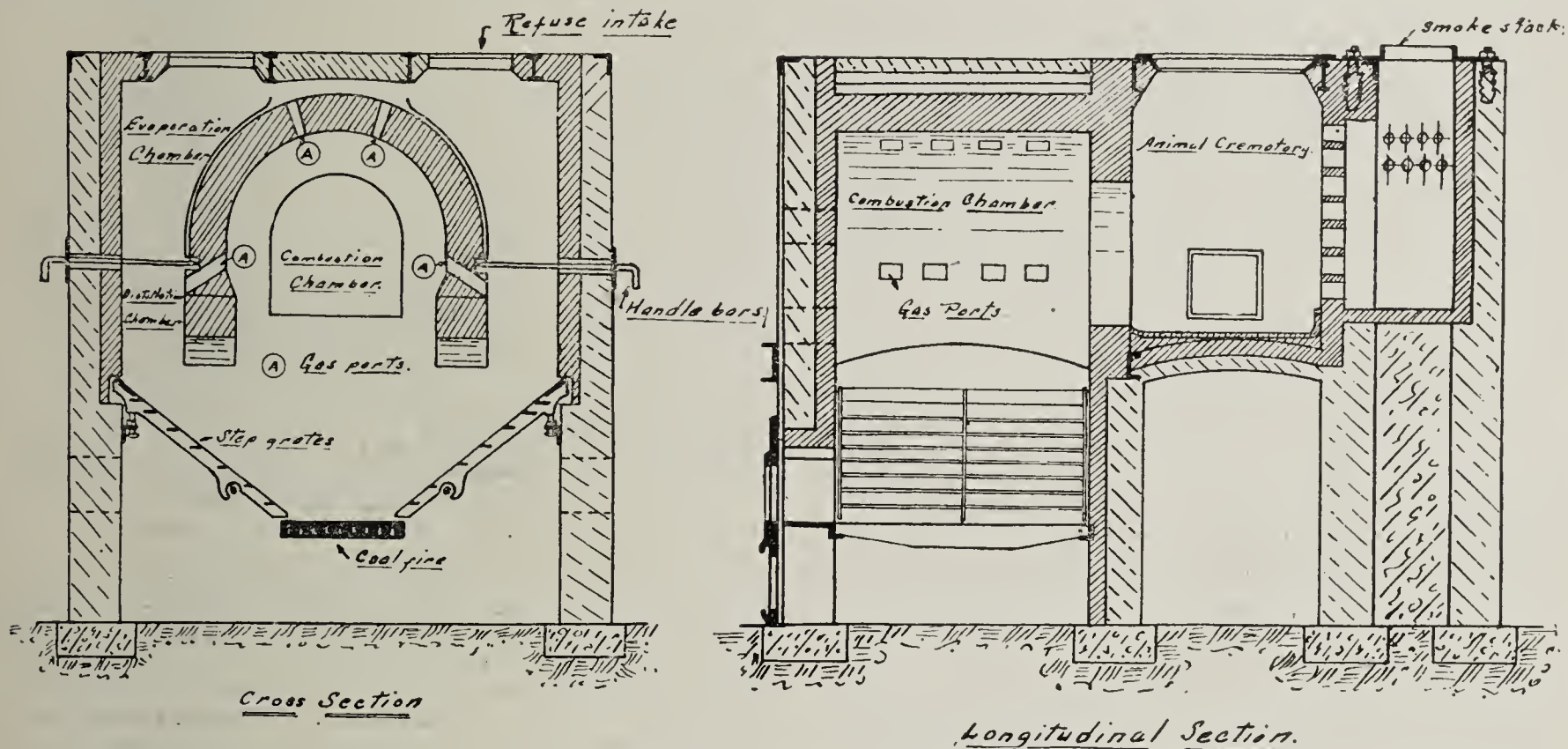


Fig. 2.—The garbage is placed in the refuse intake and dehydrated in the evaporation chamber. All vapors arising from this drying chamber are drawn by the chimney draft, through the gas ports, into the combustion chamber. The partly dried garbage is then charged into the distillation chamber by withdrawal of the handle bars. Here the heat is sufficient to distil the volatile hydrocarbons, which pass into the combustion chamber, through the gas ports, and are ignited. The fixed carbons remaining are burned on the step grates. The combination of the combustion space for both the solid matter and the volatiles insures the highest concentration of heat, and as all vapors and gases pass through this zone, the malodorous vapors are destroyed.

ward, when supervision of the disposal for the municipality was assumed, this method became impracticable. Owing to the unusual amount of sullage water from the numerous small restaurants, the garbage at times contained 90 per cent. liquid. Soakage pit methods proved a failure on account of the low degree of permeability of the soil; and disposal in the river, because of the tides, proved equally unsatisfactory.

Figure 1 represents the final type of temporary incinerator evolved from the original idea of hillside incineration. Incidentally it might be stated that many varieties of field incinerators were constructed either for demonstration or for experimental purposes.

Permanent Arrangements.—Each kitchen has its individual incinerator, a type slightly modified from those used by the Army. This method obviates col-

volatile hydrocarbons, which gases are then drawn through gas ports into the "combustion chamber," the temperature of which is sufficiently elevated to produce ignition of these. The solid fuels or fixed carbons remaining are then raked on the coal fire and there completely incinerated.

At present the water carriage sewerage system empties into the Potomac River. Plans are under way for the construction of a septic tank, with treatment of the effluent preliminary to the discharge into the river.

2. Lelean, P. S.: Sanitation in War, Philadelphia, P. Blakiston's Son & Co., 1917.

Accident Insurance and Ptomain Poisoning.—Death from ptomain poison contained in mushrooms supposed to be edible, and eaten by the insured without negligence, is held within a policy insuring against death by accidental means not resulting from or contributed to, directly or indirectly, wholly or partially, by disease, in the Indiana case of *United States Casualty Co. v. Griffiths*, L. R. A. 1917 F, 481.

CLINICAL AND PATHOLOGIC NOTES ON
TRENCH NEPHRITIS

W. H. TYTLER AND J. A. RYLE

*(Abstract from the Quarterly Journal of Medicine, London, 1918,
11, p. 112)*

These British officers describe the clinical features in 150 cases of trench nephritis observed during the early stages in a casualty clearing station. They also record the results of pathologic examination of cases which terminated fatally within the first three weeks of the disease. They were all cases presenting constitutional symptoms as well as albuminuria, no cases being included of the prevalent albuminuria without indisposition, and none of the so-called "lower tract" cases. All the patients were employed in the forward area and the great majority actually in the trenches. There was commonly no history of any predisposing illness, nor were there any concurrent epidemics, such as scarlet fever or tonsillitis, which could be considered to bear on the etiology of the disease. The seasonal incidence showed a marked increase during the winter months.

SYMPTOMATOLOGY

The cases were observed during the early part of 1916, and the entire following winter. The history was usually of an onset from two or three weeks previous to admission. The almost constant complaint was of shortness of breath on exertion, while swelling of the extremities and face was also frequently noted. A history of cough and of a general feeling of unfitness was common. The history of onset did not suggest an acute febrile or septicemia attack. On admission, and throughout the early course of the disease, the most striking symptoms were pallor, edema and dyspnea. Of the more severe cases, comprising between 20 and 25 per cent. of the whole number observed, the following description is given:

"The patients were pale and puffy, with edema of the eyelids, face, feet and hands, and, after a short time in bed, of the back and flanks, which might show deep creases due to the pressure of folds in the bedclothes. The abdomen, on palpation, was full and tense. The spleen, though often enlarged postmortem, was never palpable during life. The respirations were short and rapid, and the dyspnea increased on the slightest exertion. There was impaired resonance and air entry at the bases, with or without moist sounds. The worst cases showed cyanosis of the lips and ears. Nearly all required a bedrest to give them relief, while continuous administration of oxygen was sometimes necessary. Except as a terminal event, expectoration was not commonly profuse. One case had a large bilateral pleural effusion, but in the remainder of the series pleural effusion was uncommon, and when present not of large amount."

The bronchitis, as a complication of the nephritis, was usually present on admission, "and was undoubtedly a prominent cause of the severe respiratory symptoms." The dyspnea was frequently urgent and distressingly obvious. So predominant were the respiratory signs that, until the condition became more generally recognized in the field ambulances, cases were not commonly sent down with a diagnosis of acute bronchitis or of pneumonia. From clinical evidence the authors consider the dyspnea "to be primarily due to pulmonary edema, and this view was substantiated by the necropsy findings. Bronchitis was undoubtedly a great contributory factor, and swelling of the abdomen and of the tissues of the abdominal wall probably played a part." A striking resemblance was frequently noted between the respiratory symptoms in trench nephritis and those seen in cases of gas poisoning.

The pulse, in nearly all cases, was full and bounding, and the blood pressure was generally above 140 mm. of mercury. One patient showed subconjunctival hemorrhages. Pyrexia was not the rule save in relation to the bronchitis. A small group of cases, however, without apparent bronchitis, showed temperatures ranging from 100 to 104 F., during the first week of the disease. Another small group of cases showed the respiratory picture described above, with the addition of prolonged expiration and the general symptoms of severe

asthma, but with complete absence of external edema. The presence of albumin and casts in the urine, and the relatively small amount of expectoration, served to distinguish this group from the cases of simple capillary bronchitis which were so numerous during the winter. In spite of the anasarca and the pulmonary edema the patients usually passed a quantity of urine not much below the normal amount. None of the cases with respiratory symptoms and edema showed evidence of uremia.

In the fatal cases death usually occurred during the second week. In such cases the terminal picture showed increased cyanosis, and very severe dyspnea with profuse frothy expectoration. Death in all the fatal cases was apparently due to respiratory failure.

PROGNOSIS

The mortality among cases of nephritis admitted to this casualty clearing station during the winter of 1916-1917 was 4 per cent. All of these fatal cases were of the respiratory type, and in all but one there was associated bronchitis. "The immediate prognosis, then, in the absence of this very common complication, may be said to be good in the dyspneic form of the disease. The uremic type, from the experience of those who have seen more of it, shows a higher mortality rate."

TREATMENT

The authors emphasize that "the first essential in successful treatment is early diagnosis. Cases which had been first recognized late in the disease were in general slower in their reaction to treatment." Warmth and rest in bed with good nursing and the administration of saline purgatives, produced a rapid change in the condition of all cases of moderate severity. Postural treatment of the dyspnea, and oxygen when necessary—given preferably by the continuous intranasal method—gave much relief. Hot packs were often beneficial, but seemed to be definitely contraindicated in cases with pyrexia or severe bronchitis. The diet was customarily fluid, sometimes with the addition of light farinaceous foods. "So far as possible patients were not evacuated until the symptoms had largely disappeared. In uremic cases bleeding and lumbar puncture may give relief, particularly the former."

URINE EXAMINATION

The urine nearly always showed a large amount of albumin on admission, the amount being roughly proportional to the severity of the symptoms. Specific gravity varied between 1.012 and 1.018, with an average of 1.015. Of the entire series of cases only about 2 per cent. showed macroscopic hematuria. Microscopically, the centrifugalized urine showed numerous tube casts, red blood cells and leukocytes. The number of casts, however, was usually smaller than in severe acute nephritis as seen in civil life.

THE BLOOD

Urea in the blood varied from 0.05 to 0.15 per cent., with an average of 0.08 per cent. The amount did not seem to bear any constant relation to the amount of urea in the urine. Leukocytes in a small series of cases were not definitely increased, the usual figure being between 8,000 and 10,000. Higher counts were not observed save with severe bronchitis.

PATHOLOGY

The morbid anatomy in trench nephritis is based on a series of twenty-five necropsies. The most constant gross changes observed were those seen in the lungs and spleen, consisting, briefly, "in an extensive pulmonary edema, often of rather characteristic nature and usually accompanied by a purulent bronchitis, and in the presence of characteristic hemorrhages throughout the spleen. The kidneys constantly showed to the naked eye only the most slight and indefinite changes. "It was seldom that one could attempt even a guess at the nature of the disease from the gross examination of the kidneys alone." They were seldom enlarged, and the only change suggesting disease was a slight pallor and opacity of the cortical tissue. The cortex was seldom swollen or wider than natural. A few of the kidneys showed some congestion so that the cortical vessels stood out as red

streaks against a pale background. In some cases swelling of the glomeruli, causing them to stand out from the cut surface like minute glistening drops, was observed. This change, however, was not constant. Hemorrhagic lesions were not infrequently seen elsewhere than in the spleen. Several cases showed petechial hemorrhages in the renal pelvises. Two cases showed numerous subepicardial, and one case numerous subpleural petechiae. Two cases showed large cerebral hemorrhage, one central and one superficial. The heart was often considerably dilated when the lung involvement was extreme, and such cases showed venous engorgement of the abdominal viscera. In most cases congested lymph nodes were found at the roots of the lungs, and often in the mesentery. The brain in some cases showed moderate subarachnoid edema.

ETIOLOGY

Bacteriologic examination was carried out on material from sixty cases taken during life, and from sixteen of the series of twenty-five necropsies. Blood cultures were made on a series of ten cases, all in the early stages of the disease, and all showing pyrexia. One case yielded an organism which was apparently a pneumococcus, growing in short chains with definite capsules. "The presence of this organism in the blood was probably secondary to a pneumonic process in the lung." The cultures in the remaining nine cases remained sterile. In a series of forty cases cultures were made from the urine. In twenty-four of the forty cases the urine yielded streptococci of the enterococcus or fecal type. These organisms produced a luxuriant, confluent, often opaque growth on serum free agar—sometimes simulating a staphylococcus—and on blood agar produced colonies up to 1 mm. in diameter, rather opaque by transmitted light, with a narrow green halo, and reflected light often whitish, the halo then appearing as a blackish background to the colony. Under the microscope they showed short chains of often elongated cocci. In most of the cases hemolytic streptococci were present as well.

The urine from a series of fifty control cases was then examined. These embraced many conditions, the diagnoses including diarrhea, trench fever, pneumonia, cerebrospinal fever, scarlet fever, trench feet and several others. In only five of these cases were streptococci isolated which produced a green color on blood agar. Most of the control urines yielded hemolytic streptococci. In twelve cases cultures were made from the throat. The cultures from ten of these cases yielded streptococci producing fine dryish colonies on blood agar, with a pronounced green halo. Several cases also yielded pneumococci. In no case was an organism of the enterococcus type recovered. In sixteen cases cultures were made at necropsy from heart blood, lungs, spleen and kidneys. In nine cases streptococci were isolated from the lungs, in six cases from the spleen, and in two cases from the kidney. Cultures from heart blood remained sterile in every case. The streptococci from the lung were all of the type described as recovered from the throat cultures, and were never of the enterococcus type. The organisms isolated from the spleen and kidney, on the contrary, were in general similar to those found in the urine of nephritis cases, and may be considered as enterococci. In one of the two cases in which an organism was isolated from the kidney a similar streptococcus was recovered from the spleen also, and in this case streptococci could be demonstrated in the tissues. During the season at which influenza was prevalent influenza bacilli were isolated from the lungs of two cases and from the kidney of a third. Broth cultures of three organisms from the urine, three from the throat, and one from the spleen were injected subcutaneously into mice, the dose being 1 c.c. All the animals died in from three to five days, but in no instance could the streptococci be recovered from the blood or organs.

SUMMARY

In the early stages of the attack general edema, dyspnea, albuminuria with casts, red corpuscles and leukocytes in the urine, which is not, or but very little, reduced in amount, were the principal features. In the fatal cases death may be caused by respiratory failure from edema of the lungs, usually

associated with severe bronchitis, the latter being regarded as secondary. The characteristic changes were found in the lungs, the spleen and the kidney, in all of which capillary thromboses were present, most marked, however, in the lungs and in the kidney associated with acute glomerulitis. The most marked changes were found in the lung. There was a diffuse edema with some fibrinous and cellular exudate, the condition being really one of pneumonitis rather than edema in the usual sense, and associated therewith was a bronchitis which the authors regard as secondary. Bacteria were not found in the lungs except in the bronchi, in which were streptococci of the mouth type. Beside the thromboses in the spleen there were many small hemorrhages, and hemorrhages were also found in the serous membranes and in two cases in the brain. The changes in the kidney were less marked than expected from the symptoms, being principally inflammatory changes in the glomeruli. In nearly two thirds of the cases, streptococci of the intestinal type were found in the urine. It is apparent, both from a clinical and anatomic point of view that the changes in the lungs are the predominating ones, and there is good reason to doubt that conditions in the kidneys would explain the phenomena of trench nephritis—a view which should have an important bearing on the direction of future investigations of these conditions. It is of interest that the changes in the lungs being of an inflammatory nature, but not associated with bacteria, apparently favor the view that inhalation of gas and other fumes may play a positive rôle in trench nephritis. The authors emphasize, however, that the disease may develop in places where such inhalation is excluded. While the condition in the lungs may be due in part to the general edema, features are present which indicate an inflammatory process, the origin of which remains unexplained.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

DICHLORAMINE-T.—Paratoluenesulphonedichloramide. — $\text{CH}_3\text{C}_6\text{H}_4\text{SO}_2\text{NCl}_2$.—The dichloramide of paratoluenesulphonic acid, $\text{CH}_3\text{C}_6\text{H}_4\text{SO}_2\text{OH}$.

Actions, Uses, Dosage, Physical and Chemical Properties.—See New and Nonofficial Remedies, 1918, p. 157.

Dichloramine-T, Monsanto.—A brand of dichloramine-T complying with the N. N. R. standards.

Manufactured by the Monsanto Chemical Works, St. Louis. No U. S. patent or trademark.

Manufacture of Organic Chemicals.—In *Science*, March 8, 1918, Dr. Roger Adams describes the activities of the laboratories of the University of Illinois in making rare and much needed chemical products for research and teaching work for the laboratories of the United States, the supply of which was formerly obtained largely from abroad. Eight different chemicals in amounts valued at \$5,000 were made, and more than thirty laboratories and distributing houses were supplied. The work has expanded since so that about 120 different products have been supplied outside the laboratory, valued at about \$9,000, the products being distributed in amounts of a few grams up to pounds. Among the different chemicals synthesized which were in demand in the laboratories are dimethyl glyoxime, nitroso beta naphthol, cupferron, nitron and ninhydrin, besides many others. They have all been tested in comparison with a well known standard product, and in all instances have been found as good and in many instances much better.

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SATURDAY, APRIL 6, 1918

THE MILLING PROCESS AND BERIBERI IN WAR TIME

Beriberi began to become a disease of prominence in the Far East when polished or highly milled rice began to take the place of the natural brown rice. The difference between these two forms of the cereal lies in the fact that modern milling removes the embryo and a considerable part of the pericarp of the husked grain. Since the rice bran or rice polishings representing the removed portions contain substances essential to nutrition, a deficiency manifested itself through the use of the polished rice whenever it constituted a very considerable part of the ration. To the indispensable component of the polishings the name "vitamin" has been given. Beriberi has been the most characteristic instance of so-called "deficiency disease," because the origin of the dietary deficiency in an inadequate diet is now clearly understood, and because its most prominent symptoms can be both reproduced experimentally by an exclusive diet of polished rice and cured by administration of suitable sources of vitamins. On the basis of this knowledge, beriberi induced by the undue use of polished rice has been averted in many quarters in the East and much suffering has been prevented by the judicious selection of the diet, as for example in parts of the Philippines. Indeed, it might be supposed that except for the uncontrollable habits of certain primitive peoples, the danger of the occurrence of beriberi on a large scale is practically a matter of the past in all countries and climates.

The history of the present war has shown, however, that this is by no means the case. Beriberi was reported to occur among the British forces in the Dardanelles and Mesopotamia during the autumn and winter of 1915. Owing to the exigencies of the military situation, many persons in those regions subsisted for considerable periods mainly on canned meats, jam and white bread, or crackers baked principally from white flour. This has raised anew the question of the distribution of vitamins in the various parts of the wheat with a view to ascertaining whether the parts of this cereal removed in milling white flour

are peculiarly valuable as sources of antineuritic vitamin.

During the "roller" milling of wheat, the brittle pericarp is broken up by the rollers into bran, while the embryo, being soft and oily, is squeezed out flat. In the sieving and fanning of subsequent operations, the bran and embryo are separated so that each may be obtained as such and examined. In the case of rice milling, however, the polishings contain a mixture of pericarp and embryo, since these are not so easily separated by the mechanical processes in technological use. The embryo of rice can, however, be removed alone by more laborious methods. In an elaborate study conducted at the Lister Institute for Preventive Medicine in London, Chick and Hume¹ have demonstrated by means of curative experiments on polynuritic pigeons that in both the rice and wheat grain, the antineuritic vitamin is concentrated mainly in the germ or embryo; it is also present to a less degree in the bran (pericarp and aleurone layer), probably in the aleurone layer. In case of maize grain, the embryo also possesses marked antineuritic properties. Here the scutellum can be separated from the "plantlet" and separately investigated. Both these constituents of the embryo were found to contain antineuritic vitamin. These conclusions are by no means new in all their details; but what these investigators found cannot be too strongly emphasized, namely, that the more important location of the antiberiberi vitamin is in the embryo or germ and not the pericarp of the grain.

Ordinary white flour consists of the wheat endosperm left after removal of the aleurone layer in the milling process. Such flour is deficient in the antineuritic vitamin, and Chick and Hume remind us that the endosperm, if used as an exclusive diet, will induce polynuritis in pigeons (or beriberi in man) in a manner identical with polished rice. Several years ago Little² reported in THE JOURNAL that in Newfoundland and Labrador, where in midwinter and spring many persons are obliged to subsist largely on bread, beriberi frequently occurs. At the present time the bread is made from fine wheat flour; in the memory of the older inhabitants, when the bread was made from "brown" flour, the disease was unknown. In 1910 the following interesting event took place: A ship laden with whole-wheat flour ran ashore, and a considerable proportion of her cargo was removed in order to lighten her, and later was consumed by the adjacent population. There was no case of beriberi in that region for a year following this occurrence. Taken in connection with the outbreaks of beriberi that have been reported in connection with British troops living on restricted rations, these comparatively

1. Chick, Harriette, and Hume, E. Margaret: The Distribution in Wheat, Rice, and Maize Grains of the Substance, the Deficiency of Which in a Diet causes Polyneuritis in Birds and Beri-Beri in Man, *Proc. Roy. Soc., B*, 1917, **90**, 44.

2. Little, J. M.: Beriberi Caused by Fine White Flour, *THE JOURNAL A. M. A.*, June 29, 1912, p. 2029.

recent experiences indicate that special precautions are called for when the diet is liable to consist largely of foods deficient in vitamins.

The British investigators have reached the conclusion, therefore, that for the prevention of beriberi it is in the highest degree desirable that the germ (embryo) and the bran of wheat should not be excluded from the flour destined for manufacture of bread and biscuit for troops on active service. This is the more necessary when the troops are separated from fresh food supplies, and the rest of the ration consists largely of tinned foods.

We are aware that technical difficulties arise in the packing and transporting of whole-meal or germ-containing flour. It seems likely that expert advice can overcome this; at any rate the problem involved deserves most careful study from those competent in this field. Baked products like crackers or biscuits can doubtless be shipped without encountering the difficulties presented by the flour itself. It must not be assumed from what has been stated that wheat germ is the only available source of antineuritic vitamin, or that the dangers just emphasized apply with equal force to all individuals in the population. Where liberal variety in diet is possible, the chance of deficiency is greatly reduced; but there are plenty of instances in which extremes of climate, temporary separation from a diversity of fresh food supplies, or the exigencies of active service on long campaigns or during siege have brought untoward consequences. We must learn to avert these as far as possible. As most cases of human beriberi have in the past been attributable to a defect in the character of the cereal employed in the ration, and as the germ or embryo of the grain is the principal source of the antineuritic vitamin, the suggestion of an alteration in the kind of flour supplied where deficiencies are most likely to arise seems well worthy of serious consideration.

Chick and Hume³ have recorded several impressive instances which further illustrate that deficiencies can occur as the result of milling innovations. They state that beriberi was rare on Norwegian ships before 1894, after which date it became much more frequent. This frequency coincided with an alteration of diet which was made compulsory in that year in response to a popular demand for an "amelioration" of the conditions of life in the Norwegian mercantile marine. Previously the sailors on long voyages used biscuit made from rye flour; subsequently the masters of ships were obliged to supply bread baked from white wheaten flour, or a mixture of wheat and rye flour. It is an interesting corollary to note that in the milling of rye flour there is no separation of the germ. Again, it is pointed out as very significant in connection with

the siege of Kut-al-Amara that beriberi should have broken out among the British troops while on their normal ration of white wheaten flour, and should have cleared up when they were obliged to share in the more coarsely milled (and doubtless germ-containing) grain of their Indian fellow-soldiers.

THE RISING COST OF MILK

Until recently, the problems of the milk supply were considered almost exclusively from the sanitary side. That the milk of different breeds of cattle may have unlike chemical composition, particularly with respect to the content of fat, has of course not entirely failed of recognition; but, after all, discussion has centered preeminently about those questions that relate to the presence and entrance of bacteria into the milk and to the methods of maintaining a high standard of milk hygiene. Confronted suddenly with enormously increased costs in many of the common foods, among which milk belongs, consumers are asking whether they are justified in paying the price now demanded. The public is assured by our experts in nutrition that it would be a misfortune to have the supply and the purchase of milk decreased in this country, where its use is well within what are considered optimal limits. THE JOURNAL has repeatedly subscribed to the same sentiment. Admitting the general proposition of the prime necessity for milk, the consumer properly asks whether the existing conditions in the milk market are defensible.

In the past, we have attempted occasional critical discussions of various factors concerned in the production of milk. Recently the Agricultural Experiment Station of the University of Wisconsin, at Madison, has collated the newest facts regarding the partition of the expenditures ending in the sale of milk to the consumer.¹ It appears that, under Wisconsin conditions at least, the farmer is getting something over half of the money that the consumer pays for milk. The farmer's share might be increased if he could avoid producing a surplus at certain seasons of the year, or if he could himself take care of this surplus without throwing it on the milk market. Transportation costs about 8 per cent., handling at the milk plants of the distributors involves an outlay of a further 18 per cent. for bottling, pasteurizing and other items of preparation, and the delivery system adds the final quarter of the total expenditure.

In considering the possibility of economy, the expense of distribution appears to be the only item that offers any prospect of reduction under present conditions. The Wisconsin report points out that with our present competitive system of distributing milk, there is an unnecessarily large amount of

3. Chick, Harriette, and Hume, E. Margaret: The Distribution Among Foodstuffs (Especially Those Suitable for the Rationing of Armies) of the Substances Required for the Prevention of (A) Beriberi and (B) Scurvy, *Tr. Soc. Trop. Med. and Hyg.*, 1917, **10**, 141.

1. Hibbard, B. H., and Erdmann, H. E.: Marketing Wisconsin Milk, *Bull.* 285, Wisconsin Agric. Expt. Station, December, 1917.

duplication. Not only are there often more men engaged in the business of delivering milk than are necessary, but each has more machinery and general equipment than are necessary in handling his business; that is, each could usually handle much more business without a great increase in his fixed investment. In almost any town one may frequently see three or four delivery wagons on the same street, at the same time, literally traveling in each other's tracks. Various remedies have been proposed, such as cooperative distribution, municipal monopoly, a private monopoly publicly controlled to place service above profits and allow a normal return on a reasonable investment of capital, or a method of marketing through stores that already have a delivery system for other commodities. Such economies would reduce the total cost of milk a little more than one eighth. If we may take Wisconsin as a typical state, it appears that the per capita consumption is less than 0.6 pint per day. In consideration of all the circumstances, possibly we should be content to accept current prices as reasonable under existing conditions. While milk prices have increased rapidly of late, they have not risen so rapidly or so much as have prices of other foods.

Grades of milk now found on the market are not such as are most helpful to the consumer in aiding him to select the class of milk he wishes to buy. Were such grades established, milk would sell more nearly on a quality basis. Since it is difficult for most consumers to recognize quality in milk, unrestricted competition in its production and distribution tends to lower quality. If we cannot lower the price of milk, we can at any rate try to get a good return for the expenditure.

PULMONARY VENTILATION IN TRAUMA AND SHOCK

The contributors to THE JOURNAL have lately given evidence of the intense interest which the misfortunes of war have awakened anew in the ever present subject of shock. In the series of articles on the nature and treatment of wound shock and allied conditions,¹ by observers who had exceptional opportunities to observe the patients in the early stages of injury, the occurrence of what has sometimes been termed acidosis has been reported as a characteristic sequence to trauma. Emphasis has been placed on the lowering of the alkali reserve of the blood, on the fact that under anesthesia and operation a further lowering occurs, and on the corollary that the intravenous infusion of alkaline solutions seems to provoke a prompt, beneficial response.

Recently attention was directed to Yandell Henderson's experiments showing that the factor of the alkali reserve of the blood is undoubtedly affected by altered

breathing.² In researches with Haggard,³ he has demonstrated anew that excessive pulmonary ventilation by means of artificial respiration induces not only a lowering of the carbon dioxid content, but also of the carbon dioxid capacity of the blood. Arterial pressure also falls, and death from circulatory failure may follow. If the artificial respiration, instead of being made with fresh air, is carried on by continual reinjection mainly of expired air, so that the carbon dioxid content of the blood is not reduced, the carbon dioxid capacity and arterial pressure do not fall and the other ill effects also fail to appear. Now the pain that the wounded feel is commonly attended by excessive breathing. The question, therefore, naturally arises whether abnormally extensive pulmonary ventilation induced by pain, pain hyperpnea, can account for the diminished alkali reserve reported for the shocked victims of the battlefield, or whether the trauma per se plays a part. Henderson and Haggard,⁴ working at the Yale Medical School physiologic laboratories, have reached the conclusion that apart from overventilation of the lungs, trauma does not cause a lowering of the carbon dioxid capacity (alkali reserve) of the blood, even when by general traumatization and cooling of the abdominal viscera and consequent stagnation of the blood in the injured parts, failure of the circulation and death are induced. If, on the other hand, no measures are taken to prevent excessive pulmonary ventilation, the overbreathing induced by localized manipulation of the stomach, while the rest of the viscera are protected, causes lowering of the carbon dioxid content and carbon dioxid capacity of the blood and also of arterial pressure. If the lowering of the carbon dioxid capacity is pushed beyond the apparently critical level, between 33 and 36 per cent. by volume, the disturbance of the vital equilibrium results fatally. The same duration and degree of localized manipulation administered while the subject is inhaling 6 or 7 per cent. of carbon dioxid does not cause any marked lowering of the carbon dioxid capacity, arterial pressure, or general vitality. Below the critical level for the carbon dioxid capacity, treatment by the administration of from 7 to 10 per cent. of carbon dioxid in the air breathed does not cause restoration of carbon dioxid capacity or arterial pressure.

It is not unlikely, according to Henderson and Haggard, that when a very low level of carbon dioxid capacity is reached, a true acidosis due to tissue asphyxia and production of abnormal acid metabolic products may supervene. But if the maintenance of

2. Respiration and the Carbon Dioxid Capacity of the Blood, editorial, THE JOURNAL A. M. A., March 30, 1918, p. 924.

3. Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the Carbon Dioxid Capacity of the Blood, III, The Effects of Excessive Pulmonary Ventilation, Jour. Biol. Chem., 1918, **33**, 355.

4. Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the Carbon Dioxid Capacity of the Blood, IV, The Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity, and Shock, Jour. Biol. Chem., 1918, **33**, 365.

1. THE JOURNAL A. M. A., Feb. 23 and March 2, 1918.

a proper alkali reserve or carbon dioxide capacity of the blood is dependent on a suitable not too low content of carbon dioxide in the blood, the long suggested plan of administering carbon dioxide in certain types of shock, as well as in the dangers of ether anesthesia, cannot be passed by without thoughtful consideration. There are indications already available that the proposed procedure will be given an opportunity to demonstrate its possibilities in the present crisis.

SUGAR IN WAR TIME

During recent months, many physicians have been asked regarding the possible effects of the various newly imposed or proposed dietary restrictions or innovations on the health of the individual. Despite the widespread acquiescence of our population in the dictates of the national and state food administrations, there is not unnaturally a frequent final appeal to the members of the medical profession for approval of such changes as have been proposed in the interest of the movement to help win the war. Among other plans for conservation, a reduction in the use of sugar has been urgently requested and, indeed, made inevitable at times when local shortage has curtailed the available supply so that the customary quota is not forthcoming. A summary compiled for the War Emergency Food Survey Section of the Bureau of Markets¹ furnishes facts that will enable us to draw conclusions more definite than those permitted by vague generalizations from intangible sources. The most pertinent information is that, respecting the actual use of sugar in the United States in recent years. The amount consumed in 1917 was approximately 9,100,000,000 pounds, or 88.3 pounds per capita. In 1916 it amounted to 8,300,000,000, or 84.7 pounds per capita. It is thus apparent that if these statistics are correct there has been some increase in the consumption of sugar.

Eighty-eight pounds of sugar per capita used each year represent about 110 gm. (nearly 4 ounces) per day for every man, woman and child in this country. Expressed in terms of food fuel units this is equivalent to 440 calories, a not inconsiderable portion of the daily energy needs of an adult man. The sugar of the daily diet consumed in the measure indicated by the government statistics would furnish one seventh of the food fuel where 3,000 calories are required, and even a larger proportion where the daily energy requirement is put on a lower basis. Four ounces of sugar, as the accusation now stands, is the caloric equivalent of two thirds of a quart of good milk or of eight slices of bread approximating one third of a pound.

When it is recalled that this great per capita consumption of sugar is largely a phenomenon of recent years and the result of the development of an industry whereby the price of the product has been lowered, the necessity for the inclusion of this carbohydrate up to one seventh or even one fifth of the daily energy requirement in the diet will obviously be questioned. Sugar is primarily used for its flavor rather than its fuel value. One American student of nutrition has even gone so far as to question the physiologic wisdom of the modern increased consumption of sugar. Thus Sherman² writes:

The cheapening of a staple article of food, which is almost universally popular and which, like the refined sugar of commerce, is of uniform and well-known composition and practically free from danger of adulteration or harmful deterioration, would be a source of great satisfaction but for the fact that refined sugar constitutes an extreme case of a one-sided food, its sole nutritive function being to serve as fuel so that, as the energy requirement of the body is met to a larger and larger extent by the consumption of refined sugar there is a constantly increasing danger of unbalancing the diet and making it deficient in some of the substances which are needed for the building and repair of body tissue and for the regulation of physiological processes.

From a practical standpoint it is pointed out in a government bulletin³ that in the American cuisine sugar is used with too many kinds of food, with a consequent loss of variety and piquancy of flavor in the different dishes. The nutty flavor of grains and the natural taste of mild fruits are very often concealed by the addition of large quantities of sugar.

Sugar is well utilized in the human organism; from the standpoint of cost its food value is very high, and its popularity need not be debated. But there is no consideration of nutrition that seriously demands so large an inclusion of sugar in the diet or forbids considerable reduction in its use, especially when the best interests of the civilized world demand it.

Zoology and the War.—It is often said that this war is a scientific war and it is true both in its destructive aspects and in its safeguarding and protecting features. It is equally true that when all is said as to guns and explosives and poisonous gases, the last word lies with the man power of the belligerents. And it is here that zoology's great service is rendered. It is purely biological studies that have made possible the assembling of great numbers of men without disease slaying far more than fall before the guns of the enemy. The surgery which restores 90 per cent. of the wounded would be impossible without the knowledge reached by decades of parasitologic research. Our knowledge of sanitation and the prevention of infectious disease has doubtless saved many more combatants and noncombatants than have been slain in all the battles. It is not only Serbia which has been saved from typhus. Without our knowledge of the transmission of this disease, and the preventive measures thus made possible, all the belligerent nations would have been decimated by this scourge. Typhoid fever, cholera, bubonic plague, smallpox, would each have taken similar toll. For every dozen lives lost from battle, hundreds would have been destroyed by infectious diseases which we are now able to hold in check.—Prof. Maynard M. Metcalf in *Scientific Monthly*.

1. Sugar Supply of the United States: Its Extent and Distribution on Aug. 31, 1917, Circular 96, U. S. Dept. Agriculture, Office of the Secretary, Washington, Jan. 31, 1918.

2. Sherman, H. C.: Food Products, New York, 1914, p. 440.

3. Abel, Mary Hinman: Sugar as Food, Farmers' Bull. 535, U. S. Dept. Agriculture.

Current Comment

THE YIELD OF FOOD PER ACRE IN THE UNITED STATES

To many well educated persons it has become comparatively easy nowadays to think of food in terms of its energy value, and to express nutritive needs by calories. We owe this fact largely to the rapid popularizing of the science of nutrition, a movement largely fostered in this country by the efforts of the late Professor Atwater and his various associates, and probably not equally by any other nation in the world. Any one who knows the needs of the individual can estimate the requirement of the nation, so far as the problem is one of mathematics. Today we are face to face with precisely such problems. Food has become associated with patriotism, and there is nothing to be ashamed of in linking these words together. In their story of the food problem, Kellogg and Taylor have remarked:

It is a time of rare and glorious opportunity; a time in which prosaic business and industry may be lifted up to the high plane of national service. And it is being so conceived in many quarters. The editor of a miller's journal puts it well for his miller and baker readers when he says: "He who grinds a barrel of flour or makes a loaf of bread to the glory and good of the nation, forgetful of self, performs his duty in a spirit of devotion equal in its way to that of him who goes forth to actual battle."

In the face of a world shortage of food there is something more than scientific inquisitiveness, therefore, in attempting to ascertain the comparative productiveness of our land in terms not usually employed. Many of our readers are conversant with the acreage crop of many foods. They think of a yield of 35 bushels of corn or oats per acre in contrast with 20 bushels of wheat on the one hand and 100 bushels of potatoes on the other. But the United States Department of Agriculture¹ has recently attempted to furnish an acre-for-acre comparison of different crops and animal products in terms of nutrients for man. At the head of the list of crops commonly grown in this country stands corn, a 35-bushel crop of this cereal producing 150 pounds of protein and more than 3,000,000 units of energy. This fact in itself speaks for the importance of encouraging the use of corn by improved milling and culinary procedures. Next in order stand sweet potatoes and Irish potatoes, with calories-per-acre values of 2,000,000 or more. Corn is ahead of all other crops except navy beans and soy beans in tissue-building material. In the latter element soy beans far outclass all other crops, showing nearly twice as much protein per acre as navy beans, which rank second in this regard. The statistics show that the dairy cow is the most efficient of farm animals in the production of human food (milk), and that the hog is the most efficient in the conversion of grain into meat, producing five times as much per acre of crops as does any other animal. The calories-yield per acre,

when suitable crops are converted into pork, is estimated at nearly 700,000 calories, in contrast with 130,000 calories similarly furnished by beef. Where milk is produced, however, the record of the hog is eclipsed.

THE MEASURE OF ACIDOSIS

A comparatively simple and seemingly practical method of ascertaining the existence of a condition of acidosis in the organism, and the degree to which it has developed, consists in what has been fancifully termed "titrating the body." This amounts to a determination of the quantity of an alkali—sodium bicarbonate—that is required to change the reaction of the urine so that it becomes alkaline. In normal persons this result takes place, as has repeatedly been demonstrated, when from 5 to 10 gm. of the alkali are administered. It suggests that the kidneys secrete alkaline urine only when the level of the bicarbonate concentration of the blood reaches certain proportions. Palmer and Van Slyke¹ have remarked, in the course of a study of acidosis at the Hospital of the Rockefeller Institute, that to judge from the small amounts of bicarbonate required to turn the urine of normal men alkaline, this level would be appreciably, but not greatly, above the average normal. They have found, in accord with this, that under conditions of health there is a fairly definite level of the plasma bicarbonate at which the urine changes its reaction from one more acid than blood to one more alkaline. In normal men this occurred when the plasma bicarbonate (as CO₂) reached 71 ± 5 per cent. by volume. In the case of persons abnormal in health, there may be a different status of kidney permeability. In most of the pathologic cases studied at the Rockefeller Institute hospital, the urine did not become more alkaline than the blood until a higher plasma bicarbonate had been reached than in normal persons. It is evident, therefore, that the quantity of bicarbonate required in some pathologic conditions to produce an alkaline urine may give a false indication of the degree of acidosis or even the presence of such a condition; for, in some cases that belong to the group of abnormal persons, the plasma bicarbonate may rise appreciably higher than is normally the case before an alkaline urine begins to be excreted. Palmer and Van Slyke explain that herein may lie the true explanation of the objection that certain clinicians have registered against the liberal use of alkali therapy. If bicarbonate is given to patients in continued doses until the urine becomes alkaline, there is danger of administering unnecessary and perhaps even injurious amounts. Alkalosis, in contrast with acidosis, has lately been associated with tetany. There accordingly arises the necessity of carefully controlling the therapeutic use of sodium bicarbonate. This may best be done by determination of the plasma bicarbonate. It is improbable that more severe acidosis often exists than is indicated by the bicarbonate retention test in "titrating the body"; but

1. Cooper, M. O., and Spillman, W. J.: Human Food from an Acre of Staple Farm Products, *Farmers' Bull.* 877, U. S. Dept. Agric., October, 1917.

1. Palmer, W. W., and Van Slyke, D. C.: Studies of Acidosis, IX, Relationship Between Alkali Retention and Alkali Reserve in Normal and Pathological Individuals, *Jour. Biol. Chem.*, 1917, **32**, 499.

Palmer and Van Slyke now contend that it may be indefinitely less severe. As they express it, the alkali retention test, conducted by feeding bicarbonate until the urine shows an alkalinity approximating that of normal blood, indicates either the approximately correct alkali reserve, or less. If no acidosis is indicated by the test, its absence can therefore apparently be accepted; but if acidosis is indicated, the finding must be confirmed by blood analysis before being accepted.

SOME NUISANCES OF THE BATTLE FRONT

The dead bodies of animals or men exposed to the elements of nature without further attention become the occasion for much concern if they are in the neighborhood of human habitations. They afford a locus of dangers and nuisances arising in particular from putrefaction and flies. In war, the great toll of dead men and horses left to decay without special burial or treatment presents a problem in sanitation that army officers are often compelled to face in a large way, whereas it is not infrequently present in the ordinary routine of every day peace-time experiences, though in less conspicuous guise. The stench of the battlefield and the swarms of insects that help in the work of final destruction of animal tissue have often been described. How to combat them effectively must doubtless be determined by the exigencies of the situation, which are quite different at the fighting front from what they are likely to be in an ordinary environment.

Foreman and Graham-Smith,¹ who have attempted to find easy and practicable means for mitigating the various nuisances arising from exposed animal matter, have lately conducted numerous experiments under field conditions. They have arrived at the conclusion that in the superficial treatment of intact or opened carcasses and other putrescible materials, reagents should be used which adhere to the greasy surfaces, form films, render the skin waterproof, and kill the bacteria in it, thus checking putrefaction by preventing the access of water and putrefactive organisms to the tissues. Further, the reagent should be a deodorant, capable of repelling flies which lay their eggs on animal matter, killing the eggs or larvae, resisting the action of water, and remaining operative in all respects for a long time. The British investigators state that watery emulsions of disinfectants are necessarily deficient in most of these properties. Only undiluted oily reagents possess them.

In the experience of Foreman and Graham-Smith, coal-tar creosote oil meets the needs just outlined most satisfactorily. Many other disinfectants have, of course, been tested here and abroad. The method reported is said to have advantage for a variety of purposes beside the treatment of dead bodies. Flies have been kept from entering such places as dugouts by means of sacks treated with creosote oil mixtures and hung over the entrance. Latrines have been kept free from flies by being sprayed with it. The enumer-

ation of these few circumstances not only serves to indicate a practical management of serious difficulties of daily life, but also helps to remind us how greatly these become aggravated and magnified in the circumstances of war time. Yet they must be met.

THE BEHAVIOR OF CERTAIN VITAMINS

A recent study of one of the dietary essentials or vitamins which McCollum has designated temporarily as "water-soluble B" brings us appreciably nearer to a more precise understanding of these unique substances. Ever since the surprising descriptions of the almost miraculous relief of animals suffering from experimental polyneuritis by the administration of extremely small quantities of substances derived from rice polishings and other sources, the curiosity of both the physiologist and the clinician has been aroused at the possible chemical nature and mode of action of these so-called vitamins. Enough data furnished by competent workers now exist to indicate how essential these as yet unidentified components of the diet are for the physiologic well-being of the individual. Without certain additions, otherwise adequate mixtures of the familiar nutrients, proteins, fats, carbohydrates and inorganic salts, will not suffice to induce satisfactory nutrition. These additions, or vitamins, are widely distributed in the most diverse natural products. The absence of the dietary essentials results in nutritive decline, and a variety of pathologic consequences which are just beginning to be recognized as indications of dietary deficiencies. McCollum and Simmonds¹ have found that the water-soluble B, the vitamin that averts symptoms of polyneuritis when the diet is otherwise adequate, can be extracted from diverse plant and animal sources by the use of alcohol. This procedure liberates the vitamin so that it becomes soluble in organic solvents like benzene, with which it cannot be extracted from its original sources. Thus it has been found that the water-soluble B is not extracted directly from beans, wheat germ, or pig kidney by ether, benzene or acetone, but is readily extracted in great part by alcohol. After being removed by alcohol, it is shown to be soluble thereupon in benzene, but very slightly soluble in acetone. The probability, McCollum and Simmonds state, that there should be two or more physiologically indispensable substances in what they term water-soluble B, both or all of which should show the same solubility relations with three solvents, is relatively small and lends support to their view that the substance which protects animals against polyneuritis is the only essential complex in the extracts described. In other words, the data support the view that there are no specific substances present in these extracts which protect against such diseases as scurvy, rickets, pellagra and sprue, and tend to confirm their contention that the latter are not due to specific starvation, as is the case with beriberi and xerophthalmia. The tentative exclusion of the hypothesis of a great multiplicity of vitamins marks an advance in the study of these diseases.

1. Foreman, F. W., and Graham-Smith, G. S.: Investigations on the Prevention of Nuisances Arising from Flies and Putrefaction, *Jour. Hyg.*, 1917, **16**, 109.

1. McCollum, E. V., and Simmonds, Nina: A Study of the Dietary Essential, Water-Soluble B, in Relation to its Solubility and Stability Towards Reagents, *Jour. Biol. Chem.*, 1918, **33**, 55.

Medical Mobilization and the War

Navy Needs More Medical Reserve Officers

According to the *Army and Navy Journal*, examinations are to be held at each of the larger stations of the Navy to increase the strength of the Medical Reserve Corps of the Navy. The department needs 500 additional medical reserve officers, and it is stated that the men are needed for active duty as soon as they can be obtained.

American Prisoners Interned in Germany

Among the list of American prisoners who have been interned in Germany, as announced in the *Official Bulletin*, are the names of the following doctors: Dr. John Brown, taken from the *Esmeraldas* on March 10, 1917, interned at Camp Beeskow, home address, Hampton, Va.; Dr. John Davies, taken from the *Georgic* in the North Atlantic, Dec. 10, 1916, interned at Camp Karlsruhe, home address, Columbus, Miss.; and Dr. Herbert Snyder, taken from the *Voltaire*, Dec. 2, 1916, interned at Camp Karlsruhe, home address, Norfolk, Va. The Association's biographic records do not contain these names and addresses.

New Regulations Regarding the Mailing of Parcels to Members of the Expeditionary Forces

Under date of March 29, the Postmaster-General issued an order stating that on and after April 1, 1918, parcels for members and individuals connected with the American Expeditionary Forces in Europe shall not be accepted for mailing or dispatching unless they contain such articles only as are being sent at the written request of the addressee, approved by his regimental or higher commander or an executive officer of the organization with which he is connected. In enforcing this order, postmasters are instructed to secure the assurance of the sender in each case that all the articles contained in the parcels are sent at the addressee's approved written request, that such request is enclosed in the parcel, and to require the sender to place on the wrapper of the parcel under his name and address the following endorsement: "This parcel contains only articles sent at the approved request of addressee which is enclosed." The postoffice order is issued at the request of the War Department.

Personnel of the Medical Department

For the week ending March 29, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 827, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 176 majors, 3 captains and 479 lieutenants.

MEDICAL RESERVE CORPS: 18,206, including 1,107 majors, 4,246 captains and 12,853 lieutenants. On active duty: 15,174, including 986 majors, 3,727 captains and 10,461 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,229, including 15 lieutenant-colonels, 253 majors, 150 captains and 811 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 93, including 3 brigadier-generals, 11 colonels, 72 lieutenant-colonels and 7 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,153, of whom 1,343 are on active duty; DENTAL CORPS, N. G., 259; VETERINARY CORPS, 24; VETERINARY RESERVE CORPS, 1,426, of whom 823 are on active duty; VETERINARY CORPS, N. G., 57; VETERINARY CORPS, N. A., 296; SANITARY CORPS, 1,017, and AMBULANCE SERVICE, 143, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number			
	MRC	MC,NG	DC,NG	San. C.
Physical disability	476	35	6	4
Inaptitude	120	10	0	1
Other branches of the service..	383	19	2	42
Domestic troubles	30	0	0	1
Needed by the community	35	1	0	0
Deaths	43	3	0	0
Dismissals	2	2	0	0
Resignations	142	43	5	8
	1,301	113	13	56

Distinguished Service Awards for Medical Officers

It is reported that distinguished service crosses have been awarded to two American medical officers for exceptional performances. One is given as "Lieut. H. R. Davies, M. R. C.," of Charleston, S. C., who is serving with the British Army.

It is stated that on January 8 he entered a dugout under conspicuous fire, remained there attending the occupants after it had been blown in, performed an amputation and saved the life of a British soldier, and that previous to this time he had taken a prisoner in a listening post in the Toul sector. It is stated that this is the first medal conferred on an American serving with the British forces. The biographic department of the Association does not record any physician of this name and address.

It is also reported that a distinguished service cross has been awarded to Lieut. J. P. Rosenwald, M. C., N. G., U. S. Army, for duty performed during the fighting on the Luneville sector. Lieutenant Rosenwald, while attached to an artillery regiment, twice entered a battery position under heavy fire in order properly to care for the wounded. Lieut. John Paul Rosenwald, Minneapolis, is 34 years old. He graduated from the John A. Creighton Medical School in Omaha in 1910 and is a Fellow of the American Medical Association.

New Legislation

During the week ending March 30 several bills were introduced into the Congress, which concern the Medical Department.

BILLS PASSED

Army Nurse Corps.—The Senate passed Senate Bill 3693 prescribing the personnel of the Army Nurse Corps, the qualifications for appointment, method of appointment, pay, allowances and leave, and the conditions under which nurses may be retired.

Commutation of Quarters.—The Senate also passed Senate Bill 3863 providing for commutation of quarters during the present emergency for every commissioned officer of the Army of the United States on duty in the field or on active duty outside of the United States who maintains a place of abode for a wife, child or dependent parent.

BILLS INTRODUCED

Rank and Pay of the Medical Department.—Senate Bill 4168 was introduced into the Senate by Senator J. K. Shields of Tennessee, which provides:

"That the Medical Department of the Army shall consist of one surgeon general with the rank of major general, who shall be chief of said department; six assistant surgeons general, the assistant surgeons general to be equally distributed in the grades of major general and brigadier general; the Medical Corps; the Medical Reserve Corps; the Dental Corps; the Dental Reserve Corps; the Veterinary Corps; the Veterinary Reserve Corps, the commissioned officers of which shall be citizens of the U. S.; the Nurse Corps and contract surgeons authorized by law; the enlisted force of the Medical Department of the Army; and the Medical Enlisted Reserve Corps, as now provided by law. Commissioned officers of Medical Corps below rank of brigadier general shall be proportionately distributed in the several grades as now provided by law. The commissioned officers of Medical Reserve Corps shall be distributed in the several grades as in Medical Corps of Army. In time of war the President shall have authority to appoint in grade of consultant, to be equally distributed in grades of major general and brigadier general, such number of officers of Medical Reserve Corps as interests of service may demand: Provided, That reserve officers so appointed shall at no time exceed twenty in number. Nothing in this Act shall be held or construed so as to discharge any officer of the Regular Army or deprive him of a commission which he now holds therein."

To Furnish Uniforms.—H. R. 10925 was introduced into the House of Representatives by R. L. Doughton of North Carolina,

"To furnish all uniforms, accouterments and equipments required for any officer of the military forces of the United States at cost prices."

H. R. 10976 was also introduced by Mr. Doughton:

"Requiring the Government to furnish uniforms to officers of the Army or Navy, and for other purposes."

Filling Vacancies in Medical Department.—H. R. 10928 was introduced by L. C. Dyer of Missouri, which provides:

"That hereafter the President shall be authorized to fill any vacancies that may occur in the commissioned personnel of the Medical Department of the Army by ordering such officers of the medical section, officers' Reserve Corps and Dental Reserve Corps, who shall have been in active service one year or more, to the Army Medical School or Army Dental School under such rules and regulations as shall be prescribed by the Secretary of War, and such officers so ordered, upon completion and satisfactory examination, shall be commissioned first lieutenants in the Medical Department, U. S. Army, and be entitled to all the pay, promotion and allowances of officers of like rank in the Army of the U. S., except that the rate of retirement shall be one-thirtieth of the present retirement pay as now prescribed by law for each year's active service as an enlisted man, contract surgeon, or as a commissioned

officer in the Army of the U. S., medical section, Officers' Reserve Corps, Medical Reserve Corps, Dental Reserve Corps, or Organized Militia in Federal Service: Provided, That at the age now prescribed by law for retirement every officer to be so commissioned shall have had not less than fifteen years' active service in any of the branches enumerated in this Act: Provided further, That preference for appointment shall be given to those who have had the longest aggregate active service in the branches enumerated in this "Act."

DISEASE CONDITIONS AMONG TROOPS
IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the
Surgeon-General for the Week Ending
March 22, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):	
All troops	1,464.2
National Guard Camps	893.6
National Army Camps	1870.
Regular Army	1,390.2
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	48.7
National Guard Camps	37.8
National Army Camps	57.
Regular Army	43.
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):	
All Troops	8.9
National Guard Camps	2.8
National Army Camps	13.1
Regular Army	9.3

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE
WEEK ENDING MARCH 22, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admis- sion Rate per 1,000 (Dis- ease Only)	Noneffective per 1,000
Wadsworth.....	9	..	..	12	1	..	6	2	381.5	21.7
Hancoek.....	7	..	..	15	6	1	2	2	355.8	24.1
McClellan.....	5	..	2	15	5	..	1	0	732.5	28.2
Sevier.....	3	..	1	18	..	..	..	1	1,056.5	45.5
Wheeler.....	4	..	6	28	..	..	..	1	964.6	37.6
Logan.....	7	..	..	54	4	..	..	0	1,036.7	39.2
Cody.....	9	..	..	7	1	..	..	2	483.6	32.6
Doniphan.....	..	..	..	16	1	2	1	1	1,484.2	44.3
Bowie.....	21	..	..	26	..	..	..	4	1,529.2	57.0
Sheridan.....	1	..	..	21	..	..	2	0	433.9	24.6
Shelby.....	4	..	..	13	2	1	..	1	935.3	46.4
Beauregard.....	5	..	20	17	1	..	..	3	1,234.7	53.9
Kearny.....	1	..	..	10	5	..	11	3	1,374.6	47.2
Devens.....	11	..	..	12	8	..	1	2	1,292.6	48.4
Upton.....	35	..	..	48	7	8	1	12	1,118.2	30.7
Dix.....	20	1	1	19	5	1	5	4	1,851.3	44.0
Meade.....	29	..	..	7	6	..	5	8	911.8	34.0
Lee.....	11	..	..	238	..	..	5	10	1,877.6	63.3
Jackson.....	15	..	2	24	3	10	..	5	1,547.0	53.2
Gordon.....	7	..	2	32	12	..	..	0	1,488.6	44.5
Sherman.....	23	..	..	41	13	..	20	13	1,888.1	58.9
Taylor.....	12	..	..	52	122	1	..	9	2,228.0	71.5
Custer.....	1	..	..	15	2	..	7	5	1,454.2	41.3
Grant.....	9	..	..	17	14	1	10	4	753.1	28.3
Pike.....	19	2	3	185	18	..	6	10	2,911.6	75.3
Dodge.....	33	..	..	37	110	..	22	11	3,077.6	78.5
Funston.....	28	..	..	17	6	4	1	14	3,004.9	86.8
Travis.....	26	..	..	50	53	..	..	7	2,761.6	71.9
Lewis.....	8	..	..	27	40	..	23	3	1,600.7	83.4
Northeastern Dept. .	..	..	..	16	5	..	..	0	1,128.3	33.1
Eastern Dept.	14	..	..	40	15	..	1	6	1,623.2	30.4
Southeastern Dept. .	21	..	1	41	11	2	2	4	850.1	40.9
Central Dept.	17	..	..	29	38	..	14	9	1,507.3	43.4
Southern Dept.	10	..	..	94	23	..	8	5	1,176.8	43.3
Western Dept.	2	..	1	24	7	2	11	1	844.3	26.8
Aviation, S.C.	49	..	..	128	119	7	48	32	1,626.0	48.9
Camp Greene.....	3	..	..	48	27	1	6	2	800.5	27.8
Camp Fremont.....	..	..	..	42	12	..	1	0	1,423.1	53.3
El Paso.....	1	..	..	7	4	..	1	0	1,127.1	7.9
Columbus Bks. ....	..	..	..	31	1	..	2	0	2,046.8	50.7
Jefferson Bks.	12	..	..	67	20	..	3	4	2,957.0	99.3
Fort Logan.....	4	..	..	2	2	..	2	0	2,714.1	93.1
Fort McDowell.....	1	..	2	13	11	..	..	0	2,602.9	55.2
Fort Slocum.....	17	..	..	11	1	..	..	4	2,548.9	51.8
Fort Thomas.....	1	..	..	6	..	..	..	0	1,289.6	58.5
D. B. Alcatraz.....	..	..	..	..	..	..	..	0	648.0	6.2
D. B. Fort Leaven- worth.....	..	..	..	..	..	..	..	0	5,059.6	133.0
A. A. Humphreys....	1	..	..	4	..	..	..	0	982.9	11.2
J. E. Johnston.....	1	..	1	15	..	1	..	1	829.2	33.5
Camp Merritt.....	16	..	2	49	5	..	6	11	1,254.9	63.9
Camp Stuart.....	12	..	..	29	6	..	1	7	1,782.3	47.4
West Point, N. Y. .	..	..	..	..	2	..	..	0	2,614.5	19.8
Edgewood.....	1	..	..	4	..	..	..	0	2,565.8	30.4
General Hospitals...	1	..	1	42	1	..	1	2	..	..
Nat'l Guard Depts. .	..	..	1	10	17	..	1	1	..	..
Nat'l Army Depts. .	16	..	1	58	53	1	29	5	..	..
Total (all troops).	563	3	47	1,888	825	38	266	231	1,464.2	48.7

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending Mar. 22, 1918	Regulars in U. S., Week Ending Mar. 22, 1918	National Guard, All Camps, Week Ending Mar. 22, 1918	National Army, All Camps, Week Ending Mar. 22, 1918	Expedi- tionary Forces, Week Ending Mar. 14, 1918
Pneumonia.....	23.5	22.4	11.9	33.3	36.2
Dysentery.....	0.1	0.0	0.0	0.3	0.7
Malaria.....	1.9	0.8	4.5	0.9	0.0
Venereal.....	78.5	85.9	39.4	95.3	46.0
Paratyphoid.....	0.04	0.0	0.0	0.1	0.0
Typhoid.....	0.1	0.0	0.0	0.3	0.2
Measles.....	34.4	37.9	4.0	48.6	16.5
Meningitis.....	1.6	1.6	0.6	2.3	2.5
Scarlet fever.....	11.1	13.0	3.6	12.3	30.9

NEWS OF THE CANTONMENTS

Eighty-Third Division, Camp Sherman, Chillicothe, Ohio
MARCH 26, 1918.

INFECTIOUS DISEASES

Until well into January the camp was comparatively free from the infectious diseases. During January there were 2 cases of chickenpox, 627 of measles, 368 of mumps, 41 of pneumonia, 81 of scarlet fever, 5 of epidemic meningitis and 21 of diphtheria. During February there were 3 cases of chickenpox, 298 of measles, 897 of mumps, 50 of pneumonia, 142 of scarlet fever, 4 of epidemic meningitis and 14 of diphtheria. The incidence of sore throats and tonsillitis increased, and there were 583 reported cases. Up to February there were 42 deaths, and in that month 12 were added; a small list considering the duration of the camp and the number of men who have been ill in that time.

The large number of sick made it necessary to provide more quarters, as the base hospital capacity is a limited factor, and these quarters were provided by the opening of a convalescent hospital in four barracks. This hospital was placed under the management of the sanitary train, which obtained an invaluable opportunity for instruction of both officers and men.

PROMOTION

Major Henry S. Satterlee, commanding officer of the sanitary train, has been promoted to the rank of Lieutenant-Colonel in the National Army, as required by the new tables of organization.

CONFERENCES

During February, conferences were held by a representative of the division surgeon's office with the members of the advisory and local boards of the selective service in the various districts of Ohio and western Pennsylvania. The effect of such conferences should be evident in the diminished number of men rejected at camp for evident physical defects.

Under the new authorizations, it will be possible to have groups of men with similar physical defects and to assign medical officers to supervise the therapeutic instruction of the groups, prescribing the type of and duration of exercises.

TUBERCULOSIS

The special board examining for tuberculosis has found only 381 cases of pulmonary disease; of the diseases found, 2.84 per thousand were tuberculosis; 3.34 per thousand were cardiovascular defects, and all other defects amounted to 0.979 per thousand.

PERSONAL

Major E. G. Huber, M. C., commanding officer of the base hospital, has been promoted to the rank of Lieutenant-Colonel, and will visit other base hospitals for observational and educational purposes.

Lieut.-Col. Allen B. Tucker of the sanitary corps has been sent to Camp McClellan, Anniston, Ala., to take up the fight against mosquitoes.

Capt. Charles A. Haskins has been sent here in his place as assistant to the sanitary inspector, Major J. H. Burkett.

Majors Harry M. Hosmer and Alfred Friedlander have been on a visit to other base hospitals for the opportunity of learning how the medical surgical services are organized.

Several of the chiefs of services from other base hospitals have been here for a similar purpose. Such opportunities will be of the greatest value to both the visitor and the visited.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

APRIL 1, 1918.

COURT MARTIAL OF LIEUT.-COL. JOHN H. ALLEN, M. C.

Charges which grew out of the discharge of Private Otho Murray, the drafted man who had Landry's paralysis, and for which Major Board has already been tried by a court martial, caused the court martial of Lieut.-Col. John H. Allen, M. C., former division surgeon, now camp surgeon at Camp Zachary Taylor.

The two charges against Lieutenant-Colonel Allen are that he violated the ninety-sixth article of war, for the reason stated above, and that he was guilty of insubordination and disrespect to the commanding general in writing a letter to Major Arthur T. McCormack at Washington, regarding Major Board's connection with the case of Otho Murray.

The letter that was submitted as evidence was written before the trial of Major Board, and was in regard to the trial. It is charged by the prosecution that Lieutenant-Colonel Allen wrote this letter for the purpose of having the trial of Major Board thrown out of court. The prosecution also claimed in regard to the letter that the judge advocate, who was a member of the investigating committee, was ridiculed and criticized by Colonel Allen, when he referred to 2 c.c. being drawn from the spinal canal of Private Murray as compound cathartics. On the court trying Lieutenant-Colonel Allen are one brigadier-general, four colonels, and three lieutenant-colonels.

NUTRITIONAL SURVEY

The nutritional survey party which was sent to Camp Zachary Taylor five weeks ago by Surgeon-General Gorgas to investigate into food conditions here will complete its task within a week and report through Division Surgeon Col. William M. Smart to the Surgeon-General. The members of the board are physicists and chemists. They are Capt. R. G. Hoskins, Capt. Leon S. Congdon, Lieut. F. A. Cajori and Lieut. A. G. Hogan.

Some suggestions have been made for messes to balance the menu better. The members of the board decline to discuss what their report will be concerning food conditions here. They completed surveys at four other cantonments before coming to Camp Zachary Taylor.

The new division sanitary officer, Val E. Miltenberger, is receiving congratulations on his promotion. He was a first lieutenant in the Regular Army when he came here last week from Camp Dix. He jumped the grade of captain and was commissioned a major in the National Army.

Major Luther R. Poust, assistant to the camp surgeon, Lieut.-Col. John H. Allen, has returned from a leave of ten days spent in the East and resumed his official duties.

Since his return, Major Poust has been promoted to lieutenant-colonel. He was one of the first officers here, having been in charge of sanitation during the construction period. Recently he was relieved of his duties as sanitary officer and made assistant to the camp surgeon, Lieut.-Col. John H. Allen.

On recommendation of Lieut.-Col. William Smart, surgeon of the Eighty-fourth (Lincoln) Division, Capt. David C. Donan was transferred from the base hospital to the Three Hundred and Thirty-Sixth Infantry Regimental Infirmary.

BASE HOSPITAL UNITS

Major Leonard S. Hughes, who will command Base Hospital Unit No. 40, has arrived and assumed his duties. He was educated in Louisville and is a veteran of the Spanish-American War. The unit was organized at Lexington, and its enlisted personnel includes scions of some of the oldest and foremost families of the Blue Grass State.

There are now three base hospital units at the cantonment, and nearly as many commissioned officers filling each position at the hospital. These officers are receiving valuable experience and training in this manner, while the patients are benefited by the combined medical skill. When orders are received for a hospital unit to go forward, the commissioned personnel will have a thorough knowledge of the work, and its removal will not interfere with the efficiency of the force at the local hospital. Only two of the base hospital units have been completely organized, the commissioned personnel of the third having been formed "on paper." A large inflow of medical officers is expected here next week.

PRISONERS' WARD

Arrangement have been completed for a special ward at the base hospital at Camp Zachary Taylor for the care and con-

finement of sick prisoners. Lieut.-Col. Will Pyles, superintendent, has received official notification from the Surgeon-General that the recommendation for the prisoners' ward has been approved and authorization given for its construction.

The building will be more substantial than other wards as a precautionary measure against escape of prisoners, and the windows will be barred. It will cost approximately \$5,000. The site has not been selected, but it will probably be within the hospital area along Washington Avenue (formerly Bickel Lane), between the Preston Street road and Lincoln Avenue.

The new ward will alleviate a situation that has caused considerable inconvenience and handicap to the hospital officers and attachés. Whenever a military prisoner is stricken ill and removed from a guardhouse to the hospital it becomes necessary to station a guard at his bedside night and day to thwart any attempt at escape that might be made.

The new prisoners' department will have a general ward for treatment of medical and surgical patients and isolated rooms for those suffering from contagious diseases. It will all be under one roof. A few guards will be able to watch and control all the patients. It is expected that work on the structure will be started at an early date and rapidly pushed to completion. It has been announced that an extension will be added to the eye, ear, nose and throat building at the base hospital, and that an isolation ward for nurses suffering from contagious diseases will be erected.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

MARCH 28, 1918.

DISEASE RATE

Camp Grant has set a mark the past week for all of the National Army cantonments to shoot at, and it is safe to predict that bull's-eyes will be few and far between. A noneffective rate of 28.3 per thousand and an annual admission rate of 783 per thousand will prove thorns in the side of many aspiring camps for some time to come. Further comment on disease conditions at Camp Grant is unnecessary.

INSPECTION

Another inspection has been passed in safety. Col. A. E. Truby was the ogre this time, but there was no necessity to call for a Siegfried. Contrary to the usual custom of inspectors, his comments on the excellence of the medical aspects of the camp were many, and on the other hand, there were but few things calling for adverse comment.

SOCIETY

A dinner and theater party was tendered by Lieut.-Col. James M. Phalen, division surgeon, to the surgeons of the divisional organizations last week as a windup of a series of weekly dinners and meetings that has been held each Thursday night at the different regimental infirmaries throughout the division. As a result of these informal gatherings, an unusual esprit de corps has arisen, welding the sanitary phase of the Eighty-Sixth Division into a compact body, inspired with the determination to maintain the axiom that the "Eighty-Sixth Division cannot be surpassed." At Colonel Phalen's dinner, to quote the words of the editor of the *Podunk Weekly Squeegie*, a good time was had by all.

PROMOTIONS

Promotions have been coming like Portia's "rain from Heaven." Major G. L. McKinney, M. C., sanitary inspector, was the guest of Colonel Raymond of the Central Department at a little lieutenant-colonelcy examination party recently and his promotion is hourly expected. The commanding officer of the sanitary train received an electroplating wire from Washington several weeks ago that transformed his gold leaves to silver, and he is now addressed as Lieut.-Col. S. J. Kopetzky, M. C. N. A. Major A. Schuyler Clark is understudying Lieutenant-Colonel Michie in the rôle of commanding officer of the base hospital, and the directorship of the field hospital section of the sanitary train has fallen on the shoulders of Major E. A. Spitzka of anatomic fame. Promotions to the rank of Major, M. R. C., have been received by: H. H. Thompson, surgeon, Three Hundred and Forty-Second Infantry; D. H. Silsby, surgeon, Three Hundred and Forty-Fourth Infantry; C. C. Vogel, surgeon, Three Hundred and Thirty-First Field Artillery; J. D. Dallenbach, surgeon, Three Hundred and Thirty-Second Field Artillery; F. Deacon, surgeon, Three Hundred and Thirty-Third Artillery, and H. S. Gradle, assistant to the division surgeon.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Fremont, Palo Alto, Calif., as commanding officer of base hospital, from San Francisco, Col. EUCLID B. FRICK.

To Camp Jackson, Columbia, S. C., Camp Hancock, Augusta, Ga., Camp Wheeler, Macon, Ga., Camp Sheridan, Montgomery, Ala., Camp Beauregard, Alexandria, La., Sheffield, Ala., for inspection, and on completion to his proper station, Col. JOSEPH R. WHITE.

To Camp Upton, Yaphank, L. I., N. Y., for inspection, and on completion to his proper station, Col. PERCY M. ASHBURN.

To Fort Oglethorpe as commanding officer, United States Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM.

To Fort Riley for inspection of medical officers, and on completion to his proper station, Col. EDWARD L. MUNSON. Base hospital, from San Francisco, Major FLETCHER O. McFARLAND.

To Camp Dix, Wrightstown, N. J., Mincola, L. I., N. Y., New York City, Lakewood, N. J., for inspecting cardiovascular work, and on completion to his proper station, Lieut. Col. WARFIELD T. LONGCOPE. To Camp Dix for temporary duty, from Camp Doniphan, Lieut. Col. SAMUEL S. CREIGHTON. To assist camp surgeon, from Camp Devens, Major JOSEPH L. SENER.

To Camp Lee, Petersburg, Va., Camp Meade, Annapolis Junction, Md., Camp Dix, Wrightstown, N. J., base hospitals, and on completion to his proper station, from Camp Greene, Lieut.-Col. WILLIAM L. SHIEP.

To Camp Zachary Taylor, Louisville, Ky., Camp Lee, Petersburg, Va., Camp Meade, Annapolis Junction, Md., base hospitals, and on completion to his proper station, from Camp Sherman, Lieut.-Col. EDWARD C. HUBER.

To Hoboken, N. J., for duty, from San Francisco, Lieut.-Col. HENRY H. RUTHERFORD; from Fort Hamilton, Lieut. ERNEST H. SANITOR; from Rockefeller Institute, Lieut. VIRGIL H. CORNELL.

To Mincola, L. I., N. Y., for inspection and on completion to his proper station, Lieut.-Col. WALTER R. PARKER.

To Camp Grant, Rockford, Ill., base hospital, from San Francisco, Major ROBERT H. WILDS.

To Colonia, N. J., for duty, from Camp Pike, Major ALFRED P. UPSHUR.

To Gettysburg, Pa., as camp surgeon, from Camp Dix, Major DOUGLAS W. McENRY.

To Norfolk, Va., as sanitary inspector, from Camp Sevier, Major JAMES R. MANKIVELL.

To Rockefeller Institute for instruction in the serum therapy of pneumonia, from Camp Sherman, Major ALEXANDER W. WILLIAMS.

To Camp Logan, Houston, Texas, base hospital, from Camp Logan, Lieut. GEORGE U. LIPSHULCH.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. FREDERICK T. HILL.

To New Haven, Conn., for duty, from Williamsbridge, Lieut. ARDEN PREER.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp McClellan, Anniston, Ala., Camp Pike, Little Rock, Ark., Camp Shelby, Hattiesburg, Miss., base hospitals, and on completion to his proper station, from Camp Sheridan, Major JAMES S. McLESTER, Birmingham.

To Camp Meade, Annapolis Junction, Md., as member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. BURTON F. AUSTIN, Mobile.

To Camp Sheridan, Montgomery, Ala., base hospital, from St. Louis, Lieut. LEMUEL B. NICHOLSON, Gadsden.

To Colgate Creek, Md., for duty, from Fort Oglethorpe, Capt. JOHN McI. WHITESIDE, Anniston.

To Dallas, Texas, Aviation Repair Depot, for duty, from Birmingham, Capt. GASTON W. ROGERS, Birmingham.

To Fort Oglethorpe for instruction, Lieuts. JOSEPH W. HUGHES, Birmingham; RALPH M. KIMBROUGH, Thomasville; from Camp Sheridan, Lieuts. BENJAMIN E. GRAHAM, Gurley; JAMES R. HAIGLER, Montgomery.

To Fort Riley for instruction, from Fort Riley, Lieut. RUSSELL CALLEN, Birmingham.

To Mineola, Long Island, N. Y., Hazelhurst Field, Capt. KOSCIUSKO W. CONSTANTINE, Birmingham.

To New Orleans, La., Charity Hospital for instruction, and on completion to Camp MacArthur, Waco, Texas, base hospital, from Fort Oglethorpe, Lieut. THOMAS C. SAVAGE, Demopolis.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. DUKE C. BRADFORD, Springfield.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM A. STANLEY Enterprise.

Resignation of Lieut. CLARK HILL, Cance, accepted.

Arizona

To Camp Bowie, Fort Worth, Texas, base hospital, from St. Louis, Lieut. GEORGE W. PURCELL, Tucson.

To Fort Riley for instruction, from San Antonio, Lieut. SPENCER D. WHITING, Phoenix.

To Washington, D. C., for temporary duty, from Washington, Capt. FREDERICK T. WRIGHT, Douglas.

Arkansas

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. JAMES W. SLAUGHTER, Wesson.

To Camp Pike, Little Rock, Ark., base hospital, from St. Louis, Capt. SCOTT C. RUNNELLS, Little Rock.

To Camp Wheeler, Macon, Ga., base hospital, from St. Louis, Lieut. WALLACE D. ROSE, Little Rock.

To Fort Oglethorpe for instruction, from Camp Beauregard, Capt. JOHN H. BELL, Arkadelphia.

To Fort Riley for instruction, Lieut. ALBERT E. TATMAN, Eureka Springs.

To Jefferson Barracks, Mo., for duty, from Camp Pike, Capt. WILLIAM K. READ, Texarkana.

To San Antonio, Texas, Kelly Field, for duty, from Fort Riley, Lieut. R. NEWMAN BROWN, McGehee.

Canal Zone

To Panama Canal Department for duty, Lieut. JOHN D. ODOM, Cristobal.

California

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieut. BENJAMIN E. MERRILL, Santa Paula.

To Camp Fremont, Palo Alto, Calif., base hospital, Capt. FRED P. BOWEN, Los Angeles; HERBERT A. MAKINSON, Oakland; SYLVAN L. HAAS, San Francisco; Lieuts. FRED O. BUTLER, Eldridge; HARRY J. CRAYCROFT, Fresno; CHARLES W. HARRISON, Loma Linda; WINFIELD L. BARTOW, ARTHUR L. PETER, Los Angeles; EARL B. FITZGERALD, Martinez; EDWIN R. FOUNTAIN, Merced; GEORGE T. WILHELM, Porterville; ERVIN J. CASPER, HERBERT J. COHN, EDWARD J. GHIDELLA, MELVILLE H. LONG, San Francisco; THOMAS L. BLANCHARD, San Jose.

To Camp Grant, Rockford, Ill., base hospital, Lieut. BRUCE McV. MACKALL, San Francisco.

To Camp Kearny, Linda Vista, Calif., as members of a board of medical officers to examine the command for tuberculosis, Capt. CHARLES E. IDE, Redlands; Lieut. LESTER E. TRETHAWAY, French Camp. Base hospital, Lieuts. PAUL E. DOLAN, Livermore; OTTO D. CHAMLEY, Los Angeles; EVERETT E. GRAY, Marysville; FRANK J. TILLMAN, Oxnard; ROBERT K. MACKLIN, Pasadena; GEORGE C. WRIGLEY, Sonoma; HOMER R. EVANS, Trona.

To Camp Lee, Petersburg, Va., base hospital, Lieut. FREDERICK M. GODNEY, San Francisco.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. WALLACE A. REED, Covina.

To Fort Oglethorpe for instruction, from St. Louis, Capt. CHARLES J. HARBECK, Hayward.

To Fort Riley for instruction, Lieuts. ANGUS A. MACLENNAN, Los Angeles; from Camp Bowie, Lieut. FRANK A. WOODWARD, Los Angeles; from Camp Kearny, Lieut. JOHN P. JONES, National Soldiers Home.

To Fort Sam Houston, Texas, base hospital, Lieut. JOHN H. SCHAEFER, Kerman.

To Los Angeles, Calif., Camp Arcadia, for duty, from Los Angeles, Capt. ARTHUR N. BOBBITT, San Diego.

To Mineola, L. I., N. Y., for duty, Capt. JOSEPH E. GRANT, San Diego.

To report by wire to the Commanding General, Western Department, for assignment to duty, Capt. ROBERT B. DIMON, Los Angeles.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. FRANK DUNLAP, Brawley; JESSE M. BURLEW, Santa Ana.

Colorado

To Camp Beauregard, Alexandria, La.; Camp MacArthur, Waco, Texas; Camp Travis, Fort Sam Houston, Texas, base hospitals, and on completion to his proper station, from Camp Logan, Major JOSIAH N. HALL, Denver.

To Camp Cody, Deming, N. M., base hospital, from Chicago, Major EDWARD F. DEAN, Denver.

To Camp Crane, Allentown, Pa., for duty, from Camp Custer, Lieut. ROBERT R. PACKARD, Denver.

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Riley, Lieut. CARL W. SLUSSER, Denver.

To Camp Grant, Rockford, Ill., base hospital, Major CHARLES F. STOUGH, Colorado Springs.

To Fort Logan, Colo., for duty, Capt. JOHN GORSUCH; Lieuts. CHARLES W. METZ, HARRY S. SHAFER, Denver.

To Fort Riley for instruction, Capt. VICTOR B. AYERS, Buena Vista; Lieuts. CHARLES L. ORR, Alamosa; CLARENCE M. FROID, Central City; LOUIS G. BROWN, Colorado Springs; EARLSCOURT G. SHAFFER, Delta; WILLIAM D. FLEMING, ELBERT B. SWERDFEGER, Denver; JOSEPH R. HOOD, Golden; ARTHUR G. TAYLOR, Grand Junction; CLYDE T. KNUCKEY, Lamar; VIVIAN R. PENNOCK, Longmont; ROBERT C. BOWIE, Morgan; JULIAN C. KENNEDY, Oak Creek; AUGUSTUS F. ERICH, Paonia; ORTUS F. ADAMS, Segundo; FRANK J. BLACKMER, Steamboat Springs.

To Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Lieut. JOSEPH A. KELLY, Oak Creek.

Physically incapacitated for active service, Lieut. BERT MENSER, Denver.

Discharged, according to cable received from General Pershing, Major EDWARD WILLIAM LAZELL, Denver.

Connecticut

To Camp Dix, Wrightstown, N. J., as assistant to the orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. EWALD E. OLSSON, Bridgeport.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Lieut. FRANK E. WILSON, Hartford.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Shelby, Lieut. RAYMOND V. QUINLAN, Meriden.

To Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Capt. CHARLES J. LEVERTY, Bridgeport.

To New Haven, Conn., for duty, Lieut. EUGENE M. BLAKE, New Haven.

Delaware

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. WILLARD R. PIERCE, Millford.

District of Columbia

To Allentown, Pa., Concentration Camp, for duty, from Walter Reed General Hospital, Capt. JOHN A. TALBOTT, Washington.

To Camp Forrest, Chickamauga Park, Ga., as division sanitary inspector, from Camp McClellan, Capt. WILLIAM H. LITTLEPAGE, Washington.

To Camp MacArthur, Waco, Texas, base hospital, Capt. HAMPDEN S. LEWIS, Washington.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. FRANK L. BISCOE, Washington.

To Fort Oglethorpe for instruction, from Cornell Medical College, Capt. WILLIAM J. MANNING; Lieut. GEORGE von P. DAVIS, Washington.

To Hoboken, N. J., for duty, from Fort Hamilton, Capt. ARTHUR J. HALL, Washington.

To San Juan, Porto Rico, base hospital, Lieut. JOSE R. VILLAMIL, Washington.
To Walter Reed General Hospital, Takoma Park, D. C., for duty, from duty as a contract surgeon at Walter Reed General Hospital, Lieut. ALBERT J. MOLZAHN, Washington.
To Washington, D. C., for duty, from Hoboken, Major WILLIAM E. ERVING, Washington. As medical aide to the Commissioners of the District of Columbia, Lieut. JAMES J. KILROY, Washington.
To the inactive list, from District of Columbia, Lieut. JOHN W. BOVEE, Washington.

Florida

To Fort Oglethorpe for instruction, Capt. EUGENE J. JAUDON, Miami; from Fort Dade, Capt. GEORGE M. RANDALL, St. Petersburg. For instruction, Lieut. WILLIAM S. GRAMLING, Miami.
To Fort Screven, Ga., for temporary duty, from Fort Oglethorpe, Lieut. ROBERT F. McDANIEL, Deland.
Honorably discharged, Capt. LYSTON H. D. PIERCE, Tampa.
Resignation of Lieut. ARTHUR L. IZLAR, Ocala, accepted.

Georgia

To Camp Gordon, Atlanta, Ga., for duty, from Pittsburg, Lieut. JAMES T. CALLOWAY, Atlanta.
To Camp Sevier, Greenville, S. C., base hospital, from Camp Lee, Capt. EDWARD M. COLEMAN, Athens.
To Camp Wheeler, Macon, Ga., base hospital, Lieuts. JAMES H. NICHOLSON, Madison; LAWSON S. RENTZ, Ray City.
To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. ROLAND L. BROOKS, Columbus.
To Fort McHenry, Md., for duty, Lieut. VIRGINIUS L. BROWN, Fort Valley.
To Fort Oglethorpe for instruction, Capt. JOHN McCG. SPENCE, Camilla; Lieuts. JOHN W. SOMERVILLE, WILLIAM W. YOUNG, Atlanta; from Camp Gordon, Lieut. BUFORD C. BIRD, Colquitt.
To Fort Sam Houston, Texas, for temporary duty, from Fort Oglethorpe, Lieut. GEORGE B. SMITH, Rome.
To Mineola, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. JAMES L. BLAIR, Atlanta.
To the inactive list, from Camp Joseph E. Johnston, Lieut. WILLIAM A. DEAN, Atlanta.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. BEN H. CLIFTON, Lyons.
Resignation of Lieut. GORDON S. SUMNER, Foulan, accepted.

Idaho

To Camp Grant, Rockford, Ill., base hospital, Lieut. JOHN F. COUGHLIN, Twin Falls.
To Fort Riley for instruction, Capt. LOUIS PERKINS, Lewiston; FRANK L. BARROWS, Moscow; Lieuts. JAMES M. KERNS, Malad; ELLIS KACKLEY, Soda Springs.

Illinois

To Camp Cody, Deming, N. M., base hospital, Capt. ROLLIN T. WOODYATT, Chicago.
To Camp Crane, Allentown, Pa., for duty, from New York City, Capt. EDWARD S. BLAINE, Chicago; from Fort Ontario, Lieut. MARCUS H. HOBART, Chicago.
To Camp Custer, Battle Creek, Mich., base hospital, Major SAMUEL C. PLUMMER; Capt. DAVID C. STRAUS, Chicago.
To Camp Devens, Aver, Mass., for duty, from Fort Oglethorpe, Lieut. SAMUEL L. OREN, Lewistown.
To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. LYNN W. ELSTON, Chicago. For duty, from Fort Riley, Lieut. FREDERICK M. PHILLIPS, Mulkeytown. To examine the troops for cardiovascular diseases, and on completion to Camp Dodge, base hospital, Lieut. FRED M. SMITH, Chicago.
To Camp Doniphan, Fort Sill, Okla., base hospital, Capt. EDWARD C. SPITZ, East St. Louis.
To Camp Grant, Rockford, Ill., base hospital, Lieut. JOHN M. BERGER, Chicago.
To Camp Kearny, Linda Vista, Calif., base hospital, from Fort Riley, Lieut. RUDOLPH G. TENEROWICZ, Chicago.
To Camp Lee, Petersburg, Va., base hospital, Lieut. HENRY S. BLESSE, South Chicago.
To Camp Logan, Houston, Texas, as division sanitary inspector from Camp Pike, Major RAY H. DAVIES, Chicago. To assist the board in examining the command for nervous and mental diseases, from Camp Beauregard, Lieut. WALTER C. COOK, Peoria.
To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. OSCAR CLEFF, Chicago.
To Camp Sherman, Chillicothe, Ohio; Camp Custer, Battle Creek, Mich.; Camp Grant, Rockford, Ill., base hospitals, and on completion to his proper station, from Camp Zachary Taylor, Major WALTER W. HAMBURGER, Chicago.
To Camp Wheeler, Macon, Ga., base hospital, Lieuts. JOHN PELLETTIERI, HERMAN REINSCH, Chicago; THEODORE F. REUSCH, Collinsville; CHARLES McLAUGHLIN, New Berlin; JOSEPH F. MIECZUNSKI, North Chicago.
To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. GEORGE RUBIN; Lieuts. MICHAEL ARCHANGEL GALGANO, JOSEPH P. GHEASSON, JOHN L. SEVICK, Chicago; COLIN K. ROSS, Hume; JOHN F. HENDERSON, Isabel; TAYLOR W. FUNKHOUSER, Mattoon.
To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Grant, Rockford, Ill., base hospital, Capt. LOUIS J. FRITSKER, Chicago.
To Fort Benjamin Harrison for duty, from Fort Benjamin Harrison, Lieut. MARTIN W. HANSON, Easton.
To Fort Bliss, Texas, to examine the command for mental and nervous diseases from Camp Cody, Capt. ROMNEY M. RITCHEY, Elgin.
To Fort Oglethorpe for temporary duty, and on completion to his proper station, Major HARRY E. MOCK, Chicago. For instruction, Capt. HERBERT G. VAUGHAN, Oak Park; VICTOR M. DALY, Pontiac; Lieuts. LOUIS A. MANGAN, HARVEY D. THORNBURG, Chicago; TULLY O. HARDESTY, Jacksonville; WILLIAM F. BUCKNER, Watseka; from Camp Sherman, Lieut. CHARLES J. TIERNEY, Cicero; from Camp Wadsworth, Lieut. ALBERT R. CARTER, Murphysboro; from Chicago, Lieut. GEORGE W. STABEN, Springfield; from St. Louis, Lieut. FRED W. FIELDER, Batchtown.
To Fort Riley for instruction, Capt. JOHN F. TAYLOR, Buda; WILLIAM P. FORKIN, Chicago; CHARLES F. BURKHARDT, Effingham; Lieuts. WILLIAM O. WARREN, Carlyle; JOHN W. ECKSTEIN, ALVIN V. HELWIG, ALVIN A. HOLDEN, Chicago; ALVIN A. PETERSON, East Frankfort; CLINTON D. SWICKARD, Newman; WILLIAM A. HEAP, West Frankfort; from Fort Des

Moines, Lieut. RICHARD J. BEDFORD, Dahinda; from St. Louis, Lieuts. WILLIAM E. BALSINGER, Chicago; BYFORD H. WEBB, West Frankfort.

To Fort Sam Houston, Texas, for duty, Capt. FRANK D. FRANCIS, Chicago.

To Hoboken, N. J., for duty, from Camp Pike, Lieut. LEROY E. ELLISTON, DePue.

To Mineola, L. I., New York, Hazelhurst Field, from Chicago, Lieut. EUGENE CARY, Chicago.

To New York City for duty, and on completion to his proper station, Major JOHN A. HORNSBY, Chicago. Cornell Medical College for instruction in military roentgenology, from Fort Riley, Lieuts. ARTHUR E. ROGERS, Bloomington; GEORGE A. CONRAY, JOHN E. DAMRON, CARL B. HERRMANN, CARL J. JOHANNESSON, Chicago; CLARENCE P. HARRIS, KEITH T. MEYER, Oak Park.

To Nogales, Ariz., base hospital, from Camp Kearny, Capt. FREDERICK J. RILEY, Chicago.

To Philadelphia, Pa., for instruction in orthopedic surgery, from Philadelphia, Lieut. HARRY J. FORTIN, Chicago.

To Washington, D. C., for instruction, and on completion to Newport News, Va., for duty, Lieut. GEORGE S. MATHERS, Chicago.

Discharged, according to cable received from General Pershing, Lieut. ISRAEL SHERRY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE W. STEELY, Louisville.

Resignations of Capt. CLARENCE McCLELLAN, Chicago, and Lieut. GEORGE A. LIERLE, Burton, accepted.

Indiana

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. RAYMOND EVANS, Clinton.

To Camp Doniphan, Fort Sill, Okla., base hospital, Lieut. ALBERT E. BARBER, South Bend.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. ROBERT E. REPASS, Indianapolis.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieuts. EDWARD J. RICHSTEIN, Evansville; HARVEY K. STORK, Huntingburg; LEO A. SALB, Jasper.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. ELMER E. EIFERT, Jasper.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. THOMAS J. DEHEY, South Bend.

To Hoboken, N. J., for duty, from Camp Lee, Capt. ALFRED P. ROOPE, Columbus.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Indianapolis, Capt. ERNEST DEW. WALES, Indianapolis.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, from Army Medical School, Lieut. HARRY C. JOHNSON, Logansport.

Honorably discharged, Lieut. BENJAMIN S. POTTER, Cumberland. Resignations of Capt. IRA A. NELSON, Crothersville, and Lieut. JAMES B. SHOEMAKER, Miami, accepted.

Iowa

To Camp Bowie, Fort Worth, Texas, base hospital, Capt. WALTER H. FOX, Waucoma; Lieuts. CLAIREMONT H. MITCHELL, Leon; FRANK A. PRIESSMAN, Mechanicsville.

To Camp Custer, Battle Creek, Mich., base hospital, from Boston, Capt. EDWARD S. PARKER, Ida Grove; from Fort Riley, Lieut. EDMUND W. WILSON, Rolfe.

To Camp Dix, Wrightstown, N. J., as a member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieuts. HARRY R. JENKINSON, Iowa City; HENRY I. McPERRIN, Perry.

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. LEE W. PRESCOTT, Sloan.

To Camp Grant, Rockford, Ill., for duty, from Camp Grant, Capt. JAMES J. DALY, Decorah.

To Camp Lee, Petersburg, Va., base hospital, from Chicago, Capt. EVARTS A. GRAHAM, Mason City. Base hospital, Lieut. ARTHUR C. BROWN, Council Bluffs.

To Camp Logan, Houston, Texas, to examine the command for mental and nervous diseases, from Camp Beauregard, Lieut. FISHER B. E. MILLER, Cherokee.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. EDGAR A. STEWART, Salem.

To Fort McHenry, Md., for temporary duty, from St. Louis, Capt. ROBERT J. LYNCH, Des Moines.

To Fort Oglethorpe for instruction, from Camp Dodge, Lieut. ADAM H. KONIGMACHER, Missouri Valley; from Chicago, Lieut. RAY R. KULP, Davenport.

To Fort Riley for instruction, Capt. HOWARD J. WRIGHT, Des Moines; CHARLES W. LYON, Marne; GUY SEWARD, Neola; CHARLES L. PATTERSON, West Side; Lieuts. FRANK P. RIGGLE, Cedar Rapids; JOSEPH W. SELLARDS, Clarinda; HENRY A. COBB, Council Bluffs; GEORGE S. YATES, Des Moines; EDWARD H. WHITE, Dubuque; ALEXANDER P. STEWART, Inwood; ALBERT J. CHARLTON, Lowden; CHETWYND M. FRANCHERE, Mason City; ARMAND NAFFZIGER, Merrill; HOWARD M. WILLIAMSON, Olin; FREDERICK M. HAHN, Webster City; from Fort Des Moines, JOHN J. BOWES, Livermore.

To Hoboken, N. J., for duty, from Camp Bowie, Capt. PRENTISS N. CLEAVES, Cherokee.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. MERL L. PINDELL, Macksburg; JACOB J. SYBENGA, Pella.

Honorably discharged on account of physical disability incident to the service, Capt. GEORGE I. LYTHCOTT, Des Moines. On account of physical disability existing prior to entrance into the service, Capt. LOUIS B. CARSON, Maquoketa.

Resignations of Lieuts. HARRY C. NICHOLS, Carson, and CHARLES E. KELLOGG, Shenandoah, accepted.

Kansas

To Camp Bowie, Fort Worth, Texas, base hospital, Lieuts. ERNEST J. BECKNER, Goodland; WALTER P. STOLTENBERG, Kingsley; JOHN E. CASTLES, Lawrence; JOHN G. SWAILS, Wathena.

To Camp Custer, Battle Creek, Michigan, base hospital, from Fort Riley, Lieut. LEROY J. WHEELER, Ellinwood.

To Camp Kearny, Linda Vista, Calif., base hospital, from Fort Riley, Lieut. EDGAR C. TAYLOR, Pretty Prairie.

To Camp Lewis, American Lake, Washington, base hospital, from Fort Riley, Lieut. JAMES M. MOORE, Madison.

To *Camp Logan*, Houston, Texas, base hospital, from St. Louis, Lieut. RAYMOND H. MUNFORD, Dodge City.

To *Camp Pike*, Little Rock, Ark., base hospital, from Fort Riley, Capt. FREDERICK E. KRAFT, National Military Home.

To *Fort Oglethorpe*, for instruction, from St. Louis, Lieut. CLIFFORD C. NESSELRODE, Kansas City.

To *Fort Riley* as divisional tuberculosis specialist, from Fort Riley, Capt. EDWARD H. JOHNSON, Peabody. Base hospital, Capt. JOHN M. SUTTON, Lincoln. For instruction, Capt. BENJAMIN F. HAWK, Anthony; LEONARD S. STEADMAN, Junction City; from Fort Riley, Capt. WILLIAM L. CARLYLE, Sabetha. For instruction, Lieuts. JOHN F. PATTISON, Augusta; JESSE W. BARKER, Chanute; ALMONTA S. HAYS, Cherokee; HERSCHEL L. HENDRICKS, Climax; MYRON L. WHITE, Coffeyville; FRED R. FUNK, Dreden; BENJAMIN H. MAYER, Ellsworth; WILLIAM L. WELSH, Hazelton; DELMAR H. SMITH, Junction City; JULIUS H. RABIN, THOMAS RICHMOND, RAYMOND A. YOUNG, Kansas City; MATTHAUS H. HORN, Marrowville; THOMAS A. COLEMAN, Medicine Lodge; JOHN L. PEPPERS, Newton; WILLIAM S. GRISSELL, Ransom; ERNEST E. WHITE, Stockton; GUY R. MCCREERY, Whiting; from Fort Riley, Lieuts. JAMES WELCH, Herinton; GEORGE H. SMITH, Kansas City; from St. Louis, Lieut. HUGH E. CHARLES, Atchison.

To *Jefferson Barracks, Mo.*, for duty, from Fort Riley, Capt. WILLIAM L. WILMOTH, Denison; HERBERT L. SCALES, Hutchinson; PAUL CHRISTMAN, Parsons; Lieut. JOHN C. LARDNER, Fort Scott.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM H. HEUSCHELE, Corning.

Kentucky

To *Camp Dodge*, Des Moines, Ia., base hospital, Capt. HUBERT M. MEREDITH, Scottsville.

To *Camp Gordon*, Atlanta, Ga., base hospital, from St. Louis, Lieut. BARNETT BELOTE, Mayfield.

To *Camp McClellan*, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. GEORGE G. HUNTER, Covington.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. EUGENE C. HARTMAN, Brandenburg.

To *Chickamauga Park, Ga.*, for duty, from Fort Oglethorpe, Capt. RODMAN H. WILLIAMS, New Hope.

To *Fort Oglethorpe* for instruction, Capt. MARVIN S. VEAL, Daniel Boone.

To *Hoboken, N. J.*, for duty, from Camp Sheridan, Capt. FREDERICK L. KOONTZ, Louisville.

To *New Haven, Connecticut*, for observation and treatment, Lieut. ERWIN C. BRANDON, Elizabethtown.

Honorably discharged, Lieut. LYTLE ATHERTON, Livermore.

Resignation of Lieut. EDWARD ADAMS, Boaz, accepted.

Louisiana

To *Camp Dix*, Wrightstown, N. J., base hospital, from Philadelphia, Major KARL W. NEY, New Orleans.

To *Camp MacArthur*, Waco, Texas; *Camp Travis*, Fort Sam Houston, Texas; *Camp Logan*, Houston, Texas, base hospitals, and on completion to his proper station, from Camp Beauregard, Major JAMES B. GUTHRIE, New Orleans.

To *Camp Travis*, Fort Sam Houston, Texas, base hospital, from San Antonio, Lieut. POPE W. ODEN, Shreveport.

To *Colgate Creek, Md.*, for duty, from Camp Joseph E. Johnston, Lieut. ERASTUS L. MILLER, Longville.

To *Fort Oglethorpe* for instruction, from Camp Beauregard, Lieut. JOEL A. WILKINSON, Homer.

To *Fort Sam Houston, Texas*, base hospital from Fort Oglethorpe, Lieut. WALTER P. LAMBETH, Allendale.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, Lieut. JAMES L. LOCASCIO, New Orleans.

Maine

To *Camp Dodge*, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. CARL G. DENNETT, Unity.

To *Fort Oglethorpe* for instruction, Lieut. DEFOREST WEEKS, Woodfords.

To *Garden City*, Long Island, N. Y., for duty, from Portland, Maine, Lieut. JULIUS C. ORAM, Portland.

Maryland

To *Camp Crane*, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. JAMES S. SPEED, Baltimore.

To *Camp Custer*, Battle Creek, Mich., as a member of the board for the examination of the command for tuberculosis, from Camp Lee, Lieut. LOUIS L. JACOBS, Baltimore.

To *Camp MacArthur*, Waco, Texas, for duty, and on completion to his proper station, Major CHARLES BAGLEY, JR., Baltimore.

To *Camp Sevier*, Greenville, S. C., base hospital, from Camp Sevier, Lieut. WILLIAM H. HOUSTON, Fishing Creek.

To *Camp Shelby*, Hattiesburg, Miss., as division tuberculosis specialist, from Camp Sheridan, Lieut. LOUIS M. LIMBAUGH, Baltimore.

To *Camp Travis*, San Antonio, Texas, to make a further nutritional survey, from San Antonio, Lieut. ALFRED T. SHOHL, Magnolia.

To *Fort Oglethorpe* as assistant in the school for instruction in urology and dermatology, Lieut. WILFORD A. H. COUNCILL, Baltimore.

To *Fort Riley* for instruction, from San Antonio, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

To *Hoboken, N. J.*, for duty, from Camp Meade, Capt. HUGH W. BRENT, Baltimore; from Camp Dodge, Lieut. WILLIAM H. SMITH, JR., Hazerstown.

To *New York City*, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. MAURICE FELDMAN, Baltimore.

To *Plattsburg, N. Y.*, for duty, from Fort Oglethorpe, Lieut. JOHN C. NORTON, Baltimore.

Massachusetts

To *Army Medical School*, to give orthopedic instruction, and on completion to his proper station, from Boston, Capt. MARK H. ROGERS, Boston.

To *Camp Crane*, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. GEORGE MOSSMAN, Westminster.

To *Camp Dix*, Wrightstown, N. J., as assistant to the orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. REUBEN L. LEVERTON, Boston.

To *Camp Jackson*, Columbia, S. C., base hospital, from Camp Jackson, Capt. JOHN M. BIRNIE, Springfield.

To *Camp Lee*, Petersburg, Va., base hospital, Lieut. ALFRED E. KING, Watertown.

To *Camp Pike*, Little Rock, Ark., as division psychiatrist, from Camp Pike, Capt. CHESTER C. BECKLEY, Lancaster.

To *Chickamauga Park, Ga.*, for duty, from Fort Oglethorpe, Capt. GEORGE P. COGSWELL, Cambridge; Lieut. EDWARD A. DUFFY, Boston.

To *Fort Oglethorpe* for instruction, Capt. ARTHUR W. AKERLEY, Boston; from Camp Shelby, Capt. HENRY L. NOEL, Lexington; from Camp Devens, Lieuts. ABRAHAM HASKINS, Boston; JACOB GENNART, New Bedford.

To *Fort Riley*, and *Chicago, Ill.*, for inspection and on completion to his proper station, Major ALEXANDER S. BEGG, Cambridge. For instruction, from Camp Bowie, Lieut. JOSEPH D. COLLINS, Northampton.

To *Metuchen, N. J.*, for duty, from Hoboken, Major JAMES N. PASCOE, Fort Revere.

To *New Haven, Conn.*, for duty, from Camp Joseph E. Johnston, Capt. CHARLES E. PERRY, Haydensville.

To *New York City*, Neurological Institute, for intensive training, Lieut. WILLIAM A. MACINTIRE, Grafton.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, Lieut. WARREN S. SHIELDS, Boston. For instruction in the serum therapy of pneumonia, Lieuts. JAMES H. PARK, Boston; WILLIAM B. ADAMS, Springfield.

To *Washington, D. C.*, for duty, Lieuts. FRANCIS W. PEABODY, Boston; HOWARD K. TUTTLE, Tewksbury.

Honorably discharged, Lieut. PATRICK MEECHAN, Lowell.

Michigan

To *Camp Dodge*, Des Moines, Ia., for duty, from Fort Riley, Lieut. ARTHUR R. SMECK, Detroit.

To *Camp Jackson*, Columbia, S. C., base hospital, from St. Louis, Capt. HENRY J. MEYER, Saginaw.

To *Camp Lee*, Petersburg, Va., base hospital, Lieut. MORTIMER E. DANFORTH, Stanton.

To *Camp MacArthur*, Waco, Texas, base hospital, from Pittsburgh, Lieut. JESSE O. PARKER, Owosso.

To *Camp Sherman*, Chillicothe, Ohio, base hospital, Lieut. ROBERT E. WEEKS, Augusta; ARTHUR J. SAHS, Cheboygan; BERNARD J. HEETDERKS, Grand Rapids.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Sam Houston, Lieut. KENNETH F. MAXEY, Detroit.

To *Dayton, Ohio*, Wilbur Wright Field, from Fairfield, Lieut. PHILIP I. FROUDE, Detroit.

To *Fort Oglethorpe* for instruction, from Camp Beauregard, Lieut. FRANK S. COLLIER, Vicksburg; from Chicago, Lieuts. CARROLL S. THOMSON, Clinton; WILLIAM G. HOEBEKE, Kalamazoo.

To *Hoboken, N. J.*, for duty, from Camp Custer, Major RALPH E. BALCH, Kalamazoo; from Camp Greene, Lieut. ALBERT S. BARR, Greenville.

To *Rochester, Minn.*, Mayo Clinic for instruction and on completion to *Camp Dodge*, Des Moines, Ia., base hospital, Lieut. GROVER C. WOOD, Detroit.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, from Fort Riley, Lieut. ROBERT P. STARK, Allegan.

To *Waynesville, N. C.*, for duty from Fort Oglethorpe, Lieut. RICHARD H. JUERS, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. JAMES L. WALSH, Iron River; HARRY D. OBERT, Jackson.

Resignation of Capt. WILLIS W. CHAPMAN, Cheboygan, accepted.

Minnesota

To *Ann Arbor, Mich.*, University of Michigan, for instruction, from Winnipeg, Major JAMES F. CORBETT, Minneapolis.

To *Camp Crane*, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. IVER F. SELLESETH, Minneapolis.

To *Camp Grant*, Rockford, Ill., base hospital, Lieuts. THEODORE L. HANSEN, Albert Lea; ROBERT E. SPINKS, Middle River; IRVING G. WILTROUT, Minneapolis; JOHN J. O'HEARN, WILLIAM R. WINNE, Rochester; WILLIAM A. MEIERDING, Springfield; JOSEPH D. WALLER, Wilmont.

To *Chicago, Ill.*, for instruction, from Camp MacArthur, Lieut. CARL PAULSON, Minneapolis.

To *Fort Oglethorpe* for instruction, from Chicago, Capt. JAMES A. McLAUGHLIN, Minneapolis.

To *Fort Riley* for instruction, Capt. JOHN S. MACNIE, Minneapolis; Lieuts. ALBERT E. WILLIAMS, Backus; THEODORE H. DEDOLPH, Braham; WILLIAM J. EKLUND, Duluth; HUGO N. SARCHET, Redwood Falls; from Fort Riley, Lieut. HENRY E. DOUGLAS, Hutchinson.

To *New York City*, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. PAUL S. EPPERSON, Biwabik; FRANK J. ELIAS, Duluth; URSES V. PORTMANN, Jackson.

Mississippi

To *Camp Bowie*, Fort Worth, Texas, base hospital, Lieuts. LEWIS W. KITCHENS, Strayhorn; FRANKLIN H. RUSSELL, Wayside.

To *Camp Logan*, Houston, Texas, to assist the board in examining the command for nervous and mental diseases, from Camp Beauregard, Lieut. THOMAS C. CLEVELAND, Meridian.

Missouri

To *Camp Bowie*, Fort Worth, Texas, base hospital, from Fort Riley, Capt. JOSEPH B. UNSELL, Louisiana Base Hospital, Lieut. HAROLD W. FAY, St. Louis; from Pittsburgh, Lieut. JAMES E. DEWEY, Springfield.

To *Camp Crane*, Allentown, Pa., for duty, from Fort Myer, Lieut. LEE H. VINEMILLER, Farley.

To *Camp Dix*, Wrightstown, N. J., as member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Capt. SOLON CAMERON, St. Louis.

To *Camp Dodge*, Des Moines, Ia., for duty, from Fort Riley, Lieut. SAMUEL W. HOLT, Steffenville.

To *Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. WALTER E. HOLBROCK, Kansas City.

To *Camp Lee*, Petersburg, Va., base hospital, from Fort Riley, Lieut. JOHN A. FLURY, St. Louis.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Capt. JOHN S. WEAVER, Kansas City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Grant, Rockford, Ill., base hospital, Capt. WILLIAM M. WALLIS, Maryville.

To Dallas, Texas, Love Field, from St. Louis, Capt. FREDERICK C. SIMON, Lieut. JOSEPH J. REILLY, St. Louis.

To Fort Oglethorpe for instruction, from St. Louis, Capt. WALTER C. G. KIRCHNER, JAMES W. SHANKLAND, St. Louis; Lieuts. HOWARD O. LIENHARDT, Kansas City; JOHN W. STEWART, St. Louis; from Camp Sherman, Lieut. JOHN J. DE VEREAUX, Hawk Point.

To Fort Riley for instruction, Capt. GAIL B. ALLES, Lamar; from Camp Logan, Capt. JOHN G. BIRCHETT, Cardwell. Base hospital, Lieut. CHARLES M. MILLER, St. Louis. For duty, from Fort Riley, Lieut. LOUIS W. SCHREIBER, St. Louis. For instruction, Lieuts. LARKIN E. WILLIAMS, Clover; NED C. LEWIS, Kansas City; WILFORD W. MARTIN, Kirksville; LEE R. FARMER, Lees Summit; GEORGE R. PENNINGTON, St. Charles; ARTHUR W. KOESSEL, JOHN H. MURPHY, EDWIN A. NOLL, St. Louis; JOHN M. WILSON, Stoutsville; from Fort Riley, Lieut. JOHN R. BRUCE, Marshfield; from St. Louis, Lieut. BERNHARDT W. KLIPPEL, St. Louis.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. FRANK J. TAINTER, St. Charles.

To Jefferson Barracks, Mo., for duty, from Camp Pike, Lieut. KIRBY C. GARNER, Crosstown.

To New Orleans, Charity Hospital, for instruction, and on completion to his proper station, from Camp Shelby, Capt. HORACE A. LOWE, Springfield.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. JOSEPH C. PEDEN, St. Louis.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, from Fort Riley, Lieut. URSA C. WESTON, Osgood.

To San Antonio, Texas, Kelly Field, from Kansas City, Lieut. CLINTON K. SMITH, Kansas City.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. LEVI M. ASBURY, Dalton; Lieut. FRIEDRICH A. HECKER, Kansas City.

Montana

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. MARK T. VORNHOLT, Glasgow.

To Camp Grant, Rockford, Ill., base hospital, Lieut. WILLIAM E. LONG, Anaconda; from Chicago, Lieut. ALEXANDER M. MACAULAY, Great Falls.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. ALBERT A. PASTENE, Chester.

To Fort Riley for instruction, Capt. CHARLES E. K. VIDAL, Great Falls; JAMES N. ALEXANDER, Roundup; Lieuts. ARTHUR S. NEEDLES, East Scebey; GEORGE A. BAKER, Ekalaka; EDWARD E. GANS, Judith Gap; PAUL L. GREENE, Livingston; JULIO R. SOLTERO, Moore.

To New York City, Cornell Medical College, for instruction in military roentgenology from Fort Riley, Lieut. JOHN E. BRIDENBAUGH, Billings.

Nebraska

To Camp Crane, Allentown, Pa., for duty, from New York, Capt. CHARLES E. REMY, Johnston.

To Camp Dix, Wrightstown, N. J., as member of the board of medical officers to examine the command for tuberculosis, Lieut. NEAL P. MCKEE, Atkinson.

To Camp Dodge, Des Moines, Ia., base hospital, Lieuts. CLARENCE E. SMART, Alliance; FRANCIS M. SWARTWOOD, Bethany; WILLIAM J. HAWES, Fairbury; HARRY W. McFADDEN, Greenwood; HAL D. WILMOTH, Lincoln; ARTHUR M. SONNELAND, Norfolk; CHARLES P. CHARLTON, Palmira; RAYMOND B. McNAMARA, Wynot.

To Fort Bayard for observation and treatment, Capt. PHILLIP M. DALE, Greenwood.

To Fort Des Moines, Ia., for temporary duty, Capt. JAMES McD. PATTON, Omaha.

To Fort Riley for instruction, Capt. CLAUDE LER. WILLIS, Anselmo; GEORGE H. BENTZ, Fairfield; EUGENE C. FOOTE, Hastings; GEORGE W. STROUGH, Hickman; MERIT WOOD, Tekamah; Lieuts. HERBERT P. WALKER, Albion; FRANK A. WILMOT, Bethany; FRANCIS J. STEISKAL, Crete; EDWARD O. WILSON, Madison; ADOLPH W. THOMS, Odell; ADOLPH F. SRB, Carlburg; SWANSON, Omaha; from San Antonio, Lieut. J. IRWIN LIMBURG, Walthill; from St. Louis, Lieut. ROBERT C. PANTER, Dorchester.

To Hoboken, N. J., for duty, from Camp Logan, Capt. FRANK M. BARNES, Harrison.

To New York City, Cornell Medical College, for instruction in military roentgenology from Fort Riley, Lieut. GEORGE F. HAWES, Arlington.

To Omaha, Neb., for duty, and on completion to Fort Des Moines, Ia., for temporary duty, from Fort Omaha, Lieut. LEONARD O. RIGGERT, Omaha.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, from Fort Riley, Lieut. CLARENCE M. HYLAND, Omaha.

Resignation of Lieut. WILLIAM O. AKERS, Florence, accepted.

Nevada

To Camp Kearny, Linda Vista, Calif., base hospital, Lieut. CHARLES E. SECOR, Tuscarora.

To Fort Riley for instruction Lieut. GRANVILLE E. LEAVITT, Yerlington; from Camp Kearny, Lieut. ISAAC ALEXANDER, Ely.

New Jersey

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. ADDISON H. BISSELL, Newark.

To Camp Lee, Petersburg, Va., base hospital, Capt. CLEMENT J. HAILPERIN, Newark.

To Fort McHenry, Md., for duty, Lieut. EDWARD F. SYROP, Bayonne.

To Fort Oglethorpe for instruction, Lieuts. NATHAN HELLER, SIDNEY B. RAWITZ, ABRAHAM G. REINFELD, Newark; PHILIP J. DORETY, Trenton; from Camp Joseph E. Johnston, Lieut. HARVEY M. EWING, Upper Montclair.

To Hampton, Va., Langley Field, from Fort Oglethorpe, Lieut. BARNEY D. LAVINE, Trenton.

To Hoboken, N. J., for duty, from Fort Hamilton, Capt. FRANCIS M. McMURROUGH, Jersey City.

To New York City, base hospital, Capt. MICHAEL S. CRANELLI, Hoboken; from Camp Dix, Capt. NELSON K. BENTON, Newark.

To Watertown, Mass., Watertown Arsenal, for duty, from Fort Oglethorpe, Lieut. GEORGE B. VERBECK, Caldwell.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. MICHAEL VINCIGUERRA, Elizabeth.

Resignation of Lieut. CHARLES M. GRAY, Vineland, accepted.

New Mexico

To Fort Leavenworth, Kan., Department Laboratory, for duty, Lieut. NATHANIEL D. FRAZIN, Tyrone.

To Fort Riley for instruction, Lieut. GEORGE L. WYCKOFF, Dulce.

New York

To Asheville, N. C., base hospital, from Camp Cody, Capt. JOSEPH E. J. KING, New York City; from Camp Lee, Capt. FREDERICK B. HUMPHREYS, Lieut. WILLIAM V. HEALEY, New York City; from Fort Logan H. Roots, Lieut. HENRY L. WENNER, Jr., New York City; from Fort Oglethorpe, Lieuts. ARCHIE E. GORDIN, EDWIN HENES, Jr., ALFRED F. ORTH, THEODORE M. SANDERS, New York City.

To Brooklyn, N. Y., for duty, Lieut. HUDSON R. MILLER, New York City.

To Camp Crane, Allentown, Pa., for duty, from Camp Sherman, Capt. KARL OSTERHAUS, New York City; from Fort Oglethorpe, Lieuts. DAVID H. HALLOCK, HARRY D. SONNENSCHNEIN, New York City; from Rockefeller Institute, Lieut. SEYMOUR G. CLARK, Brooklyn.

To Camp Devens, Ayer, Mass., for duty, from Camp Devens, Capt. RAYMOND C. HILL, Bath. Base hospital, Lieut. JOHN A. WENTWORTH, Clifton Springs.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Joseph E. Johnston, Capt. FRANK McLEAN, New York City; as member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES ROSE MILLER, Ray Brook.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Hancock, Capt. MAX A. LEVY, New York City.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Major DAYTON C. WIGGIN, Rosebank.

To Camp Lee, Petersburg, Va., Camp Greene, Charlotte, N. C., Camp Jackson, Columbia, S. C., Camp Hancock, August, Ga., base hospitals, and on completion to his proper station, from Camp Meade, Major EDWARD E. TULL, New York City. To Camp Lee, base hospital, Lieuts. SAMUEL HECHT, Brooklyn; FRANCIS J. CLUNE, Yonkers.

To Camp Meade, Annapolis Junction, Md., as member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. ALEXANDER ALTSCHUL, New York City.

To Camp Upton, Long Island, N. Y., as assistant to the camp surgeon, from Camp Upton, Capt. RALPH E. BRODIE, Albion. Base hospital, from Camp Upton, Capt. WALTER H. VOSBURG, Dunkirk; from Camp Grant, Lieut. JOSEPH F. WARD, BROOKLYN.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Sam Houston, Lieut. ROBERT L. LEVY, New York City.

To Cape May, N. J., for duty, from Newport News, Capt. SAMUEL R. HURLBUT, Lockport; from Fort Oglethorpe, Lieut. HERMAN F. LAMPE, New York City.

To Corpus Christi, Texas, for duty, from Camp Custer, Capt. ALFRED W. ARMSTRONG, Canadaigua.

To Fort H. G. Wright, New York, to examine the troops and on completion to Watertown, Mass., for the same duty, and on completion to Springfield, Mass., for the same duty, from Camp Devens, Capt. BRUNO S. HOROWICZ, New York City. Lieut. ADELBERT C. ABBOTT, Syracuse.

To Fort McHenry, Md., for duty, Lieuts. JULIUS E. ALTER, Bronx; MORRIS L. POLLACK, Brooklyn; BENJAMIN ROSENTHAL, SOLON C. WOLFF, New York City.

To Fort Oglethorpe for instruction, from Army Medical School, Capt. JAMES C. DAVIS, Rochester; from Camp Devens, Capt. WILMARTH S. BUCK, Plattsburg; from Camp Sevier, Capt. JOS. A. LANAHAN, Albany; from Camp Upton, Capt. EDWARD H. VINES, New York City; from duty as a contract surgeon at Fort Oglethorpe, Capt. FRANCIS B. TRUDEAU, Saranac Lake. For instruction, Lieuts. SAMUEL J. BLUMENTHAL, Brooklyn; HIRAM S. YELLEN, Buffalo; WILBUR F. MacDONALD, Delanson; FRANCIS J. McCULLA, Frewsburg; KEVORK N. BOSTANIAN, JOHN F. LEWIS, DAVID PASHMAN, MAX I. ROVEN, New York City; JOHN A. JOHNSON, Jr., Olean; CHARLES RIEGER, Port Richmond, Long Island; from Army Medical School, Lieut. PORTER A. STEELE, Buffalo; from Camp Upton, Lieut. FREDERICK L. BARNUM, Kingston; ANDREW K. ANDERSON, Long Island City.

To Fort Riley for instruction, Lieut. MILTON CHAPMAN, Rochester; from Fort Riley, Lieut. CARL G. FROST, Buffalo.

To Hoboken, N. J., for duty, from Camp Jackson, Capt. HARRY B. HUVER, Williamsville; from Camp Shelby, Capt. RAYMOND SANDERSON, Poughkeepsie.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Fort Sill, Capt. EDWIN S. INGERSOLL, Rochester.

To New York City, base hospital, from New York City, Major WILLIAM H. STEWART, New York City. Base hospital, Capt. HARRY C. SHULTZ DE BRUN, CHARLES H. SANFORD, New York City. Base hospital, Lieuts. ABRAHAM L. GARBAT, ROBERT C. SCHLEUSSNER, New York City; from Philadelphia, Lieut. OTTO C. PICKHARDT, New York City. Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieuts. FRANCIS H. CURRIN, Brooklyn; IRVING EPSTEIN, JESSE D. HAND, JOSEPH HOROWITZ, HENRY K. SCHNEIDER, New York City.

To Otisville, N. Y., as commanding officer of army hospital, Capt. WILLIAM J. HAMMER, New York City.

To Rochester, N. Y., base hospital, from Fort Oglethorpe, Lieut. HIRAM RANDALL, Rochester.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. HAROLD E. SMITH, Long Island, N. Y. For instruction in serum therapy of pneumonia, from Washington, Lieut. MARTIN F. NOLAN, Tonawanda.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Lieut. RICHARD S. FARR, New York City.

To Washington, D. C., for duty in the Surgeon-General's Office, Major SIGMUND POLLITZER, New York City.

To *Waynesville, N. C.*, for duty, from Camp Joseph E. Johnston, Major CHARLES E. DAVIS, Albany.

Honorably discharged, Lieut. CHARLES W. DUNN, New York City. On account of physical disability existing prior to entrance into the service, Lieut. ALBERT W. GILMARTIN, Brooklyn.

North Carolina

To *Camp Custer*, Battle Creek, Mich., as a member of the board for the examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES T. VERNON, Burlington.

To *Camp Meade*, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. RALPH C. SADLER, Whiteville.

To *Hoboken, N. J.*, for duty, from Camp Greene, Capt. CHARLES W. BANNER, Greensboro.

To *New York City*, Neurological Institute, for intensive training, Lieut. EVERETT S. BARR, Asheville.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School* for duty, Lieut. WILLIAM C. DUFFY, New Bern.

Resignation of Capt. ROBERT L. GIBBON, Charlotte.

North Dakota

To *Camp Meade*, Annapolis Junction, Md., as member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. HERBERT B. WENTZ, Verona.

To *Fort Riley* for instruction, Capt. GARLOS S. JONES, Williston; Lieuts. LOUIS B. DERDIGER, Esmond; ARTHUR PEAKE, Grand Forks; JOHN W. NEWLOVE, Minot; FRANK E. WEED, Park River; GUSTAVE L. RUDELL, Plaza; LLOYD H. VAN SLYKE, Tioga; EVERETT E. GREEN, Westhope.

To *Jefferson Barracks, Mo.*, for duty, from Fort Riley, Capt. BERNARD S. NICKERSON, Mandan.

Ohio

To *Camp Crane*, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. ROBERT C. AUSTIN, Payton.

To *Camp Dix*, Wrightstown, N. J., as assistant to the orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. HENRY J. PEAVY, JR., Redo. As member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES H. HAMMA, Springfield.

To *Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. CHARLES E. BEAMAN, Cincinnati.

To *Camp McClellan*, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. HAROLD F. KOPPE, Logan.

To *Camp Sherman*, Chillicothe, Ohio, base hospital, from Chicago, Capt. JOHN A. CALDWELL, Cincinnati.

To *Camp Upton*, Long Island, N. Y., for duty, from Southern Department, Major ROBERT CONARD, Blanchester.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, from St. Louis, Capt. IVAN I. YODER, Cleveland. Base hospital, Lieut. CHARLES C. SHEARER, Cincinnati.

To *Cleveland, Ohio*, for duty, and on completion to the inactive list, Capt. HARRY G. SLOAN, Cleveland.

To *Fort Bliss, Texas*, to examine the command for mental and nervous diseases, from Camp Cody, Lieut. JAMES A. BELYEA, Toledo.

To *Fort McHenry, Md.*, for temporary duty, from Fort Oglethorpe, Lieut. JULIAN H. BUFF, Cincinnati.

To *Fort McPherson, Ga.*, for duty, from Rochester, N. Y., Major JOSEPH L. RANSCHOFF, Cincinnati.

To *Fort Oglethorpe* as instructor, Major ROGERS S. MORRIS, Cincinnati. For instruction, Capt. FRANKLIN W. ROUSH, Dayton; Lieuts. JOHN T. BOYKIN, Cleveland; TODD CARIS, Mansfield.

To *Fort Riley* for instruction, Lieuts. OSCAR E. TOWNSEND, Cleveland; FRED H. MILLER, Grand Valley.

To *Hampton, Va.*, Langley Field, from Fort Oglethorpe, Lieut. ROBERT MCQ. ANDRE, Springfield.

To *Hoboken, N. J.*, for duty, from Fort McHenry, Major GEORGE C. SCHAEFFER, Columbus. For duty, Lieut. J. CLIFF WETHERILL, Weston.

To *Lake Charles, La.*, Signal Corps Aviation School, from Fort Oglethorpe, Lieut. JOHN C. MARTIN, New Concord.

To *Mineola*, Long Island, N. Y., Hazelhurst Field, from Cincinnati, Capt. ARTHUR C. BACHMEYER, Cincinnati.

To *New York City*, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. JAMES E. STEWART, Akron; HENRY SNOW, JR., Norwood.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School* for duty, from Fort Riley, Lieuts. FRANK A. LAWRENCE, Elyria; JOHN D. BOYLAN, Milford Center.

To the inactive list, from Lakewood, N. J., Capt. PAUL J. COLLANDER, Ashtabula.

Honorably discharged, Capt. HARRY W. SHAW, Junction City. On account of physical disability, Capt. GEORGE RUBEN CLAYTON, Lima. On account of physical disability existing prior to entrance into the service, Capt. MERTON C. PHILLIPS, Fremont; HARRY T. MILLER, Springfield; Lieut. BYRON BING, Pomeroy.

Oklahoma

To *Camp Crane*, Allentown, Pa., for duty, from Camp Cody, Capt. RALPH V. SMITH, Tulsa.

To *Camp MacArthur*, Waco, Texas, as orthopedic surgeon in the camp, from Camp Beauregard, Capt. LEONARD S. WILLOUR, McAlester.

To *Chicago, Ill.*, for instruction, Capt. FANTON M. SANGER, Oklahoma City.

To *Fort Riley* for instruction, Lieuts. OSCAR W. TEMPLIN, Alva; REUBEN W. WILLIAMS, Anadarko; SAMUEL M. STONE, Edmond; JOHN H. SHAUNTY, Eufaula; WILLIAM McILWAIN, Lone Wolf; OSCAR J. STREET, Louis; JOSEPH G. NOBLE, Muskogee; JESSE M. PEMBERTON, Okemah; GALVIN L. JOHNSON, Pauls Valley; HARDIN WALKER, Rosston; FREDERICK C. BROWN, Sparks; WILLIAM W. LIGHTFOOT, Thackerville; CASPER A. HICKS, Wetumka; CHARLES W. TEDROWE, Woodward; SIMON W. STRADER, Yukon.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, from Fort Riley, Lieut. GUY P. McNAUGHTON, Miami.

Oregon

To *Fort Riley* for instruction, Lieut. JULIUS H. GARNJOBST, Salem.

To *Jefferson Barracks, Mo.*, for duty, from Camp Logan, Capt. LEO E. CHILTON, Canyon City.

To *Philadelphia, Pa.*, for orthopedic instruction, from Chicago, Capt. EDGAR H. BROWN, McMinville.

Discharged, according to cable received from General Pershing, J. PLAMONDON, Pendleton.

Pennsylvania

To *Army Medical School* for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM Q. MARKELL, Pittsburgh.

To *Asheville, N. C.*, base hospital, from Camp Fremont, Lieut. WILLIAMS S. LONG, Reading.

To *Camp American University*, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. MICHAEL M. WOLFE, Philadelphia.

To *Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. DEFERREST BALLOU, JR., Philadelphia.

To *Camp Crane*, Allentown, Pa., for duty, from Camp Logan, Lieut. RALPH L. RUTLEDGE, McKeesport; from Fort Jay, Lieut. JOHN W. FREY, Avalon; from Fort Oglethorpe, Lieut. HARRY O. POLLOCK, Wilmerding.

To *Camp Custer*, Battle Creek, Mich., base hospital, from Pittsburgh, Lieut. SIMON A. LEVEY, Pittsburgh.

To *Camp Dix*, Wrightstown, N. J., as member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. WILLIAM J. DAVIS, Wilkes-Barre. Base hospital, from Camp McClellan, Lieut. WILLIAM WEISS, Philadelphia.

To *Camp Dodge*, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. ARTHUR ST. C. BRUMBAUGH, Altoona; from St. Louis, Lieut. SAMUEL STALBERG, Philadelphia.

To *Camp Gordon*, Atlanta, Ga., for duty, from Camp Hancock, Lieut. LEON FELDERMAN, Philadelphia.

To *Camp Greene*, Charlotte, N. C., for duty, from Camp Greene, Capt. JOHN W. BOGGS, Philadelphia.

To *Camp Jackson*, Columbia, S. C., as divisional tuberculosis specialist, from Camp Jackson, Major JOHN W. BOYCE, Pittsburgh.

To *Camp Lee*, Petersburg, Va., base hospital, Lieut. DENNIS A. MYERS, Philadelphia.

To *Camp Meade*, Annapolis Junction, Md., for instruction in administrative work, and on completion to his proper station, from Edgewood, Md., Lieut. FRANKLIN P. PHILLIPS, Clarion.

To *Camp Morrison*, Va., camp hospital, from Newport News, Lieut. EDWARD A. STEINHEILDER, Philadelphia. For duty, from Pittsburgh, Lieut. EDWIN P. BUCHANAN, Pittsburgh.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Sam Houston, Lieut. CHARLES W. McCLURE, South Bethlehem.

To *Chickamauga Park, Ga.*, for duty, from Fort Oglethorpe, Lieut. EDWARD K. GOLDING, Reading.

To *Dallas, Texas*, Love Field, from Pittsburgh, Lieut. CHARLES R. BRENNER, Pittsburgh.

To *Fort Bliss, Texas*, to examine the command for mental and nervous diseases, from Camp Cody, Lieut. EMORY L. DRAVO, Warren.

To *Fort H. G. Wright*, N. Y., to examine the troops, and on completion to *Watertown, Mass.*, for the same duty, and on completion to *Springfield, Mass.*, for the same duty, from Camp Devens, Lieut. HARRISON M. STEWART, Mont Alto.

To *Fort Oglethorpe* for instruction, Major SENECA EGBERT, Philadelphia; from Camp Devens, Capt. WILLIAM T. McCONVILLE, Honesdale. For instruction, Lieuts. HAROLD W. KINDERMAN, Philadelphia; CLARENCE L. YOUNG, Pockville; from Camp Hancock, Lieut. ELI H. PORCH, Philadelphia; from Camp Joseph E. Johnston, Lieut. HARRY J. STOCKBERGER, Claridge; from Camp Meade, Lieuts. PHILIP S. ROSENBLUM, Philadelphia; GEORGE G. GRAZIER, Pittsburgh; from Camp Sevier, Lieut. BRADLEY H. HOKE, Coalport.

To *Fort Sill, Okla.*, Post Field, from Lake Charles, La., Capt. ROBERT S. McCOMBS, Philadelphia.

To *Fort Worth, Texas*, Taliaferro Field, from Pittsburgh, Lieut. GEORGE S. CUNNINGHAM, Pittsburgh.

To *Garden City*, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. ALOIS F. SEIFRIS, Mars.

To *Hoboken, N. J.*, for duty, from Philadelphia, Major GEORGE M. DORRANCE, Philadelphia; Capt. THOMAS X. STELLWAGEN, JR., Media; Lieut. JOHN W. BRANSFIELD, Philadelphia.

To *Jefferson Barracks, Mo.*, for duty, from Fort Riley, Lieut. RUSSELL RICHARDSON, Philadelphia.

To *New York City*, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Capt. WILLIAM F. BEITSCH, New Brighton; Lieuts. LOGAN E. HULL, Altoona; PETER B. MULLIGAN, Hazelton; JOSEPH H. WYATT, Mahoney City; WILLIAM D. BAUN, JOSEPH W. POST, Philadelphia; WALTER A. MONNICH, Pittsburgh; CHARLES K. SHANOR, Sewickley; FRANCIS R. WISE, York.

To *Rochester, Minn.*, for duty, and on completion to his proper station, Major GEORGE A. DE SCHWEINITZ, Philadelphia.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, from Camp Lee, Lieut. HERBERT F. KENNY, Pittsburgh.

To *Washington, D. C.*, for duty in the Surgeon-General's Office, from Rockefeller Institute, Capt. JAMES H. AUSTIN, Ardmore. For duty, Lieut. WILLIAM H. CHANDLER, Philadelphia.

To *Williamsbridge, N. Y.*, for duty, Lieuts. WARREN T. O'HARA, New Kensington; JOSEPH C. YASKIN, Philadelphia.

To the inactive list, from Pittsburgh, Capt. WILLIAM C. MEANOR, Pittsburgh.

Honorably discharged, Lieut. CLYDE L. WILLIAMS, Harmonsburg. On account of physical disability existing prior to entrance into the service, Lieut. ADOLPH H. FRIEDMAN, Philadelphia.

Relieved from further active duty, Lieut. JAMES R. MARTIN, Philadelphia.

Rhode Island

To *Lake Charles, La.*, Signal Corps Aviation School, from Fort Oglethorpe, Lieut. KENNETH CHURCHILL, Providence.

South Carolina

To *Camp Gordon*, Atlanta, Ga., base hospital, Lieut. ALEXANDER S. BLANCHARD, Williston.

To *Fort Riley* for duty, from Fort Riley, Lieut. LEWIS F. ROBINSON, Pickens.

To *Lake Charles, La.*, Signal Corps Aviation School, from Fort Oglethorpe, Lieut. LONNIE M. McMILLAN, Florence.

South Dakota

To *Fort Riley* for instruction, Capt. WILLIAM E. FEHLIMAN, Lead; Lieuts. DENNIS W. SULLIVAN, Britton; WILLIAM R. BALL, Mitchell; CLEVELAND F. BROOKS, Platte; PIERRE R. PINARD, Wagner.

Tennessee

To *Camp Custer*, Battle Creek, Mich., as a member of the board for the examination of the command for tuberculosis from Fort Oglethorpe, Lieut. ENOCH C. SEALE, Nashville.
To *Camp Doniphan*, Fort Sill, Okla., base hospital, from Fort Riley, Lieut. SALVADOR L. BOCCELLATO, Memphis.
To *Camp Greene*, Charlotte, N. C., base hospital, from St. Louis, Capt. BERNARD C. McMAHON, Memphis.
To *Camp McClellan*, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. HARRY L. LOTT, Knoxville.
To *Chickamauga Park*, Ga., for duty, from Fort Oglethorpe, Lieut. IRA J. TATUM, Gleason.
To *Fort Dade*, Fla., for duty, from Fort Oglethorpe, Lieut. GEORGE E. KERR, Chattanooga.
To *Fort Oglethorpe* for instruction, Lieut. JESSE A. JAMES, Nashville.
To *Fort Riley* for instruction, Lieut. GRANVILLE D. LEQUIRE, Rutledge.

Texas

To *Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. ELMER W. JONES, Wellington; from Chicago, Lieut. FRANK G. SANDERS, Fort Worth.
To *Camp Crane*, Allentown, Pa., for duty, from Washington, Lieut. QUINCY B. LEE, Wichita Falls.
To *Camp Hancock*, Augusta, Ga., for duty, from Camp Hancock, Lieut. HOWARD L. FAROUHAR, West Brownville.
To *Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, from Southern Department, Capt. ARTHUR W. C. BERGFELD, Seguin.
To *Camp MacArthur*, Waco, Texas, base hospital, from Chicago, Capt. WILLIAM L. CROSTHWAITE, Waco.
To *Camp McClellan*, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. WILLIAM A. CHERNOSKY, Rosebud.
To *Camp Sevier*, Greenville, S. C., as orthopedic surgeon, from Camp Travis, Major CHARLES S. VENABLE, San Antonio.
To *Camp Travis*, San Antonio, Texas, base hospital, from Chicago, Capt. BERNARD F. SMITH, San Antonio.
To *Fort Oglethorpe* for instruction, Capt. ADDISON L. LINCEUM, Austin; SIDNEY J. FRANCIS, Luling; from St. Louis, Capt. IRA E. PRITCHETT, Houston. For instruction, Lieut. MILTON M. GLOVER, Wichita Falls; from Camp Hancock, Lieut. KNIGHT W. FIELD, Dallas; from Camp Pike, Lieut. CHARLES O. ADAMS, Longview; from San Antonio, Lieut. HALL SHANNON, Dallas.
To *Fort Riley* for instruction, from Fort Sill, Capt. FOSTER R. WINN, Alvin; from Camp Bowie, Lieut. JOHN R. LEWIS, Gainesville; from Camp Logan, Lieut. HENRY E. BAYLIS, Huntsville; from Camp MacArthur, Lieut. SAM R. GRIFFIN, Canyon; WILLIAM E. CAMPBELL, Cedar Creek; SILAS G. CAIN, Haskell; WALTER PURVIANCE, Pampa; from Fort Sill, Lieut. OZRO W. CUNNINGHAM, Valley View.
To *Fort Sam Houston*, Texas, for duty, from Fort Riley, Lieut. LYLE J. LOGUE, Houston.
To *New Orleans*, Charity Hospital, for instruction, and on completion to *Camp MacArthur*, Waco, Texas, base hospital, Capt. DAVID H. LAWRENCE, El Paso. On completion to *Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. GEORGE T. THOMAS, Amarillo.
To *New York City*, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. JAMIE D. STEPHENS, Temple.
To *San Antonio*, Texas, Kelly Field, from San Antonio, Lieut. EDWARD E. COLLINS, Premont.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE W. HOWARD, Dallas; JAMES S. BUIE, Hillsboro; TALBERT M. HALL, Osage.
Resignation of Lieut. FRANCIS C. GREEN, Oglesby, accepted.

Utah

To *Fort Riley* for instruction, Capt. JOHN C. EVANS, Salt Lake City; Lieut. JOSEPH E. DAY, Garland City; JOSEPH H. PECK, Gold Hill; THOMAS W. STEVENSON, Salt Lake City.
To *Philadelphia*, Pa., for orthopedic instruction, from Camp Travis, Lieut. DAVID K. ALLEN, Salt Lake City.

Virginia

To *Camp Gordon*, Atlanta, Ga., as assistant to the camp surgeon, from Camp Gordon, Major FREDERIC ELMER JENKINS, National Soldiers' Home.
To *Camp Sevier*, Greenville, S. C., base hospital, from Camp Sevier, Lieut. WILLIAM B. PORTER, Richmond.
To *Chickamauga Park*, Ga., for duty, from Fort Oglethorpe, Lieut. WADE C. PAYNE, Haymarket.
To *Fort McHenry*, Md., for duty, Lieut. ADRIAN VAN B. ORR, Chester.
To *Fort Oglethorpe* for instruction, from Camp Lee, Majors SAMUEL B. MOORE, Alexandria; ALLEN J. BLACK, Hollins; Lieut. ISAAC H. GOLDMAN, Richmond. For instruction, Lieut. WAVERLY S. TUCKER, Richmond; from St. Louis, Lieut. ELIJA M. HICKS, Roanoke.
To *Fort Sam Houston*, Texas, for temporary duty, Capt. JOHN M. LOVE, Norfolk.
To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, Lieut. JOHN E. WINE, Forestville.
Honorably discharged, Lieut. ALVAH RAMSEY, Burkesville.

Washington

To *Camp Fremont*, Palo Alto, Calif., base hospital, Lieut. CHARLES B. COWAN, Seattle.
To *Camp Lewis*, American Lake, Wash., base hospital, Lieut. HINTON D. JONES, Tacoma; from Camp Lewis, Lieut. CHARLES R. McCREERY, Tacoma.
To *Fort Riley* for instruction, from Camp Lewis, Capt. WILLIAM H. AXTELL, Bellingham; Lieut. JOSEPH S. SMEALL, Tacoma. For instruction, Lieut. CHARLES H. DEWITT, Jr., Tacoma.
To *New York City*, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. FRANK L. WOOD, Lyden; from Portland, Ore., Lieut. FRANK A. BRYANT, Colfax.
To *Seattle*, Wash., University of Washington, for duty, and on completion to *Camp Fremont*, Palo Alto, Calif., base hospital, Major JAMES B. EAGLESON, Seattle.

West Virginia

To *Camp Morrison*, Va., for duty, from Pittsburgh, Lieut. RALPH H. BOICE, Sistersville.

To *Los Angeles*, Calif., Arcadia, for duty, from Los Angeles, Lieut. HARRY R. PARKER, Williamson.
Honorably discharged, on account of physical disability existing prior to entrance into the service, Capt. CALVIN M. KESSLER, Clarksburg; WILLIAM L. RAYL, Huntington; Lieut. NOAH E. STEELE, Omar.

Wisconsin

To *Camp Bowie*, Fort Worth, Texas, base hospital, from Fort Riley, Capt. VERNON ROBERTS, National Home.
To *Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. GEORGE R. REAY, LaCrosse.
To *Camp Pike*, Little Rock, Ark., to examine the troops for cardiovascular diseases, Capt. JAMES G. TAYLOR, Milwaukee.
To *Chicago*, Ill., Presbyterian Hospital, for instruction, and on completion to *Fort Riley*, base hospital, Capt. WILLIAM B. McCAULEY, Milwaukee. On completion to *Camp Grant*, Rockford, Ill., Lieut. EDMUND H. MENSING, Milwaukee.
To *Fort Oglethorpe* for instruction, from Fort Riley, Major EDWARD J. BARRETT, Sheboygan; from Chicago, Lieut. GEORGE H. SCHLESSELMAN, Fond du Lac.
To *Fort Riley* for instruction, Capt. ENOCH P. WEBB, Beaver Dam; BENJAMIN FOSSE, Beloit; HERMAN HENDRICKSON, Green Bay; GEORGE W. FIFIELD, Janesville; CHARLES R. LOCKWOOD, Kankakee; JOHN W. BIRD, Stevens Point; EUGENE GATES, Two Rivers; RICHARD E. DAVIES, Waukesha; Lieut. FRANK C. WALCH, Black Creek; HAROLD KALLING, Black River Falls; WILLIAM H. BAYER, Gleason; RAYMOND N. NELSON, Horicon; ROBERT C. MONTGOMERY, Madison; EDWARD N. PFEFFER, Milwaukee; JOHN T. BROOKS, Minong; EDWIN RILEY, Park Falls; ROY F. BREEDEN, Richland Center; CLINTON C. FULLER, Stratford; CHARLES R. GOUGH, Wausau; DANIEL W. LYNCH, West Bend; JOSIAN A. POWLASS, West De Pere.
To *Milwaukee*, Wis., to examine applicants for appointment to the Officers Reserve Corps, Major GEORGE V. I. BROWN, Milwaukee.
To *New York City* for orthopedic instruction, and on completion to his proper station, from Fort Riley, Major RALPH KAYSON, Plymouth.
Honorably discharged, Lieut. GEORGE D. SPENCER, Evansville.
Resignation of Capt. JOHN R. MINAHAN, Green Bay, accepted.

Wyoming

To *Fort Riley* for instruction, Capt. ARTHUR E. LANE, Laramie; Lieut. ALLAN M. GIDDINGS, Crosby.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Cyrus T. Foster, city health commissioner of Rock Island, has been appointed commissioner of the sanitary district of Rock Island by the state board of health. Dr. Henry S. Bennett has been given a similar appointment in the Moline territory.—Dr. G. Gwin Taylor, Elkhart, has been made medical supervisor of sanitary military zones in Illinois, comprising the territory around the Rock Island Arsenal, Camp Grant, Rockford, the Great Lakes Training Station, Fort Sheridan, Scottfield, Belleville, and Chanute Fields, Rantoul.—Dr. G. Allen Lightle, Tallula, has been appointed resident medical officer of the Rock Island military district under the city board of health.

Miscellaneous.—The city authorities of Springfield, in response to a communication from Dr. C. St. Clair Drake, director of the state department of health, regarding the health organization of Springfield have agreed to take action looking to the establishment of a modern department of health, in accordance with a recommendation recently made in the report of a survey by the United States Health Service. The mayor and the commissioners of health have agreed, that if the tax levy for health purposes passes the spring election, the city will reorganize the health department, employ a full-time physician as health officer, appoint a bacteriologist and chemist, employ a full-time public health nurse, one sanitary and quarantine officer, two food and dairy inspectors and a superintendent of the isolation hospital, as well as competent help to look after the department of vital statistics.—At Mason City, March 12, Dr. Henry O. Rogier, county chairman of the Illinois Tuberculosis Association, which is a branch of the Red Cross, started a movement to organize the work of a tuberculosis commission and a number of committees were appointed to carry on the work. Dr. William H. Schuette, Mason City, has been appointed county advisor.

Chicago

Personal.—Dr. Edward K. Armstrong has been sent to France by the American Red Cross to engage in child welfare work among the civilian population.

To Address the Chemical Society.—Prof. E. V. McCollum of Johns Hopkins University, April 12, will address the

Chicago section of the American Chemical Society on "The Biological Analysis of Food."

Health Committees to be Appointed.—At a meeting of the Chicago Church Federation, March 8, action was taken to have appointed 1,000 health committees in a campaign against tuberculosis. About 2,000 sleeping porches will be built this spring, and citizens will be encouraged to sleep outdoors. The cooperation of the city health department and the Municipal Tuberculosis Sanitarium was promised in the movement.

Miscellaneous.—Suit to recover the property of the Chicago College of Medicine and Surgery, valued at \$300,000, was filed, March 19, by Mrs. Neva A. Brown, widow of the late Henry B. Brown, a chief owner of the Valparaiso University. —Under the direction of Dr. William N. Lipscomb, the first-aid car of the American Red Cross will be in Chicago during the week of April 15. Lectures will be given and classes conducted, showing modern methods of preventing railroad accidents and the administering of first aid to the injured. —At the meeting of the medical women of Illinois, March 27, an initial step was taken to raise \$300,000 to equip a woman's hospital unit. Chicago's quota is \$25,000, to be collected between March 26 and April 6. Dr. Clara P. Seippel was elected chairman of the finance committee. The object is to collect into one unit the women in the medical service abroad.

INDIANA

For New Hospital.—The county council at Winchester has appropriated \$15,000 toward the erection of a new hospital. The county has a previous donation of \$10,000 from Mrs. W. E. Miller and a lot on which to build.

Personal.—Dr. George H. McLin, Huntington, was brought home from St. Louis seriously ill. He had been traveling in the Southwest. —Dr. Andrew T. Custer, Linton, has resigned as coroner of Greene County and Dr. H. O. Woodrow has been made his successor.

Miscellaneous.—At South Bend the county council has appropriated \$100,000 for the construction of new buildings for the county tuberculosis hospital. —At Decatur early in March, there were four deaths of patients from eating meat. After an investigation of the circumstances surrounding these deaths, it was decided that they were due to botulism.

For Selling Narcotics.—Dr. Benjamin F. Patton of Fontanet, formerly of Terre Haute, has been sentenced to prison for giving prescriptions for morphin. Dr. Patton was accustomed to visit a west end saloon in Terre Haute where many drug fiends gathered to get his prescriptions. He claimed he had sixty-eight patients, but the government fixed the number at 150.

New Indiana School of Medicine.—A \$400,000 building for the Indiana School of Medicine is to be erected on a site just east of the Robert W. Long Hospital, Indianapolis. It is expected that the new building will be four or five stories high and built of pressed brick and stone, trimmed to harmonize with the hospital building. It is expected that \$150,000 will be realized from the sale of the old building.

IOWA

Resolutions Adopted.—The Scott County Medical Society, March 5, adopted a series of resolutions calling attention to the greater prevalence of venereal disease among civilians than in the Army, and asking that future registrants for the Army be considered and dealt with in the light of an urgent war emergency and placed under military control with reference to venereal diseases. It was further resolved that delegates to the next meeting of the state medical association should be instructed to urge the state association to adopt similar resolutions.

Personal.—Dr. Mathew A. Tinley, Council Bluffs, now a lieutenant-colonel in France, has been awarded the French Cross of War. —Dr. Benjamin H. Chamberlain, Wyoming, has been made a member of the school board. —Dr. William S. Norton, Muscatine, was reelected to the board of education. —Dr. Edward S. Bowman, Davenport, county physician, has been removed from the office by the supervisors. —Dr. Ludwig F. Guldner, Davenport, was chosen physician for the baby welfare clinic to succeed Dr. Emil O. Ficke who has entered the Army medical service.

Miscellaneous.—Through the Waterloo Tuberculosis Clinic and Dispensary it has been ascertained that there are 600 active cases of tuberculosis in Waterloo. —At Davenport a free tuberculosis clinic was opened, March 20, in charge of Dr. Roscoe P. Carney and Sidney G. Hands as examining

physicians, assisted by a tuberculosis nurse. —Two new wards in the base hospital at Camp Dodge were opened, March 18, making a total of twenty-four completed wards. There are 1,500 patients in the hospital. —A number of cases of typhoid fever occurring at Dubuque led to the appointment of a committee by the Dubuque County Medical Society. After an investigation, this committee reported that there was no epidemic or general cause for alarm, but suggested certain instructions to the people of the city in an effort to avoid further dissemination of the disease. —At a meeting of the Iowa Tuberculosis Association at Des Moines, March 4, Dr. Orville W. McMichael of Chicago, the principal speaker, said that more than 500 soldiers with tuberculosis have been returned to their homes from Fort Dodge, Camp Grant, and other cantonments. —At Grinnel more than \$60,000 has been raised to establish a city hospital. —At Humboldt a company has been organized to establish a hospital in the building of the old Humboldt College. —At Fort Dodge, Webster County, physicians increased their rates for professional services 50 per cent.; the new rates became effective March 15.

KENTUCKY

Meningitis.—The number of cases of meningitis at Glasgow led Governor Stanley to take action, March 12, to prevent a serious epidemic. Members of the state board of health, including the state bacteriologist, were directed to attend to the situation, and an officer of the United States Public Health Service was detailed by the Surgeon-General at Washington to work with the state authorities.

Quarantine Rules Revised.—Quarantine rules for contagious diseases recently revised by the Louisville Health Department require children who have been excluded from school because of contagious diseases or exposure thereto to have a certificate from a physician stating that the rules of the department have been complied with. Children may not return to school after the expiration of the quarantine period unless they present the certificate required.

Sterilizing Laundry.—Installation of a sterilizing plant at the armory for the purpose of eliminating all danger of contagious disease being spread through the thousands of soldiers' shirts that are delivered there and which come from thousands of homes, has been recommended to Captain Hawkins, in charge of the substation of the government depot, by Major Fricks of the United States Public Health Service, City Health Officer Baker, his assistant, Dr. R. B. Norment, Jr., and Miss Mary K. Coady, supervising nurse of the board of tuberculosis hospital.

Health Board Reorganized.—By a bill put before both houses of the legislature at its present session, the state board of health has been given jurisdiction over the bureaus of tuberculosis, hotel inspection, food and drug inspection, and vital statistics. The new board will come into existence, June 21. For the present it has been decided that it will be inadvisable to remove the headquarters of the state board from Bowling Green. Both Frankfort and Lexington have been mentioned as locations for the new board. Dr. W. L. Heiser, of the tuberculosis commission, is slated to succeed Dr. Joseph N. McCormack, chief sanitary inspector and acting secretary of the board.

Suit on New Public Health Law.—It is the plan of the present state board of health to test the constitutionality of the recently enacted law which combines the various health activities in the state. It is claimed that the title "An Act Relating to Public Health" does not sufficiently cover the subject to include the abolishment and recreation of the state board of health. The suit will be brought to prevent the governor appointing the new board in June. The law provides that if one paragraph is found invalid or unconstitutional it does not affect the rest of the bill. If that portion of the bill in question is found invalid the new law will be administered by the present board as now constituted.

Personal.—Dr. Henry E. LeCates has resigned as head of the Blue Grass Tuberculosis Sanatorium at Lexington and will go to Minnesota as a member of the state advisory tuberculosis commission, with headquarters in St. Paul. —Drs. Henry E. Tuley, David C. Morton and George A. Hendon, physicians of Louisville, have been named as members of the tuberculosis corps of the Waverly Hill Sanatorium. —Dr. Orlan T. Hughes, Stamping Ground, was elected city physician at Lexington, to fill the vacancy caused by the death of Dr. Alexander C. Brown. —The many friends of Dr. S. G. Dabney will be pleased to learn of the favorable news from

his son, Lieut. William Dabney, who was wounded in an engagement in France. It is reported that he has been granted a short leave of absence and is recuperating in Nice, Italy.

MARYLAND

Personal.—Dr. George Y. Massenberg, Towson, who was with the American Red Cross in Roumania, has arrived at Moscow, Russia. He will go to France and continue to work for the Red Cross.

Mayor of Cumberland.—Dr. Thomas W. Koon was elected mayor of Cumberland for the third consecutive term at the election, March 19. Dr. Theodore A. K. Hummelshime was elected one of the four city commissioners to serve for two years. Cumberland has commission government.

Report on Pneumonia Cases.—The health department has issued a caution against contact with persons who have had pneumonia. During the past week the new cases totaled 186, compared with 152 the previous week, and 19 for the corresponding period of 1917. Sixty-one deaths from pneumonia were reported during the week.

A Special Bureau of Hygiene.—It has been recommended by Health Commissioner Blake of Baltimore, as a result of studies made by Dr. William T. Howard, Jr., assistant commissioner of health, that a bureau of child hygiene be established in the health department for the purpose of combating a high mortality rate among children.

MASSACHUSETTS

Cutter Lectures.—The Cutter lectures on preventive medicine and hygiene, were delivered by Elmer V. McCollum, professor of hygiene in the Johns Hopkins University, March 19, 20 and 21.

Officers Elected.—The annual meeting of the Massachusetts Association of Boards of Health was held at Boston, where Dr. John S. Hitchcock, Northampton, was elected president, and Dr. Francis G. Curtis, Newton, treasurer.

Medical Bequests.—By the will of Mrs. Charles H. Colburn, Milford, who died recently in Paris, a bequest of \$20,000 was made to the Milford Hospital, and a fund of \$100,000 to the Harvard Medical School for research in tuberculosis.

Woman Physician Honored.—Dr. Eveline C. DuBois, Springfield, sailed for France during the last week in March, to work close behind the lines in northeastern France under the auspices of the Secretariat Francais des Villages Liberes, a French-American organization, of which the legal head of the Lafayette family is the president of the committee on American relations. The Woman's Medical Society of Springfield gave a banquet in her honor and presented her with a jeweled flag pin.

Personal.—At the annual meeting of the associated boards of health of the Northeastern district of Massachusetts, Dr. George B. Fenwick, Chelsea, was elected president. After ten years of work in Newfoundland and Labrador, Dr. John Mason Little, Jr., Boston, who was part of the time associated with Dr. Wilfred Grenfell, has returned to the states. Dr. Eugene R. Kelley, Boston, has been appointed state commissioner of health to succeed Dr. Allan J. McLaughlin who has been called back into the federal public health service. At the annual meeting of the Robert B. Brigham Hospital for Incurables, Dr. Joel E. Goldthwait, Boston, was reelected president and Dr. Francis H. Rowley, vice president.

Miscellaneous.—Eight John Harvard scholarships were awarded students of the Harvard Medical School in Boston. These scholarships are usually awarded to students who have shown excellence in their work but who do not necessarily need financial assistance. Under the will of Rebecca A. Green, Harvard has received a donation of \$10,000, \$500 of which is for the purpose of founding a scholarship to be known as the John White Browne Scholarship for research in medicine. A death from typhus fever was reported to the Boston Health Department, March 6. The patient came from Chelsea, and after several days' illness was sent to a Boston hospital where he died. The case was diagnosed by Dr. Andrew W. Sellards, Dedham, who was a member of the unit sent to Serbia to combat typhus early in the war.

MICHIGAN

Personal.—Dr. D. B. Hagerman, Ann Arbor, has been appointed local surgeon for the Michigan Central Railroad. Dr. Robert G. Marriner, Menominee, was seriously injured, March 7.

Miscellaneous.—Active cooperation between the military medical officers and the state authorities has resulted in the reporting of 2,000 cases of communicable diseases to the state board of health during the period from September, 1917, to March, 1918. Many of these were cases of venereal disease, and the patients were sent to hospitals to undergo treatment. Free clinics are held in Battle Creek, as well as in Detroit and other cities throughout the state. In Detroit venereal diseases have been made reportable and power has been given the health officer to isolate persons afflicted with them. Drs. Francis Duffield, Detroit, was elected president, and Charles C. Drake, vice president of the board of health. After some experiences with the soldiers at Camp Taylor, Dr. Edwin R. Vander Slice, Ann Arbor, secretary of the Michigan Antituberculosis Association has returned to Ann Arbor convinced that what Michigan needs in the fight against tuberculosis is more sanatoriums, as provided for by the joint county sanatorium law passed by the last legislature. The efforts of the Michigan association for the next year will be directed toward securing city sanatoriums. The medical officers at Camp Custer have recommended a detention camp housing 2,000 men, to be composed of 250 huts, each capable of housing a squad of eight men, the whole to be enclosed with an area large enough for drill purposes. On arriving at the camp, selected men will be placed in this isolation camp.

MINNESOTA

Personal.—Dr. Jennings C. Litzenberg of the University of Minnesota has been delivering a course of lectures on sex and social hygiene, to the soldiers at Fort Snelling. The course is to continue throughout April. Dr. Roy A. Schnacke, St. Paul, has resigned as police surgeon. Dr. William M. Sweeney, Red Wing, had the misfortune to break his leg, early in March.

Miscellaneous.—At a public meeting in St. Paul, March 15, plans for a campaign against tuberculosis were made. The meeting was addressed by a number of the leading experts on tuberculosis in the city and state. The establishment of a tuberculosis fellowship at the University of Minnesota was proposed. In a list of more than fifty cities St. Paul stood fourth in excellence of health conditions as reported to the Department of Commerce of the federal government in March. At Minneapolis it was reported, March 16, that there were 7,000 cases of tuberculosis in the city, over 5,000 of which were not under supervision. At Hibbing, citizens and local authorities are cooperating with the state board of health in a campaign against quack doctors. Literature is being distributed to offset the advertising of the quacks.

MISSOURI

To Head Sanatorium.—Dr. William R. Summers, until recently assistant physician at State Hospital No. 3, Nevada, has purchased the Johnson Sanitarium at Springfield which was established by the late Dr. Samuel A. Johnson, Springfield, for the treatment of mental and nervous diseases. Dr. Johnson was killed on Nov. 26, 1917, by one of his patients who struck him on the head with an ax.

Miscellaneous.—Early in March, meningitis was slightly on the increase and an expert was employed for sixty days to help cope with the situation, on the recommendation of Dr. Eugene Carbaugh, city health commissioner. Under the new hospital and health board, the appropriation for the salary of Dr. E. H. Trowbridge, chief school medical inspector, was cut off, and the work will be continued until June 1 under the direction of the board of education, as a private citizen has agreed to pay the salary of the chief inspector.

Personal.—Dr. W. L. Whittington, formerly superintendent of the state hospital at St. Joseph, has removed to Eldridge, Calif., where he has been made assistant superintendent of the state home for the feeble-minded. Dr. and Mrs. W. B. LaForce, St. Joseph, left, February 1, for Peking, China, where the doctor has been appointed a member of the faculty of the American Indemnity College as physician in charge. The state board of health has elected the following members: president, Dr. W. J. Ferguson, Sedalia; vice president, Dr. W. A. Clark, Jefferson City; secretary, Dr. George H. Jones, Jefferson City.

Social Work Conference.—Social service, made necessary because of war conditions and the reconstruction work that must be taken up in every community at the close of the war, will be the principal subjects considered at the forty-fifth National Conference of Social Work to be held in Kansas City,

May 15 to 22. Raymond Robins, in charge of Red Cross work in Russia; Ernest P. Bicknell, director-general of the Red Cross work in the United States, and Homer W. Folks, in charge of the department of civil affairs of the Red Cross in France, have important places on the program. Among the women speakers will be Mrs. Florence Kelley, who is one of a committee of three asked by the government to inspect factories where soldiers' uniforms are made and to see that none are made in sweatshops, and Maude E. Minor, the only woman member of the New York State Probation Commission, and chairman of the War Department Committee on the Protection of Girls.

NEW MEXICO

Personal.—Dr. William R. Tipton has been made superintendent of the New Mexico Hospital for the Insane at East Las Vegas. Dr. Tipton was formerly medical director of the institution.—Dr. Samuel J. Crumbine, Topeka, secretary of the state board of health of Kansas, addressed the Kiwanis Club at Albuquerque on the subject of health conditions in New Mexico. He referred to the fact that there was no state department of public health in New Mexico. Dr. Crumbine's visit to New Mexico was in the interest of the enforcement of regulations regarding venereal and other communicable diseases.

For a Public Health Department.—The New Mexico Public Health Association, an organization with headquarters at Albuquerque, is making vigorous efforts to have the state authorities establish a state board of health, as well as to secure legislation for the improvement of health conditions throughout the state. The president of the association is Nathan Jaffa, Roswell. The secretary of the association has been in correspondence with the officers of national associations with reference to the study and prevention of tuberculosis, especially as it affects states like New Mexico, to which many persons with tuberculosis migrate. A new health law has been introduced into the New Mexico legislature, which, it is stated, is based on that of Indiana.

NEW YORK

Hearing on Health Insurance Bill.—A hearing was held on Senator Courtland Nicholl's health insurance bill, March 26. The bill has the unanimous endorsement of the New York State Federation of Labor, the Women's Municipal League, the Women's Trade Union League, and the Consumer's League of New York.

Personal.—Dr. Elliott T. Bush, Horseheads, has been appointed superintendent of the Chemung County Tuberculosis Hospital at Elmira. Dr. LaRue Colegrove, Elmira, has been made a member of the hospital commission.—Dr. Virgil D. Selleck has been appointed full-time health officer of Glens Falls.—Dr. Oliver W. H. Mitchell has resigned as head of the city laboratories at Syracuse. Dr. Augustus J. Gigger, formerly bacteriologist for the Rhode Island State Department of Health, has been named as his successor.

Physician Sentenced.—An authentic report states that, Jan. 10, 1918, in the United States District Court for the southern district of New York, Dr. William Llewellyn Owen was indicted on four counts and sentenced to one year on each indictment in the federal prison at Atlanta, Ga., the sentences to run concurrently. Reports state that Owen had been conducting a thriving business in the sale of various colored pills, the "miraculous powers" of which had been set forth in pamphlets circulated through the United States mails. The pills were "guaranteed to cure" all human ailments.

Better Facilities for Insane Urged.—On the recommendation of the Hospital Development Commission, the board of managers of the New York State Charities Aid Association has adopted resolutions urging more adequate facilities for the care of the insane and the feeble-minded in this state. There are now two bills before the legislature providing for two new state hospitals for the insane in the metropolitan district. The measures also provide for a new state board to handle the problem of the feeble-minded. The appropriation bill before the legislature calls for a total of about \$2,500,000 in authorizations and appropriations to construct new buildings for the accommodation of the insane and the feeble-minded.

Miscellaneous.—The Albany County Medical Society and other societies have expressed their opposition to the law making the regulations concerning narcotic drugs more stringent.—Utica has made a thorough reorganization of the city health department with new employees.—Dr. Geza

Kremer for several years with the department of health of New York has been placed in charge of the Sea View Hospital and Sanitarium at Castleton Corners.—At Troy a full-time public health nurse has been employed.—A bill in the state legislature to license chiropractors is being opposed by representatives of the state department of health and the educational and medical professions throughout the state. Dr. Augustus M. Downing, deputy commissioner of education, contends that the bill is absolutely at variance with the present method of state control of similar professions, since it would take from the board of regents the power of decision in admitting candidates to practice.—The Whitney bill in the legislature, which would abolish all local boards of health, replacing them with county boards and giving complete control to the state board of health, met with so much opposition from local health authorities throughout the state that it has been withdrawn.—Strong opposition has developed to bills introduced into the New York state legislature, which if they became laws would remove all obligation on the part of rural communities to carry out physical training and health inspection. The present physical training law requires that children of 8 years or over in elementary and secondary schools should receive systematic physical training and health inspection. Among the opponents of these measures were Dr. Thomas D. Wood, professor of physical education at Columbia University, and Dr. Eugene Lyman Fiske of the Life Extension Institute, who claim that children in the rural districts need physical training and inspection more than those in the city.

New York City

Charitable Bequests.—To Harvard University for the creation of two scholarships in the medical school, \$5,000, by the will of Mrs. Elizabeth C. Franham.

Gifts Wanted for Columbia War Hospital.—Base Hospital No. 1, the Columbia War Hospital, announces that it is now caring for 600 men from overseas and from the various cantonments in this country and that certain gifts will be acceptable. Among the articles particularly desired are the following: talking machines, with records; bookcases and books, games, wicker chairs, playing cards, tobacco, jellies, jams and fruits.

Personal.—Dr. Seth M. Milliken has been appointed assistant attending physician to the Roosevelt Hospital, to take the place of Dr. Kirby Dwight, who has entered military service.—Major Grayson M. P. Murphy, former head of the American Red Cross Commission in Europe, has been awarded the first Liberty Service Medal, recently created by the American Social Science Association for the recognition of notable humanitarian and patriotic services for national welfare.

Fund for Women's War Work.—March 26, the American Women's Hospitals, organized by the war service committee of the Medical Women's National Association, inaugurated a campaign to raise funds for establishing in the allied countries hospitals and clinics to be conducted entirely by American women physicians and surgeons. A woman physician in every state has been appointed by the committee to organize her colleagues for future service abroad and for immediate service in the campaign.

Resolutions Regarding Occupational Diseases.—The executive committee of the Associated Outpatient's Clinics of New York City recently adopted resolutions, in consonance with those of other medical bodies, emphasizing the desirability of the early recognition of the diseases of industrial occupation, and the necessity for detailed records of all patients, as to occupation, etc. The resolutions urge that adequate facilities be provided for the treatment of occupational diseases and industrial poisonings, and that the study of occupational diseases be stimulated among the physicians connected with dispensaries.

Miscellaneous.—The sum of \$8,000 has been given by citizens to erect a building at the People's Hospital on the east side to treat children with physical defects and to conduct a campaign of hygiene.—The United States government has taken over the old Hudson Street Hospital at 67 Hudson Street, to be put into the military service.—A bill in the New York legislature provides for the establishment of a special health department and organization for Brooklyn.—A course of lectures on food and food conservation as related to the war will be given at the College of the City of New York under the direction of Dr. Charles Baskerville, professor of chemistry. The courses are open to all who are interested.

American Women Physicians Give Hospital to Serbia.—The American Women's Hospitals, of which Dr. Rosalie Slaughter Morton is chairman, in response to an official request, announces that the institution will establish a hospital in Serbia which will contain about 250 beds. This organization has already fifty workers in the war zone and has sent a motor laboratory and two ambulances to Serbia. The American Women's Hospitals is also planning to establish a chain of clinics and dispensaries throughout France and Italy manned entirely by women surgeons and laboratory assistants. Since March 25, this organization has been carrying on a campaign to raise funds for the purpose. It has organized a committee with subcommittees, whose members are conducting the campaign in each state. Fifty American women physicians are now working in France.

New York Hospitals Preparing for Soldiers.—A hearing was held, March 25, by the committee on hospital and medical facilities of the mayor's committee on national defense for the purpose of planning coordination of medical facilities in this city for the care of sick and wounded military men arriving from overseas. Dr. Sigismund S. Goldwater presided. Representatives of the United States Navy, the board of education, the immigration department, the New York State Charities Aid Association, the American Motor Car Service, the police department, the Red Cross, private hospitals and kindred institutions were present. It was pointed out that there are now numerous patients from the Navy in the public and private hospitals of this city. As a result of the conference, the state board of charities will at once order a survey of the hospital facilities of both the city and the state with the view of ascertaining their availability for military use. In all cases in which expansion of public or private hospitals is found necessary, it is the intention to make the extensions permanent. Health Commissioner Amster favored an amalgamation of the field nursing forces of the department of health with the units under the direction of the Red Cross. The Red Cross has already made preparations to meet the demands that may be made on it as a result of any great increase in the wounded military population of the city.

New York Academy of Medicine Adopts Resolutions on Occupational Diseases.—At a meeting of the New York Academy of Medicine held, March 7, 1918, resolutions in regard to the industrial disease problem were adopted urging that the authorities of medical schools be notified of the necessity of instruction in the treatment and prevention of occupational diseases, particularly with reference to the poisonous substances used in war and other industries. It was urged that clinics be established both in New York and in the neighboring towns where there are munitions and other manufacturing plants, so that these diseases may be studied and treated in a competent manner and both employers and employees may enjoy the benefits of this knowledge and receive instructions concerning the nature of industrial hazards and how to avoid them. Large hospitals and dispensaries were urged to record accurate data concerning patients suffering from industrial diseases and to provide adequate means for their treatment. It was also urged that the importance of the early recognition of and the necessity of promptly reporting these cases be brought to the attention of practitioners, and that means be provided to extend the excellent work done by the division of industrial hygiene in the bureau of preventable diseases, of the New York City Health Department. In the resolutions, the medical press was requested to give more space to the discussion of industrial diseases, and finally, the federal government, in the interest of the conservation of health and efficiency, was requested to cooperate, through its corps of P. H. S. experts, in the supervision of conditions in factories producing war munitions and allied products.

NORTH CAROLINA

Miscellaneous.—Dr. Benjamin E. Washburn, Raleigh, in charge of county health work reports that 6,000 people at seventy-five different places heard lectures on health conditions, and that 277 hookworm patients were treated during February. Nine counties have health departments which are cooperating with the state board of health in educational, sanitary and quarantine work, the physical examination of schoolchildren, vaccinations, etc.—Arrangements have been made for free nursing service for those who are unable to pay. Two nurses have been provided.

OHIO

Fire at Milford Center.—Fire at Milford Center, March 5, destroyed a large building owned by Dr. John L. Boylan, Marysville.

State Meeting Postponed.—Because of war conditions, it has been decided by the council to postpone until October 1-3, the seventy-first annual meeting of the Ohio State Medical Association, which was to have been held in Columbus in May.

Toledo Unit in Service.—The Toledo unit, comprising the staff of the U. S. Hospital Ship *Mercy* is in active service with the Atlantic fleet. The personnel of the staff includes Surgs. Charles W. Moots and P. Bruce Brockway, and Asst. Surgs. Robert H. Butler, Bellefontaine, Marsh Dolloway and Thomas Ramsey.

Personal.—Dr. William B. Quinn, Springfield, has been placed in charge of the obstetrical department of the Springfield City Hospital, succeeding Dr. Clarence S. Ramsey, resigned.—Dr. William H. Burns, Alliance, who has been under treatment for several weeks at the sanatorium in Bluefields, W. Va., has returned home convalescent.—Dr. Ralph W. E. Cole, city epidemiologist of Akron, has resigned to become chief of the division of communicable diseases, public health, education, and vital statistics in the state health department of West Virginia.—Dr. Clayton W. Russell, Springfield, who has been under treatment at the Springfield City Hospital has returned home much improved.—Dr. Stephen U. Sison, Ravenna, has been appointed district surgeon for the Baltimore and Ohio system.—Dr. Fernand J. Leblieq, has been appointed city physician of Sandusky to succeed Dr. John S. McClelland, who disappeared two months ago.—Dr. Chester W. Waggoner has been made city health officer of Toledo.—Dr. Oscar H. Sellenings, Columbus, who left for France several months ago is now connected with the children's bureau of the American Red Cross, Paris.—Dr. George W. Miller has been elected president of the Dayton Antituberculosis Society.

Cincinnati

Old Medical Building for Soldiers.—The old McMicken Hall has been turned over to the War Department for the housing of soldiers who are taking courses of instruction in the University of Cincinnati.

Personal.—Dr. Max C. Labermeier has been appointed temporary district physician succeeding Dr. John J. Schwartz, who resigned to enter the military service.—Dr. Adam W. Montague has been appointed receiving physician at the General Hospital.—Dr. Vera V. Norton has passed the examination for resident physician at the municipal tuberculosis sanatorium.

New Clinics.—A special medical clinic is to be established at the Cincinnati General Hospital by the medical committee for Dr. Charles L. Bonifield. This is in addition to the clinic in charge of Dr. John M. Withrow. An outdoor clinic for malignant disease is to be inaugurated at the hospital. In a plea before the board of health, March 13, Surg. Paul Preble of the United States Public Health Service, urged the establishment of a clinic to aid in the stamping out of venereal disease in the military zone in which Cincinnati is included.

Medical College Dedicated.—The new buildings of the Ohio-Miami Medical College of the University of Cincinnati were formally dedicated, March 25. Gifts of \$25,000 were announced. Pres. Charles W. Dabney of the university, in his opening address, paid eloquent tribute to Dr. C. R. Holmes by whose untiring efforts these magnificent buildings were added to the university. Addresses were also made by Dr. Henry S. Pritchett of the Carnegie Foundation, Dr. Joseph Ransohoff and others. Mr. Rufus B. Smith, on the behalf of the directors, accepted the building. The chief donors were Mrs. Mary M. Emery, who gave \$300,000 for the building, Dr. Benjamin K. Rachford, who gave \$125,000 for the endowment of a chair of pathology, Mr. and Mrs. Charles P. Taft, Mrs. Charles Fleischmann, Col. William Cooper Proctor, Harry H. Levy, Mrs. W. T. Semple, Mrs. Christian R. Holmes, Mrs. Julian Benjamin, Miss Mary Hanna, Mrs. Emilie Heine and James P. Orr. The grand total of subscriptions was \$555,000. There still remains \$75,000 to be raised to free the buildings from debt.

OKLAHOMA

Personal.—Dr. Robert J. Gaudin, Oklahoma City, has resigned as a member of the city board of health. Dr. Hil-

brand J. Hards, city health officer, has also handed his resignation to the mayor.

Miscellaneous.—In February at a conference between the governor, the state health officers and members of the faculty of the university and other organizations, a program for social hygiene was adopted. Governor Williams spoke of his intention of issuing a proclamation setting aside a "Hygiene Sunday," in starting the campaign.—The state board of health has issued a book of rules and regulations in regard to health matters which are to be distributed to all health officers of the state and to physicians and others who may desire it.—A tuberculosis dispensary was opened, March 12, at Oklahoma City, in charge of a public health nurse. A tuberculosis survey of the city is under consideration. Dr. Lewis J. Moorman, Oklahoma City, is to be director of the dispensary.—The commissioner of public safety at Oklahoma City has protested against the practice of small towns adjacent to Oklahoma City in sending smallpox cases to be cared for at city expense. There were eighty-four cases of smallpox in February, and ten new cases had been reported up to March 5.—At a conference of the inspectors of the state board of health under Dr. John W. Duke, Guthrie, in an effort to suppress smallpox it was decided that the state is to be divided into districts and an inspector assigned to each. Where conditions warrant, vaccination will be required of every one, and free vaccine will be distributed for the purpose.—At Muskogee, March 6; a health survey was begun.

PENNSYLVANIA

Philadelphia

Charitable Bequest.—A bequest of \$1,000 to the maternity hospital of St. Vincent's is contained in the will of the late James McHugh.

Rush Hospital Fund.—The twenty-five teams of men and women engaged in a ten-day campaign to obtain \$150,000 for the Rush Hospital for consumption and allied diseases, reported \$25,500 as a result of the first four days.

Neurologists Needed for Service.—An urgent appeal has been received from Dr. Charles L. Dana, chairman of the National Committee for Mental Hygiene, requesting the services of neurologists and psychiatrists for the medical department of the Army without delay. Men of maturity and standing are needed for these positions.

Plans for Mosquito Campaign.—A conference was held at the Academy of Natural Sciences, March 29, in which were discussed details of a campaign begun by the federal, state and city governments, and by industrial establishments to exterminate mosquitoes in South Philadelphia and Delaware County. Dr. Benjamin F. Royer, acting state commissioner of health, presided as the commonwealth's representative and the city was represented by Dr. Andrew A. Cairns, acting chief of the bureau of health.

Smallpox Quarantine.—More than 5,000 persons, most of them colored, were vaccinated, March 27, in two city blocks after three cases of smallpox had been discovered within the area. The blocks under quarantine are from Tenth to Eleventh and from Pine to South streets, including several small thoroughfares. The quarantine was put in force at 6 o'clock in the morning by a detail of police and 100 physicians under Dr. Henry A. Strecker aroused the residents and vaccinated them. Few offered resistance. One of the patients was found to be a sailor who is believed to have contracted the disease in a southern port and brought it to this city.

Personal.—Dr. Alice Weld Tallant, professor of obstetrics at the Women's Medical College of Pennsylvania, read a paper on "Civilian Relief Work in France" before a special meeting of the Medical Society of the Women's Hospital of Philadelphia, March 25. Dr. Tallant has recently returned from the war zone where she was connected with the Smith College Reconstruction Unit in France.—Dr. David G. Metheny of the Jefferson Medical College has been elected professor of anatomy in the medical department of Baylor University, Dallas, Texas.—Dr. Charles H. Frazier, head of the hospital unit known as the Government Head Surgery Hospital No. 11, which is equipped with 1,000 beds, has tendered his resignation to Dr. Wilmer Krusen, director of public health and charities as consulting head surgeon of the Philadelphia General Hospital in order to hold himself in readiness for service with his unit.

Medical Notes.—A joint medical meeting of the Jewish Hospital Clinical Society and the Mount Sinai Hospital Clinical Society was held at the Mercantile Club, Tuesday even-

ing, March 26. Dr. John B. Deaver was the speaker of the evening and the meeting was followed by supper.—The Pathological Society of Philadelphia tendered a luncheon, March 29, to the American Association of Pathologists and Bacteriologists, the American and Canadian sections of the International Association of Medical Museums, the American Association of Immunologists, and the American Association for Cancer Research.—The meeting of the Philadelphia Pediatric Society and the Babies' Welfare Association will be held on Friday, April 5, at the Academy of Natural Sciences, and will be given over to the consideration of the reduction of infant mortality. The speakers will be Miss Julia Lathrop, chief of the federal children's bureau; Dr. Jessica Piexotto, of the Council of National Defense, and Dr. Richard M. Pearce of the American Red Cross. Motion pictures will show the work now being done in France.

CANADA

Canadian Tuberculous Soldiers.—Up to Dec. 31, 1917, the Canadian Hospitals Commission had cared for 2,871 tuberculous soldiers. Of that number 1,983 had been overseas, and 888 had been sent from Canadian training camps. The number of patients who had been discharged or who had died up to that date was 1,466. Of those, 803 had been overseas and 663 had not been out of Canada. Of those under treatment, December 31, 1,180 had been overseas and 225 were camp patients, making a total of 1,405 at that time.

Canadian Amputation Cases.—January 15, when complete records were available, 1,051 Canadian soldiers on whom amputations had been performed had been returned to Canada. Of that number 266 had been discharged. A classification of the amputation cases shows that 328 men have lost arms. Of these 111 have been discharged. The total number of patients who had legs amputated is 723, of whom 568 are still in the hospitals in Canada. Of the men still in hospitals, 73 lost arms below the elbow and 144 above that joint. Of the men still in hospitals who lost legs, there were 194 who had amputations performed below the knee and 374 above.

Hospital News.—It has been decided to erect in Alberta, near Calgary, a new military hospital with a capacity of 300 beds, which may be enlarged to one with a capacity of 600 to 900 beds.—Additional ward space and facilities for treatment are being provided at the military hospital in Vancouver, B. C. This will give 150 more beds.—The Manitoba Military Convalescent Hospital, Winnipeg, is to be enlarged to a 1,000 bed institution.—The capacity of the Esquimalt Military Hospital, B. C., is to be expanded from 110 beds to 300 beds.—The total accommodation of the military hospitals of Canada in contemplation is 20,366. The exact accommodation at present is 12,291, and in addition the discharge depot accommodation amounts to 2,300.—It is said that there are 20,000 wounded Canadian soldiers in England awaiting transportation to Canada. This large number will tax the accommodation of the Canadian military hospitals.

Personal.—Dr. Alfred A. Thompson, M.P., Ridgeway, who has been medical superintendent of the military hospitals of Canada, is planning to resign, as the military hospitals commission is now replaced by a civilian organization, a fact which precludes his occupancy of the position and that of member of parliament at the same time.—Dr. Harry J. Watson, Winnipeg, Manit., who has been overseas for two years as a captain in the C. A. M. C., and resigned from the Canadian army medical service, has been appointed major in the Medical Reserve Corps of the United States Army, and has left to assume his new duties. Major Watson at one time practiced in Ottumwa, Iowa, and was three years in the Philippines with the United States forces.—Major Thomas D. Archibald, Toronto, who saw service overseas; but has been commanding officer at the military hospital at Whitby, has been given command of several military hospitals in Toronto.—Lieut.-Col. D. King Smith, Toronto, who was overseas with the University of Toronto Base Hospital, served for some months in Halifax, but has now been given command of the North Toronto Military Hospital.—Col. Alexander Primrose, Toronto, who has returned to Canada from England, where he was consulting surgeon to the C.E.F., has been appointed to the command of the military section of the Toronto General Hospital, which has apportioned over 200 beds for returned soldiers.—Major Howard Lester Harris, M.B., has been invalided to England from Saloniki. He was studying in Austria when war began. Before that he was practicing in Kamloops, B. C., and

enlisted at Victoria.—Dr. Wilfred T. Grenfell, C.M.G., the Labrador medical missionary, was in Toronto when he was attacked by laryngitis and ordered south by his physician. Latest advices state he has fully recovered.—Dr. Charles J. C. O. Hastings, M.O.H., Toronto, has been elected president of the American Public Health Association.—Major Gilbert Royce, Toronto, who went overseas three years ago with the University of Toronto Base Hospital, has been made a lieutenant-colonel and given command of a hospital at Bromley, England.—Dr. Percy W. Barker, Stratford, Ont., who has been in France two years, is home on leave of absence, having suffered from trench fever.—Dr. William Goldie, Toronto, will go overseas shortly for service in some of the hospitals of England.—Major Sydney S. Burnham, Toronto, who has been the recipient of the Distinguished Service Order, has been gazetted a general staff officer of the third grade. He is a son of Dr. Howard H. Burnham, Toronto.

GENERAL

The Pacific Medical College.—A letter from Dr. Charles B. Pinkham, secretary of the California State Board of Medical Examiners, states that the Pacific Medical College, Los Angeles, Calif., has never received recognition nor been approved by the California Board of Medical Examiners, that he has been informed recently that diplomas have been issued granting a degree without a requirement of specific attendance, and that a number of state boards have admitted the holders of such diplomas to examination. He asks that this information be disseminated among the state boards of the United States, since they may not have carefully investigated the record of the institution. He says that, as a result of the California board's investigation, an attorney representing the college has advised him that immediate steps are being taken to disincorporate the institution.

FOREIGN

Ichthyol Now Produced in Italy.—It has been found that the bituminous schist in the Vallepiana district in Italy yields a high grade ichthyol, equal to the best hitherto imported from Austria.

Chair of Phthisiology at Edinburgh University.—The first incumbent of the newly founded chair of phthisiology at the University of Edinburgh is Sir Robert W. Philip, professor of clinical medicine, said to be the founder of the first anti-tuberculosis dispensary.

Fatal Gas Gangrene.—Two Italian surgeons have recently succumbed to infection acquired while operating on wounded with gas gangrene. The victims are Drs. L. di Murro and G. Sica, both of whom had been long at the front. The gas gangrene developed a few days after the infection, but there were several weeks between the two tragedies.

Exchange of Prisoners Between Italy and Austria.—The twelfth interchange of sick and disabled war prisoners recently repatriated thirty-seven Italian officers and 303 privates, but the *Policlinico* remarks that there can be no question of reciprocity, as the condition of the Austrian prisoners in Italy is so much better than that of the Italian prisoners in Austria that it is by no means an even exchange.

Italian University to be Founded in Switzerland.—The *Riforma Medica* states that Switzerland has four universities at which French is spoken and three at which German is spoken, but there is none in the Italian speaking part of the country. By a recent legacy to the canton of Ticino, and gifts from other Italians, the funds have been provided to found an Italian speaking university and steps have already been taken for its realization at Ticino.

Campaign Against Venereal Diseases.—According to a statement of Mr. Hayes Fisher, president of the Local Government Board in England, a good start has been made in the campaign against venereal diseases. In fifteen months since the regulations were issued, 135 out of 145 county and borough councils have submitted schemes, of which 112 have been approved and 111 have been actually administered. During the nine months extending to the end of September, 1917, 12,000 hitherto unknown patients were treated in the London center alone, and it was calculated that by the end of the year 1917, 16,000 would have been cared for. Manchester has established centers in all its hospitals, twenty clinics for outpatients, and a laboratory in connection with the university, where good work is being done. A circular is to be issued recommending more lying-in homes, particularly for sufferers from the disease, 75 per cent. of the expense of which is to be borne by the government.

LONDON LETTER

LONDON, March 5, 1918.

The National Physique

In the first of a series of lectures on "Problems in British Anthropology" at the Royal Institution, Prof. Arthur Keith said that the problem of physical deterioration is an old one. When our troops returned from the South African War it was raised by the late Gen. Sir Frederick Maurice, because he found that of every five men who offered themselves as recruits, three had to be rejected because they were found physically unfit for service. Sir William Taylor, director-general of the Army Medical Service at the time, reported that of 679,703 recruits examined between 1893 and 1902, only 424,651 men were passed as fit for service by the army medical officers, while 255,022 were rejected. An army of over a quarter of a million had thus to be cast aside because it was below the military standard of the time. The consequence was that in 1903 the government of the day appointed an interdepartmental committee to inquire whether there was any clear evidence of deterioration of the national physique. That committee in 1904 recommended a systematic investigation of representative sections of the nation so as to ascertain whether or not our bodies are changing or deteriorating under modern conditions. The report was duly piegonholed, and there lies to this day covered by the dust of fourteen years. The victorious manner in which our national armies have come through conditions more severe and more trying than any to which armies of former times were ever subjected seems to allay any fear that we are not equal to our forefathers in either vigor of body or strength of will. But every country in Europe has its contingent of men unfit to bear arms and unfit for the physical brunt of civil life. Before the war Germany had to reject 16 per cent. of her young men, because bodily weakness or deformity rendered them useless as soldiers. We also have our share of the unfit; the size of that share is the index of our physical deterioration as a nation. Under present conditions the need for a physical survey of the people, instead of being merely a matter of theoretical importance, as it was at a former time, has become a matter of urgent, practical importance. The total number of our population is not the most important matter for us at present: it is the number of our fit men and women, boys and girls, that matters. The medical examinations instituted by the Ministry of National Service really constitute a physical census of our man power. Our schoolchildren also are being surveyed. Ten years ago it was wisely ordained that the board of education should carry out a medical examination of boys and girls attending schools. The need for an anthropometric survey has been urged for the past sixteen years by fellows of the Royal Anthropological Institute and has the unanimous support of all scientific men. The Conjoint Board of Scientific Societies, set up by the learned bodies and corporations of this country to place the resources of science at the disposal of the government, appointed a strong committee to prepare a scheme of survey. This committee is of the opinion that such a survey is a matter of national importance and that it can be carried out by machinery already in existence. All that is now necessary is to set up an advisory council to coordinate the work carried on by the various government departments and a bureau to deal with the statistics as they are collected.

Modern Changes in the Human Face

In his second lecture on "Problems of Human Anthropology," Prof. Arthur Keith described the discovery of the remains of a boy in Suffolk of the period which closed about 4,000 years ago, and of the skeleton of an old man who had suffered from rheumatism, dating back 3,000 years, which had been unearthed while the foundations of a flying school in the west of England were being laid. Such bones, he said, are really documents, and enable us to discover the changes that have since taken place. The face has undergone several alterations. He had taken the skulls of twenty-five men and twenty-five women of the pre-Roman period in the Royal College of Surgeons and compared them with the same number of men and women who had died in London about the end of the eighteenth century. In the modern skull the orbit is bigger; the floor seems to have sunk; the cheek bone is smaller and has been pulled backward; and the supra-orbital ridge is less pronounced. The nose has become longer, narrower and more prominent. There is also in modern skulls a marked tendency to lay down a bony "sill" at the entrance

to the nose so as to narrow it. Modern palates are longer and narrower, and the teeth are arranged to form a pointed instead of a rounded arch. In regard to the lower jaw, he said that the tendency is to smooth away the sharp angle and to make the hinder border run into the lower border, while the chin is growing larger. In the ancient skull the incisors met edge to edge, but he doubted if 3 per cent. of modern persons have the old bite; though if we had to return to the method of living of four or five thousand years ago, our bones would probably go back to the ancient shape. The masseter muscle is growing less, but the temporal muscle, whose function is to crush food between the molar teeth, is increasing in size, because our modern tendency is to do hard chewing with the back teeth.

Vital Statistics in 1916

The registrar-general's return of vital statistics for 1916 in England and Wales has just been published. It shows a reduction of 4.5 in the marriage rate as compared with that for 1915 (when it was exceptionally high), and the lowest death rate of children under the age of 1 year ever recorded. The difficulties of framing estimates of population owing to the war have become so formidable that it is no longer possible to put forward figures otherwise than as rough approximations. As the estimates (except those for birth rate and marriage rate purposes) are for the civil population only, enlistment has been treated as equivalent to emigration. The estimated civil population of England and Wales was 34,500,000 in 1916 (15,000,000 males and 19,500,000 females). The marriages during 1916 numbered 279,846, a rate of 14.9 persons per thousand, 0.6 below the average rate of the decade 1901-1910. The marriage rates for 1916 were 49.5 for males and 41.0 for females, the lowest hitherto recorded for females, and the lowest but one for males. We have thus the curious phenomenon of an unprecedentedly high marriage rate in 1915 (explained in previous letters to THE JOURNAL) succeeded by an almost unprecedentedly low one in 1916. The flood of marriages which set in with the second quarter of 1915 did not ebb until a year later, so that considerably more marriages were registered in the first quarter of 1916 than in the corresponding quarter of any previous year. These violent changes are no doubt the direct consequences of the war, and appear in 1917 to be giving place to a less abnormal state of affairs. There was in 1916 a notable increase in the proportion of marriages of young widows. The population of widows under 30 years of age must have been greatly increased by the war. In proportion to the total population, the birth rate was 20.9 per thousand living. The reduction of natality accompanying the war amounted to only 12 per cent., whereas in Germany the fall is reported to have been 40 per cent. in the two years 1915 and 1916. The excess births over deaths was 277,303. The number of fatal casualties incurred by English and Welsh troops during the year must be very much lower than 277,303, and so the increase in population must have continued. The German statistics record 1,331,000 deaths in 1916, apparently exclusive of at least the great majority of fatal war casualties, as against 1,103,000 births; and the Hungarian figures for deaths "not in action" are 428,057, as against 333,551 births. In England and Wales the deaths of 508,217 persons were registered, a rate of 13.3 per thousand. The deaths of children under 1 year of age numbered 71,646, or 91 per thousand, the lowest rate ever recorded. Eighty-eight reputed centenarians died, seventy-nine of whom were women.

PARIS LETTER

PARIS, Feb. 28, 1918.

The Oculocardiac Reflex May Differentiate True Nervous Shock

At a recent meeting of the Réunion médicale de la IV^e Armée, Dr. H. Dorlencourt read a very interesting paper on his subject. Of twenty-six cases of shock in which he tested for this oculocardiac reflex, he found that it was absent in twenty. This abolition of the reflex was noted even in the milder cases of shock, and appeared to be due solely to the shock; local or general infections, the severity of the wound or hemorrhage did not seem to be factors in the suppression of the reflex. In three cases the reflex was positive, but it was weak and much retarded. In no case did it appear until after pressure had been applied to the eyeball for thirty seconds; in one case not until after 105 seconds of compression. In three other cases the reflex was inverted and retarded. These experiences suffice to prove the functional

inactivity of the nerve centers regulating the vegetative processes of the body. The study of the oculocardiac reflex is thus a veritable functional interrogation of the most important centers of the *vie végétative*. It enables the physician to demonstrate that when shock is sufficiently intense, centripetal excitation becomes incapable of provoking the usual reaction on the part of these centers. The abolition of this reflex furnishes new proof in support of the theory which regards shock as being a condition of functional insufficiency of the nerve centers.

HEMORRHAGE AND PSEUDOSHOCK

Dorlencourt added that severe hemorrhage may produce a typical condition of shock; but in certain cases, relatively frequent, true shock of nervous origin does not appear. The posthemorrhagic state leads to a condition of pseudoshock, simulating true shock closely in its principal manifestations. The differential diagnosis is very difficult, but yet in all cases, the distinction should be made between pseudoshock of hemorrhagic origin and true nervous shock, because the therapeutic indications in both instances are wholly unlike. It is to be regretted that frequently the apparent identity of the symptoms determines the treatment that is adopted. To institute treatment without having differentiated between these two conditions means risking the life of the patient. Dorlencourt summarized the characteristic symptoms on which a differential diagnosis should be based, and related the experiments he has conducted to establish whether the oculocardiac reflex might serve as a differential sign. This reflex was found abolished in true nerve shock in 76 per cent. of the cases; in acute posthemorrhagic cases it was absent in only 28 per cent.

DIFFERENTIAL VALUE OF REFLEX

The examinations on which these statistics are based were too few in number to permit of drawing definite conclusions; however, it is apparent that the oculocardiac reflex is a useful sign in making a differential diagnosis between nerve shock and posthemorrhagic pseudoshock. The study of this reflex among shock victims permits of putting in evidence the state of inactivity and of functional disturbance of the centers of the *vie végétative* in the shock state. From the practical point of view this research seems, to some extent, to permit the differentiation of true shock from certain syndromes with which it might be confused.

War Wounds of the Rectum

Dr. Mocquot, professeur agrégé à la Faculté de médecine of Paris and chirurgien des hôpitaux, and Dr. Fey recently communicated to the Paris Société de chirurgie their observations made in thirty cases of projectile wounds of the rectum. Among these cases were four of wounds of the peritoneal portion of the rectum, nineteen of the extraperitoneal rectum and anus, and seven of the recto-urinary passages. Among the wounds of the peritoneal portion, there were four cases of penetrating wounds of the abdomen with multiple visceral wounds. The projectile had wounded the rectum in each case, the small intestine in three cases, the cecum in two cases, the mesentery in one case. In three cases the rectal injury had been discovered and treated in the course of a laparotomy; in one case it was not recognized. In order to expose these wounds well and suture them, the patient must be put in the Trendelenburg position, a median incision made close to the pubic bone and the pelvis well drained. Of these four patients one was in shock and died some hours after the operation; one was operated on twenty-three hours after the wounding; peritonitis had already set in and he died the next day. A third, whose rectal wound remained unrecognized and was not sutured, died on the fourth day; the fourth recovered. In this case there was, besides the rectal perforation, a perforation of the small intestine and a wound of the mesentery from which blood was spurting.

With wound of the extraperitoneal portion of the rectum and of the anus (nineteen cases), the treatment included treatment of the wounds of the soft parts and of the bony skeleton; treatment of the rectal wound and exclusion of the rectum by making an artificial anus. These wounds often being gangrenous, it is necessary to excise freely the track of the projectile—bringing the wound well into view—and extract all foreign bodies. In cases of wounds of the anal canal, it is not advisable to attempt to suture but allow the wound to heal by granulation, even at the expense of the subsequent formation of a stricture. On the other hand, wounds of the ampulla should be sutured, but always with exclusion of the rectum and the making of a colostomy. Of the nineteen patients in this group, ten were cured by

operation; nine died. Mocquot and Fey had seven cases in which besides the wounds of the rectum there was also a wound of the bladder or urethra. In each case the injuries were the result of wounds inflicted in a sagittal direction (two perforating bullet wounds; four obscure wounds caused by shell fragments). The wounds of the upper rectum and bladder, four in number, all developed a rectovesical fistula. One only, seen early and treated at once, was cured by cystostomy and suture of the rectal wound. The remaining three patients, who were seen late, were infected and died even though a colostomy had been done.

Moquot and Fey state that an immediate cystostomy is the treatment of choice of rectovesical wounds. A colostomy is, perhaps, of value if there is also much injury of the surrounding soft tissues and bones. Direct suture is indicated only in wounds of the peritoneal portion of the rectum and of the bladder. These are abdominal cases, and laparotomy is effective.

Dr. Quénu, professor de clinique chirurgicale à la Faculté de médecine of Paris, stated that he had seen cases such as these only during the secondary period or late. He believes that the suture question is debatable; from his limited experience, he would be inclined not to suture but make the débridement of the rectum and anus as extensive as possible. He believes that ample excision of dead tissue in the rectum offers more protection against pelvic cellulitis and diffuse gangrene than a colostomy does. Perhaps it might be well to reserve colostomy for cases of destruction of the anus, for these lesions entail stricture, with obliteration, necessitating a colostomy, which might as well be done immediately.

Dressingless Treatment of Surgical Wounds

Dr. Phocas recently read a paper before the Paris Société de chirurgie on the complete or early dispensing with dressings in cases of surgical wounds that had healed by first intention. He has treated seventy-three surgical wounds by this method and has obtained excellent results. The procedure, which was at first utilized for the small appendectomy wound, was then used more generally. Many laparotomies done for disease of the adnexa or for fibroma have been dressed in this manner. It was found that this procedure lends itself very well to laparotomies because dressings always exert some pressure, and the patients feel better without them; gas is expelled more easily and slight distention does not cause either discomfort or pain. The absence of the dressing permits exposure of the wound to light and air, keeps it dry, and it heals more quickly. This method of procedure, the dressingless treatment, advocated some time ago by Le Fort, is made possible now because of the aseptic care given wounds during operation. It is a natural evolution of the dressing which has gone through many stages, with the method of Guérin, of Lister, of antiseptic dressings, and then the compress held in place with adhesive plaster. It is merely a case of simplifying the dressing more and more. The complete absence of dressing is the last stage of this evolution. The complications in the course of wound healing appear to occur less frequently and are of less gravity when wounds are treated by the "dressingless" method.

Honors Conferred on Americans

Acting on the recommendation of the undersecretary of state for the Service de Santé militaire, the government of the Republic has, as evidence of its appreciation of the services rendered by the American Ambulance at Neuilly-sur-Seine, conferred on three members of its Comité de direction the following decorations: M. Laurance V. Benet, president of the American Ambulance, is promoted to the grade of commander of the Legion of Honor; M. Eugène-André La Chaise, former director of the Ambulance in the army zone, is promoted to the grade of officer of the Legion of Honor; Dr. Charles Winchester du Bouchet, founder of the American Ambulance and surgeon in chief, is made chevalier of the Legion of Honor. The American Ambulance, established at the Pasteur lycée at the commencement of hostilities, was closed, July 20, 1917, handing over its quarters to the medical department of the American army. During the three years of its existence, more than 10,000 French and allied wounded were treated at the Pasteur lycée and in the auxiliary hospitals under the direction of the American Ambulance, and thousands of sick and wounded have been transported by its automobile ambulances in the army zone and in the Paris camp retranché.

Death of Dr. Defontaine

Dr. Defontaine, deputy and councillor-general of the département du Nord has just died, at the age of 59. At the

beginning of the war he remained in his part of the country, which was occupied by the enemy, and suffered all the indignities inflicted by the foe. He was repatriated about a year ago, but his health having been profoundly undermined he succumbed to an affection which he had contracted during his captivity.

Personal

At its last meeting, the Académie des Sciences elected a nonresident member to take the place of the late M. Gosselet. M. Flahaut of Montpellier was elected. He has been the correspondent of the Académie for the section on botany since 1904, and is the author of many exceedingly meritorious publications, notably those dealing with the algae and with mushrooms.

Association News

THE CHICAGO SESSION

The Scientific Exhibit

The director of the Scientific Exhibit reports that many unusual and interesting exhibits are being arranged. He urges that others who may be in position to exhibit work demonstrating scientific investigation or specimens illustrating anatomic or pathologic conditions shall communicate with him. Applications for space in the Scientific Exhibit should be accompanied by a brief description and a statement of the object of the exhibit; the approximate space desired should also be stated. Allotments of space will be made in accordance with the estimated educational value of the exhibit and the priority of the application for space. Application blanks and further details are to be obtained by addressing Dr. George H. Weaver, Director of Scientific Exhibit, 637 South Wood Street, Chicago.

Special Arrangements for Medical Women

The medical women of Illinois are looking forward with pleasure to entertaining the women physicians of America in Chicago next June. Dr. Clara P. Seippel has been appointed by the Local Committee of Arrangements as the chairman of a subcommittee to have special supervision of this work. Subcommittees have been appointed to be of service to these visitors, not only during their stay, but before their arrival.

Committee on Hospitality.—Dr. Grace H. Campbell, chairman, 25 East Washington Street, Chicago, will be pleased to assist women physicians who wish hotel reservations, to obtain these so that women physicians may be lodged at one hotel.

Down town headquarters for the comfort and convenience of the women Fellows of the American Medical Association will be established in one of the women's clubs.

The subcommittee on entertainment of women physicians will be glad to hear from every medical woman who will be in Chicago during the week of the meeting and to be advised as soon as she knows definitely of the date and time of her arrival and her address while in the city, so that the committee may plan some social gatherings.

Marriages

LIEUT. ALEXANDER BOYD MONTGOMERY, M. R. C., U. S. Army, Checotah, Okla., on duty at Camp Greene, N. C., to Miss Grace Sarah Clark of Long Beach, Calif., March 16.

LIEUT. CHARLES HERBERT DOE, M. R. C., U. S. Army, Rochester, Minn., to Miss Nora O'Donnell-Kitts of London, England, at Brighton, England, February 7.

LIEUT. HARRY EUGENE VANDER BOGART, M. R. C., U. S. Army, Chicago, to Miss Gertrude Berkey of Goshen, Ind., at Chicago, recently.

LIEUT. ARNOLD EGARD SAVERIEN, U. S. N. R. F., Los Angeles, to Miss Dorothy Crawford of Davenport, Iowa, at Alameda, Calif., March 20.

LIEUT. KENNETH JOHNSON, M. R. C., U. S. Army, to Miss Elsie Mathilda Ernst, both of New York, January 5.

FRED W. MCKIBBON, M.D., Oakdale, Calif., to Miss Mary Moorhouse of Lodi, Calif., at Los Angeles, recently.

Deaths

Major Charles B. Ewing, M.D., U. S. Army (retired). Baltimore; Missouri Medical College, St. Louis, 1879; aged 59; a Fellow of the American Medical Association; was appointed assistant surgeon in the Army, July 5, 1884; was promoted captain in 1889, and major in 1901; he was appointed a brigade surgeon of volunteers with the rank of major in June, 1898, and major and surgeon of volunteers, Nov. 1, 1899; he was retired, Nov. 17, 1909; died at his home, March 1.

William Gwain Eynon, M.D., New York City; Bellevue Hospital Medical College, New York, 1887; aged 53; a Fellow of the American Medical Association; formerly president of the Bronx County Medical Society; attending physician to the Home of Refuge, New York City; assistant attending physician to the Park Hospital, and consulting physician at the Bronx Eye and Ear Hospital; died at the New York Hospital, March 24, from pneumonia.

Sarah R. Mead, M.D., Newark, N. J.; Woman's Medical College of New York Infirmary for Women and Children, New York City, 1883; aged 70; a Fellow of the American Medical Association; a member of the New York Neurological Society; died at the Mountinside Hospital, March 17, from injuries received in an automobile accident a few hours before.

Capt. Samuel Chandler Baker, M.D., M. R. C., U. S. Army, Sumter, S. C.; University of Virginia, Department of Medicine, Charlottesville, Va., 1888; aged 51; a Fellow of the American Medical Association; a member of the American College of Surgeons; died at his home, while on a furlough from Camp Wheeler, Macon, Ga., March 20, from pneumonia.

George Francis Harris, M.D., Buffalo; Cornell University Medical College, New York City, 1904; aged 44; a Fellow of the American Medical Association; a member of the medical staff of the Buffalo State Hospital; formerly a practitioner of Binghamton; a member of the Psychiatric Society of New York; died at his home, March 18.

Charles W. Gensimore, M.D., Bedford, Pa.; Baltimore University School of Medicine, 1898; aged 42; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; a member of the United Spanish War Veterans; died in the Western Maryland Hospital, Cumberland, March 19.

Herbert Lee, M.D., St. Joseph, Mo.; Central Medical College, St. Joseph, Mo., 1899; aged 56; a Fellow of the American Medical Association; a member of the American Medico-Psychological Association; formerly professor of chemistry in the Ensworth Medical College; committed suicide, March 21, while demented.

Lieut. George Jackson Brand, M.D., M. R. C., U. S. Army, La Fayette, Ill.; Loyola University School of Medicine, Chicago, 1910; aged 32; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; on duty at Fort Sill, Okla.; died, February 12, from pneumonia.

David Penfield Austin, M.D., New York City; Columbia University College of Physicians and Surgeons, 1866; aged 33; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; died suddenly, March 19, following a fall in his home.

Dyer J. Jenkins, M.D., Broadway, Ohio; Starling Medical College, Columbus, 1898; aged 44; a member of the Ohio State Medical Association; formerly coroner of Union County; was instantly killed, March 19, when his acetylene lighting plant, which he was cleaning, exploded.

Archelaus Ernest Turrentine, M.D., Blytheville, Ark.; University of Nashville, Medical Department, 1903; aged 40; a Fellow of the American Medical Association; formerly a member of the Mississippi State Medical Association; died at his home, March 12, from pneumonia.

Abbott W. Slaughter, M.D., Green Bay, Wis.; St. Louis (Mo.) Medical College, 1884; aged 57; formerly a Fellow of the American Medical Association; a member of the State Medical Society of Wisconsin; died suddenly, March 18, from heart disease.

Charles Holmes, M.D., Washington, D. C.; Howard University, Medical Department, Washington, D. C., 1886; aged 67; a clerk in the office of the United States Weather Bureau for thirty-five years; died at the home of his daughter, March 13.

Lieut. Hubert Ferrell, M.D., M. R. C., U. S. Army, Tyler, Texas; University of Texas, Department of Medicine, Galveston, 1909; aged 32; a Fellow of the American Medical Association; died in Dallas, Texas, February 24, from spinal meningitis.

Stanley C. Newlin, M.D., Anderson, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 61; formerly a Fellow of the American Medical Association; formerly president of the Madison County Medical Society; died at his home, March 20.

Percy B. Wilson, M.D., Sneads, Fla.; University of Alabama School of Medicine, Mobile, 1895; aged 46; formerly a Fellow of the American Medical Association; a member of the Florida Medical Association; died at his home, March 10.

Olin J. Fryer, M.D., Greenwich, N. Y.; New York Homeopathic Medical College, New York City, 1905; aged 44; a member of the Medical Society of the State of New York; died suddenly at his home, March 14, from heart disease.

Eugene Storer, M.D., Wilkesburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1907; aged 33; a member of the Medical Society of the State of Pennsylvania; died at the home of his parents in Wilkesburg, March 19.

Granville Moody Brubaker, M.D., Roxbury, Pa.; Baltimore Medical College, 1894; aged 49; formerly a member of the Medical Society of the State of Pennsylvania; died at the home of his father in Waynesboro, Pa., March 15.

Oscar James Russi, M.D., Jersey City, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1901; aged 41; formerly house physician of St. Francis College, Jersey City; died at his home, March 9, from pneumonia.

Randall Thompson, M.D., Kildeer, N. D.; Chicago College of Medicine and Surgery, 1908; aged 42; formerly a member of the Illinois State Medical Society; died in a hospital in Mandan, N. D., March 11, from acute nephritis.

William Nelson Mebane, M.D., Greensboro, N. C.; George Washington University, Department of Medicine, Washington, D. C., 1906; aged 41; a Fellow of the American Medical Association; died February 5, from pneumonia.

Benjamin F. Larue, M.D., Appleton, Minn.; Rush Medical College, Chicago, 1870; aged 71; formerly a member of the Minnesota State Medical Association; was found dead in bed, February 12, from cerebral hemorrhage.

Edgar P. Little, M.D., Manor, Ga.; Atlanta Medical College, Atlanta, Ga., 1892; aged 50; formerly a member of the Medical Association of Georgia; died at a sanatorium in Valdosta, March 14, from heart disease.

Linus James McAdam, M.D., Barker, N. Y.; Niagara University, Medical Department, Buffalo, 1890; aged 59; for many years a practitioner of Buffalo; died at his home, March 17, from injuries received when kicked by a horse.

James C. Davies, M.D., Emmetsburg, Iowa; University of Iowa College of Medicine, Iowa City, 1880; formerly a member of the Iowa State Medical Society; formerly a practitioner of Idaho; died at his home, March 21.

William Edgar Wagner, M.D., New York City; Jefferson Medical College, Philadelphia, 1906; aged 40; formerly a Fellow of the American Medical Association; died at a hospital in New York City, March 17.

William H. McCurdy, M.D., Delta, Pa.; Jefferson Medical College, Philadelphia, 1881; aged 63; a member of the Medical Society of the State of Pennsylvania; died at his home, March 22, from pneumonia.

Lieut. Gustaf Lewis Norstedt, M.D., M. R. C., U. S. Army, Mount Carmel, Pa.; Jefferson Medical College, Philadelphia, 1916; aged 26; on duty at Camp Upton, N. Y.; died there, March 16, from pneumonia.

James Gilbert Hughes, M.D., Greeley, Colo.; Northwestern University Medical School, Chicago, 1892; aged 56; a Fellow of the American Medical Association; died at his home, January 4, from pneumonia.

Joseph Francis Doyle, M.D., Manchester, N. H.; University of Maryland School of Medicine, Baltimore, 1917; aged 27; an intern at St. Francis' Hospital, Hartford, Conn.; died in that institution, March 19.

Ripley H. Hunter, M.D., Bullard, Texas; University of Nashville, Medical Department, 1882; aged 49; a Fellow of the American Medical Association; died at his home, February 5, from pneumonia.

John A. Ronayne, M.D., Long Island City, N. Y.; Columbia University, College of Physicians and Surgeons, 1896; aged 44; died in the Polyclinic Hospital, New York City, March 18, from pneumonia.

James Beauregard Eubanks, M.D., Monroe, N. C.; Vanderbilt University, Nashville, Tenn., 1887; aged 56; a Fellow of the American Medical Association; died at his home, March 9, from pneumonia.

Lloyd D. Knott, M.D., Lebanon, Ky.; University of Louisville, Ky., 1866; aged 72; formerly a member of the Kentucky State Medical Association; died at his home, March 20, from an infection.

Oliver Laird Miller, M.D., Pittsburgh; Jefferson Medical College, 1863; aged 79; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home, March 13.

Benjamin F. Jones, M.D., Goldfield, Colo.; College of Physicians and Surgeons, Keokuk, 1878; aged 63; a member of the Colorado State Medical Society; was found dead in his office, March 18.

Charles Gimbernat, M.D., New York City; Bellevue Hospital Medical College, New York City, 1865; aged 75; retired physician and pharmacist; died at his home, March 14, from pleurisy.

William M. Lawrence, M.D., Sandborn, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1892; aged 61; was found dead in his office, March 19, from heart disease.

William J. McGurn, M.D., Boston; Tufts College Medical School, Boston, 1904; aged 45; a Fellow of the American Medical Association; died at his home, about March 20.

John M. Yost, M.D., Pulaski, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1863; aged 80; a veteran of the Civil War; died at his home, January 7.

Charles Henry Prindle, M.D., Chicopee, Mass.; University of Vermont, College of Medicine, Burlington, 1885; aged 61; died at his home, January 21, from pneumonia.

George C. G. Givan, M.D., Harriman, Tenn.; Medical College of Indiana, Indianapolis, 1890; aged 64; a Fellow of the American Medical Association; died, March 15.

Berry Allen Watson, M.D., Columbia, Mo.; Bellevue Hospital Medical College, New York City, 1867; aged 85; died at his home, January 19, from senile debility.

William Teegarden, M.D., Springfield, Ohio; Homeopathic Hospital Medical College, 1872; aged 70; died suddenly, March 15, from cerebral hemorrhage.

Edward Lawrence Salmon, M.D., Maynard, Mass.; Harvard University Medical School, Boston, 1905; aged 40; died at his home, March 17, from pneumonia.

Charles Humphrey Treadwell, M.D., Chicago; Harvey Medical College, Chicago, 1905; aged 46; died at his home, March 24, from diabetes mellitus.

William D. McCune, M.D., Branchton, Pa.; Miami Medical College, Cincinnati, 1879; aged 70; died at his home, March 16; from senile debility.

Francis R. Salisbury, M.D., Sparta, Wis.; Rush Medical College, Chicago, 1884; aged 59; died at St. Mary's Hospital, March 20, from septicemia.

Milford B. Shipp, M.D., Salt Lake City, Utah; Jefferson Medical College, Philadelphia, 1883; aged 82; died at his home, March 15.

Mortimer Haight, M.D., Toronto, Ont.; McGill University, Faculty of Medicine, Montreal, 1893; aged 49; died at his home, March 12.

William Wesley Keeling, M.D., Nemaha, Neb.; Eclectic Medical College, Cincinnati, 1864; aged 66; died at his home, about March 19.

Joseph A. Bonnette, M.D., Baltimore; Baltimore Medical College, 1890; aged 60; died at his home, March 19, from pneumonia.

Reuben Dunn Small, M.D., Gardiner, Me.; Bowdoin Medical School, Portland, 1869; aged 80; died at the home of his son, about March 8.

Charles Frank Osman, M.D., Boston; Harvard University Medical School, 1880; aged 61; died at his home, March 9, from heart disease.

George H. Webster, M.D., Janesville, Wis. (license, Wisconsin, 1900); aged 57; died at his home, December 3, from paralysis.

Pren M. Moore, M.D., Warsaw, Ohio; Miami Medical College, Cincinnati, 1873; aged 70; died at his home, March 13.

M. H. Summers, M.D., Columbus Junction, Iowa (license, Iowa, 1887); aged 67; died at Cedar Rapids, Iowa, March 11.

Frederick J. Klussman, M.D., Toledo, Ohio (license, Ohio, 1896); died in St. Vincent's Hospital, Toledo, March 9.

The Propaganda for Reform

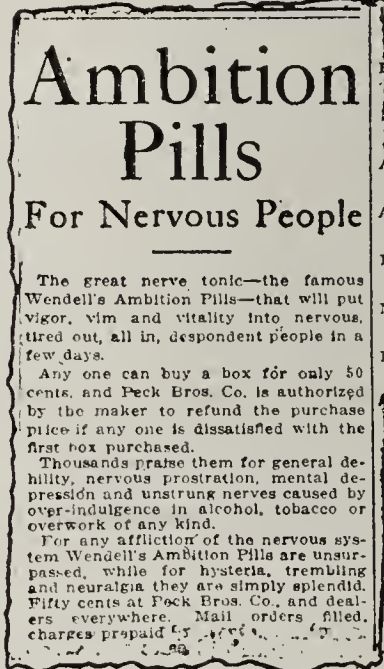
IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME MISCELLANEOUS NOSTRUMS

What Was Found by the Chemists of the Louisiana State Board of Health

Louisiana has long ranked high among those southern states that have been active in safeguarding the health of their citizens. It was the Louisiana "Health Train," it will be remembered, whose "patent medicine" exhibit was responsible for suit being brought against Dr. Dowling, the president of the Louisiana State Board of Health, by one of the concerns affected by the exhibit. It may be mentioned incidentally that this suit, after a mistrial, was never again reopened. Continuing its policy of giving the public the facts regarding worthless, dangerous or misleadingly-advertised nostrums, the Bureau of Food and Drugs of the Louisiana State Board of Health has, at the suggestion of its president, analyzed several widely advertised "patent medicines." The results of some of these analyses are briefly given in what follows:

Wendell's Ambition Pills.—This "great nerve tonic" will, if one is to believe the advertisements, "put vigor, vim and vitality into nervous, tired out, all-in, despondent people in a few days."



The Louisiana chemists reported that each pill was found to contain a little over one-thirtieth of a grain of strychnin and about one-fifth of a grain of iron in the form of the sesquioxid (ferric oxid). Pepper, cinnamon and ginger were also found and what was probably aloes in very small amounts. These pills are sold at 50 cents a box, each box containing forty-two pills. Under our present lax methods of permitting almost any dangerous drug to be sold indiscriminately, provided it is in the form of a "patent medicine," it seems, from the Louisiana findings, that it is

possible for any one to purchase enough strychnin in a single box of Wendell's Ambition Pills to kill an adult.

Exelento Quinine Pomade.—This preparation, which seems to be heavily advertised in the South, bids apparently for the colored trade. A typical advertisement consists of a picture of a negress with long wavy hair accompanied by the claim:

"Kinky hair made to grow long, soft and silky by using Exelento Quinine Pomade."

Other claims, made, of course, in newspapers and not in the trade package—for the latter would subject the manufacturers to prosecution under the Food and Drugs Act—are:

"Don't be fooled by using some fake preparation which claims to straighten your hair. Kinky hair cannot be made straight; you are just fooling yourself by using it. You have to have hair before you can straighten it. Now this Exelento Quinine Pomade is a hair grower."

"Don't let some fake Kink Remover fool you. You really can't straighten your hair until it is nice and long. That's what Exelento Quinine Pomade does, removes dandruff, feeds the roots of the hair and makes it grow long, soft and silky."

This preposterous fake was analyzed by the Louisiana state chemists who reported the following findings:

Petrolatum ("Vaseline")	91.84 per cent.
Liquid Paraffin with trace of Oil of Gaultheria	6.18 per cent.
Sulphur	1.29 per cent.
Other substances, including trace of quinin	0.098 per cent.

It would seem from these findings that calling this stuff a "Quinine Pomade" constitutes a definite misbranding under the Food and Drugs Act. Aside from this fact, however, it is a sorry commentary on the business ethics of great newspapers that they will accept the advertisement of so obvious a humbug.

Orchard White.—This is another of the thousand-and-one toilet preparations whose chief virtue lies in the money making possibilities they offer their exploiters. The advertisements of Orchard White emphasize the use of lemon juice as a "beautifier," the headline displays reading:

"Girls! Try This on Your Hands! Make a Lemon Beauty Cream."
"Lemon Juice Softens and Whitens Rough, Red Hands. Women can make a quarter pint of wonderful lemon beauty cream for a few cents. Nothing so good!"
"Lemon Juice For Freckles. Girls! Make beauty lotion at home for a few cents. Try it!"
"Lemons for Complexion. Juice of two lemons made into creamy lotion can be used to bleach, whiten and soften the skin."

**Girls! Try This on Your Hands!
Make a Lemon Beauty Cream**

Juice of lemons clears, softens and whitens the skin. Prepare a wonderful complexion lotion for a few cents!

"It seems that every girl and woman here is making lemon lotion," says a well-known druggist, and the reason is, because at the cost of a small jar of ordinary cold cream they can prepare a full quarter pint of a creamy lemon skin softener and complexion beautifier by squeezing the juice of two fresh lemons into a bottle containing three ounces of orchard white. Care should be taken to strain the juice through a fine cloth so no lemon pulp gets in, then this lotion will keep fresh for months. Every woman has known for years that lemon juice is used to

bleach and remove such blemishes as freckles, sallowness and tan, and is the ideal skin softener, smoothener and beautifier.

Try it, girls! Get three ounces of orchard white at any pharmacy or toilet counter and two lemons from the grocer and make up a quarter pint of this fragrant lemon lotion and massage it daily into the face, neck, arms and hands. It should naturally help to whiten, soften, freshen and bring out the roses and beauty of any skin. It is marvelous to smoothen rough, red hands.—Advt.

Under such headings the advertisements advised using the juice of two lemons mixed with "3 ounces of orchard white." Throughout the advertisements the words "orchard white" are not capitalized, the obvious intent being to lead the public to believe that this "patent medicine" is an official drug. Analyzed by the state chemists of Louisiana, "Orchard White" was reported to be nothing more mysterious than a mucilage containing bismuth citrate, boric acid, alcohol and gum tragacanth. In commenting on this product, Dr. Dowling said: "Claims in the advertising, in addition to being very much exaggerated, are also false and misleading. The advertising of this preparation, to my mind, is particularly objectionable for the reason that it exploits a simple and harmless article—the juice of lemons—in order to lead the unsuspecting to purchase a product which might prove harmful."

Derwillo.—This is a nostrum sold for the skin and complexion and put out by "Mae Edna Wilder, Inc., of Rochester, N. Y.," one of the numerous names under which the Neal-Adkin mail-order concerns advertised. The state analyst of Louisiana reported that the preparation consisted of zinc oxid, calcium carbonate, starch and salicylic acid in water, the whole thing colored with carmine and perfumed with odor of rose or rose geranium.

Vick's Vap-O-Rub.—This product is a simple salve, and in general, the advertising is more conservative than is common to products of this type. The Louisiana chemists reported that Vaporub appears to be a mixture of yellow vaseline, which comprises more than three fourths of the salve, the

Head Stopped Up? Can't Breathe?

Try the Vick Vap-O-Rub Treatment

Applied in Salve Form Over Throat and Chest Relieves by Inhalation and Absorption.

Vapor treatments are best for inflammations of the air passages. The vapors carry the medication direct to the inflamed surfaces without disturbing the stomach, as internal medicines will do. A very convenient vapor treatment is a good application of Vick's "Vap-O-Rub" Salve over the throat and chest, covered with a warm flannel cloth. The body heat releases vapors that are inhaled with every breath, opening the air passages, loosening the phlegm, and healing the raw surfaces. For deep chest colds, first apply hot wet towels to open the pores. Vick's is then absorbed through the skin, taking out that tightness and soreness. 25c, 50c, or \$1.00.

VICK'S "VAPORUB" SALVE

remainder consisting of camphor, menthol and oils of thyme, eucalyptus and turpentine.

La Creole Hair Dressing.—We are told in an advertisement in the Roanoke (Va.) *World-News* of Feb. 25, 1918, that "La Creole Hair Dressing Restores Original Color to Your Gray Hair." Further, we are asked to believe that this preparation is "No Dye" and does its work because it "Revives Color Glands." To quote:

"La Creole revives the natural color glands. In a short time you will be delighted to see all your gray hair (and entire head of hair) turn to the natural lustrous dark color your hair used to be. Not even a trace of gray will show—but all your hair will be of an evenly dark shade."

"... get the original Hair Color Restorer—La Creole."

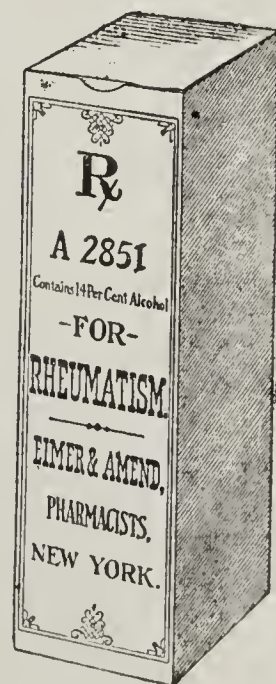
While in the newspaper advertisements "La Creole" is still a "hair restorer," on the trade package it is a "hair dressing." It used to be a "hair restorer" on the trade package but the manufacturers now blandly announce that "to comply with the Pure Food and Drugs Act the name was changed from 'restorer' to 'dressing' . . ." Lying on the trade package is, since the Food and Drugs Act went into effect, likely to prove expensive; lying in newspaper advertisements is still safe and, therefore, in keeping with the ethics of the "patent medicine" business. La Creole was analyzed by the Louisiana chemists who reported:

"This product consists of a perfumed solution containing lead acetate, sulphur and glycerin, alcohol and water. The action of the lead acetate and sulphur forms a lead sulphid compound which is dark brown thus giving hair a dark brown color."

From this it will be seen that La Creole, in addition to being advertised under lying claims, is one of those dangerous lead-containing mixtures whose use may give rise to symptoms of poisoning.

Prescription A 2851 for Rheumatism.—This product, which is said to have been known earlier as "Eimer and Amend's Rheumatic Remedy," was analyzed by the state chemists of Louisiana who reported that the preparation seemed to be essentially nothing more nor less than a low grade of sherry wine containing approximately 7 1/2 per cent. of potassium iodid.

Sloan's Liniment.—This preparation is one of those proprietary remedies which, if truthfully advertised, might have a very proper place among home remedies. Unfortunately, it



is not truthfully advertised. With every bottle of the preparation there is a circular advertising other products of the same firm, some of which are seriously objectionable. Analyzed by the chemists of the Louisiana State Board of Health, "Sloan's Liniment" was reported to have approximately the following composition:

Oil of turpentine, probably about	46-50 per cent.
Oil of camphor, probably about	36 per cent.
Oil of sassafras, probably about	16 per cent.
Capsicum	Present

GUAIODINE

Report of the Council on Pharmacy and Chemistry

The following report on Guaiodine, marketed by the Intravenous Products Company, Denver, has been adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

A referee of the Committee on Pharmacology in submitting to the Council a report from the A. M. A. Chemical Laboratory on Guaiodine advises that the Laboratory's examination shows that instead of containing free "colloidal" iodine as claimed, the preparation is essentially an iodated fatty oil, containing only combined iodine. Equally misleading, in view of the Laboratory's findings, are the implied claims that the antiseptic action of Guaiodine corresponds to that of free iodine.

Guaiodine is advertised mainly for the treatment of gonorrhea. While it may be true that the guaiacol contained in Guaiodine has some beneficial effect, especially when preceded by potassium permanganate irrigation as advised, the advertised claim that "Guaiodine acts as a specific for gonorrhea in a majority of cases" is utterly false.

The "case records" offered to establish the therapeutic value of Guaiodine are in themselves sufficient to condemn the "evidence." The following are fair samples:

"The second boy came a day or so later with a slight discharge with the characteristic burning and itching, and with symptoms of a beginning gonorrhea, and judging from the source of the infection, it was believed to be so. Two injections of Guaiodine were given when the discharge ceased."

"I have several cases that were completely cured in a very short time. I note this, that the first dose causes a cessation of the discharge and the second seems to increase the flow, but the color is changed. I give three doses, and then use a mild wash, and in ten days they are well. I am very pleased with this preparation and very truly believe that it is the best there is to date for the positive cure of gonorrhea."

REPORT OF THE CHEMICAL LABORATORY

Guaiodine is manufactured by the Intravenous Products Company, Denver, Colorado. The "literature" which accompanies the product describes Guaiodine as:

"... an electro-chemically prepared iodine, suspended in oil, containing iodine, the same strength as the U. S. P., tincture of iodine, or 7 per cent., together with a therapeutic dose of guaiacol."

The Intravenous Products Company claims that Guaiodine is made by an "electro-chemical process of preparing colloidal iodine," discovered by one E. B. Page, and that by this process the tendency of iodine to produce iodism has been "overcome." It is said to be "pre-eminently an antiseptic and germicide." Guaiodine is a dark brown, oily liquid with a specific gravity of 0.9845 at 15.6 C. and an odor suggestive of guaiacol. Its solubilities were those of a fat. Free iodine was absent in the recently purchased specimen (traces were present in an older one). Steam distillation indicated that the product consisted of volatile and nonvolatile constituents. The volatile matter was concluded to consist, in the main, of guaiacol or some guaiacol-like body, and the nonvolatile matter to be an iodized fatty oil. Quantitative determinations indicated that Guaiodine contained about 7.25 per cent. of iodine in combination, and that it is composed approximately of 3 per cent. volatile matter and 97 per cent. non-volatile matter. Hence Guaiodine appears to be an iodized fatty oil to which a small amount of guaiacol or some guaiacol-like substance has been added.

THE COUNCIL'S ACTION

On the recommendation of the referee, the Council voted that Guaiodine be declared inadmissible to New and Non-

official Remedies because of false statements as to composition and action.

[EDITORIAL NOTE.—Advertisements of Guaiodine have appeared, during the past year, in the following:

<i>New York Medical Journal</i>	<i>American Journal of Surgery</i>
<i>Medical Review of Reviews</i>	<i>Medical Times</i>
<i>Military Surgeon</i>	<i>International Journal of Surgery</i>
<i>American Medicine</i>	<i>American Journal of Clinical Medicine</i>
<i>Urologic and Cutaneous Review</i>	
<i>Therapeutic Gazette</i>	

Correspondence

THE SAVING OF LARD BY THE DRUGGIST

To the Editor:—There are about 40,000 druggists in the United States, each of which uses, at a low average, 25 pounds of lard per annum. This means 1,000,000 pounds in all. Much the greater portion of this is used as zinc ointment, the most frequently employed ointment both among the general medical profession and with the laity. Zinc ointment and simple cerate make up the bulk of the apothecarial lard. In both these preparations the petroleum products might be advantageously substituted. In fact, there is such a zinc pomade, put up in tubes, which enjoys a great popularity. If, however, a physician writes a prescription, or a customer asks for zinc oxid ointment, the druggist has no choice—he must, according to the pharmacopeia, dispense an ointment composed of benzoinated lard and zinc oxid, every ounce of which means practically an ounce of lard, enough pork fat, together with the other fats contained in an ordinary diet, to supply a hard working man for a day.

Pork fat, especially when enclosed in its normal fat tissue, is an admirable fat for a man engaged in hard muscular labor. It is firm and compact, and does not readily decompose, and therefore may be kept for a long time without deterioration. When eaten it is slowly liberated from its tissue enclosure, and is therefore slowly emulsified and slowly split into the fatty acids and glycerin, and therefore its fat is delivered slowly to the thoracic duct, and to the veins. This slow delivery insures that the man consuming it has fat supplied to his blood in manageable quantities for a long time after a meal. As the working man says, "It stays by me." The softer fats, such as bird fat, turkey fat, chicken fat and goose fat, and milk fat, such as butter, milk and cream, are more readily decomposable, more readily absorbable, more readily delivered to the blood, and therefore not so enduring as pork fat.

What are the means to be taken to save this excellent fat for the man working in the fields at home, or the man pointing the gun abroad?

In the first place, an emergency order should be passed by the state boards of health advising the use of petrolatum with about 5 per cent. of paraffin to take the place of lard as an ointment base. To await the passage of a law would take too long.

An ointment base composed of equal parts of lanolin and petrolatum is also an excellent substitute, and in many ways superior to lard, as there is no question of its decomposing, neither of the ingredients is of the slightest use as food, and food has become the central fact in the great war.

DOUGLAS W. MONTGOMERY, M.D., San Francisco.

[COMMENT.—It is doubtful if simple cerate and zinc ointment make up the bulk of lard used by pharmacists. Neither is there any substantial basis for believing that, as food, lard is superior to other fats under ordinary conditions. Further, the substitution of petrolatum for lard in ointments is a debatable question; this undoubtedly could be done frequently in some cases, but not in all. But while we are talking of economizing in the use of lard, let us not forget that there is urgent need for curtailment in the use of other fats, as well as in the use of sugar, alcohol and glycerin. The United States Food Administration calls attention to the fact that "it is possible to reduce largely the amount of these

materials used in medicines by the adoption of infusions, decoctions and solid forms of medication, such as capsules, in place of elixirs, syrups, fluid extracts and tinctures." And while we are economizing, some of us could occasionally, avoid the prescribing of preparations which are not specifically indicated, and which we are not sure will influence favorably the course of the disease.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GAS TREATMENT OF GONORRHEA

To the Editor:—In THE JOURNAL, March 9, 1918, p. 738, an article from a French magazine on the treatment of gonorrhea is abstracted. I would be pleased to have the treatment explained in full.

HENRY LAUGHLIN, M.D., Philadelphia.

ANSWER.—In addition to the details given in the abstract, we quote the writer's words: In a case of acute anterior gonorrheal urethritis, "Notre traitement consistera à lui injecter par le méat 5 c.c. du mélange (mixture) de nos 2 solutions dans les proportions suivantes: 4 c.c. solution A et 1 c.c. solution B." Solution A is prepared by dissolving 6 gm. of picric acid in 1,000 c.c. of water; Solution B by dissolving 17 gm. of anhydrous sodium thiosulphate (hypo-sulphite) in the same quantity of water. "These two solutions being in contact, the hydrogen radical of the acid is replaced by the metal radical of the neutral salt corresponding to the hyposulphurous acid to form soluble sodium picrate at the same time that the gas, sulphur dioxide, SO₂, is generated, with a deposit of sulphur." The solutions should both be tepid. The generation of gas continues some time, and is not complete until after twenty minutes at body temperature, 37 C. The injection into the meatus is not painful, contrary to what might be expected from the irritation produced in the air passages by this gas, SO₂. During the acute phase he gives three injections a day of the mixture, 4 c.c. of Solution A and 1 c.c. of Solution B. When the posterior urethra becomes involved, he injects a total of 6 c.c. instead of 5 c.c., of the mixture, using 4.8 c.c. of Solution A and 1.2 c.c. of Solution B. When the urethritis is subsiding, and in chronic cases, he gives one injection a day, using 5 or 6 c.c. of the mixture according as the three-glass test gives positive or negative findings. The injected fluid should be retained for fifteen minutes at least.

SUPPLY OF NEO-ARSPHENAMIN

To the Editor:—Is there any neosalvarsan to be had at this time? If not, what in your estimation is the safest product to use which will give the desired result?

GUSTAV SCHMITT, M.D., Milwaukee, Wis.

ANSWER.—No German manufactured neosalvarsan has been imported into this country for some time, and it is unlikely that any is available. The Federal Trade Commission has granted an importing license to the Diarsenol Company, Inc., 475 Ellicott Square, Buffalo, for the Canadian brand of neoarsphenamin, neodiarsenol. Licenses to manufacture were also issued to the Takamine Laboratories, New York, to the Farbwerke-Hoechst Company, New York, and to the Dermatological Research Laboratories, Philadelphia. It is intimated that an importing license will also be granted for the French product—novarsenobenzol. The safest and most effective product, provided one has mastered the technic is one of the arsphenamins, not the neoarsphenamins.

MEDICOLEGAL DECISION ON PRESCRIBING OF NARCOTICS

To the Editor:—In THE JOURNAL (March 16, 1918, p. 804) I note an abstract of the decision in the case of the *United States v. Reynolds* (U. S.), 244 Fed. R. 991. Does this apply to the prescribing by physicians of other narcotics as well?

GEORGE I. GARRISON, M.D., Quapaw, Okla.

ANSWER.—It is likely that the medicolegal decision concerning which you inquire would apply to all the narcotics covered by the Harrison Antinarcotic Law.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 14. Sec., Dr. T. J. Stout, Brinkley.
ARKANSAS (E): Little Rock, May 14. Sec., Dr. C. E. Laws, Ft. Smith.
DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.
NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.
NEW MEXICO: Santa Fe, April 8. Sec., Dr. R. K. McClanahan, East Las Vegas.
NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.
OKLAHOMA: Oklahoma City, April 9-10. Sec., Dr. J. J. Williams, Weatherford.

California July Examination

Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the oral and written examination held at San Francisco, July 10-12, 1917. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 166 candidates examined, 150, including 17 osteopaths, passed, and 16, including 8 osteopaths, failed. Fifty-seven candidates were licensed through reciprocity, 13 candidates were granted certificates to practice chiropody, and 7 candidates were granted drugless practitioner certificates. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists (1916)	83.7; (1917) 75.8, 80.4, 83, 86.7, 87.1, 87.1, 87.8, 91, 91.4, 92.2		
College of Physicians and Surgeons, Los Angeles (1917)	75.3, 76.1, 77.4, 78.3, 78.3, 78.7, 80.5, 80.7, 81.2, 81.5, 82.1, 83.2, 83.9, 84.1, 84.3, 84.4, 84.5, 85.2, 85.3, 85.9, 85.9, 86, 86.1, 86.2, 86.2, 86.2, 86.3, 87.1, 87.5, 87.7, 87.8, 88.1, 88.1, 88.2, 88.4, 88.8, 89, 89.7, 90.8, 90.9, 90.9, 91.7, 91.8, 92, 92, 92.2, 92.8, 93.7		
Coll. of P. and S., San Francisco.....(1917)	80.3, 83.2, 83.4		
Hahnemann Medical College of the Pacific (1917)	76, 76.4, 79.1, 79.3, 80.7, 81.1, 82.2, 84.4, 88.2, 89.3, 90.8, 97.1		
Leland Stanford Junior University (1916)	92.8; (1917) 81.3, 81.5, 83.7, 86.2, 86.9, 88, 88.2, 88.7, 89.2, 90.2, 91, 91.1, 94.4, 96.8		
Oakland College of Medicine and Surgery..(1917)	86.3, 90.1, 90.4, 92.7		
University of California (1917)	81.5, 85, 85.9, 86.8, 87.2, 87.3, 87.7, 88.5, 88.5, 90.2, 91, 91, 91.1, 91.7, 91.7, 92.4, 92.4, 92.9, 93, 93.1, 94.4, 95.7, 95.9, 96.8, 97.4.		
Loyola University	(1916)		75.1
University of Illinois	(1916)		86.2
Tulane University	(1916)		95.5
Harvard University	(1915)* (1917)		90.4
Tufts College Medical School.....(1916)			75
Cornell University	(1916)		90
Jefferson Medical College of Philadelphia.....(1916)			84.5
University of Pennsylvania.....(1916)			86.4
Vanderbilt University	(1917)		84.5
University of Vermont.....(1914)			83.7
Trinity Medical College.....(1903)			84.2
University of Munich	(1913)		85.4
University of Edinburgh	(1910)		92.1

FAILED

College of P. and S., San Francisco.....(1917)	72.9, 73.1, 73.7
Hahnemann Medical College of the Pacific.....(1917)	73.5
University of Colorado.....(1907)	70.9
John A. Creighton Medical College.....(1913)	65.3
Kyushu Imperial University	(1911) 44.5
Tokyo Charity Hospital Special Medical School.....(1909)	62.2

* No grade given.

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama	(1912)		Oregon
University of Southern California.....(1904)			Arizona
Denver and Gross College of Medicine.....(1906)			Colorado
Denver College of Medicine	(1892)		Utah
Columbian University	(1901)		Arkansas
Howard University	(1887)		S. Carolina
Chicago College of Medicine and Surgery.....(1913)			Illinois
Chicago Homeopathic Medical College.....(1886)			Iowa
Coll. of Med. and Surg., Chicago (Physiomedical)....(1903)			Utah
Coll. of P. and S., Chicago....(1888) Ariz.; (1905) (1909)			Illinois
Hahnemann Medical College and Hospital of Chicago.....(1910)			Illinois
Illinois Medical College.....(1903)			Illinois
Northwestern University.....(1902) (1909) (1915)			Illinois
Rush Medical College.....(1880) Illinois; (1889)			Indiana
University of Illinois.....(1914) (1915)			Illinois
Woman's Med. School of Northwestern Univ..(1893) (1894)			Wisconsin
State University of Iowa College of Medicine.....(1889)			S. Dakota
Hospital College of Medicine.....(1901) Illinois; (1906)			Kentucky
Kentucky School of Medicine.....(1906)			Kentucky
College of Physicians and Surgeons, Baltimore.....(1910)			Penna.
Tufts College Medical School.....(1908)			New Hamp.
University of Minnesota	(1895) (1903)		Minnesota
Barnes Medical College.....(1908)			Nebraska
John A. Creighton Medical College.....(1900)			Iowa

Lincoln Medical College.....	(1909)	Nebraska
University of Nebraska.....	(1907)	Nebraska
Albany Medical College.....	(1911)	New York
Bellevue Hospital Medical College.....	(1876)	Penna.
Columbia University.....	(1880) Ohio; (1914)	New York
Ohio Medical University.....	(1901)	Arizona
Western Reserve University.....	(1887)	New York
Hahnemann Med. Coll. and Hosp. of Philadelphia...	(1910)	Penna.
Jefferson Medical College of Philadelphia.....	(1914)	Iowa
University of Pennsylvania ..	(1888) Pennsylvania; (1914)	Illinois
University of Pittsburgh.....	(1912)	Penna.
Western Pennsylvania Medical College.....	(1891)	Ohio
University of Nashville.....	(1888) (1901)	Tennessee
Vanderbilt University.....	(1912)	Tennessee
University of Texas.....	(1908)	Texas
Milwaukee Medical College.....	(1906)	Wisconsin
Trinity Medical College.....	(1901)	N. Dakota
McGill University.....	(1896)	Vermont
Osaka Jikei Medical College.....	(1899)	Wyoming
Tokyo Charity Hospital Special School.....	(1911)	Nevada
University of Christiania.....	(1893)	N. Dakota

	FAILED	
Bennett Medical College.....	(1910)	73
Baltimore University.....	(1903)	51.1
University of Michigan Medical School.....	(1906)	73.1
John A. Creighton Medical College.....	(1917)	69.3
University of Oregon.....	(1915)*	56.1
* Official information states that this candidate is not a graduate of the school named.		

Book Notices

SHOCK AT THE FRONT. By William Townsend Porter. Cloth. Price, \$1.25. Pp. 151. Boston: The Atlantic Monthly Press, 1918.

Much of the material in this book originally appeared in a series of articles in the *Atlantic Monthly*; hence the primary purpose of the author was to write an informative and entertaining rather than a scientific article. The author writes in colloquial style with a conspicuous sense of humor, and his book is full of vivid descriptions of scenes en route and at the front.

Unfortunately, the promises held out by the author in the beginning of the book that he had discovered and would explain the cause of shock are not fulfilled. In concluding he says:

I sailed for my own country, bearing with me the certainty that fat embolism is a frequent, if not the most frequent, cause of shock as seen on the battle field; and the further certainty that the use of carbon dioxid respiration treatment is of advantage.

The theory which he attempted to prove was that shock is always accompanied by low blood pressure; is caused by fat embolism in the capillary circulation; occurs most frequently, if not altogether, in cases of fracture of long bones, or in cases of extensive wounds of the subcutaneous fat tissues; the embolism causes a blocking of the vessels with a bleeding of the arteries into the veins, and the rebreathing of expired air changes the respiration, elevates the blood pressure and overcomes the shock. The details of his experiments are necessarily merely fragmentary outlines, but are probably more than sufficient for lay readers. It probably makes very little difference to the lay reader whether shock is produced, as suggested by Dr. Porter, or whether many other factors, such as those considered by the Medical Research Committee, whose extensive studies were recently published in THE JOURNAL, are of greater importance.

It is unfortunate also that the author sometimes paints with too heavy a brush. This is particularly true of the fourth chapter describing his visit to Compiègne and his observations of the Carrel-Dakin method, concerning which he is more than optimistic. The lay reader is likely to expect too much after reading the following description of an illustrative case seen after Dr. Porter's return:

I saw recently in New York a man who had had for twenty-five years a large ulcer on the leg. He entered the war hospital of the Rockefeller Institute, July first. His wound was measured and the theoretical curve was drawn. It was seen that the curve would strike the normal at August 6. "On August 6," the man was told, "you will be healed"; and on the promised day, the last square centimeter closed.

But these considerations should not detract too much from the graphic pictures drawn by the author, and from the entertaining qualities of his book.

A TEXT-BOOK ON GONORRHEA AND ITS COMPLICATIONS. By Dr. George Luys, Chief Medical Officer of the Urological Centre at the Military Hospital, Versailles. Translated and edited by Arthur Foerster, Captain, R. A. M. C. (T. C.). Second revised edition. Cloth. Price, \$6.

In his preface to the second English edition, Capt. Arthur Foerster states that both Dr. Luys and he have been away from their homes for many months, and that collaboration being impossible, only a few minor changes have been introduced into the second edition. He points out further that no radical advance in the knowledge and treatment of gonorrhea has been made during the last few years. Most important among the alterations is the substitution of new figures for figures showing instruments of German manufacture. The colloidal silver preparations are especially more strongly advocated, and some remarks on electrical treatment have been added. The work is an excellent and complete discussion of the subject.

Mississippi October Examination

Dr. W. S. Leathers, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 23-24, 1917. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 8 passed and 3 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College.....	(1915)	81.2	81.5
Chicago College of Medicine and Surgery.....	(1917)	77.5	80
Loyola University.....	(1917)		83
Tulane University.....	(1917)		85.5
Meharry Medical College.....	(1917)		75
University of Tennessee.....	(1916)		77.2
FAILED			
College of Physicians and Surgeons, Little Rock.....	(1910)		36
Meharry Medical College.....	(1912)		65
Memphis Hospital Medical College.....	(1911)		61
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas.....	(1906)		Arkansas
Tulane University.....	(1915)		Louisiana
Memphis Hosp. Med. College....	(1905) Louisiana; (1912)		Tennessee

Florida Eclectic November Examination

Dr. G. A. Munch, secretary of the Florida Board of Eclectic Medical Examiners, reports the practical and written examination held at Tampa, Nov. 20-21, 1917. The examination covered 7 subjects and included 69 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom failed. The following colleges were represented:

College	FAILED	Year Grad.	Per Cent.
Georgia College of Eclectic Med. and Surg. (1910)	70;	(1916)	72
Hospital Medical College, Atlanta.....	(1909)*		73
* Graduation unverified.			

Montana October Examination

Dr. S. A. Cooney, secretary of the State of Montana Board of Medical Examiners, reports the written examination held at Helena, Oct. 2, 1917. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 31 candidates examined, 26 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado.....	(1917)		79.2
Chicago Coll. of M. and S....	(1913) 75.2; (1914) 86.6; (1917)		79.9
Loyola University.....	(1917)		83.3
Rush Medical College (1902)	82.2; (1903) 75; (1916) 76.8; (1917)		82.6
University of Illinois.....	(1914)		83.8
State University of Iowa College of Medicine.....	(1906)		76.6
University of Louisville.....	(1912)		85.4
Detroit College of Medicine and Surgery.....	(1917)		82
University of Michigan Medical School.....	(1910)		85.7
Minneapolis College of Physicians and Surgeons.....	(1903)		82.3
Ensworth Central Medical College.....	(1907)		76.6
Ensworth Medical College.....	(1910)		81.8
Marion-Sims-Beaumont Medical College.....	(1903)		75
St. Louis University.....	(1917)		79
John A. Creighton Medical College.....	(1917)	80.7	84.6
Cornell University.....	(1913)		83.1
Cincinnati College of Medicine and Surgery.....	(1901)		80.9
Eclectic Medical Institute.....	(1894)		83.9
Vanderbilt University.....	(1917)		83
Milwaukee Medical College.....	(1904)		77

Medicolegal

Liability of Private Hospital for Theft by Nurse and Attacks by Strangers

(*Vannah vs. Hart Private Hospital (Mass.)*, 117 N. E. R. 328)

The Supreme Judicial Court of Massachusetts sustains exception to a verdict for the defendant, which it was sought to hold liable for an alleged theft by a nurse of a ring which the plaintiff wore when she went under the ether for an operation, and missed when she regained consciousness in the private hospital operated by the defendant for gain. The court says that on the evidence the jury was warranted in finding that the ring was forcibly removed from the plaintiff's hand by one of the operating nurses who, when last heard from, was in California. If the nurse did steal the ring, it was plain that the defendant was not liable on the ground that in stealing the ring the nurse was acting within the scope of her employment as a servant of the defendant. If the plaintiff had stood in the relation of a stranger to the defendant, there would have been no error in the trial; but she did not stand in such relation. The case was not tried on the footing that the rights of the plaintiff in this action depended on the contract made by her with the defendant, and the presiding judge was wrong in telling the jury that the defendant's liability depended on the plaintiff's proving that it was negligent.

Under the contract entered into by the defendant corporation, it was its duty not only (1) to give the plaintiff a room in the hospital before and after the operation, and (2) to give her surgeon and family physician the use of the operating room for the operation, but also (3) to give to the plaintiff the services of such nurses as were necessary for her care before, after and during the operation. It expressly appeared that she paid to the hospital \$15 a week for attendance. The services of the nurses which, under the contract, the defendant was bound to furnish her included the services of nurses while she was unconscious from the effects of the ether, a condition which was a necessary part of the operation; and the question which this court had to decide was whether there was a violation of duty on the part of the defendant under this contract if the operating nurse in question stole the ring by forcibly pulling it off the plaintiff's finger while she was under the effects of the ether, or whether on the facts appearing at the trial the jury could have so found. The court is of the opinion that the jury could have so found.

If, for example, a stranger had burst into the operating room, attacked the plaintiff and done her bodily harm, or had attacked the plaintiff while the nurses were carrying her from the operating room to her own room, and the defendant's nurses had stood by and done nothing to protect the plaintiff from those attacks, it is plain in the court's opinion that there would have been a violation of the duty owed by the defendant under its contract with the plaintiff. It is equally plain, in the court's opinion, that the duty owed by the defendant under its contract with the plaintiff extended to the care of the rings on her fingers while she was unconscious from the effects of the ether, as well as to the security of her person. And, finally, it is equally plain in the court's opinion that there is as much a violation of the duty owed by the defendant under the contract when the attack on the person or larceny of the ring is committed by one of the defendant's own nurses (whose duty it was to protect the plaintiff), as well as in the case in which the attack is made by a stranger, and the nurses do not undertake to protect her from the attack.

In its legal aspects, the case is governed by the decision in *Bryant v. Rich*, 106 Mass. 180, wherein it was held that, as a matter of contract, a passenger on a steamer had the right to receive proper treatment from the defendants and their servants and all of them. But a defense was made out if the defendant's evidence was believed that when the plaintiff was received into the hospital she was asked to put into the

custody of the defendant corporation all her "valuables." On the other hand, if the plaintiff's evidence, that she was asked only to put her money into the custody of the hospital, was believed, her rights depended on the rule of *Bryant v. Rich*.

Communication of Syphilis to Wife and Assault

(*State vs. Lankford (Del.)*, 102 Atl. R. 63)

The Court of General Sessions of Delaware holds, as the jury was charged in this case, that a husband may commit an assault and battery on his wife, notwithstanding the marriage relation. A wife in confiding her person to her husband does not consent to cruel treatment, or to infection with a loathsome disease. A husband, therefore, knowing that he has such a disease, and concealing the fact from his wife, by accepting her consent, and communicating the infection to her, inflicts on her physical abuse, and injury, resulting in great bodily harm; and he becomes, notwithstanding his marital rights, guilty of an assault, and indeed, a completed battery. If the accused knew he was infected with syphilis, and his infection was unknown to his wife, the intent to communicate the disease to her by having sexual intercourse with her may be inferred from the actual results. If the jury should find the evidence that the accused, knowing that he was infected with a venereal disease, and, without informing his wife of the fact, had sexual intercourse with her after such knowledge had been communicated to him, and thereby infected her with the disease, their verdict should be guilty. If the jury should find that the accused, during the period he had sexual relations with his wife, did not know that he was infected with a venereal disease, and that he did not communicate with his wife after being informed that he was infected, their verdict should be not guilty. The verdict was guilty.

Typhoid Fever Not Caused by an Accident

(*State ex rel. Faribault Woolen Mills Co. et al. vs. District Court, Rice County, et al. (Minn.)*, 164 N. W. R. 810)

The Supreme Court of Minnesota reverses a judgment which allowed compensation under the workmen's compensation act to an employee of the woolen mills company for temporary disability caused by typhoid fever, the germs of which were alleged to have been ingested by drinking infected water furnished in the company's factory for the use of its employees. The court says that if contracting this disease by drinking infected water was an accident within the definition thereof contained in the law, the evidence was probably sufficient to sustain the findings of the district court.

Under statutes which provided compensation for personal injury by accident without defining the meaning of the terms used, there was a diversity of opinion among the courts as to whether diseases, and especially the so-called "occupational diseases," were accidents within the meaning of the statute. The American statutes seem to have been framed largely along the lines of the prior English statute. The English courts held that a disease, unless contracted in consequence of some injury to the physical structure of the body, was not a "personal injury by accident," within the meaning of the English law, until by amendment the law was expressly made to include occupational diseases. In *Finday v. Tullamore Union*, 48 Ir. L. T. 110, 7 B. W. C. C. 973, it was held that typhoid fever was not an accident within the meaning of the law. The courts of Michigan, New Jersey and Ohio seem to have taken the same view as the English courts. The Massachusetts court distinguished their statute from the English statute on the ground that it omitted the element of accident as a condition to recovery, and held that contracting a disease was "a personal injury," although it might not be an accident. The Wisconsin court held that contracting typhoid fever was an accident within the meaning of their law, but forceful reasons for the opposing view are set forth in the dissenting opinion of Justice Barnes. The United States Circuit Court of Appeals for the Ninth Circuit held that contracting typhoid fever was an accident within the terms of an insurance policy indemnifying against claims "on account of bodily injuries accidentally suffered."

To avoid the uncertainty previously existing and to make clear the class of injuries to which the Minnesota compensation law was intended to apply, the legislature inserted therein a definition of what shall be deemed an accident within the purview of such law. So far as here important, the statute provides for compensation "in every case of personal injury . . . caused by accident, arising out of and in the course of employment," and then provides that the word "accident" as used therein shall "be construed to mean an unexpected or unforeseen event, happening suddenly and violently, with or without human fault and producing at the time, injury to the physical structure of the body." By restricting the injuries for which compensation is to be made to those caused by accident, and by defining the term "accident" to mean "an unexpected or unforeseen event, happening suddenly and violently, . . . and producing at the time, injury to the physical structure of the body," the legislature clearly manifested an intention to exclude from the operation of the law disabilities caused by disease unless the disease resulted from an accident of the character above described; and the courts must give effect to such intention. The disease in the present case was not caused by an accident as that term is defined in the law. The disease germs were not taken into the system in consequence of anything which happened "suddenly and violently," or which at the time produced "injury to the physical structure of the body."

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.
Alabama State Medical Association, Birmingham, April 16.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
American Orthopedic Association, Washington, D. C., April 22-23.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
Arizona Medical Association, Phoenix, April 25-26.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
California State Medical Society, Del Monte, April 16-18.
Connecticut State Medical Society, Hartford, May 15-16.
Georgia State Medical Association, Savannah, April 17-19.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Louisiana State Medical Society, New Orleans, April, 16-18.
Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New York State Medical Society, Albany, May 21-24.
North Carolina State Medical Society, Pinehurst, April 16-18.
Oklahoma State Medical Association, Tulsa, May 14-16.
South Carolina Medical Association, Aiken, April 16-18.
South Dakota State Medical Society, Mitchell, May 21-23.
Tennessee State Medical Association, Memphis, April 9-11.

CHICAGO INSTITUTE OF MEDICINE

Meeting held March 28, 1918

Angina Pectoris

DR. E. FLETCHER INGALS and MR. WILLIAM R. MEEKER:
See THE JOURNAL, this issue, p. 969.

Pathology of Angina Pectoris

DR. E. R. LECOUNT: See THE JOURNAL, this issue, p. 974.

Coronary Thrombosis in Relation to Angina

DR. JAMES B. HERRICK: I wish to discuss four propositions:
1. Coronary thrombosis causes some attacks of angina.
2. Coronary thrombosis is not necessarily always fatal.
3. Coronary thrombosis produces a group of clinical symptoms that can frequently be recognized with a reasonable degree of certainty. 4. Experimental work seems to show

that the electrocardiograph may be helpful in recognizing this condition. In speaking of coronary thrombosis we should also include some cases of coronary embolism.

As to the first proposition there is little need for discussion. All clinicians, I am sure, have seen cases of angina, which, if they have been checked by necropsy, have shown obstruction of the coronary artery by a thrombus.

The second proposition, that coronary thrombosis is not always necessarily fatal, is one that is perhaps today believed by most. Yet for many years the doctrine prevailed that the coronary arteries were terminal arteries and that their obstruction by thrombi was necessarily fatal. It has prevailed from the time of Parry, and John Hunter's celebrated case up to a few decades ago. It was fortified especially by the teachings of Cohnheim, who from his experience as a pathologist, and as the result of his experiments on dogs, said that obstruction of the coronary arteries was always followed by death in two minutes; but Cohnheim's dictum was soon challenged both as to the necessarily fatal result of obstruction of the coronary, and that the coronaries were end arteries. Dr. LeCount has spoken to this point.

The proof that these arteries are not end arteries comes from anatomists, pathologists, experimental workers and clinicians. Anatomists proved by dissections that there were anastomoses, not negligible, not merely capillary, but sometimes visible to the naked eye, between the right and the left coronary. This was proved by various other means of examination—by Spalteholz by rendering the heart translucent, by roentgenograms of injected vessels, etc. The pathologists have seen many cases in which, as we have heard tonight, the obstruction has clearly been of long standing, a condition that could not obtain unless there were a reasonable degree of blood supply from some other source than the one coronary artery. Later experimenters have had more favorable results than Cohnheim. A few weeks ago we heard Prof. W. T. Porter of Harvard speak of his experience in Europe. Porter was one of the first who was successful in having his animals live after ligation of large coronary vessels. Our colleague, Dr. Joseph L. Miller, with S. A. Matthews, also was successful, so that now it is not uncommon for experimenters to ligate large branches of the coronary artery and have the animals live for hours, days, weeks and months. This means that the coronaries are not, in the strict sense, terminal arteries.

Clinicians have seen patients, with symptoms that perhaps necropsy would show were clearly due to obstruction of the coronary, who have lived for hours, days, weeks or months. The point, therefore, that I wish to bring out is that obstruction of the coronary artery, even of a main branch, is not necessarily fatal, and this must be due to the fact that something is in the way of collateral circulation that can take up the work of the obstructed vessel which is out of function.

As to the third point, there are certain clinical symptoms which at times permit of the recognition of the disease. I have tried to group these symptoms. Any classification must be more or less artificial, because there is certainly no hard and fast line that can be drawn between any two of these groups of cases.

The first group that I have put down as caused by obstruction of the coronary vessel is that in which death is seemingly instantaneous. These are the cases that have been described particularly by Krehl, who emphasizes the fact that there is a sudden stoppage of the heart and respiration; there is no agonal struggle, no edema of the lungs, no distortion of the features. Death seems to be extremely sudden, or, we may say, instantaneous.

A second group would be those in which there is obstruction, with heart pain; there comes sudden or early death, within a few minutes or a few hours. If the physician reaches the house in time, he sees that the patient is clearly in the death agony.

The third is the group in which the symptoms are severe, but death is deferred for hours, for days, for months, and possibly recovery occurs.

The fourth is a group that is purely hypothetical. The patient's symptoms are slight; possibly there is a slight pain. It may be passed off as a neuralgia or pleurodynia. In many

hearts there are scattered patches of fibrosis, many of which are surely due to obstruction of the twigs of the sclerosed coronary. If a large branch may cause sudden death with pain, why not a small twig produce slighter symptoms without death?

It is of the third group particularly that I am speaking tonight. These patients as a rule are from 30 to 50 or 60 years of age; some have signs of definite cardiovascular disease; some have not. Some have suffered previously from typical angina pectoris on walking, etc. In all the cases in which I have dared to venture this diagnosis, pain has been a striking feature. The patients who have previously experienced angina describe the pain in this attack as the worst they have ever had. The pain may be substernal or precordial, may be referred to the epigastric region, and may or may not radiate to the arms. It is rather diagnostic of this type that the pain has lasted longer than in typical angina. It may last a half hour, or three, four or five hours, and in one or two cases I have seen it amount to a typical status anginosus in which one severe attack succeeded another. Huchard said that in some of the cases that he describes there was no pain. Not infrequently the pain has stopped after a few hours, even though the patient lived for a long time. Often there is nausea with vomiting; the patient is frequently in a condition of collapse. A striking fact is that the mind remains clear.

The pulse is generally small in volume, though sometimes the volume is fair; it is sometimes almost imperceptible, frequently rapid, more rarely slow, frequently running, sometimes irregular. The heart tones are startlingly feeble. The blood pressure is low, and it is rather characteristic, at least of the cases going on from bad to worse, to have the blood pressure hour after hour get lower and lower. Dr. LeCount spoke of a fibrinous patch over the area of softening of the heart. Pericardial friction is not infrequently heard over the infarct in the myocardium. Twice I have heard this. If the patient lives a few days or weeks he generally shows signs of myocardial weakness. This may be extreme, as in two cases in which there resulted edema of the legs, ascites, albuminuria, etc. In other cases the symptoms are those of chronic fibrous myocarditis—dyspnea on exertion, anginal attacks, cyanosis, cough, etc.

A rather striking fact is also the acutely developing emphysema. The first case I ever saw puzzled me. There was a marvelous hyperresonant note over the chest, obscuring the cardiac dulness, and only when I looked up the subject did I find that von Basch had already described it. Frequently there are râles due to edema of the lungs. Some of the patients I have seen have impressed me not only on account of the clear mental condition in spite of the startlingly feeble circulation, but by the way in which they preserved their muscular strength. Yet in one or two I have seen an asthenia comparable in its degree to that of pernicious anemia or Addison's disease. Many attacks resemble closely a surgical subdiaphragmatic accident, such as pancreatitis or perforated gastric ulcer.

I have seen one case in which I believe there was coronary obstruction with a most remarkable after-effect. A man described to me having had frequent attacks of angina after walking, for several months. One day he had a frightful attack of the character I am describing and which I thought was due to coronary obstruction. Following that he had no attack of the ordinary paroxysmal variety. I do not know how to explain that unless it is like this: I can conceive that this man had a roughened coronary vessel partially obstructed, which after the manner of intermittent claudication produced on exertion the painful seizure. Then a thrombus formed at some narrow point, and this put a certain portion of his myocardium out of function with resulting fibrosis, to which new condition the heart became accustomed and which did away with the varying and relative ischemia of the myocardium that was present when the obstruction was partial but sufficient to interfere with the blood supply adequate to meet the demands produced by exertion.

I believe it is possible in many of these cases to make a fair approximation to a diagnosis, and I have been led to

that belief because in three cases in which the clinical symptoms were carefully studied, necropsy showed coronary obstruction. These were cases in which there had never been a previous attack of angina, in which there was no marked sclerosis of the beginning of the aorta; they were in three persons who had never had syphilis, and yet the coronary artery in each one was distinctly sclerosed.

At my suggestion Dr. Fred M. Smith in the Presbyterian Hospital and Rush Medical College studied experimentally the coronary arteries in dogs. He first injected the arteries of the heart. Some anastomoses could be seen with the naked eye. At times, as he injected, he could inject the right coronary from the left, or vice versa. The objection Dr. LeCount raised to many of these studies is valid. Dr. Smith tried not to use too much force, registering the pressure with a mercurial manometer. The second point he tried to establish was the mortality from ligation. His results in animals are more favorable than Dr. Porter's and compare favorably with those of Dr. Miller. Thus one dog out of eleven in which he ligated the ramus descendens of the left side died; ten lived. In the circumflex the mortality is always higher. These experiments concern acute obstructions. I believe, with Dr. LeCount, that there is a great field for experimental work in producing slowly forming obstructions.

The third point was the determination of the area of the heart muscle that became softened and later fibrous as the result of the obstruction of each artery or its branches. It was possible to produce with reasonable certainty lesions in a fairly definite area by ligation of various arteries. In general the endocardial and subendocardial changes were more extensive than those in the subepicardial tissue.

Lastly he studied the electrocardiographic changes produced by these obstructions. He took the dog's electrocardiogram before operating. Tracings were made soon after the operation to get the immediate change; then at varying intervals, from a few minutes up to hours, days, weeks and months, and the irregularities were noted. Careful study was made of the hearts of dogs dying or killed. The thought in this work has been that if it can be proved that with a certain artery obstructed there is a definite lesion in the heart muscle or in the conducting system, and if with that lesion there is a definite electrocardiogram, may it not be that when we encounter that abnormal electrocardiogram in the human being and have the symptoms suggestive of coronary thrombosis we may be able to state with a reasonable degree of certainty that the patient has had obstruction in a particular portion of the coronary system?

It takes a long time to reach any results in the human being. Patients with this condition do not present themselves very often; a large proportion with coronary obstruction die a sudden death, or are too ill to come to the office or to a hospital where they can have the electrocardiographic tracings taken. And yet we have been able to take several tracings in patients in whom we believe these coronary thromboses had occurred. And in one of the cases the patient died, having lived five months after the obstruction. The electrocardiograms turned out to be right. The necropsy revealed the lesion.

[Dr. Herrick showed lantern slides illustrating the experimental work of Dr. Smith, including tracings from dogs, which were compared with some from human beings believed to be suffering from coronary obstruction, the diagnosis in one case having been confirmed by necropsy.]

Clifford Allbutt's Views of the Cause of Angina Pectoris

DR. ROBERT H. BABCOCK: In the first place, Allbutt limits the term "angina pectoris" to Heberden's classical syndrome, and rejects the terms "true" and "false" angina, believing there is but one angina; that the other pains which are sometimes considered angina should be called spurious and mock anginas; that these pains are frequently associated with certain vasomotor phenomena which Landois and Nothnagel term "vasomotoria" and "reflectorica," terms which Allbutt rejects because calculated to obscure the subject in hand. He prefers the classification for these cases of Sir William

Gowers, that they are vascular disorders. Allbutt's view of the nature of angina is this: that the angina of Heberden is a pain located in the ascending artery, or in the supra-sigmoid portion of the ascending aorta, and that this pain is due to tension or stretching of the fibrous coat, the adventitia. Since, he says, pacinian corpuscles have been demonstrated in the fibrous coat of the artery, in this respect the pain is like the pain of intestinal colic, or any pain caused by stretching of the fibrous investment of some abdominal structure or dragging or pulling on the omentum. He believes the cause of this pain is an aortitis which may be a chronic, a subacute or an acute aortitis, or may be a chronic aortitis with acute exacerbations. He regards as the proximal causes of this aortitis the usual factors which are more or less definitely recognized in the causation of senile atheroma of the aorta or of the arteries, but especially three influences—syphilis, influenza and rheumatism. In substantiation of this view he cites almost innumerable cases illustrating the causes of angina in comparatively young people, in whom syphilis would cause aortitis. He also cites cases in young people, even in children, in the course of acute rheumatism, and one or two cases in which necropsy revealed that there was an acute aortitis in these children in addition to rheumatic infection of the heart muscle or valves.

Now he says he cannot attempt to discuss all of the eighty hypotheses of angina that Huchard had collected, but discusses the principal one, namely, coronary disease and cramp of the coronaries, spasm of the heart muscle, distention of the heart muscle, etc. In discussing coronary disease he calls attention to the fact that one might say the majority of old people show more or less coronary sclerosis after death, and yet the majority of such people never suffer from angina. On the other hand, he cites many cases of people who die, having suffered from typical angina, in whom the coronaries were not diseased at all—disease could not be found. He criticizes clinicians and pathologists alike for not investigating carefully the condition of the adventitia of the artery, saying that they usually content themselves with the statement that the aorta shows more or less sclerosis, and in syphilis they study the intima and media, but rarely, if ever, the outer coat of the artery. He doubts that the heart muscle itself is capable of pain, because the ganglions and nerves of the heart, he believes, are motor rather than sensory; nevertheless, when disease of the heart does produce pain, he thinks the pain is caused by tension of the fibrous investment of the structures of the heart. He admits that pain occurs in coronary thrombosis or coronary occlusion, believing that when pain, as Dr. Herrick has said, occurs as the result of coronary occlusion it is the result of sudden blockage; and he quotes Kaufmann that it is only sudden occlusion of a main coronary artery which produces pain. Nevertheless, he believes that the pain of sudden blockage of the coronary artery from embolism, for instance, can be distinguished, and is to be distinguished, from typical Heberden's angina, and he gives exactly the symptoms which Dr. Herrick has mentioned, not only that the pain is frequently pericardial or epigastric, but that there are certain other associated symptoms which do not properly belong to Heberden's angina, namely, dyspnea, disorders of the pulse, as Dr. Herrick has said, failing circulation, failing heart and lowering blood pressure; whereas in typical angina the pulse is rarely altered to any appreciable extent. It may be slowed a little, or increased a few beats. The blood pressure, however, is variable. In some cases it may fall; in others it remains unaltered, while in others it rises, and he cites various observations from such observers as Mackenzie that there is nothing constant in the blood pressure during angina, for it certainly does not always fall, nor are there always symptoms of collapse, edema of the lungs, vomiting, etc., as in coronary embolism. He would regard such symptoms, if they occurred, as epiphenomena and due to associated lesion. He believes the sudden death in Heberden's angina is due to inhibition, and that it is a manifestation of the impression made on the vagus by the pain. If an attack of gallstone colic can produce pain by inhibition, as he witnessed in one young woman whose heart showed absolutely no disease,

then how much more easily may a diseased heart be stopped through the influence of pain on the vagus. In further corroboration of his theory he cites the pain of pericarditis, but gives cases showing that when angina has been present in cases of pericarditis that have come to necropsy sooner or later, the changes of pericarditis were found at the root of the aorta where the pericardium is reflected over the roots of the aorta. And this reminds me of the statement of Dr. LeCount that in case, as he says, the circulation at the roots of the aorta is provided by the anastomoses with other vessels, may not that very change in the coronary vessels in this situation lead to changes in the outer or fibrous coat of the aorta, which changes themselves may be responsible for the angina? I am not here to defend Allbutt's view, although I will say it appears to me as a hypothesis likely to explain the diversity of findings which are recorded, and the reason why so many investigators have such very different views concerning the nature and cause of the pain.

Allbutt rejects the theory of the angina's being due to distention of the heart muscle, citing the statements of the late John H. Musser and other authors to the effect that they had recognized cases of typical angina in which the angina totally disappeared after dilatation set in and mitral insufficiency became established, and reappeared with the return of compensatory hypertrophy. I think Allbutt would assume that in such cases the dilatation lessens somewhat the strain brought on the suprasigmoid portion of the aorta and therefore does away with such tension and stretching of the sensitive coat of this portion of the vessel as to bring about angina. He believes the theory of spasm of the heart muscle is not tenable, since, as he asks, What is systole but transient spasm of the heart muscle? Spasm of the coronaries and intermittent claudication he looks on as makeshift views to explain the great variety in the morbid anatomic changes found in the hearts to which I have alluded. In some hearts suffering with angina the coronaries were not diseased, and in others they were greatly diseased. On the whole, Allbutt, it seems to me, has presented a very strong case, and whether it answers to all cases or not, it certainly does seem to me that his views explain the overwhelming majority of cases, both in their causation and in their symptomatology, and we may say also in those measures which relieve angina.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

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- 1 Corpus Luteum in Ovary of Domestic Fowl. R. Pearl and A. M. Boring.—p. 1.
- 2 Studies on Growth of Blood Vessels in Tail of Frog Larva; Experiment on Living Animal. E. R. Clark, St. Louis.—p. 37.
- 3 Fate of Ultimobranchial Bodies in Pig (*Sus Scrofa*).—J. A. Badertscher, Bloomington, Ind.—p. 89.
- 4 Chondriosomes in Testicle Cells of Fundulus. J. Duesberg, Baltimore.—p. 133.
- 5 Position of Insertion of Pectoralis Major and Deltoid Muscles on Humerus of Man. A. H. Schultz, Washington, D. C.—p. 155.
- 6 Effect of Heart Beat on Development of Vascular System in Chick. W. B. Chapman, St. Louis.—p. 175.
- 7 Vestigial Gill-Filaments in Chick Embryos with Note on Similar Structures in Reptiles. E. A. Boyden, Boston.—p. 205.

American Journal of Diseases of Children, Chicago

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- 8 *Intestinal Intoxication in Infants. O. M. Schloss, New York.—p. 165.
- 9 Effect of Body Posture on Position and Emptying Time of Stomach. L. R. DeBuys and A. Henriques, New Orleans.—p. 190.
- 10 Case of Polycystic Kidney in an Infant. L. T. Royster, Norfolk, Va.—p. 196.
- 11 Acute Syphilitic Meningitis in an Infant Twelve Months Old. D. B. Leitch, New York.—p. 201.

8. **Intestinal Intoxication in Infants.**—Investigation of cases of intestinal intoxication by Schloss has furnished evidence which emphasizes the importance of the loss of fluid and the impaired secretion of urine. Determinations were made on thirty normal infants and on forty-six patients with intestinal intoxication. Thirty-six had acidosis and thirty-three of these showed an increase in the nonprotein nitrogen of the blood. There were, therefore, only three patients with acidosis without an increase of the nonprotein nitrogen. It is therefore apparent that infants suffering from intestinal intoxication show a marked increase of nonprotein nitrogen and urea in the blood. This increase is not due directly to increased concentration of the blood from loss of water, but to defective kidney elimination.

The renal lesions in intestinal intoxication are not sufficient to account for the impaired elimination by the kidney. It is probably due to the fact that lack of water restricts the formation of urine. This condition is probably due to the following factors which may act singly or in combination: 1. The loss of water in the stools is so great that it is impossible for the infant to ingest sufficient fluid to replace the loss. 2. The patient refuses to ingest fluid or vomits practically all that is taken. As a result the tissues become dehydrated. The retention of nitrogenous waste products and the failure of the kidney to do its part in preserving the acid-base equilibrium results from the deficient secretion of urine. The oliguria may be due to the fact that the dehydrated tissues hold as much water as possible so that none is available for the formation of urine. Other factors, dependent mainly on the loss of water, which may play a rôle are: (1) an increase in the concentration of blood colloids to such degree that their osmotic pressure is greater than the arterial pressure in the kidney; (2) a diminution in the total blood volume leading to decreased blood flow through the kidney. The symptoms of intestinal intoxication are essentially those of uremia. The two conditions are similar in all essentials. In one, defective kidney function is due to an organic lesion; in the other it results from the negative water balance and consequent oliguria. Acidosis plays a definite part in the symptomatology of intestinal intoxication, but the essential cause is probably some unknown toxic agency.

American Journal of Medical Sciences, Philadelphia

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- 12 *Pathologic Uterus at Menopause. C. R. Robins, Richmond, Va.—p. 313.
- 13 *Nature of Mononuclear Cells Seen in Exudate of Lobar Pneumonia Accompanying Typhoid. J. Forman and C. C. Hugger, Columbus, Ohio.—p. 317.
- 14 *Unsuspected Syphilis; Statistical Study. J. S. McLester, Birmingham, Ala.—p. 320.
- 15 *Spiral Fractures of Tibia; Report of Cases. C. Davison, Chicago.—p. 323.
- 16 Achylia Gastrica and Chronic Connective Tissue Lientery; Clinical Study of Three Hundred and Twenty-Two Cases. N. W. Jones, Portland, Ore.—p. 335.
- 17 *Digitalis and Control of Auricular Fibrillation and Auricular Flutter, with Electrocardiograms Illustrating Effect. R. H. Halsey, New York.—p. 344.
- 18 Syphilis of Lung; Report of Cases. H. Lisser, San Francisco.—p. 356.
- 19 Three Cases of Infection of Upper Respiratory Tract with Staphylococcus Pyogenes Aureus, Presenting Symptom Complex of Acidosis. L. U. Gardner, Boston.—p. 380.
- 20 Urinary Infections of Pregnancy and Puerperium. F. H. Smith, Abingdon, Va.—p. 392.
- 21 Simple Procedure for Preparation of Colloidal Gold for Diagnostic Purposes. O. I. Lee, New York.—p. 404.
- 22 Present Status of Hodgkin's Disease. A. F. Beifeld, Chicago.—p. 409.
- 23 Asthma Considered in Its Relationship to Vegetative Nervous System. F. M. Pottenger, Monrovia, Calif.—p. 417.

12. **Pathologic Uterus at Menopause.**—Analyzing a series of cases in which he performed hysterectomy, Robins found that 58 occurred in women who were 40 years old and over, and in all of these the complete removal of the uterus and adnexa had been practiced. In 28 of these the operation was performed for fibroids, pelvic inflammation and other conditions in which the impossibility of conserving the organs was manifest and beyond dispute. In the remaining 30, cancer was either a positive or a possible diagnosis. In 4 a positive diagnosis of cancer of the cervix, afterward con-

firmed by the microscope, was made and a Wertheim operation, preceded by cauterization with the Percy cautery, was done. In 26 a diagnosis of chronic metritis, including in this, induration of the cervix, was made and a possibility of malignancy considered. In practically all of these bleeding from the uterus was a prominent symptom, manifesting itself as irregular or continuous bleeding, and sometimes accompanied by marked anemia. In 2, cancer of the fundus was found on opening up the uterus.

13. **Exudate in Pneumonia of Typhoid.**—In the exudation in lobar pneumonia accompanying typhoid the mononuclear cells predominate. These mononuclear cells are classified by Forman and Hugger as: (1) lymphoid cells; (2) epithelial cells which have desquamated into the air sac; (3) large mononuclear leukocytes in abundance which contain indophenol oxydase granules; (4) large mononuclear leukocytes which are not so numerous and which do not contain the granules reacting to the indophenol blue synthesis.

14. Abstracted in THE JOURNAL, April 28, 1917, p. 1287.

15. **Spiral Fractures of Tibia.**—Davison urges the treatment of spiral fractures of the tibia by external reduction and external immobilization which, he says, usually results in imperfect union of the fragments with defective function of the leg. Treatment by open operation and autoplasmic repair usually results in early good anatomic union of the fragments with restoration of the strength and function of the leg. The autoplasmic transplantation of bone in the repair of a recent spiral fracture of the tibia is a capital operation, which requires careful technic, capable assistants and aseptic surroundings.

17. **Digitalis in Control of Auricular Fibrillation.**—With proper precautions Halsey believes that the following conclusions can be drawn: The gross irregularity of the ventricle in cases with fibrillation of the auricle can be controlled by digitalis if sufficient drug is administered. The patient should be instructed to continue the use of digitalis for the remainder of life, and should be taught how to determine the amount of the dose necessary from day to day to control the heart rate. Give sufficient drug to maintain the rate of the ventricle below 70 per minute when counted after a rest in the late afternoon. The fibrillating auricle under a short course of digitalis may return to normal rhythm. In auricular flutter the aim of treatment with digitalis is to produce auricular fibrillation and then control the rate of the ventricle with digitalis, hoping in the favorable cases for a renewal of normal sequential rhythm.

American Journal of Orthopedic Surgery, Boston

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- 24 Scheme of Curative Workshops in Orthopedic Centers of United Kingdom. King Manuel, London, England.—p. 149.
- 25 Diagnosis and Treatment of Hip-Joint Disease. J. K. Young, Philadelphia.—p. 157.
- 26 Method of Procedure for Orthopedic Surgeons in Camp. J. T. Rugh.—p. 166.
- 27 Arthroplasty with Aid of Animal Membrane. W. S. Baer, Baltimore.—p. 171.

Archives of Internal Medicine, Chicago

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- 28 Myiasis, Especially that Due to Syrphid Larvae. M. C. Hall, Detroit.—p. 309.
- 29 *Comparison of Functional and Anatomic Findings in Series of Cases of Renal Disease. A. Stengel, J. H. Austin and L. Jonas, Philadelphia.—p. 313.
- 30 *Relationship of So-Called Idiopathic Cardiopathy to Exophthalmic Goiter. D. Symmers, New York.—p. 337.
- 31 *Effect of Diuretics on General Blood Pressure in Animals with Constriction of Renal Arteries. E. W. Bridgman, Baltimore, and K. Hirose, Okayama, Japan.—p. 351.
- 32 *Physiology of Stomach. Gastric Secretion During Fever. J. Meyer, S. J. Cohen and A. J. Carlson, Chicago.—p. 354.
- 33 Influences of Extrarenal Factors on Renal Functional Test Meal. W. G. Lyle and H. Sharlit, New York.—p. 366.
- 34 *Study of Paroxysmal Tachycardia with Especial Reference to Tachycardia of Ventricular Origin. W. T. Vaughan, Boston.—p. 381.
- 35 *Pharmacodynamic Examination of Vegetative Nervous System in Typhoid. I. Matsuo and J. Murakami, Kyoto, Japan.—p. 399.

36 Action of Tyramin on Circulation of Man. A. W. Hewlett, San Francisco.—p. 411.

37 *Loss of Water Vapor Through Skin in Infants. W. B. McClure and L. W. Sauer, Chicago.—p. 428.

29. Functional and Anatomic Findings in Renal Disease.—

A group of thirty cases of renal disease have been studied by Stengel and his associates by certain of the recently introduced methods of renal functional testing, including the estimation of the plasma chlorids. Fifteen of these cases have come to necropsy, thus affording an opportunity of comparing the functional and anatomic findings. The cases of acute nephritis showed rather a pronounced impairment of all the renal functional tests. The cases of advanced chronic glomerulonephritis showed, in the most pronounced degree, elevation of blood pressure, depression of phenolsulphonaphthalein excretion, elevation of blood urea of nonprotein blood nitrogen, fixation of urinary specific gravity and the presence of albuminuric retinitis. These cases were characterized, however, by a normal or even a definitely subnormal plasma chlorid level, and by a considerable reduction of the plasma bicarbonates. Those cases which exhibited marked tendency to proliferative changes in the glomerular tufts were characterized, as a rule, by higher blood pressure than the cases which exhibited chiefly hyaline changes in the tufts. The cases which might have been classed clinically as chronic parenchymatous nephritis or as nephroses, because of the very slight elevation of blood pressure, the less marked depression of phenolsulphonaphthalein, the less marked elevation of nonprotein nitrogen and the more nearly normal urinary specific gravity, and because they exhibited conspicuous edema, especially of the face, and abundant albumin and casts of all kinds in the urine—these cases were less definitely characterized histologically than had been expected. While they showed pronounced degenerative or necrotic changes in the tubular epithelium, they also showed conspicuous, even advanced glomerulonephritis. Histologically, their separation from the clinical group of advanced glomerulonephritis would have been difficult, perhaps impossible.

Grossly, the kidneys in these cases were identical with those of the other group just mentioned. The plasma chlorids were elevated in the two cases of this group studied in this connection. The cases which clinically and histologically were cases of renal arteriosclerosis, exhibited a variety of forms of kidney, grossly, and could not have been properly classified on gross appearance alone. The blood pressure, and especially the pulse pressure, although much above normal, were usually lower than in cases of advanced glomerulonephritis. The plasma chlorids and plasma bicarbonates were normal or approximately so. In all cases with elevation of blood pressure some fall of pressure was noted in the last five or ten days before death. Contrary to expectation, however, the fall in diastolic pressure was closely proportional to the fall in systolic pressure, and not less, as would have been expected.

30. Relationship of Idiopathic Cardiopathy and Goiter.—

The symptomatology of the condition described by clinicians as thyrotoxic cardiopathy, Symmers says, is identical with the symptomatology of the lesion familiarly known among pathologic anatomists as idiopathic dilatation and hypertrophy of the heart. The clinical features are characterized by signs of great increase in the size of the heart, with or without murmurs of relative insufficiency and with or without signs of decompensation, as shown by dyspnea, subcutaneous edema, transudation in the serous cavities, cyanosis and the like, by tachycardia, and, on occasions, by bilateral exophthalmos with or without detectable indications of enlargement of the thyroid. Thus the symptoms are largely those of the cardiopathy, and signs of thyroid disturbance, such as tachycardia, tremor, exophthalmos and enlargement of the thyroid, if present, are apt to be projected into the background rather than to assume a prominent place in the picture. Of these symptoms, the tachycardia is constant, and with the patient in bed and at rest, varies between 90 and 160 beats to the minute. Anatomically, the so-called thyrotoxic cardiopathy is characterized by great enlargement of the heart, due to dilatation and hypertrophy of all the chambers or of different

combinations of chambers without valvular or pericardial, arterial, renal, pulmonary or other of the causes customarily invoked to explain enlargement of the heart. The so-called thyrotoxic cardiopathy is associated with definite structural alterations in the thyroid in the form of moderate changes in the size of the gland, overgrowth of the fibrous trabeculae, rearrangement of the architecture of the parenchyma, dependent on redistribution of the stroma, regeneration of vesicles and dilatation of the older alveoli, and variations in the amount and staining reaction of the colloid—a chronic interstitial and hyperplastic thyroiditis.

31. Effect of Diuretics on Blood Pressure.—Experiments were undertaken by Bridgman and Hirose in the hope of affording further light on the tenability of Traube's theory under conditions of increased functional demand on the kidney. It was thought possible that, if the renal artery were narrowed, but not occluded, and then diuretic substances administered intravenously, the compensatory nature of hypertension might be revealed. Narrowing of the renal artery without obliteration was made possible by the aluminum band of Halsted. The results of these experiments were negative. They give no support to the view that hypertension in chronic renal disease is a compensatory mechanism, brought into play when the renal arterial stream-bed is narrowed, by chemical or reflex paths, to counteract the effect on excretion of the locally diminished blood flow. Their value is only that of negative evidence in general. They do not disprove the compensatory nature of hypertension, but show that its demonstration is not to be had by the experimental method employed.

32. Gastric Secretion During Fever.—In a series of five experiments on two dogs in which fever was produced by nucleate and prodigiousus, and in twelve experiments on five dogs, in which a temperature elevation as high as from 105 to 112 was caused by external heat, the changes produced in the secretion caused by the injection of 1 c.c. of gastrin were striking and uniform. The volume was diminished; at times there was no secretion at all. The total and free acid were reduced. The chlorids were practically constant. The authors are of the opinion that these experiments prove that during fever produced by the injection of sodium nucleate or *B. prodigiousus*, or during temperature elevation caused by external heat, gastrin is unable to induce the normal secretion of gastric juice. The changes in the gastrin secretion are exactly the same as those found in the gastric juice secreted in response to food during fever. It is suggested that during fever, toxins are elaborated having a direct depressor action on the cells of the stomach so that they fail to react to secretory nerve impulses and secretagogues.

34. Paroxysmal Tachycardia of Ventricular Origin.—In eighteen cases of paroxysmal tachycardia reported by Vaughan only two, which are here reported in detail, showed a site of impulse formation elsewhere than in the auricles. Study of the literature points to the infrequency of cases of paroxysmal tachycardia of ventricular origin. To those already reported two are added. Digitalis may be an exciting cause in the production of the condition, but there must be some other predisposing factor such as ventricular hyperirritability from impaired blood supply or from some other cause.

35. Vegetative Nervous System in Typhoid.—In typhoid there sometimes exists striking bradycardia, even in the fever period, for which there is no satisfactory explanation. The work done by Matsuo and Murakami is an attempt at a solution of this problem through the hypothesis of Eppinger and Hess. They used typhoid patients, including seven cases of paratyphoid B, bacteriologically and serologically proved. Up to the time of examination no complication had set in. All were more than 14 years old. Patients who were in excited states were avoided. For the pharmacodynamic examination the authors used atropin, pilocarpin and epinephrin. In typhoid cases, atropin acts strongly on those patients who have marked bradycardia, but has almost no effect on those who have no bradycardia. Increase of pulse rate is the most significant atropin action; then comes increase

of thirst, and lastly palpitation. In only one case the remarkable paradoxical phenomenon, decrease of 17 in pulse rate, accompanied by arrhythmia, was observed. After injection of epinephrin, increase of pulse rate, elevation of blood pressure, acceleration of respiration and elevation of body temperature were observed in many cases. Tremor and glycosuria were often observed, but palpitation, nausea, and headache seldom. So-called dissociation of epinephrin action was observed even in cases of typhoid.

In the majority of cases salivation and sweating were observed after pilocarpin injection, besides nausea, vomiting and singultus. In only one case did the authors find a decrease of 14 in the pulse rate, accompanied by arrhythmia. This fact has never been noticed by anybody up to this time. Dissociation may be seen after pilocarpin in typhoid, but not so marked as after epinephrin. Examining the function of the vegetative nervous system in 38 cases of typhoid, the authors found 14 cases which corresponded to vagotonia, 11 cases which corresponded to sympathicotonia, 3 cases which were sensitive to all three drugs, 7 cases which were sensitive to pilocarpin and epinephrin, and 3 cases which were sensitive only to pilocarpin. In the cases with marked bradycardia, the state of vagotonia was often observed, while in those with no bradycardia, sympathicotonia was often observed. The state of vagotonia may be one explanation for bradycardia in typhoid. The deaths among these patients were all in the condition of sympathicotonia.

37. Loss of Water Vapor Through Skin.—It appears from a study of the experiments reported on by McClure and Sauer that the rate of ventilation has a decided effect on the amount of water vapor given off by the skin. This amount increases with the rate of ventilation up to a certain point, when it seems that a cooling effect prevents a further increase. Cotton garments, such as used in the authors' experiments, do not seem to offer any obstacle to the loss of water vapor from the skin; at least not when they have been in contact with the skin a number of hours. Such factors as fretfulness, crying and increase in the room temperature increase the insensible perspiration of the infant. The loss of water vapor from the skin of certain atrophic infants is relatively great. The loss of water vapor from the skin seems sufficiently great to make it an important factor in the heat elimination of the infant. Furthermore, this mechanism of heat elimination seems to possess a great degree of elasticity.

Boston Medical and Surgical Journal

March 7, 1918, **178**, No. 10

- 38 Some Aspects of Forensic Psychiatry. J. W. Courtney, Boston.—p. 313.
- 39 Treatment of Anthrax with Normal (Bcef) Serum. Review of Literature; Report of Case. C. H. Hyman and T. Leary, Boston.—p. 318.
- 40 Diagnosis of Conditions Causing Painful and Irritable Backs. J. W. Sever, Boston.—p. 323.
- 41 Case of Cerebrospinal Meningitis Successfully Treated by Intraspinal and Intraventricular Administration of Antimeningitis Serum. T. A. Hoch, Waverley.—p. 327.

March 14, No. 11

- 42 Unnecessary Operations. G. C. Wilkins, Manchester, N. H.—p. 347.
- 43 Artificial Pneumothorax and Pulmonary Tuberculosis. C. Floyd, Boston.—p. 349.
- 44 Transfusion Experiences in Over Two Hundred Cases. A. R. Kimpton, Boston.—p. 351.
- 45 Surgical Treatment of Empyema. W. Whittemore, Boston.—p. 360.
- 46 Climate in Tuberculosis. H. F. Gammons, Carlsbad, Texas.—p. 364.

Bulletin of Johns Hopkins Hospital, Baltimore

March, 1918, **29**, No. 325

- 47 *Ureterovenous Anastomosis; Experimental Hydronephrosis and Blood Nitrogen. M. R. Reid, Baltimore.—p. 55.
- 48 *Bird Malaria and Pathogenesis of Relapse in Human Malaria. E. R. Whitmore.—p. 62.
- 49 Physician's Aphorisms; Mediaval Hebrew Satire. H. Friedenwald.—p. 67.

47. Ureterovenous Anastomosis.—The technic by which ureterovenous anastomosis may be accomplished successfully and leave a ureter which remains patent, is described by Read. He found that after anastomosis of the ureter into

the vena cava the blood does not flow back into the pelvis of the kidney. By anastomosing a ureter into the portal or splenic vein the effect of the urine on these organs could be studied. Ureterovenous anastomosis leads to hydronephrosis unaccompanied by marked histologic changes in the kidney. The dilatation of the ureter in these cases begins at the point of anastomosis and ascends to the pelvis of the kidney. After a single anastomosis, the life of the dog, at the end of two months, remains unaffected. The urea and nonprotein nitrogen of the blood rises slightly at first but shows no tendency to increase subsequently. When both ureters have been anastomosed into the systemic venous current, the blood urea and nonprotein nitrogen continue to rise until death, about as rapidly as they do in cases of double nephrectomy. The hydronephrotic kidney secretes urine which is characterized by a low salt and a high nitrogen concentration. After double ureterovenous anastomosis the average life of the dogs in this series was six and three-fourths days. The kidneys apparently do not reduce materially the toxicity of the substances which they remove from the blood stream.

48. Pathogenesis of Relapse in Human Malaria.—Whitmore believes that in malaria the body produces antibodies which resist the multiplication of the parasites. But certain of the parasites become resistant to these antibodies (or to quinin) and continue the asexual cycle, the number of parasites, however, being too small to produce symptoms. When anything happens to lower the resistance of the body, these parasites are able to multiply rapidly and produce symptoms; that is, a relapse. The continuation of gametocytes is due to the continuation of the asexual cycle. As long as the infection continues, the body is stimulated to produce antibodies, and the infected person is resistant to superinfection; that is, there is a labile infection. There is no immunity after recovery; as soon as the infection is stopped by the antibody production, or by treatment, the stimulus to antibody production is withdrawn, and the person is susceptible to reinfection, just as though he had never been infected before.

California State Journal of Medicine, San Francisco

March, 1918, **16**, No. 3

- 50 Hodgkin's Disease and Its Treatment; Report of Cases. W. W. Boardman, San Francisco.—p. 125.
- 51 Headache Resulting from Pathologic Intra-Oral and Intranasal Conditions. A. B. Baer, San Francisco.—p. 133.
- 52 Treatment of Infantile Paralysis. J. Carling, Los Angeles.—p. 136.
- 53 Pyelograms of Tumors of Kidneys. G. MacGowan, Los Angeles.—p. 138.

Cleveland Medical Journal

February, 1918, **17**, No. 2

- 54 Development of Infant Welfare Centers. R. A. Bolt, Cleveland.—p. 69.
- 55 *Four Hundred and Forty-Three Cardiovascular Examinations at Camp Dodge. H. Feil, Cleveland.—p. 75.
- 56 Mental Attitude Toward Food. J. T. Smith, Baltimore.—p. 79.
- 57 Injuries Accompanying Labor. A. J. Skeel, Cleveland.—p. 83.
- 58 Chronic Alcoholism—Classification of Cases and Value of Medical Treatment. A. M. Loope, Cleveland.—p. 89.

55. Cardiovascular Examinations at Camp Dodge.—Between 25,000 and 30,000 men were sent to Camp Dodge during September, October and November, and of these 443 were referred to the cardiovascular board for defects. In the various regiments the percentages of referred examinations ranged from 0.3 to 0.6 per cent. Of these 443 cases, 163 cases were rejected (37 per cent.). The pulse rate was taken in the dorsal and standing positions, after exercise and two minutes later. It was found that the greatest change and increase in the pulse rate was in the normal heart and in the heart bordering on decompensation. In the organically diseased hearts with marked hypertrophy and excellent compensation, the change of rate was very slight from the dorsal to the standing position, after exercising and two minutes later. The greatest differences in pulse rates were seen in the so-called nervous or irritable heart. One explanation for this phenomenon is that the reserve force of the large well compensated heart is great, provided that the musculature is not diseased and has a greater waiting force than the average normal heart. A number of cases of splendid com-

compensation were seen with lack of any discomfort on exercising. A great number of men were referred because of precordial thrills. These were found to be produced by excitable hearts, no other sign of cardiac disease being detected. It was noted that thrills were most readily appreciated by gentle pressure of the examining hand.

The majority of the irregularities were of the juvenile type, increase of rate with inspiration and slowing with expiration. This was most exaggerated in those men showing symptoms of the effort syndrome of Lewis. Extrasystoles were observed in twelve cases; of these, three were without other signs of cardiac disease, in the remaining nine physical signs of definite cardiac pathology were found. Systolic and diastolic observations were made in all cases. Observations were made usually at the end of the examination. Two cases of chronic interstitial nephritis with hypertonus were seen. Several cases of hypertonus occurred associated with cardiac hypertrophy, with shortness of breath and palpitation on exertion. Cardiac hypertrophy with no cause determinate appeared six times. Asthma was associated with cardiac hypertrophy in two cases; with hypertonus in one case. Of six cases of cardiac hypertrophy (cause not determinate) some were associated with symptoms of effort syndrome while others suffered no discomfort on exertion. One man had with his hypertrophy, marked tachycardia with dyspnea and precordial discomfort on exercise. The most interesting sounds have been the systolic murmurs heard best at the base or at the apex not associated with other physical signs or symptoms. Three cases were seen with very loud systolic murmurs heard best over the second left interspace, very widely transmitted. These were regarded as cases of possible congenital heart disease. The cardiorespiratory murmurs have been legion, systolic murmurs in second left and right interspace heard during expiration, disappearing with deep breath. Then there is the faint systolic whiff at the apex appearing after exertion. Feil says that his limited experience with the exercise test emphasizes the need of coordinating all findings before judgment is passed on the individual heart case. The slow rate of the badly damaged but well compensated heart appeared many times. The finding of a precordial thrill not associated with other abnormalities should not be regarded as cause for rejection. Extrasystoles should not be passed over lightly in the absence of other findings.

Iowa State Medical Society Journal, Des Moines

March, 1918, S. No. 3

- 59 Organization of Effective Antituberculosis Work. D. B. Armstrong. New York.—p. 73.
- 60 Symptoms and Diagnosis of Sinusitis. C. M. Werts. Des Moines.—p. 78.
- 61 Nonoperative Treatment of Accessory Sinus Disease. H. G. Langworthy, Dubuque.—p. 83.
- 62 Operative Treatment of Accessory Sinuses of Nose. F. E. V. Shore. Des Moines.—p. 86.
- 63 End Results of Treatment of Inflammation of Accessory Sinuses of Nose. L. W. Dean. Iowa City.—p. 89.
- 64 Value of Hygiene and Sanitation in Camp. T. F. Duhigg, Des Moines.—p. 91.

Journal of Experimental Medicine, Baltimore

March, 1918, 27. No. 3

- 65 *Cultivation Experiments on Globoid Bodies of Poliomyelitis. W. G. Smillie, New York.—p. 319.
- 66 *Relation of Circulating Antibodies to Serum Disease. W. T. Longcope and F. M. Rackemann, New York.—p. 341.
- 67 *Immunity in Intestinal Obstruction. C. A. Dragstedt and J. J. Moorhead, Chicago.—p. 359.
- 68 *Action of Antiseptics on Toxin of Bacillus Welchii. H. D. Taylor and J. H. Austin, New York.—p. 375.
- 69 *Factors Concerned in Appearance of Nucleated Red Blood Corpuscles in Peripheral Blood. C. K. Drinker, K. R. Drinker and H. A. Kreutzmann, Boston.—p. 383.
- 70 *Morphologic Changes in Tissues of Rabbit as Result of Reduced Oxidation. H. G. Martin, A. S. Loevenhart and C. H. Bunting, Madison, Wis.—p. 399.
- 71 Experimental Acute Nephritis. Study of Acidosis, Nitrogen and Chlorid Retention and Protective Action of Sodium Bicarbonate. K. Goto, Philadelphia.—p. 413.
- 72 *Properties of Pure Vaccine Virus Cultivated in Vivo. H. Noguchi, New York.—p. 425.
- 73 *Survival of Poliomyelitic Virus in Brain of Rabbit. H. L. Amoss, New York.—p. 443.

65. Globoid Bodies of Poliomyelitis.—Globoid bodies identical in morphologic and cultural characteristics with the organisms described by Flexner and Noguchi, have been obtained by Smillie in twenty-two cultures from the tissues of seven monkeys suffering from experimental poliomyelitis. Twenty of the strains were cultivated from the central nervous organs, all being obtained from the cerebrum except one, which was cultivated from the cervical portion of the spinal cord. Two strains were cultivated from the spleen. None of the cultivated strains inoculated produced typical poliomyelitis in monkeys. The recovery of a strain of the globoid bodies from the inoculated monkey is as difficult as is the original cultivation of the organisms from animals inoculated with the ordinary virus of poliomyelitis. Nothing in this study has served to implicate the streptococcus in the pathology of the poliomyelitic process; the streptococcus, is, however, encountered as a common contaminant or secondary invader, especially in animals which have been etherized while moribund, or which had died some hours previous to the necropsy. When the infected and paralyzed animals are killed while still strong, secondary invading bacteria, including the streptococcus, tend to be absent from the tissues.

66. Circulating Antibodies and Serum Disease.—Of 25 cases which were studied by Longcope and Rackemann 21 developed serum disease manifested by characteristic symptoms following intradermal injections of diluted horse serum. Of 14 cases in which the serum was tested for precipitins, 12 developed serum disease. Of the 15 patients whose blood was tested for anaphylactin, 12 developed serum disease. In 3 cases the injections of serum were not followed by serum disease. Anaphylactin could never be demonstrated in the serum drawn repeatedly from these patients. In 15 cases repeated skin reactions were made and in all of these a positive response was sooner or later observed. From these results it is evident that in the cases studied, precipitins and anaphylactic antibodies were much more likely to be found in the blood serum of patients who suffered from serum disease following the injections of horse serum than in patients who escaped serum disease. In the latter instances precipitins and anaphylactic antibodies were not observed. The skin reaction, however, made its appearance irrespective of the amount of serum administered or the method of administration and appeared whether or not serum disease developed.

67. Immunity in Intestinal Obstruction.—Experimental evidence secured by Dragstedt and Moorhead shows that there is no increased immunity or tolerance to intestinal obstruction after recovery from previous obstruction. Dogs recovered from intestinal obstruction are not more resistant to injections of closed loop fluid than normal dogs. Dogs injected with closed loop fluid are not more resistant to intestinal obstruction than normal dogs. In dogs the normal variation in resistance both to intestinal obstruction and to the injection of closed loop fluid is large.

68. Antiseptics and Bacillus Welchii Toxin.—As wounds infected with *B. welchii* are frequently encountered in military surgery today, and as the antiseptics studied are used extensively on wounds of this character, Taylor and Austin used the toxin of Bull and Pritchett and the pigeon as a very sensitive indicator of the relative toxicity of the various toxin antiseptic mixtures in a series of ten experiments. Comparable results were obtained in all. It was found that Dakin's hypochlorite and chloramin-T solutions will protect pigeons against multiple fatal doses of the toxin of *B. welchii* when the antiseptic and the toxin are mixed in vitro and allowed to stand in contact for five minutes before injection. The detoxicating action of the solutions is demonstrable also in the presence of serum. Phenol solution, 0.25 per cent., has no such action.

69. Nucleated Red Blood Corpuscles in Peripheral Blood.—The authors found that hemorrhage with immediate saline infusion causes the appearance in the peripheral blood of a slightly increased number of normoblasts, provided normoblasts are already present in the blood stream. Marrow hyperplasia does not intensify this reaction and the cells

found probably do not leave the marrow pulp but are in the blood stream at the time of the experiment. The slight increase in cells occurring immediately after hemorrhage and infusion is designated a pseudocrisis. True crises are much more extensive; they tend to occur just before rapid increase in the erythrocyte count and usually toward the end of the first week following hemorrhage. Red cells and white cells tend to move from the marrow together, but this association is not invariable. After repeated hemorrhages regeneration occurs independently of the appearance of nucleated red cells in the peripheral blood. Repeated hemorrhages associated with extension of erythrocyte producing marrow lead to polycythemia but not to a conspicuous increase in speed of regeneration.

70. Reduced Oxidation.—The results obtained by the authors are summarized as follows: Exposure of rabbits to an atmosphere of low oxygen content results in a stimulation of the cardiorespiratory systems, in an extension (hyperplasia) of red bone marrow and probably of a thyroid hyperplasia, with the further production of hydropic and hyaline degeneration in the cells of the parenchymatous organs. An atmosphere of high carbon dioxide and normal oxygen content produces, however, a stimulation of the cardiorespiratory systems, but no marrow extension and, in the concentrations used, but slight hydropic degeneration in the parenchyma of the glandular organs.

72. Pure Vaccine Virus Cultivated in Vivo.—Noguchi studied the effect of disinfectants on the testicular vaccine virus at different temperatures, the influence of diluents under various experimental conditions, the effects of desiccation on the virus, and the viability of dried vaccine. The virulence of vaccine virus for the testicular tissues increases until its maximum is finally reached. The testicular strain of vaccine virus has no more tendency to localize in various organs than the ordinary skin strain. Intravenous inoculation of an excessive amount of a powerful vaccine virus (1 to 2 c.c. of undiluted stock emulsion), irrespective of whether it is from the testis or the skin, will result in a generalized eruption over the entire body surface of rabbits. Subcutaneous or intravenous introduction of much smaller quantities of the virus does not cause an appreciable local or general reaction in the rabbit. Experiments on the viability and resistance of the testicular strain of vaccine virus indicate that the virus is best preserved when emulsified with Ringer's solution or 0.9 per cent. saline solution. Of the two most commonly employed chemical agents for the ripening (eliminating bacteria) process of the green vaccine pulp, glycerol and phenol, the latter is the less injurious. Phenol in concentration above 2 per cent. destroys the virus within twenty-four hours at any temperature, but it has almost no injurious effect when used in 0.5 to 1 per cent. On the other hand, glycerol is a powerful vaccinicide. When used in full strength it destroys the virus within twenty-four hours, even at 4 C. The vaccine virus retains its virulence better in a sealed tube containing either hydrogen, nitrogen, or air than in an open receptacle. The virus deteriorates when placed in a sealed tube with oxygen or carbon dioxide. Desiccation decreases to a considerable degree the virulence of the vaccine virus. Iodin is a powerful disinfectant for the vaccine virus, but its sodium and potassium salts have no effect.

73. Survival of Poliomyelitic Virus in Brain.—The experiments recorded by Amoss provide additional reasons for concluding that the streptococcus cultivated from cases of poliomyelitis differs essentially from the filterable virus and is not the microbic cause of epidemic poliomyelitis.

Medical Record, New York

March 16, 1918, **93**, No. 11

- 74 Theoretical Considerations of Mental Deficiency. M. G. Schlapp, New York.—p. 441.
- 75 Cotton-Process Ether. W. G. Hudson, New York.—p. 446.
- 76 Pyelitis. S. S. Rosenfeld, New York.—p. 448.
- 77 Nervous Diseases of Senility. M. Neustaedter, New York.—p. 451.
- 78 Historical and Biblical Data of Circumcision. J. H. Marcus, Atlantic City, N. J.—p. 453.

Michigan State Medical Society Journal, Grand Rapids

March, 1918, **17**, No. 3

- 79 Roentgenology and Internist. C. D. Aaron, Detroit.—p. 81.
- 80 Prophylaxis of Venereal Disease. F. R. Starkey, Detroit.—p. 82.
- 81 Leukemia. C. T. Foo, St. Johns.—p. 84.
- 82 What the Medical Profession Owes the Country. L. W. Bremerman, Camp Custer.—p. 86.
- 83 Tic Douloureux and Its Treatment with Review of Cases Operated on at Universal Hospital in 1917. M. M. Peet, Ann Arbor.—p. 91.
- 84 Gastric Disturbances as Part of Central Nervous System Syphilis. L. H. Newburgh, Ann Arbor.—p. 100.
- 85 Recovery of Case of Purulent Meningitis Complicating Mastoiditis. D. O. Walthall, Ann Arbor.—p. 102.

Minnesota Medicine, St. Paul

March, 1918, **1**, No. 3

- 86 Recent Views on Alimentary Disturbances in Infancy. I. A. Abt, Chicago.—p. 81.
- 87 Prevalent Physical Defects of Older Children. A. E. Johann, Minneapolis.—p. 85.
- 88 Tic Douloureux and Its Treatment. C. R. Ball, St. Paul.—p. 91.
- 89 Shorter Isolation Periods in Infectious Diseases. H. W. Hill, London.—p. 98.
- 90 General Practitioner: His Field and Fees. W. J. Richardson, Fairmont.—p. 99.

Missouri State Medical Association Journal, St. Louis

March, 1918, **15**, No. 3

- 91 Problem of Feeding Young in Wartime. E. W. Saunders, St. Louis.—p. 73.
- 92 Urogenital Tuberculosis. C. Capell, Kansas City.—p. 77.
- 93 Some Disadvantages of Upright Posture. A. G. Pohlman, St. Louis.—p. 80.
- 94 Toxemia of Pregnancy. J. D. James, Springfield.—p. 86.
- 95 Under What Circumstances Should a Patient with Pulmonary Tuberculosis Be Advised to Change Climate? J. W. Bolton, Warrensburg.—p. 87.
- 96 The Loyal Physician. E. L. Rhodes, Lincoln.—p. 89.
- 97 Case of Congenital Scrotal Anus. J. R. Bruce, Marshfield.—p. 90.

Modern Hospital, St. Louis

March, 1918, **10**, No. 3

- 98 Hospitals for Communicable Diseases. R. E. Schmidt, Chicago.—pp. 153.
- 99 University Training for Navy Hospital Corps. W. Connely.—p. 159.
- 100 Placement Bureau for Handicapped. R. Jones, Cincinnati.—p. 165.
- 101 Hospital Field in Figures—Survey of Conditions as They Actually Exist. H. T. McClure.—p. 169.
- 102 Contagious Ward of Morristown Memorial Hospital, Morristown, N. J. S. S. Goldwater, New York.—p. 171.
- 103 Refrigeration for Institutions. G. H. Wheeler, Brunswick, N. J.—p. 173.
- 104 New Nurses' Home for Ninnequa Hospital, Pueblo, Colo. R. W. Corwin, Pueblo, Colo.—p. 176.
- 105 Standardization of Hospitals—Classes XIV, XV and XVI, Institutions for Nervous and Mental Diseases. J. A. Hornsby and Others.—p. 178.
- 106 Bookkeeping for Small Hospitals and Allied Institutions. H. K. Carter and C. A. Porter.—p. 182.
- 107 Present-Day Conditions Applying to Purchase of Hospital Supplies. G. W. Wallerich, Chicago.—p. 196.

New York Medical Journal

March 16, 1918, **107**, No. 11

- 108 Treatment of Croupous Pneumonia. R. F. Ives, New York.—p. 481.
- 109 Operative Procedure for Relief of Contracted Eye Sockets. F. Allport, Chicago.—p. 484.
- 110 Fortifying Child Against Mental Disorders. E. S. Elwood, Albany.—p. 486.
- 111 Wassermann Complement Fixation Test for Syphilis. J. W. Smith, Jr., New York.—p. 489.
- 112 Differential Blood Count. Arneith Formula and Doehle's Inclusion Bodies in Pulmonary Tuberculosis. R. W. Bachman and B. H. Lueke, Philadelphia.—p. 492.
- 113 Present Status of Local Application of Radium and Roentgen Rays. W. A. Weed, Birmingham, Ala.—p. 495.
- 114 Shoes, Physiologic and Therapeutic. D. D. Ashley, New York.—p. 498.
- 115 Case of Calculi in Urinary Bladder. A. Peskind, Cleveland.—p. 502.
- 116 Status of Abortifacient in Modern Social Order. R. H. MacNair, Springfield, Mass.—p. 503.
- 117 Drug Addiction. Recommendations of Public Health Committee. C. L. Dana, New York.—p. 504.
- 118 Clinical Types of Localized or Partial Tetanus. C. G. Cumston, Geneva, Switzerland.—p. 505.
- 119 Methods of Prevention and Control of Disease in War Industries. J. W. Schereschewsky, Washington, D. C.—p. 506.
- 120 Medical College Training for Navy Hospital Corpsmen. W. Connely, Minneapolis.—p. 507.

Oklahoma State Medical Association Journal, MuskogeeMarch, 1918, **11**, No. 3

- 121 Gastric Ulcer. J. A. Westfall, Supply.—p. 81.
- 122 Instruments of Precision in Diagnosis. Thermometer. G. F. Garrison, Oklahoma City.—p. 84.
- 123 Foreign Bodies in Air Passages. E. S. Ferguson, Oklahoma City.—p. 85.
- 124 Diagnostic Value of Nystagmus. A. L. Guthrie, Oklahoma City.—p. 91.
- 125 Purpura Hemorrhagica; Report of Case. W. W. Taylor, Oklahoma City.—p. 92.
- 126 Case of Complete Bony Obstruction of Both Nares. W. H. Rutland, Altus.—p. 98.

Southwestern Medicine, El Paso, TexasMarch, 1918, **2**, No. 3

- 127 Conservation of Hearing. G. K. Angle, Albuquerque, N. M.—p. 1.
- 128 Expert Testimony, or Opinion Evidence. W. Wylie, Phoenix, Ariz.—p. 6.
- 129 Lobar Pneumonia. G. Werley, El Paso.—p. 12.
- 130 Pyelocystitis in Infancy and Childhood. J. A. Rawlings, El Paso.—p. 18.
- 131 Liquor Calcis in Fractures. E. D. Strong, El Paso.—p. 22.

Wisconsin Medical Journal, MilwaukeeMarch, 1918, **16**, No. 10

- 132 Mental Hygiene Movement and Psychiatry. W. F. Becker, Milwaukee.—p. 379.
- 133 Surgical vs. Medical Treatment of Goiter. E. V. Smith, Fond du Lac.—p. 388.
- 134 Differential Diagnosis of Forms of Goiter. J. F. Pember and T. W. Nuzum, Janesville.—p. 392.
- 135 Chronic Nonsurgical Pyelitis; Its Etiology and Treatment. J. C. Sargent, Milwaukee.—p. 400.
- 136 Ambulatory Automatism. H. W. Powers, Milwaukee.—p. 404.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, LondonFeb. 23, 1918, **1**, No. 2982

- 1 *Penetrating Wounds of Brain. H. Cushing.—p. 221.
- 2 *Extraction of Foreign Body from Brain with Aid of Roentgenoscopy. H. H. Rayner and A. E. Barclay.—p. 226.
- 3 Influence of Muscular Exercise on Longevity. H. Weber.—p. 228.
- 4 Thigh Stump Extension Splint. W. E. Fisher.—p. 229.

1. Penetrating Wounds of Brain.—The net results of Cushing's study of head cases admitted to three contiguous hospitals during a period of three weeks were as follows: Taking as 100 the total number of cases admitted with an initial diagnosis of some form of "head wound," the percentage with dural penetration was 23.5. Taking the verified cases alone the percentage with dural penetration was 49.3. Of these 49.3 per cent. verified cases approximately one third died without operation, their injuries being either of extreme gravity or multiple. Of the remaining two thirds, all were submitted to operation, and exactly half of the patients subsequently died, thus giving the generally accepted 50 per cent. operation mortality for wounds of this type. For comparison the following figures covering the whole three months may be given for the cases that came under the supervision of Dr. Cushing's team. Of the cases submitted to operation, 10.9 per cent. proved to have merely scalp wounds, 23.7 per cent. cranial wounds with intact dura, 60.7 per cent. cranial wounds with dural penetration and 4.5 per cent. bursting fractures of the cranium but with the scalp and dura both intact. During the initial two weeks the operation mortality for the author's own team was above the average figure for all the hospitals together. This may be accounted for in some measure by the fact that during this period, as also during the entire three months, wounds of the more serious type were deliberately selected from among the cases retained at the hospital. This is indicated by the relative height of the percentage of cases with dural penetration (60.7) as compared with the corresponding percentage (49.3) for the whole of the verified cases during the first two weeks.

Of 225 cases, 6 patients died without intervention, the remaining 219 were operated on, and 133 proved to have

dural penetration. The net results are best shown by dividing these 133 cases into thirds roughly corresponding with each consecutive month of service. First, 44 cases with 24 deaths = 54.5 per cent.; second, 44 cases with 18 deaths = 40.9 per cent.; third, 45 cases with 13 deaths = 28.8 per cent. These percentages are practically end results, for no cases were evacuated until they had passed the stage of conceivable complications, and Cushing believes they are sufficiently encouraging to justify the hope that a still further lowering of the mortality may be attained, and that in an advanced hospital 75 per cent. of recoveries is not too large a figure to be set as a goal. During the three month period an operation, with certain technical devices applicable to the average penetrating wound, was gradually evolved. Aside, possibly, from the principle of track suction there is nothing original about the procedure, nor are the instruments new.

The main features of the procedure lie: 1. In the removal en bloc rather than piecemeal of the area of cranial penetration. 2. In the detection of the indriven bony fragments by catheter palpation of the track rather than by the exploring finger. 3. In the suction method of removal of the disorganized brain, thereby cleansing the track of the so-called pulped or devitalized tissue, whose retention, as is the case with dead tissue anywhere, favors infection. 4. In the use of dichloramin-T in oils as an antiseptic particularly suitable for infections in the central nervous tissues. In addition to these more essential features of the performance, the routine preoperative neurologic study of the case stereoscopic roentgen-ray negatives, the shaving of the entire scalp, the invariable use of local anesthesia, preferential radial (tripod) rather than flap incisions, foreign body extraction with the magnet when possible, closure of the wounds with buried sutures in the galea, the dressing of all serious cases in the operating room rather than in the wards, all these steps, though less novel, Cushing says, were, nevertheless, contributory to the successful outcome of the more severe cases.

2. Extraction of Foreign Body from Brain.—The extractor used by Rayner and Barclay is made like a pair of dental forceps, the jaws being about 1 ½ inches apart when closed. Above the jaws is fitted a small fluorescent screen. Beaks or blades are fixed at right angles to the jaws and meet at the points, but are insulated from one another by a small fiber block let into one of the blades, which is made slightly longer than the other. For brain work the blades are thin and close together, the point of the longer blade being rounded. For the removal of foreign bodies from ordinary tissues stronger blades are used, the point being fashioned like a blunt dissector so that the instrument can dissect, and, by opening the blades, separate its own way down after the skin incision has been made. The blades are connected with an electric bell through a relay that is specially fitted in order to avoid stimulation of structures when contact is made. When the blades are brought into the correct relationship with the foreign body, that is, with the longer blade alongside and the shorter blade touching the top of the fragment—contact is made and the bell rings. This indicates that by raising very slightly and opening the blades the foreign body can be picked up without any intervening structures being also caught. Protection, additional to that of the diaphragm, tube, box, etc., is afforded by a sheet of heavy roentgen-ray proof rubber with a 3-inch hole in it that is placed either above or below the patient.

Glasgow Medical JournalFebruary, 1918, **89**, No. 2

- 5 Antenatal Treatment of Congenital Syphilis with Salvarsan. L. Findlay.—p. 65.
- 6 Origin and Progress of Glasgow and West of Scotland Corporation of Trained Nurses. D. Newman.—p. 74.
- 7 *Case of Metastatic Cancer of Bone Marrow without Erythroblastic Reaction. W. R. Jack and J. H. Teacher.—p. 81.

7. Metastatic Cancer of Bone Marrow Without Erythroblastic Reaction.—A man, aged 58 years, was admitted to the hospital with a history of pain in the stomach, nausea, vomiting and occasional attacks of diarrhea of two years' duration. His family history was negative. He had had no other illnesses but those of childhood, and he had suffered

two years previously from a fracture of the right femur, which had healed normally. About that time, or shortly afterward, he began to complain of abdominal pain coming on soon after food, and followed by vomiting, the food coming up in mouthfuls without much feeling of sickness, and having a very bitter taste. He never vomited either blood or "coffee-ground" material. These symptoms were accompanied by loss of flesh and strength, and by occasional sharp attacks of diarrhea, the stools, however, never being noticeably dark. As his condition rapidly deteriorated, he was operated on a year ago. A large malignant tumor was found in the stomach. As it was inoperable, a gastro-enterostomy was performed, and from this he got some relief for a time, although his pain after meals never entirely disappeared, and ultimately became severe enough to keep him from eating in spite of a craving for food. It was always relieved by vomiting, and was localized to the upper epigastrium. Emaciation also rapidly progressed.

At the time of the second admission no definite tumor could be palpated, but there was distinct rigidity of both recti, and in the middle line just below the xiphoid cartilage there was a localized area highly tender to palpation. No dilatation of the stomach could be made out. Neither liver nor spleen was enlarged; no enlarged glands were to be found in the neck; and the urine was normal. Gastric analysis after a testmeal revealed an almost complete achylia, the total acidity being 2, with no free hydrochloric acid, and only a trace of lactic acid. His condition went from bad to worse, and about ten days after admission he began to complain of pain over the lower end of the sternum, where pressure on the bone elicited tenderness. A little later he had also pain in the back, in the region of the lumbar vertebrae. As bony metastases were suspected, the blood was examined. The red cells numbered 3,390,000 per c.m., the white cells 15,000; hemoglobin 45; color index 0.67; moderate poikilocytosis; no nucleated red cells nor polychromatophilia. The blood picture was that of an anemia of the chlorotic type, with no evidence of erythroblastic reaction. The bone pains increased in severity, and were also felt over the lower ribs on the left side. He gradually sank, and died four weeks after admission.

Postmortem examination: The pyloric region was occupied by a tumor about the size of a tennis ball, which completely encircled the organ. Several glands were invaded by tumor close to the primary growth. No obstruction of the bile ducts. Bones: There were a number of small secondary tumors in the lower part of the sternum, and another in the lower part of the manubrium sterni. There was a large mass occupying about 3 inches of the eighth rib which had extended into the pleural membrane over a considerable area. The fourth right and seventh left ribs were easily broken owing to the presence of tumor; the other ribs were quite strong. There was an old fracture about the junction of the upper and middle thirds of the right femur. This was not due to tumor. The marrow in the middle of the left femur was fatty, with one small red area which appeared to be a tumor. There was, therefore, no marked erythroblastic reaction. There were a few small nodules in the tenth and eleventh vertebral bodies, and there was a marked osteo-arthritis thickening between the eleventh and twelfth vertebral bodies.

Journal of Tropical Medicine and Hygiene, London

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- 8 Castellani's Absorption Test: Its Technic and Applications. F. E. Taylor.—p. 37.
- 9 Case of Antimony Poisoning. A. Breinl and H. Priestley.—p. 38.

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- 10 Treatment of Foreign Bodies in Lower Air Passages and Esophagus. H. Tilley.—p. 283.
- 11 Carriers of Meningococcus. P. W. B. Smith, G. R. Lynch and S. Mangham.—p. 290.
- 12 Relative Advantages and Disadvantages of Stiff Leg. A. Lane.—p. 292.
- 13 Splints. P. L. W. Williams.—p. 293.
- 14 Case of Gonorrheal Keratoderma. H. M. M. Woodward.—p. 294.
- 15 Case of Oriental Sore. C. R. C. Lyster and W. H. McKinstry.—p. 294.

- 16 Case of Ischiopagus Twins. W. Salmond.—p. 295.
- 17 Treatment in Field of Uncontrollable Hemorrhage in Gunshot Wounds. J. Campbell.—p. 295.
- 18 Case of Spontaneous Cure of Cataract. C. Higgins.—p. 296.
- 19 Jerusalem from Point of View of Health and Disease. E. W. G. Masterman.—p. 305.
- 20 Control of Venereal Diseases. H. W. Abbott.—p. 307.

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- 21 Serum Sickness. E. W. Goodall.—p. 323. To be concluded.
- 22 Eye-Strain; Condition of Blepsopathia. H. A. Des Vocux.—p. 327.
- 23 Chronic Gonorrheal Infection of Prostate. A. S. Cobbledick.—p. 335.
- 24 Apparatus for Transfusion of Blood by Citrate Method. A. E. Stansfeld.—p. 334.
- 25 Ministry of Health. A. M. Fraser.—p. 344.

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- 26 Relation of Alcohol to Mental States, Particularly in Regard to War. R. A. Jones.—p. 201.
- 27 Differential Stethoscope as Aid to Diagnosis of Myocardial Changes. O. Leyton.—p. 224.
- 28 Recent Work in Nervous Diseases. H. C. Thomson.—p. 235.
- 29 Retrospect of Otology, 1917. M. Yearsley.—p. 242.
- 30 Carcinomatous or Sarcomatous Pericarditis with Note on Analogous Diffuse Carcinomatous or Sarcomatous Inflammation of Other Serous Membranes (Peritonitis Carcinomatosa, etc.). F. P. Weber.—p. 246.
- 31 Place and Function of Carbohydrates, Proteins and Fats in Diet. D. Curle.—p. 250.
- 32 Nitrogen and Cancer. J. T. Shirlaw.—p. 269.
- 33 Tuberculosis in India; Its Bearing on Today's Problems. C. Muthu.—p. 277.
- 34 Case of Mirror Writing; Literature. J. L. M. Symns.—p. 283.
- 35 Three Cases of Beriberi Following Relapsing Fever and Due to Prolonged Feeding on Condensed Milk. K. Yacoub.—p. 290.
- 36 Cure of Spinal Concussion in Warfare by Suggestion. A. F. Grimby.—p. 292.
- 37 Trials for Surgeon Pioneer. D. T. Barry.—p. 293.

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- 38 Thrombosis. M. Takeuchi.—p. 5.

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- 39 *Unprecedented Results of Army Surgery During Recent Offensive. T. Tuffier.—p. 112.
- 40 Influence of Chemical Composition of Drinking Water on Proliferation of Paratyphoid B. Bacilli. Daumézon.—p. 116.
- 41 *Palpation of the Cecum. L. Pron.—p. 119.
- 42 *Intermittent Reunion for Infected Amputation Stumps. H. Chaput.—p. 121.

39. Summarized in Paris Letter, p. 796.

41. Palpation of the Cecum.—Pron gives his conclusions from palpation of the cecum in 123 subjects. It was palpable in about 50 per cent., and there was pain on pressure in some others, so the cecum was found abnormal in 63 per cent. It varied in shape, place and consistency at different hours in the same subject, but a direct connection was apparent between the pain that could be induced in the cecum and abnormal conditions in the liver. In 50 patients with some form of liver trouble, the cecum was palpable or painful in 32. Still more significant is the finding of abnormal conditions in the cecum in 72 out of 108 cases of stomach disease with objective findings. Hence the discovery of a palpable cecum or pain on pressure should attract attention to the liver or stomach. As sounds of fluid contents can be heard in the cecum even during prolonged constipation, there is a possibility that the cecum is an organ with a secretion of its own.

42. Intermittent Reunion of Infected Amputation Stumps.—Chaput expatiates on the advantages of exposing the infected stump to the air during the day, turning the flaps of soft parts back and fastening them to expose the stump to the air as it rests on a pad. At night he restores the flaps to place, over capillary drains or sheets of rubber tissue, holding the flaps in place with plaster strips. Traction is applied to them as soon as the infection is conquered. Healing has been complete in two or three weeks as a rule with this technic as applied in several cases.

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- 43 Edema of Arm After Chest Wound. V. Combier and J. Murard.—p. 1219.
 44 *Record of Arterial Pressures. J. A. Barré.—p. 1222.
 45 *Epididymitis After Meningitis. S. Costa and J. Troisier.—p. 1227.
 46 *Parameningococci in Eastern Front. M. Bloch and P. Hébert.—p. 1229.
 47 *Agglutination Differentiation of Meningococci. Netter.—p. 1231.

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- 48 *Frequency of Infectious Antecedents in War Tachycardias. O. Crouzon and N. Mauger.—p. 1237.
 49 *Uremia with Asystoly. O. Josué and M. Parturier.—p. 1244.
 50 Cancer of Liver in Young Man. De Massary.—p. 1252. Menetrier.—p. 1255.
 51 The Cerebrospinal Fluid in Diphtheric Paralysis. Lortat-Jacob and G. L. Hallez.—p. 1259.
 52 Inflammation of the Esophagus. F. Ramond, P. A. Carrié and A. Petit.—p. 1263.
 53 Emetin Eruption. G. Railliet.—p. 1266.
 54 Crescent Forms of Malarial Plasmodia. Deglos and Chaspoul.—p. 1268.

44. **Record of the Pulse.**—Barré has combined the Marey plethysmograph with the Vaquez sphygmotensimeter and uses two pneumatic cuffs, one just below and one just above the elbow. The elbow and wrist rest on cushions so that neither cuff touches the table. He gives illustrations and tracings and tells how to interpret the record to determine by the tracing the exact maximal and minimal pressure.

45. **Epididymitis after Meningitis.**—The meningitis had been caused by a parameningococcus resembling the gonococcus in its fermenting capacity.

46 and 47. **Parameningococci.**—Bloch and Hébert relate that in the cases of epidemic meningitis on the eastern firing line parameningococci are often found. They agglutinate specifically and yield only to a bivalent antiserum. Netter's experience also emphasizes the efficacy of polyvalent antisera.

48. **Infectious Antecedents in War Tachycardias.**—Crouzon and Mauger state that in ninety-six cases of tachycardia in soldiers on active service they found over 50 per cent. with a history of typhoid, acute articular rheumatism or other infectious disease, nearly all before the war. In four other cases the tachycardia developed after gassing; in four after concussion, and in two after a wound of the chest. Dumas, in the discussion that followed, remarked that he had sometimes found tachycardia an early symptom of pulmonary tuberculosis. He added that some of the candidates for the aviation course came from the front with tachycardia, but it subsided under rest and restriction of tobacco and alcohol. The men were anxious to get to flying and they usually threw off the tachycardia. The power of psychic influence is well shown, Josué added, by the tachycardia that develops in men being examined for the aviation course; it develops solely, he declares, from the candidates' fear of being rejected.

49. **Uremia from Cardiovascular Causes.**—Josué and Parturier describe two clinical cases which confirm their previous statements that oliguria for which the heart is responsible may entail uremia of 1 gm. or thereabouts and realize the clinical picture of uremic intoxication. By measures to induce polyuria all the uremic symptoms disappear. There may even be a relative oliguria with apparently ample diuresis, that is, although the output of urine may be considerable, yet it is less than the amount required for complete excretion of the urea. In both forms polyuria must be induced as the primal indication. With a damaged kidney, the prognosis depends on the ability of the heart to maintain the compensating polyuria, so that, as they say, the future of the *brightique est dans la résistance de son myocarde*. When the urea was in the blood in proportions above 1 gm., they never were able to increase the diuresis, and the uremia continued a progressive course. With uremia from oliguria in a patient with asystoly, digitalis must be given freely to bring on the liberating polyuria. The urea content of the blood then drops to normal. In one of the cases described there was albuminuria, Cheyne-Stokes breathing, high blood pressure and aortic stenosis, but all the symptoms melted away when the polyuria set in. Theobromin was then given with the digitalis to keep up the diuresis.

Le Nourrisson, Paris

January, 1918, 6, No. 1

- 55 *Meningitis in Infants. G. L. Hallez.—p. 1.
 56 *Habitual Constipation in Infants. H. Dorlencourt.—p. 20.
 57 Gelatin Tannate in Diarrhea. E. Choay.—p. 41.
 58 Commercial Modifications of Cow's Milk. A. B. Marfan.—p. 43.

55. **Meningitis in Infants.**—Hallez has been making a special study of the reasons why serotherapy of meningitis so often fails, especially in infants. The main cause is that the meningitis develops as in an enclosed cavity. Marfan calls this type of cases *méningite cérébro-spinale cloisonnée, avec épendymite, évoluant en cavité close*. Chiray has described such cases in adults, grouping them as *pyocéphalie*. In another group of cases the meningitis may be accompanied with hydrocephalus, or there may be ependymitis with posterior basilar meningitis, or encysted meningitis at different points. Hallez reviews the literature on these four main types of meningitis, and describes the clinical picture with each in infants. He has encountered twenty-four cases of the partitioned-off type, nine in young adults, two in girls of 11 and 13, and thirteen in infants from 2 to 24 months old. The return of symptoms after they had subsided under serotherapy, the taut and protruding fontanel, which does not relax after lumbar puncture, the emaciation, and the alternation of redness and pallor in the skin, eruptions and profuse sweats or abnormal dryness of the skin suggest that the meningitis is developing in some enclosed cavity. The infant's torpor is interrupted by moans and cries, except when feeding—all signs of the localization in the ventricles and excessive pressure. Hearing or vision may be materially impaired. The motor disturbances may include a tetaniform stiffness and a variable degree of paresis, with or without tremor in repose. Convulsions are rare, but monoplegia of a plastic type has been encountered. If the ventricles contain pus, the temperature may run up again.

Lumbar puncture is instructive by the negative findings in the fluid, the approximately normal fluid contrasting with the aggravation of the clinical symptoms, or there may be very little fluid in the spinal canal, or it may show that the antiserum injected two or three days before was not absorbed. The decisive sign is the difference between the comparatively clear spinal fluid and the purulent fluid that can be aspirated from the ventricles. He has never found percussion of the skull instructive. Injection of fluid into the spinal canal in an amount equal to or surpassing the amount withdrawn is liable to bring on convulsions as the usual safety valve is lacking. The spinal meningitis may have been so insidious and so slight that it escaped detection; this type is particularly liable to involve the ventricles as the serotherapy is not applied early, and hence the disease gets a good start.

Treatment is by direct injection through the fontanel into the ventricles of a polyvalent antiserum while the same is injected into the spinal cavity to ward off further localization of the meningitis. When bacteriologic examination has revealed the special germs involved, then the specific antiserum can be used. After the lumbar injection, he raises the pelvis so that the fluid can lave the higher centers. Ramond advises also turning the child on its stomach for twenty or thirty minutes so that all parts of the cerebellum, etc., can be laved. The same doses of the antiserum can be given for three or four days. Injection directly into the ventricle is simple and easy in infants. The needle is introduced in the outer corner of the fontanel, about 2.5 cm. from the median line. Hallez has done this himself and seen it done numbers of times for meningitis or hydrocephalus and has never witnessed the slightest mishap from it. The needle is pointed at the auditory canal of the ear on the other side, slanting it at an angle of about 20 degrees; it is pushed in from 2 to 4 cm., thus usually piercing the second frontal convolution. When the cavity of the ventricle is reached, fluid escapes from the needle. He generally aspirated 30 or 60 c.c. and then injected 20 or 30 c.c. of the antiserum without modifying the direction of the needle. These injections can be repeated for several days. It seems best to inject the antiserum into both ventricles.

This method of treatment has been applied generally only as the last resort, and consequently few were saved, none in Netter's eleven cases and only four of Hallez' eleven, but with earlier recognition of the partitioning-off of the meningitis, better results may be anticipated. Lesage advocates an injection into each ventricle, from the first along with the intraspinal injection, as a routine measure and reports excellent results in two cases. It is possible that vaccine therapy might prove effectual when there are multiple foci. In a case reported by Suner no fluid escaped from the ventricle when the needle was introduced, but still he injected the anti-serum. Necropsy showed that the meningitis had been restricted exclusively to the base of the brain.

56. Habitual Constipation in Infants.—Dorlencourt restricts his discussion to infants fed exclusively on milk, breast or bottle. He regards an infant with one stool a day as already subject to a certain degree of constipation. Two or three days without a passage is confirmed constipation. He insists that a purgative or laxative should never be given except as the last resort. Enemas may be useful in certain cases. They should always, he says, be given hot, and composed of physiologic serum, an emulsion of oil, or pure oil. They are contraindicated with atony of the bowel as they would only increase it, while frequently repeated lavages would deprive the mucosa of its last traces of sensibility. In this case they should be used cold and of small volume. Whatever the type of constipation, enemas should never be allowed to become a regular practice.

He emphasizes the necessity for differentiating the cause in order to apply proper treatment. In the constipation connected with atony, all measures to stimulate the organism should be applied, including general salt baths followed by rubbing with alcohol (or a very little turpentine) and massage of the abdomen. When the atony seems to be due to weakness of the reflexes, and this is traceable to anesthesia of the mucosa, immediate and often remarkable results can be obtained by introducing into the rectum a blunt tipped cannula or glass stirring rod. This is left in contact with the mucosa for a few minutes, moving it around a very little. The mere presence of this foreign body, its light rubbing of the mucosa, usually entail an evacuating reflex. This simple procedure can be tried in all forms of constipation, and has numerous advantages over other measures for the purpose. When the constipation accompanies a large flabby abdomen, the child should wear constantly a broad flannel abdominal band, extending up on the chest. In the forms of constipation with signs of hypertonicity, instead of salt baths the child should be given tepid baths and have hot compresses applied to the abdomen for several hours during the day. With both atony and hypertonus, the children should be kept out of doors. He adds, *les promenades au grand air stimulent les atoniques, calment les nerveux*.

The passage of hard feces causes erosion of the mucosa of the anus, and the pain from this causes the child to repress desires to defecate, or may induce spasm of the sphincter. Silver nitrate will help cure the fissure and treatment of the constipation will break up the vicious circle. He reiterates that laxatives do not cure constipation and they are liable to bring on a diarrhea worse than the constipation or they may be followed by aggravation of the constipation. Marfan's choice is sodium citrate; it can be given up to 1.5 to 2 gm. a day without harm. Calomel should never be used for constipation in infants. He has known it to bring on severe acute dysenteriform enterocolitis. When the constipation is the result of hypertonus or spasm, belladonna may be indicated. Dorlencourt gives it in pulverized form, 0.004 gm. per year of age, with some mild laxative such as podophyllin. He warns against combining it with magnesium salts as their action is exactly opposite.

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59 *Administration of Epinephrin. G. Milian.—p. 81.

60 *Syphilitic Primary Lesion. E. Bodin.—p. 87.

61 *Localization of Syphilis Lesions. Lacapère and Laurent.—p. 94.

62 *Febrile Reactions to Arsenobenzol. Goubeau.—p. 97.

63 Skin and Venereal Disease in Battalion. M. Pinard.—p. 102.

64 Chancriform Gonorrheal Ulcerations. R. Burnier.—p. 104.

65 Professional Inoculation of the Finger with Soft Chancre. G. Milian.—p. 107.

66 Jaundice After Galy's Treatment of Syphilis. Veillet.—p. 109.

59. Administration of Epinephrin.—Milian has been preaching since 1913 that epinephrin properly administered will ward off and cure all disagreeable or alarming by-effects of treatment with salvarsan and its substitutes. A number of clinicians have confirmed the efficacy of epinephrin in this line, but still it does not seem to be as generally known as it should be. The French dispensatory specifies only homeopathic doses, not over 1 mg. in the twenty-four hours. Martinet advocates up to 2 mg. in twenty-four hours, testing the tolerance, but Milian asserts that he has given 2, 3 and even 4 mg. of epinephrin within a few minutes, to ward off the threatening immediate or tardy dangerous congestion from the salvarsan. The intravenous route should be reserved for serious emergencies, and a small dose, amply diluted, should be the rule, for example, 100 c.c. of artificial serum containing 0.1 mg. of epinephrin. This solution arrested at once an asthmatic nitritoid attack, with no objective by-effects beyond slight pallor of the face and rapid rise in the blood pressure. There was no tachycardia until after a second injection of half the dose.

Milian's extensive experience has confirmed the advantages of giving epinephrin before the salvarsan. To ward off the reaction to the intravenous injection of the salvarsan (fever, headache, vomiting, diarrhea, etc.) he gives 2 mg. of epinephrin in a little water by the mouth one hour before and repeats it five minutes before the injection and again an hour after it. It is also advisable to give 1 mg. by the mouth morning and evening on the four following days, when the patient is inclined to be intolerant to salvarsan. To ward off the immediate nitritoid crises (congestion of the face, vomiting, distress, etc.) he gives in the place of the dose by the mouth, five minutes before the injection, a subcutaneous injection of 1 mg. of epinephrin and an intramuscular injection of 0.5 mg. The signs that the patient is duly under the influence of the epinephrin are the blanching of the face—the leukoreaction, he calls it—the rise in the arterial pressure, tachycardia and generalized tremor. The pallor of the face is the most instructive of these signs. When salvarsan serous apoplexy has developed, the doses must be large enough to be promptly effectual. In a typical case described, a frail man of 32 with syphilitic perforation of the palate had been given 0.45 gm. novarsenobenzol by the vein. During the third night thereafter, agonizing headache developed suddenly, and the intern gave 0.25 mg. epinephrin by the mouth. By morning the man was unconscious, the eyes open, temperature 39.5 C. (103 F.), and 2.5 mg. epinephrin were given by the mouth. This induced some improvement but he still lay motionless an hour later, the eyes open but no movement of the eyeballs and no winking. Then 1 mg. epinephrin was injected intramuscularly and 0.5 mg. under the skin, and in a minute the man seemed to come to life again, looking around, drawing up the bedclothes, etc. Milian suggests that extracts of other glands with an internal secretion might advantageously supplement epinephrin. It is possible that the glands along the sympathetic system have a special action on the circulation in their special region. Epinephrin displays something of this specialized action, as it does not seem to have much influence on the cerebral vessels and the coronaries while it acts strongly on the neighboring aorta. The pituitary body may perhaps, have more control over the cerebral and coronary arteries.

60. Diagnosis of Syphilitic Primary Sore.—In Bodin's experience, the primary lesion was multiple in about 20 per cent. of his cases; there were eleven chancres in 2, and one case each had seven and ten. In some of these cases preceding scabies in the region offered numerous portals of entry for the spirochetes, and the primary lesions developed simultaneously; in other cases they developed in series. In some cases the chancre spread over an extensive area, the aspect that of a large infected wound, sometimes gangrenous. In 4 of his 627 cases the primary lesion was only 2 or 4 mm. in diameter, but the glands were enlarged even beyond the

average. In 2 cases the base of the chancre was soft but the swarms of spirochetes confirmed the diagnosis. The glands were enlarged in all but 3 of his 627 cases; in 5 the adenitis supplicated. In 12 the chancre was in the meatus or urethra; in 67 cases phimosis masked the chancre; in 8 cases soft chancre complicated the primary lesion. He warns further that herpes lesions may become indurated after application of caustic drugs; only the history of the case will clear up the diagnosis.

61. Influence of Trauma in Localization of Syphilitic Lesions.—Lacapère and Laurent relate that in their forty cases of gummatous syphilitic lesions treated at the dispensary at Fez, Morocco, in fourteen cases the gummas were on the forehead. This can be explained only by the predisposing influence of the trauma when the men kneel in prayer according to the Mohammedan custom, with the brow resting on the stone floor of the mosque. Five times a day the faithful thus prostrate themselves from ten to twenty minutes, and their brows show the effects of this frequent prolonged contact with the stone floor.

62. Febrile Reaction in Treatment of Syphilis.—Goubeau explains that fever developing within a few hours after the injection of arsenobenzol is connected with the syphilitic infection itself, and is a sign of its activity and intensity. It is equivalent to a positive Wassermann reaction. It is not a sign of intolerance for the drug, and it does not contraindicate the continuance of the specific treatment. But when the fever develops or is continuous during the interval between injections, this intercalary fever is a sign of intolerance or of intercurrent disease, and calls for the moderation, suspension or complete arrest of the specific treatment.

Presse Médicale, Paris

Jan. 31, 1918, 26, No. 6

67 Nose Reflex in Facial Paralysis. C. Mirallié and P. E. Weil.—p. 49.

68 *The Intradermal Reaction in Typhus. D. Mante.—p. 50.

69 Treatment of Wounds of Vessels in the Neck. Costantini and Vigot.—p. 51.

70 *Chloramin in Ophthalmology. F. de Lapersonne.—p. 53.

68. Tuberculin Test Reaction in Typhus.—Mante relates that repeated application of the intradermal tuberculin test to 109 typhus patients showed that a positive reaction during the febrile phase was a favorable sign; all the patients thus responding recovered. The reaction veered to positive during convalescence much more rapidly in the mild than in the graver cases. The curve of the reaction is thus closely connected with the general condition and affords a basis for the prognosis.

70. Chloramin for the Eyes.—De Lapersonne reports that chloramin seems to be borne perfectly by the conjunctiva when applied in a 4 per cent. collyrium or in a 1 or 2 per cent. gelose cream. It seems to be a powerful disinfectant for corneal ulcers, etc.

Progrès Médical, Paris

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71 Roentgenoscopy of Heart Under Influence of Epinephrin. L. H. Dubois and C. Wagner.—p. 39.

72 Pulse Findings with Aortic Lesions. A. Mougeot.—p. 39.

73 Present Status of Treatment of Wounds. A. Aimes.—p. 41.

74 Correction of Cicatricial Flexion of Finger. R. Didier.—p. 45.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 26, 1918, 48, No. 4

75 *Social Insurance. O. Naegeli.—p. 97.

76 *Deafness in Schoolchildren. E. Schlittler.—p. 108.

75. The Practical Medical Side of Contract Practice.—The introduction of compulsory social insurance into Switzerland imposes new tasks on the general practitioner, and Naegeli discusses how he can best meet them and avoid being imposed on. It lies in the hands of the physicians whether the social insurance is to be a blessing or a bane for the common people. There are six great drawbacks to social insurance. Among them is the arousing of greed in the insured, and discontent, the effort to obtain unjustified advantages in the

form of unduly long rest from labor and unduly high indemnity and excessive use of drugs and dressings. Besides these three disadvantages, there are the excessive demands made on the physician's time so that quiet, thorough examinations are practically impossible, and the physician feels constantly dissatisfied and is unable to make progress in his scientific attainments, while the patients suffer. The physician's dependence on the insurance company is galling, and takes all the joy out of the actual practice of his profession and may almost completely undermine his self-reliance in medical and other matters. Last but not the least of the drawbacks, is the inability to maintain the personal factor in the treatment of the sick, and hence is lost all chance for the important psychic factors.

These drawbacks can be overcome if the physician goes to his task with confidence in his skill, sympathy, and strength of character. He must not shrink from protesting against being given more clients than he can handle, and he must make a point of thorough examinations. The insured are not anxious to be cured quickly, so thorough examinations meet with less obstacle than among the noninsured. Another point on which Naegeli insists is that a record should be kept of every case, with findings in heart, lungs and abdomen, whatever the trouble for which treatment is sought. Especial notice and record at the first examination and later should be made of the man's mentality. The urine should also be examined for albumin and sugar, but this can be done by an assistant. The ultimate outcome of each case should be added to the record. These records are especially important from the oversight they permit of the man's psychic behavior during the course of the case. His wishes and longings and the motives for them should be carefully recorded. The anamnesis is particularly important in case of a neurosis. In dubious cases, consultations should be demanded without waiting too long. Arrangements can often be made for this with the medical department of the nearest university.

The main thing, Naegeli reiterates, is the diagnosis, and this includes diagnosis by exclusion of simulation and exaggeration. Detection of these requires not only great medical knowledge and medical confidence but great psychologic talent, as the decision as to the simulation must be based usually merely on the physician's impressions. This is not enough for others, and this alone is enough to justify caution in affirming simulation. In dubious cases it is a wise plan to pass judgment on the man's condition only as it modifies his earning capacity. Although you do not assert that the man is malingering, yet you can report that his earning capacity is reduced very little if at all.

Naegeli warns of the necessity for extreme caution as to simulation in all cases in which there has been concussion of the brain, atheroma, multiple contusions and psychopathic factors. With hysteria, the complaints are constantly varying; the simulator sticks to his one trouble which is "always the same." With hysteria, the man is so convinced of his trouble that he is sure the physician will be convinced too, and he wastes no words trying to convince him, while the simulator keeps affirming the truth of his statements. The latter insists that he cannot be cured and makes no attempt to train himself to increase his earning capacity while the man with hysteria wants to be cured and rejoices at his progress. Mild hysteria and simulation are sometimes associated, and a tendency to a psychosis renders the whole problem more difficult of solution.

76. Special Schools for the Deaf.—Schlittler states that Basel opened last year three schools for children who are hard of hearing. All the children who could not hear a whisper at 6 feet were examined by a specialist. It was found that over three fourths of them had some curable ear trouble, and it was learned further that the hearing of about one fourth of all the supposedly normal children was somewhat impaired. Another significant discovery was that seven tenths of all the children in the classes for backward pupils had some ear disorder. In conclusion he reiterates the importance of seeking out and curing all curable cases of deafness, if for no other reason than to prevent such a loss to the military service when these children reach the military age.

Bolletino dell'Istituto Sieroterapico, Milan

November, 1917, 1, No. 2

- 77 Recurrences in Experimental Infection with *Spironema Recur-*
rentis. G. Castelli.—p. 57.
- 78 *Agglutination Tests for Cholera. P. Negroni.—p. 75.
- 79 *Diagnosis of Meningitis. L. Vigano.—p. 85.
- 80 Vaccination of Civilian Population Against Typhoid. A. Pugliese.
—p. 93.
- 81 Composition of the Blood in Aviators. A. Gemelli.—p. 105.
- 82 *Serotherapy in Infectious Jaundice. R. Inada and Others.—p. 111.
- 83 Distribution of Spirochetes in Organs in Infectious Jaundice. R.
Kaneko and K. Okuda.—p. 131.

78. **Prophylactic Value of Agglutination in Cholera.**—Negroni's research has confirmed the value of agglutination tests for distinguishing the true cholera germs from those that resemble them. No agglutination was ever noted with the pseudocholera germs in dilution beyond 1:500 and very rarely up to this, while with true cholera germs it occurs at 1:10,000 and even at 1:100,000. The agglutination at 1:100,000 is complete in four hours with the living germs, but with germs killed with phenol it occurs in four hours only with dilutions of 1:1,000; seven hours, 1:20,000, and fourteen hours with 1:50,000.

79. **Diagnosis of Meningitis.**—Vigano remarks that agglutination occurs too late for it to have much diagnostic value, but some have reported instructive findings with the deviation of complement test, and others with the opsonic index. The precipitation test of the cerebrospinal fluid treated with an antimeningococcus serum gave a positive response only in six. These had been tested the second, third, eighth or fifteenth day. Microscopic findings were more reliable, the findings being positive in twenty-four of the thirty cases, and cultures developed in eleven. Negative findings with these tests must be compared with the clinical findings. In one case a young man with severe meningitis, fatal the seventh day, had always shown a limpid and sterile spinal fluid. Necropsy showed adhesions between the cerebellum and the medulla partitioning off the space below, and the fourth ventricle was paved with pus.

82. **Spirochetosis Icterohemorrhagiae.**—The results realized by Inada and his co-workers with intravenous injection of antiserum in forty-one cases apparently confirm the superior efficacy of this route. They declare that, in rabbits, five minutes after the intravenous injection of 0.5 of the antiserum per kg. of weight, the antibodies appeared complete in the blood. With subcutaneous injection they appear only in an incomplete form and not until after eight hours. This passive immunity lasted for three or four days. The clinical experiences were most encouraging. The cases are tabulated and compared with cases in which the subcutaneous route was followed. The intravenous serotherapy seemed to act favorable on the hemorrhagic diathesis, the pulse and purulent complications. A chill with brief fever followed the injection on three occasions. They add that 18 of the 41 patients given this intravenous serotherapy developed more or less pronounced disturbances in vision later. It was quite severe in 8. Of these 18 patients, 10 had had the disease in a severe form, 5 in a moderate form, and in 3 the courses had been atypical. Vision was reduced in 5 who had had the severe form, in one with moderate and 2 with the atypical forms.

Policlinico, Rome

Feb. 3, 1918, 25, No. 5

- 84 *Frost-Bitten or Frozen Feet and Hands. D. A. Mazzolani.—p. 101.
- 85 Suggestions for Improving Surgical Service at the Front. G.
Dragotti.—p. 107.

84. **Freezing Injuries.**—Mazzolani comments on the extreme importance from the military standpoint of frozen feet and hands, not only because of the suddenness of the disability from this cause, but the fact that the same cause is liable to act on numbers of men at once and incapacitate them for a long time. His experience has demonstrated beyond question that certain men are more liable to get their feet frozen than others, and at a temperature which others stand perfectly. These predisposed men should be sifted out and should

not be sent to posts where freezing is likely. Frost-bitten limbs can be cured if taken in time. In the Red Cross hospital in his charge 23 per cent. of the patients in the early winter of 1915 were cases of frost-bite or freezing. Africans, the debilitated, the over-young, and the over-old, the home-sick, those with heart disease, and those who have been frost-bitten at some time are peculiarly predisposed to freezing injuries, as also the dyspeptic and those inclined to gouty arthritis. If men in these categories cannot be kept out of posts where freezing is liable, it might be well to give them some tonic at the time.

Rivista Critica di Clinica Medica, Florence

Jan. 26, 1918, 19, No. 4

- 86 *Primary Diphtheria of Skin and Genitals. E. Mondolfo.—p. 37.
Commenced in No. 3, p. 25.

86. **Primary Diphtheria of the Skin.**—Mondolfo reviews the literature on wound diphtheria and cutaneous or genital lesions in which diphtheria bacilli were found. Only four cases have been published in accessible literature in which these bacilli were found in ulcerations around the anus while none could be cultivated from the air passages. Mondolfo adds another case to this last group. The male child of 3 convalescing from mild measles showed extreme prostration for which no explanation could be found for two days, when ulceration developed on the genitals and around the anus and exceptionally virulent diphtheria bacilli were found in them in almost pure cultures. Notwithstanding vigorous antitoxin treatment the child soon died. A year later he had a similar case, a girl of 2 was brought to the hospital with diagnosis of vulvar erysipelas, but the pure cultures of diphtheria bacilli found in the lesions were evidently responsible for them. The bacilli were cultivated both from the vulvar secretions and from the nose and throat, but the nose and throat seemed of normal aspect. In both cases the cutaneous lesions had been unmistakably the primary affection. It had not been differentiated until such a late stage that recovery was scarcely to be hoped for.

Archivos Españoles de Pediatría, Madrid

December, 1917, 1, No. 2

- 87 *Congenital Syphilis. J. S. Covisa.—p. 65.
- 88 *Migrating Pneumonia in Children. A. R. Lozano.—p. 80.
- 89 *Pituitary Insufficiency. G. R. Lafora.—p. 94.

87. **Congenital Syphilis.**—Covisa describes eight cases of post conceptional syphilis in which thorough treatment cured the woman, and the child was born apparently free from any traces of the disease. The salvarsan or its substitutes must be given cautiously in such cases as the woman's heart and kidneys are already bearing the extra strain of the pregnancy. None of the twenty-three pregnant women he has treated in this way showed any symptom or signs of intolerance or by-effects of any kind. The Wassermann reaction in young infants is often unreliable.

88. **Migrating Pneumonia in Young Children.**—Instead of the pneumonia being restricted to one lobe, it spread through the entire lung in over 10 per cent. of Lozano's sixty-five cases of pneumonia in children. In these seven migrating cases the children were between 1 and 3 years old. The other lung and the bronchi never seemed to be involved, and there was no preceding rhinopharyngitis. The seven children all recovered although the course was unusually long; in some two months elapsed before recovery was complete. This long course renders nourishing feeding particularly important, especially as the children have no appetite. In one of his cases the child was fed by a catheter introduced through the nose. The children must be given water freely; this is as necessary as or even more so than food. An airy, well ventilated room is indispensable, protecting the child against drafts and getting chilled. Antipneumococcus serum and diphtheria antitoxin were given in some cases; they did not display any specific action, but seemed to be a useful stimulant. Steam in the room aids in relieving the cough; oxygen may be useful if there is much dyspnea, although it is less effectual here than in bronchopneumonia.

89. **Pituitary Insufficiency.**—Lafora reports a case of diabetes insipidus in a boy of 12 with evidences of the adiposogenital syndrome and headache. Pituitary treatment by the mouth did not modify the clinical picture but after injection of pituitary extract the polyuria dropped from an average of 12 liters to less than 2 liters, and the effect was manifest for thirty hours. This abrupt inhibiting effect was accompanied by intense headache and ill feelings in general. Under half the dose the output of urine was only 2 or 3 liters and there was no headache. Roentgenoscopy showed the sella turcica enlarged and the case has continued a progressive course since, with periods of intermission when the tissues seem to adapt themselves to the tumor and the symptoms subside for a time. At necropsy in two similar cases a cyst was found in one and a sarcoma in the other.

Repertorio de Medicina y Cirugia, Bogota

January, 1918, 9, No. 4

90 *The Tacamocho Epidemic. E. Henao.—p. 171.

91 *Foreign Body in Bladder. C. T. Macias.—p. 207.

92 Experimental Surgery. R. Sanmartin.—p. 211.

90. **Yellow Fever in Colombia.**—Thirty-six pages are devoted to reproduction of the official reports and correspondence in regard to five cases of fever occurring some time ago in the course of two weeks among the employees of the Antioquia R. R. These are all picked men, and the drinking water is boiled. The fever began with sudden onset, and 40 per cent. of the men affected died within thirty-six hours. Three had been taken sick within eighteen hours. The local physicians diagnosed yellow fever, and although the stegomyia mosquito had never been found in that region before, search for it then showed its presence along the entire railway. Bacteriologic examination of the blood was constantly negative. Two members of the Rockefeller Yellow Fever Commission visited the spot and studied the evidence, their verdict being that the epidemic could not have been yellow fever nor malaria. The fact that no further cases, developed notwithstanding the prevalence of the stegomyia, they accepted as evidence against the disease having been yellow fever.

91. **Foreign Bodies in the Bladder.**—Macias removed from the bladder part of a catheter guide by means of a median incision running from a scrotal fistula nearly to the anus, with a cross incision. There was almost impassible stenosis of the urethra. The urethra was incised where it entered the median perineal aponeurosis, and the foreign body was easily removed, the fistulas were resected and clinically normal conditions restored with smooth recovery. The case emphasizes, he remarks, the superiority of the perineal over suprapubic incision for all such foreign bodies in the bladder.

Revista de la Asociacion Medica Argentina, Buenos Aires

December, 1917, 27, No. 157

93 *Polycythemia in Tuberculosis. P. M. Barlaro.—p. 719.

94 *Mental Disturbances with Brain Tumors. J. T. Borda.—p. 724.

95 *Differential Diagnosis of Brain Tumors. M. R. Castex.—p. 770.

96 *Diagnosis of Subtentorial Tumors. R. Chiappori.—p. 810.

97 Glands with Internal Secretion. A. M. Crispin (New York).—p. 845.

98 *Poisonous Spiders. E. Escomel.—p. 853.

99 *Megacolon. (Bolos fecales.) R. Finochietto.—p. 873.

100 *Tumors of Pituitary Body. B. A. Houssay.—p. 897. E. V. Segura.—p. 984.

101 Aneurysm of the Axilla. P. Jauregui.—p. 908.

102 *Sarcoma of Thyroid Gland. J. M. Jorge, Jr., and F. C. Arrillaga.—p. 932.

103 Prophylaxis of Tuberculosis. J. Picado.—p. 964.

104 Osteoplastic Disarticulations. G. Zorraquin.—p. 1030. Conclusion.

93. **Polycythemia in Tuberculosis.**—Barlaro's experience has been that the tuberculous toxins may induce a reduction or an increase in the numbers of red corpuscles in the blood, with or without enlargement of the spleen. Anemia and polycythemia may alternate, but the latter gives the best prognosis.

94. **Psychic Disturbance with Brain Tumors.**—Borda is professor of psychiatry and his extensive experience has shown that brain tumors, wherever the site, induce a constant set of symptoms, namely, a tendency to apathy, mental

torpor, forgetfulness, confusion and mental decadence. Superposed on this there may be delirium or stupor. These psychic changes are progressive but they do not differ essentially from similar sets of symptoms developing under the influence of toxic causes. He never was able to detect any special psychic features with tumors in the frontal lobe. Six cases are described with minute detail from the psychiatric standpoint.

95. **Brain Tumors.**—Castex remarks that judging from his own service, brain tumors are frequent in Argentina. He discusses the general and differential diagnosis and the etiology. The subjects are usually adolescents or adults under 40. The laboratory tests for syphilis, etc., are so unreliable with a brain tumor that he now pays little heed to them, basing the diagnosis on the clinical examination and the history of the case. Echinococcus cysts display no characteristic symptoms, and the serodiagnosis is not reliable as many persons give a positive reaction and show eosinophilia who are free from echinococcus disease. Circumscribed serous meningitis is particularly misleading; in a number of supposed brain tumors necropsy revealed merely the serous affection.

96. **Cerebellopontile Angle Tumors.**—Chiappori emphasizes the necessity for ascertaining the exact conditions relative to the beginning of disturbances from this cause, the order in which the symptoms develop, and the character of each of the signs, in the attempt to determine the location of the tumor.

98. **Poisonous Spiders.**—Escomel describes some of the poisonous spiders of southern Peru. The bites of the two species described have been known to cause death. Potassium permanganate internally and externally seems the best treatment known to date.

99. **Impacted Feces.**—Finochietto's article is profusely illustrated showing the various means available for getting rid of large accumulations of impacted feces. When just above the sigmoid flexure, the lower end of the hard mass can usually be crumbled off with the finger. The rest can be aspirated with a giant sigmoidoscope.

100. **Tumors of Pituitary Body.**—Houssay relates that he knows of over forty cases of tumors of the pituitary body in Argentina, and has personally encountered twenty-five and published reports on seventeen. Most of the patients applied for relief first on account of disturbances in vision. He insists that every case of atrophy of the papilla or modification of the visual field for which no explanation is apparent, should have the sella turcica examined with the roentgen rays. Acromegaly points almost certainly to a pituitary tumor. Other diagnostic points are described in detail.

Segura reproduces illustrations showing the technics of different surgeons for removing pituitary tumors, and describes his own method which is a modification of the Hirsch septal technic. There is no hemorrhage or shock with this, and local anesthesia is sufficient, while it permits reinspection of the site of the tumor at any time and radium treatment. He has applied this technic in fourteen cases. The intracerebral proliferation of the probably malignant tumor exonerated the operation as the cause of death in one case. In two other cases the diagnosis of pituitary tumor proved to be erroneous, the malignant tumor originating at another point in the brain. In all his cases the immediate result was extremely gratifying, and the patients were all benefited and recovered except in these three cases. With the Hirsch method, the submucosa resection of the septum is done according to Killian, the incision along the anterior margin of the cartilaginous portion. The mucosa of the cartilage and bone is then separated and turned back on one side. The cartilage is then cut down to, but not into, the mucosa, which is then separated from the other side of the septum. The two sheets of mucosa are then opened to admit the speculum. The front wall of the sphenoidal sinus is resected, throwing the two into one large cavity, and the sella turcica is opened, with the chisel, from the sphenoidal sinus and the wall further broken away to expose the pituitary body. He interposes a pause of eight or ten minutes

between these different steps of the operation. If the tumor is not a cyst, he shells it out, working mostly from above downward. Usually these tumors are soft and friable. The field of operation is drained with gauze between the two sheets of the septum mucosa, the nostrils packed with cotton.

He keeps the passage down to the sella turcica permanently permeable by severing the right sheet of the septum mucosa at the back and above and fitting it against the left hand sheet of mucosa, thus leaving open the right nasal fossa, sphenoidal sinus and the cavity of the sella turcica. The tamponing must be firm; it is not needed after twenty-four hours. The septum is left thus attached only on the left side, but this does not seem to do any harm, the septum returning spontaneously to the middle of the cavity. It can be pushed aside at any time when the speculum is introduced to inspect anew the sella turcica region. In his last seven cases he refrained from the preliminary removal of the turbinate bones which is a cardinal point in the original Hirsch technic. By ample dilation of the nasal fossas with a dilator which he has had made for the purpose and describes with illustrations, he has been able to stretch the parts enough to admit the speculum. Of course the nose must be free from any inflammatory process, and he makes a point of giving hexamethylenamin systematically before and after the operation. He is careful not to resect the floor or the roof of the nasal fossas in order not to damage the architectural structure of the nose, and warns further that every step of the operation must be controlled by the eye, never working blindly in the depths, for fear of injuring the cavernous sinus. All the patients benefited materially by the operation, the success depending naturally on the nature and extent of the tumor and the stage of the pathologic evolution.

102. Cancer of the Thyroid.—Acute cancer and woody inflammation in the thyroid (Riedel's disease), may present such close resemblance that only microscopic examination of a scrap of the tissue will permit the differential diagnosis. Both occur generally in the thirties, and run a comparatively rapid course. A case is described in which, after a severe attack of grip, the temperature kept above normal and the neck enlarged, the enlargement settling finally in the thyroid region. The breasts also became very large and the patient felt weak and complained of palpitations, with edema over the upper part of the trunk. Necropsy revealed sarcoma of the thyroid with proliferation of the tumor into the veins and right auricle, reaching almost to the ventricle. The extent of this intravenous proliferation surpassed, it is stated, anything of the kind on record. The malignant disease ran its course in about three months, but there had been a tendency to goiter for fifteen years. It is reiterated that operative treatment of goiters which do not yield to medical measures is the only guarantee against malignant degeneration.

Revista de Medicina y Cirugia, Havana

Feb. 10, 1918, **23**, No. 3

- 105 *Reflex Amyotrophy. J. O. Cano.—p. 59.
106 Extrinsic Factors in Gastric Ulcer. R. Grau.—p. 67.
107 Albee's Operation for Disease of the Spine. A. Inclan.—p. 69.
108 Heliotherapy and Thalassotherapy. F. J. Velez.—p. 78.

105. Amyotrophy of Articular Origin.—Cano quotes with approval Reclus' statement that it is a mistake to think that an arthritis is done with when the inflammatory symptoms have subsided. A train of functional disturbances are liable to follow, from simple slight reduction of function to atrophic paralysis. In his nine cases the extensor muscles and these alone became atrophied. His patients were from 17 to 30 years old, free from predisposing lead or alcohol poisoning or gouty taint. It is evident, he reiterates, that any joint lesion, however insignificant it may be, is liable to entail a grave and incurable affection. The irritation of the nerve terminals in the joint is responsible for it by a reflex mechanism, some of the cells in the anterior cornu of the spinal cord suffering. This irritation should not be aggravated by the use of the joint. It should be left in repose after the inflammatory phase is past. The muscles should not be forced into atrophy by violent contractions induced with strong electric currents. Electric treatment should be applied

only by an expert who will use it cautiously. The surgeon should explain the conditions to the patient and warn of the probable prognosis. Further study is needed of these functional impotencies after joint disease, especially in connection with workmen's compensation.

Revista Medica Cubana, Havana

January, 1918, **29**, No. 1

- 109 Suggestions for Improving Methods of Collection of Vital Statistics. R. J. Fosalba.—p. 6.
110 Indications for Cataract Operations. J. Santos Fernandez.—p. 14.
111 *Hematologic Index in Cuba. L. Plasencia.—p. 24.
112 *Asphyxia from Forensic Standpoint. R. de Castro.—p. 36.
113 Fungus Parasites of Man. V. P. Castello.—p. 51.

111. The Blood Picture in Cubans.—Plasencia found in thirty-five healthy Cubans and in 1,000 specimens of blood from various patients that the reds numbered from four to six millions, thus not differing from the normal in latitudes farther north and in various races. The proportions of leukocytes and hemoglobin also keep within the familiar normal standards in health, but the relative leukocyte count shows exceptionally high figures for the polymorphous cells and the lymphocytes. The averages in fourteen men (and eleven women) were 56 (46.6) per cent. polymorphous cells; 5.2 (5.1) per cent. large mononuclears; 36.9 (36.1) per cent. lymphocytes; 2.5 (1.3) per cent. eosinophils, and 0.4 (0.5) per cent. mast cells.

112. Asphyxia from Medicolegal Standpoint.—De Castro emphasizes among the other features of death from asphyxia that the face and skin may present a normal aspect after death from asphyxia. The position of the head may lead to the mechanical subsidence of the primary congestion and cyanosis as the force of the circulation weakens. On the other hand, cyanosis may accompany death from other causes than asphyxia, and cyanosis often develops in the lower lying parts of the body after death. Visceral ecchymosis and congestion of the organs seem to be the most characteristic signs of asphyxia. The blood in the large vessels and right heart is generally free from clots, and sometimes in the left heart likewise. The oxygen in the blood may be down to 1.75 per cent. while carbon dioxide may be present up to 77 per cent. but there is no special sign, internal or external, peculiar to asphyxia as the cause of death.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 14, 1918, **118**, No. 1490

- 114 *Enucleation in Sympathetic Ophthalmia. S. G. Mansilla.—p. 33.

114. Sympathetic Ophthalmia.—Vision in the right eye had long been lost and the eyeball had shriveled and was hard. After a long latent period this eye became painful and in a few months the left eye showed symptoms of incipient neuritis. Enucleation of the atrophied right eye was followed by complete retrogression of the left optic neuritis, and vision returned to normal in the left eye. The enucleated eyeball showed dislocation of the lens; the lens then acting like a foreign body had set up the irritation.

Semana Medica, Buenos Aires

Dec. 6, 1917, **24**, No. 49

- 115 *Variola at Buenos Aires. E. R. Coni.—p. 629.
116 *Pregnancy in Uterus Didelphys. E. Mazzini.—p. 630.
117 *Mortality from Tuberculosis. E. R. Coni.—p. 638.
118 *Bacteriology of Tuberculosis. M. R. Castroman.—p. 639.
119 The Suprarenals in Malaria. C. Fraga.—p. 649.

Dec. 13, 1917, **24**, No. 50

- 120 Malformations of the Kidneys. F. A. Deluca.—p. 657.
121 Triumphs of Practical Prophylaxis. E. R. Coni.—p. 661.
122 History of Medicine. L. Bard.—p. 662. Continuation.
123 Infant Mortality. E. R. Coni.—p. 670.
124 The Thyroid and the Oxidizing Ferments. L. Goldenberg.—p. 671.
125 Care of the Sick and Poor at Buenos Aires. E. R. Coni.—p. 674. Continuation.
126 The Fight Against Tuberculosis. C. Ferrcirra.—p. 678.

115. No Deaths from Smallpox at Buenos Aires.—The subtitle of Coni's article is "The Extinguishing of Smallpox Mortality" as he cites figures to show the diminishing mor-

tality. There have been a total of 11,459 deaths from small-pox at Buenos Aires since 1879, but in 1910 the figure dropped to 543, and to 1 each in 1914 and 1915, and none in 1916. No other Latin-American country can make such a showing, Coni remarks, and he ascribes this triumph to the efforts of Penna, chief of the public health service, hailing him as the paladin of the battle against variola.

116. Pregnancy in Uterus Didelphys.—The gravid cornu became twisted and the apoplexy of the uterus and placenta from the torsion compelled operative relief. Mazzini expected to find merely premature separation of the placenta with internal hemorrhage, having overlooked the spiral folds and crevices in the cervix which should have warned of the torsion. The parts had suffered and the gravid cornu and its adnexa were removed. Conditions seem propitious for future pregnancies as the half of the uterus left, with its adnexa, seem practically normal.

117. Increasing Mortality from Tuberculosis.—Coni reproduces recent vital statistics which show a constant increase in the tuberculosis mortality during the years of the war. The prevailing lack of work and scarcity of food are making their influence felt in this way. He remarks that the conflicts between capital and labor are assuming an alarming endemic character. He urges the state to interfere as the frequent strikes and threats of strikes are seriously undermining the general public health, as is evident in the tuberculosis mortality. Since 1877, the tuberculosis death rate had dropped from 28.1 per 10,000 to 15.8 in 1913, but it began to climb again with the war, and reached 19.3 in 1916 and has been even higher since.

118. The "New Bacteriology of Tuberculosis."—Castroman applies this term to Ferran's conception of the tubercle bacillus as the last link of a chain of mutations. He argues that this conception gives a promise of successful treatment by curing before the true tuberculosis stage is reached.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Jan. 19, 1918, **1**, No. 3

127 *Atropin in Sinus Bradycardia. A. K. J. de Haas.—p. 147.

128 *Correction of Saddle Nose. E. W. De Flines.—p. 154.

129 *Psychoses in Camp. H. Van der Hoeven, Jr.—p. 158.

130 The Medical Officer on East Indian Ships. B. M. van Driel.—p. 164.

131 Flaccid Paralysis. G. C. Bolten.—p. 167.

127. Atropin in Bradycardia.—De Haas gives a description with tracings of a case of Adams-Stokes disease with sinus bradycardia in a man of 71. Although everything seemed to indicate that overexcitability of the vagus was responsible for the symptoms, doses of atropin up to 2.2 mg. had no accelerating influence on the pulse. Vagotony, therefore, cannot be responsible for the bradycardia in this case. The trouble, he declares, must be some obstacle to conduction between the sinus and the atrium.

128. Plastic Correction of Saddle Nose.—De Flines gives illustrations showing the excellent effect obtained in two cases of saddle nose by ingrafting a piece of bone to fit the place. It was taken with its periosteum from the tibia. Roentgenograms a year later show the bone implant of the same size and shape. It does not seem to have grown to the bone of the nose, but it shows no signs of absorption.

129. Psychoses in Camp.—Van der Hoeven relates that complete anesthesia of both halves of the body was found almost constantly in the several hundred soldiers that have passed through his service for nervous and mental disease. He found further that a large percentage of the men could have the cornea struck with the handle of a percussion hammer without the least trace of pain. There was lachrymation but no pain. Restriction of the visual field was common, and urticaria was easily induced by stroking the skin. He comments on the difficulty in the military environment of examining men with psychopathies. The commander assumes simulation whenever a man with normal temperature complains of symptoms, and it is a fact that now all the manifestations of disease are more or less influenced in the soldier

by his distaste for military service and his longing to go home. Entirely opposite to the experiences in civilian circles, the mobilized Netherlands soldier more or less unconsciously strives to make the most impressive presentation of his symptoms. With all other forms of disability, the classification of the men as fitted for full duty, light duty, and capable only of manual work, has proved beneficial, but not so with the psychopathies.

Hospitalstidende, Copenhagen

Jan. 17, 1918, **61**, No. 3

132 *Alcohol Sterilization. J. Christiansen.—p. 65. Commenced in No. 2, p. 33.

Jan. 23, 1918, **61**, No. 4

133 The Colloidal Gold Reaction in the Cerebrospinal Fluid Not Specific for Syphilis. (Guldsolreaktionen i Spinalvæsken.) A. V. Neel.—p. 97.

132. Improved Alcohol Sterilization.—Christiansen's extensive research seems to have confirmed the hydrate theory of the action of alcohol—one molecule of methyl alcohol combines with 2 molecules of water; of ethyl alcohol with 4; propyl alcohol with 8; butyl alcohol with 16, and amyl alcohol with 32 molecules of water. The two latter alcohols are not very soluble in water and hence not practicable for sterilizing the skin, but propyl alcohol has numerous advantages over ordinary alcohol for sterilization as he explains in detail. It seems that alcohol makes its way rapidly into the cells when the superficial tension of about 0.4 is reached. Once inside the cells, the alcohol induces a kind of fixation, that is, in combination with the salt present in the bacteria it induces an irreversible precipitation of the protoplasm which signifies the death of the bacterium. Higher concentrations of alcohol do not have this effect but merely suck the water out of the protoplasm, which dries up the bacteria, but they are very resistant to drying. The power of alcohols to penetrate the thin layer of grease on the skin parallels their bactericidal power, as both are the effect of the same cause, namely, a low superficial tension and high solvent power for water and lipoids. And of all the alcohols, propyl alcohol is the most efficient, as he shows by his comprehensive tests on rat skin, human skin and ulcers. Its action compared favorably with that of iodine, phenol, and other powerful disinfectants, and he urges the general use of n-propyl alcohol as a disinfectant for skin and wounds. When pure it mixes freely with water. Mixed with three times as much water, the superficial tension is 0.4.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 31, 1917, **43**, No. 4

134 *Experimental Renal Insufficiency. E. L. Backman.—p. 1409.

135 *Blood Findings in the Prematurely Born. A. Lichtenstein.—p. 1533.

134. Experimental Insufficiency of the Kidneys.—Over 123 pages are devoted to the methods and results of experimental insufficiency of the kidneys in rabbits. Backman records the action of the blood pressure, total amount, specific gravity and nitrogen content of the urine, the osmotic concentration of the blood, its urea and residual nitrogen content and the presence in the blood of substances tending to raise the blood pressure. He found albumin regularly in the urine of every rabbit when first examined. The renal insufficiency was induced by removing one kidney and resecting part of the other.

135. The Blood in the Prematurely Born.—Lichtenstein's comprehensive work fills 297 pages, including ten pages of bibliographic references given in full. The complete case history, details as to feeding, etc., are given of ninety-two prematurely born children, this section filling over 100 pages, the histories being continued for a few months to a year or more. In treatment of the anemia, which is common in the prematurely born, he obtained excellent results with iron, but it had to be given in large doses, 0.25 or 0.5 gm. of ferrous lactate from one to three times a day. Fine results were obtained with this even without change of diet. The iron was always well tolerated.

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TREATMENT OF ACUTE INFECTIONS OF THE JOINT BY LAVAGE AND DIRECT MEDICATION

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Since the publication of a paper¹ in 1915 in which a new method for the treatment of acute infections of joints, particularly of the knee joint, was described, I have been interested in the further development of the apparatus devised for this purpose and in the collection of further clinical data as to the efficiency of the method. The rather crude machine described in my first article answered the purpose well, but there were a number of mechanical defects in it, and these made it somewhat awkward. These defects have been entirely overcome, and an apparatus that is simple and efficient has now been devised, so that the problem of thorough irrigation and cleansing of a joint cavity is solved.

As I stated in my former article, any attempt to apply an antiseptic to the lining membrane of a joint, with the hope that this substance would reach and penetrate cells of that lining, is sure to be unsuccessful unless a preliminary cleansing has been effectively carried out. My attention was called to this fact by my complete failure to stain the mucosa of the pharynx by painting it with gentian violet, because the secretions of the mucous glands of the pharynx covered the surface with a thin slimy layer, which was renewed

by fresh secretions as rapidly as it was removed, and which prevented intimate contact between dye and mucous membrane as effectually as a layer of grease would have done. It seemed to me likely that the pus, fibrin and mucus accumulating on the surface of a synovial membrane must certainly interfere in a similar, and equally decisive, fashion with any attempts to apply to its surface a diffusible antiseptic.

The apparatus described herein is the result of attempts to devise some method by which an infected joint can be first mechanically cleansed with complete thoroughness, so that diffusible antiseptics applied to the joint may then come actually into contact with the

cells of the synovial membrane. Repeated trials of the apparatus to be described have proved that a mechanical cleansing of this sort may be done with great readiness under local anesthesia. I wish to consider also the attempts to make clinical use in infected joints of the observations as to the bactericidal value of gentian violet, to which attention was first called² in 1912, and to the study of which several other papers during that and subsequent years were devoted. It is hardly necessary to repeat in detail what those findings were, for in the first paper¹ I summarized them. Suffice it here to say that a selective bactericidal property was

found to be possessed by gentian violet; that this selective property ran roughly parallel with the gram reaction; that the property was exhibited by the dye either when the dye was applied directly to the bodies of the organisms or when it was applied to the medium in which they were grown (Figs. 1, 2 and 3); that it was manifested in extremely weak solutions, and that

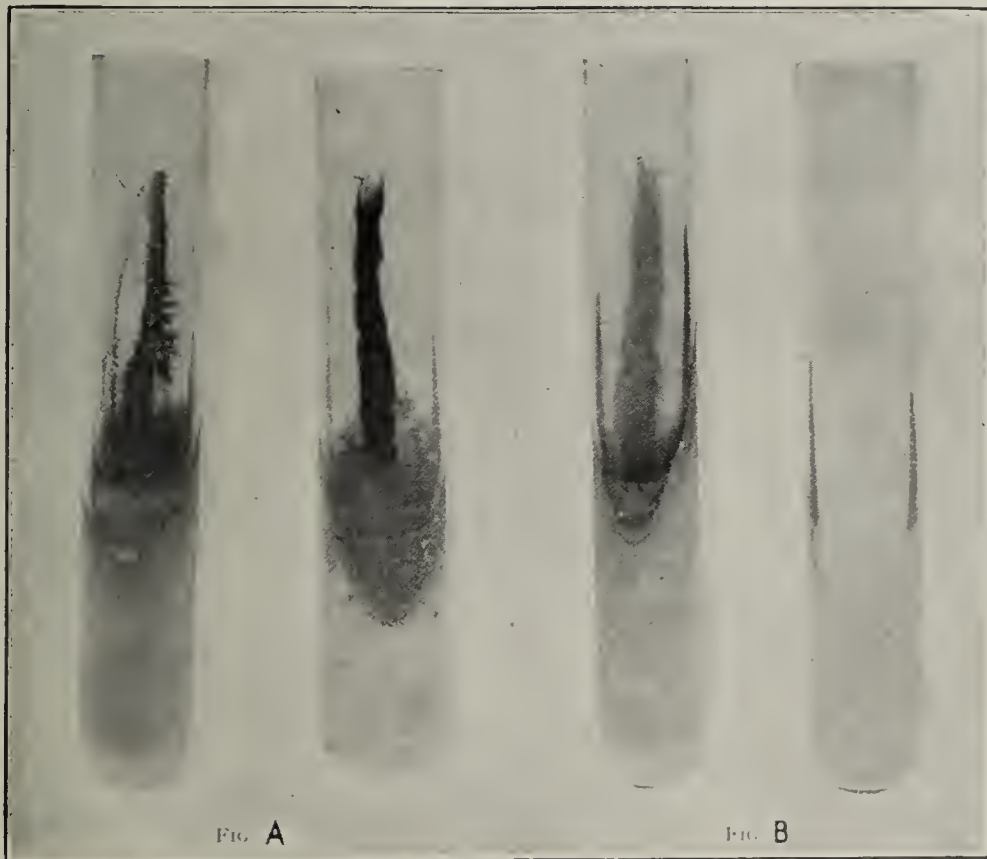


Fig. 1.—Effect of staining organisms with gentian violet: Gram-negative organisms are unaffected, gram-positive organisms are killed. A, tube on left inoculated with *Bacillus prodigiosus* (gram-negative) for control; tube on right with *B. prodigiosus* that had been stained one hour with gentian violet. The growth of the stained organisms has been unaffected by the dye. B, same experiment with *B. subtilis* (gram-positive). Tube on left inoculated with *B. subtilis* for control; tube on right with *B. subtilis* that had been stained for one hour with gentian violet. The growth of *B. subtilis* has been completely inhibited by the dye.

1. Churchman, J. W.: The Treatment of Joint Infections by Lavage and Direct Medication, *Ann. Surg.*, 1915, **62**, 409.

2. Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, *Jour. Exper. Med.*, 1912, **16**, 221.

it was shown to be a vital phenomenon, since living cells stained with the dye continued to grow.

In addition to these studies on gentian violet itself, subsequent studies also were reported on a similar action possessed by stains closely allied to gentian violet, and it was shown in these that the selective property was common to a number of stains closely related in chemical structure. Experiments were reported as having proved that the dye possessed a relatively low degree of toxicity, and it was also shown that the dye possessed the power of staining living cells. This was proved, first, by cultural experiments, in which a small amount of gentian violet was added to the medium in which epithelial tissue was growing; it was shown that the cells picked up the dye (both their bodies and nuclei being stained with it) and that, in spite of this fact, cell division continued. That the dye possessed the power of staining living cells was also shown by a number of experiments on animals in which the bladder of the living animal was filled with the dye; on removal of the organ, the mucosa was shown to be stained throughout its depth.

I wish to report the application of the apparatus thus devised, and the knowledge as to the bactericidal

leading from a to-and-fro pump. By means of properly arranged valves and stopcocks it is possible to blow or suck fluid into or out of the joint and also from or into any one of the connecting chambers of the apparatus. The system is an entirely closed one, and there is therefore no danger of contamination of the joint from without; the air from the pump passes through a sterilized cotton filter. The essential parts of the apparatus may be readily seen in the illustrations.

The whole apparatus will fit into an ordinary autoclave, and may be sterilized with the chambers containing the fluids to be used; Chamber *I* contains gentian violet; Chamber *E*, salt solution; and Chamber *D*, 2 per cent. procain (novocain). These fluids are introduced by the removal of Cap *K* and the turning of Stopcock *L* into the proper position. The irrigation and treatment of the knee are done under local anesthesia; it is a simple procedure and practically painless. The skin is anesthetized, either at the inner or outer surface of the joint, and the trocar inserted into the joint. It is quite essential that a trocar as large as the one illustrated be used (Fig. 7), for large quantities of fluid must have thorough access to the joint,

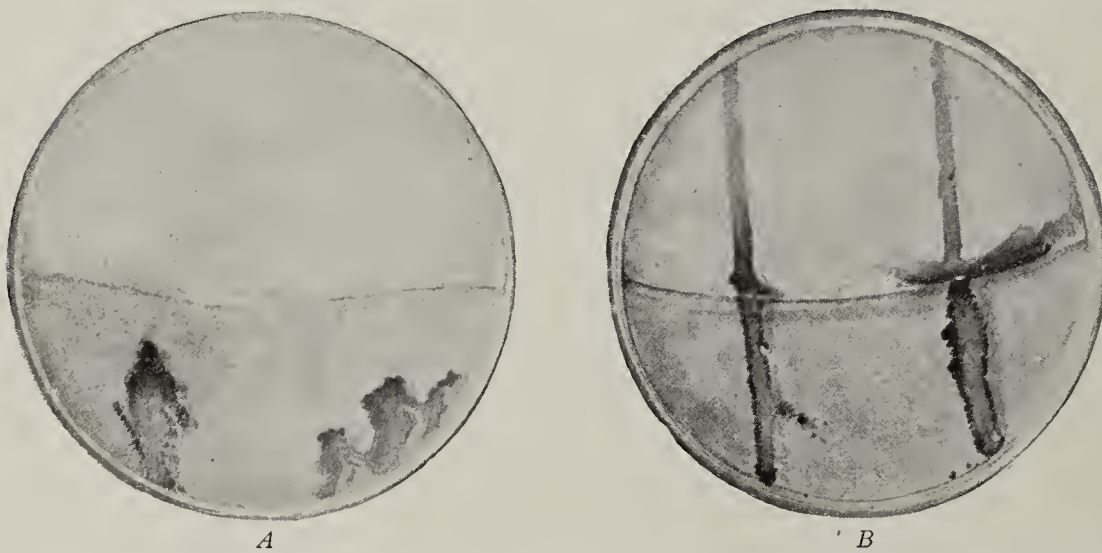


Fig. 2.—Effect of gentian violet in the mediums on which organisms are grown: Gram-positive organisms will not grow in the presence of the dye; gram-negative organisms grow as well in gentian violet as in plain agar. The lower half of the Petri dish in these two illustrations contains plain agar; the upper half, agar to which gentian violet (1:100,000) has been added. *A*, an emulsion of *Sarcina rosea* (gram-positive) has been streaked across the plate. The organism grows well in the plain agar, but does not grow at all in the gentian violet agar, growth ceasing some distance before the dividing line is reached. *B*, an emulsion of *B. prodigiosus* (gram-negative) has been streaked across the plate. Growth of the organism occurs in the plain agar and on the gentian violet agar with equal profusion.

property of a dye capable of staining living cells without doing them any apparent damage, to the treatment of suppurative infections of the joint; for it seemed to me that joint infections of this kind presented the best point of attack in making practical application of the bactericidal observations which I have published. The studies have thus far been confined to the knee joint, first because this is the joint most easily aspirated and irrigated, and second, because, though a sharp lookout has been kept for suitable cases, the fairly active service of the New Haven Hospital has provided me no suitable infections in other joints. I have, indeed, been surprised to find that suppurative infections of the knee are much less common than I had supposed.

APPARATUS AND METHOD

The apparatus (Figs. 4, 5 and 6) consists essentially of a series of interconnecting chambers leading ultimately to a single tube, *F*, which is attached to an aspirating needle for insertion into the joint. The apparatus is connected also with another single tube, *G*,

and one must also be able to suck out of the joint bits of mucus and fibrin that may be there. In my first cases I was rather fearful that the use of such a large trocar might lead to the formation of a permanent sinus; but there seems to be no danger whatever of this, as the puncture hole closes almost immediately.

After the needle is inserted, Stopcock *A* is turned into proper position, suction applied, and the contents of the knee joint run into Chamber *B*. By the turning of Stopcock *A* and application of pressure through the pump, this fluid is then forced through Tube *C* into a flask, to be preserved for study. Stopcock *A* is then put in the proper position, pressure applied by the pump, and the procain is driven from Chamber *D* through Tube *F*, into the knee, in sufficient quantity to distend it. This is left in the knee for a few moments and again withdrawn (by the turning of



Fig. 3.—Selective action of gentian violet on a mixture of gram-positive and gram-negative organisms: *A* divided plate, the upper half containing gentian violet agar and the lower half plain agar. The left half of the plate has been streaked with a mixture of *Bacillus subtilis* and *Micrococcus aureus*, both gram-positive; the luxuriant growth in the plain agar ceases some distance from the dividing line, and there is no growth whatever in the gentian violet agar. The right half of the plate has been streaked with the same mixture plus *B. typhosus* (gram-negative). At the point where the growth of *B. subtilis* and *M. aureus* ceases, a pure culture of *B. typhosus* is seen crossing the line and growing well in the gentian violet agar.

Stopcock *A*) into Chamber *B*. Salt solution is now allowed to run from the containing Chamber *E* into Chamber *D* by turning Stopcock *J*; and then, by turning Stopcock *A* into the proper position and applying pressure on the pump, the salt solution is forced into the joint to complete distention. It is then sucked out into Chamber *B*. This is repeated until the salt solution returns clear. Chamber *D* is then filled with hydrogen peroxid by turning Stopcock *A* and applying suction, which draws the fluid from a stock bottle through Tube *H* into Chamber *D*. This peroxid is then forced into the joint just as the salt had been, and is again withdrawn. The joint is then washed out again with salt solution. After this process has been repeated, the fluid will return perfectly clear, and one may feel sure that the knee joint is now clean of pus, mucus and fibrin. Gentian violet, 1:1,000, is now allowed to pass into Chamber *D* from retaining Chamber *I* by turning Stopcock *J*; and is then forced into the joint, as the saline and hydrogen peroxid have been, to the point of distention. This dye is left in the joint for five minutes, at the end of which time one can feel reasonably certain that the synovial membrane has been thoroughly stained. It may then be withdrawn and a small amount of weaker dye, 1:10,000, introduced.

If the results within the knee are at all parallel to the results obtained in the bacteriologic laboratory, one is justified in assuming that after the mucus, fibrin and pus have been got rid of by mechanical cleansing, the stronger solution of gentian violet kills organisms lying loose within the joint, on the surface of the synovia, or in its depths; and that if certain organisms do escape this dye, their development must be retarded by the presence of a weaker solution of the dye in the medium in which they are growing. This is the reason why strong dye is first used to stain the synovia, and a smaller amount of weaker dye left in the joint. After the dye has been introduced in this manner, the needle is withdrawn, a small piece of dry gauze placed over the puncture hole, and a pressure bandage of flannel applied. If there are indications that another irrigation and staining are necessary, the process can be repeated very readily at the end of a few days.

RESULTS OF TREATMENT

By the method just described, a series of infections of the joints, all of them infections of the knee, have been treated in the New Haven Hospital. The number of cases in this series is not large, but certain of them offered such excellent opportunity for the study of the effect of the method of lavage and staining that they may be regarded as crucial experiments. The first point that struck me in these cases was the ease with which a joint could be not only washed out but also distended with no pain, or at most, a very slight amount. This

was contrary to my expectations, as the pain of joint effusions is usually thought of as associated with distention and based on it; but there is no question at all that a joint can be distended to its utmost capacity with very slight pain, and if a simple local anesthetic is used there is no pain. The studies have also proved, what my experimental work had led me to expect, that gentian violet can be used in strong solutions applied to the surface of synovial membranes without the slightest damage. I had not been prepared to find that there would be no symptoms of irritation whatever, but this is in fact the case.

The series of cases treated contains eight infections of the knee, two of them pyogenic, five gonorrheal, and one of unknown character, probably tuberculous. It is Cases 7 and 8 to which I wish to call special attention, for the first six were done during the time when the apparatus for irrigation was being developed, and the cases themselves were not as carefully studied as later cases. In spite of this fact there were complete

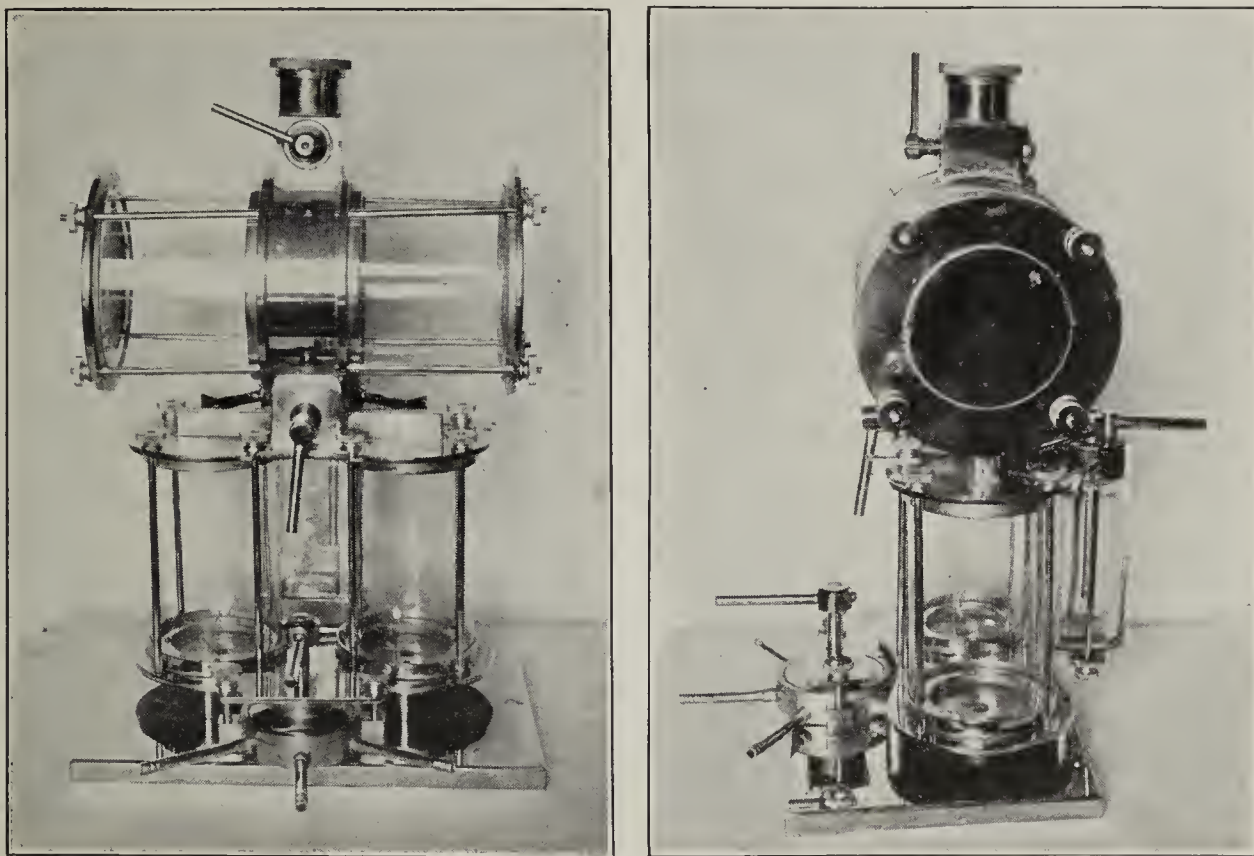


Fig. 4.—Front and side views of apparatus for irrigation and lavage.

cures in Case 1, in which there was a purulent effusion of the knee which was entirely cured by one or two irrigations. The same is also true of Cases 2, 3 and 4. Particularly instructive was Case 2. This patient suffered from a double gonorrheal arthritis of the knee, with the usual golden effusion, and he was completely relieved of all signs and symptoms. In Cases 7 and 8, however, the effect of the treatment was controlled not only by clinical observations but also by roentgen-ray and bacteriologic studies.

CASE 7.—A boy entered the hospital with an acute pyogenic infection of the left knee, following a slight wound of the lower leg. It was impossible to do the operation under local anesthesia, as the boy was difficult to control and became unmanageable on entering the operating room. Primary ether anesthesia was therefore given. The fluid withdrawn from the joint was thickly purulent. It contained staphylococci on smears, and a pure culture of *Staphylococcus aureus* was grown from it. The joint was irrigated with salt solution and then stained with 1:1,000 gentian violet in the manner described. A small amount of 1:10,000 gentian violet was left in the joint. Five or six days later the opera-

tion was repeated. At this time the fluid withdrawn from the knee was normally limpid synovial fluid, very slightly stained with gentian violet, and the cultures made from this fluid were negative. The washings and stainings were repeated. The clinical symptoms promptly disappeared, and the boy had a normal knee when he was discharged, except that the tissues about the knee were still slightly swollen. The motions were normal; both flexion and extension could be actively carried on to completion.

negative diplococcus was found in the smear. These organisms could not be grown in culture. The knee was washed out with salt solution, after which it was stained with 1:1,000 gentian violet. The clinical symptoms promptly subsided, and the boy regained complete use of his knee in a short time.

In both of these cases the roentgen-ray studies showed no definite bone changes, though there was possibly some periosteal thickening in Case 7.

COMMENT

One is justified, I think, then, in concluding that apyogenic or gonorrheal infection of the synovial membrane of the knee may be cured simply and promptly by lavage of the joint and staining with gentian violet. It is probable, of course, that the success of this treatment would be less likely the longer the process had continued, and it should hardly be necessary to say that no hope should be entertained that, if bone lesions are present, these can be influenced by the treatment. The question, of course, at once arises whether the gentian violet used played any part in the results obtained, or whether the cure of the condition was simply due to thorough cleansing of the joint. I do not think any data exist at the present time to make a positive answer to this question possible. It seems to me rather likely, however, that the gentian violet does play a part, for I have shown experimentally that gentian violet kills with great ease gram-positive organisms, and that it prevents the growth of gram-positive organisms when present in weak dilutions. It also prevents the growth of gram-negative organisms when used in strong dilutions. I have also shown experimentally that this stain, if applied to the surface of a mucous membrane, reaches its depths. It seems to me reasonable to suppose that in these cases of purulent synovitis the organisms lying on the surface or in the depths of the synovial membrane are killed by the stain used, pro-

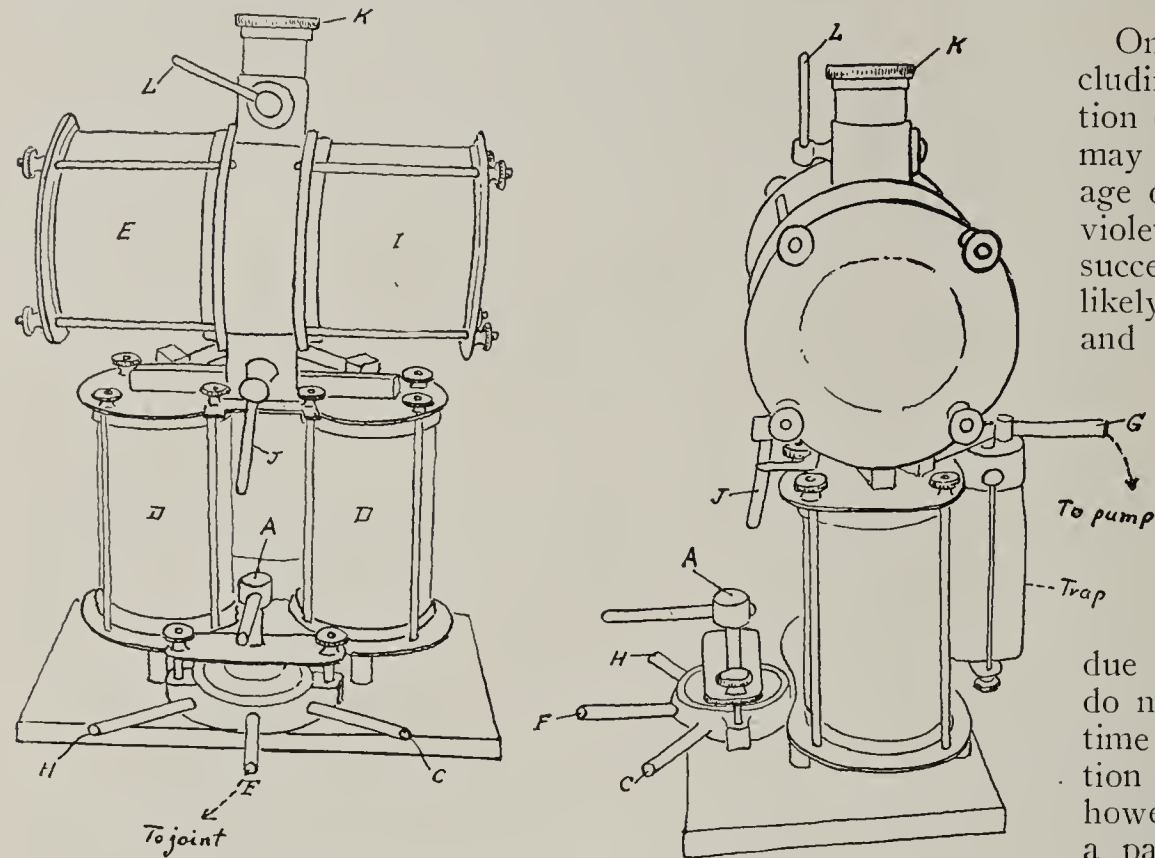


Fig. 5.—Outline of views illustrated in Figure 4.

CASE 8.—The condition was one of gonorrheal arthritis of the left knee. The clinical picture was quite typical, but the symptoms were less acute, as regards extreme tenderness,

APPLICATION OF THE TREATMENT IN EIGHT CASES

Case and Joint	Diagnosis	Roentgen Ray Findings	Character of Effusion	Smear		Culture		Function	
				Before	After	Before	After	Before	After
1. Knee	.....	.....	Purulent	.....	.....	.....	..	Restricted	Good
2. Knee	.....	.....	Gonorrheal	.....	.....	.....	..	Restricted	Good
3. Knee (double)	.....	.....	Gonorrheal	.....	.....	.....	..	Restricted	Good
4. Knee	.....	.....	Gonorrheal	.....	.....	.....	..	Restricted	Good
5. Knee	.....	.....	Gonorrheal (old)	.....	.....	.....	..	Restricted	No improvement
6. Knee	.....	.....	Tuberculous (?)	.....	.....	.....	..	Restricted	Slight improvement
7. Left knee	Septic	Negative (slight irregularity joint surface)	Purulent	Staphylococci	Limpid synovial	Pure staphylococcus aureus	Neg.	Marked limitation	Normal
8. Left knee	Gonorrheal	Negative	Golden yellow serum with fibrin clots	Gram-Neg. diplococci	Only 1 treatment	Sterile	..	Marked limitation	Normal

than is usually the case. The operation was done under local anesthesia. At aspiration the usual golden yellow fluid, containing fibrin clots, was withdrawn. A gram-

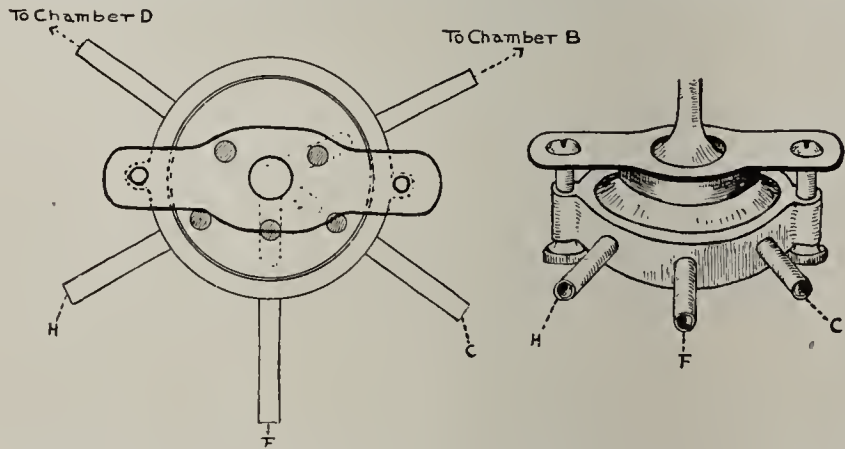


Fig. 6.—Detail of valve leading to tubes H, F and C, and controlled by Stopcock A.

vided the surface of the membrane has first been subjected to a thorough mechanical cleansing.

It is evident that these findings open up possibilities for the treatment of other confined infections. For example, I am now working on the treatment of abscesses near the surface, which I hope to aspirate, irrigate, and stain in the same way, and it is my intention also to see if this sort of treatment cannot be applied to other cavities, particularly to the pleural cavity, and to the pelvis of the kidney.

The apparent success of the use of gentian violet in this manner has also led me to attempt to use it in a somewhat different fashion, namely, by actual injection into the tissues themselves. Here, of course, I have had to proceed with the greatest possible care, first testing out on animals and on certain individuals who offered themselves for this purpose the irritating effect of the dye when thus injected. There is no doubt that it is slightly irritating when injected directly into the tissues. The pain of this irritation can be completely overcome by dissolving the dye in 2 per cent. procain solution instead of in salt solution; but even when this is done, if the dye is used in solutions as strong as 1:1,000, there is some danger that it will lead to necrosis.

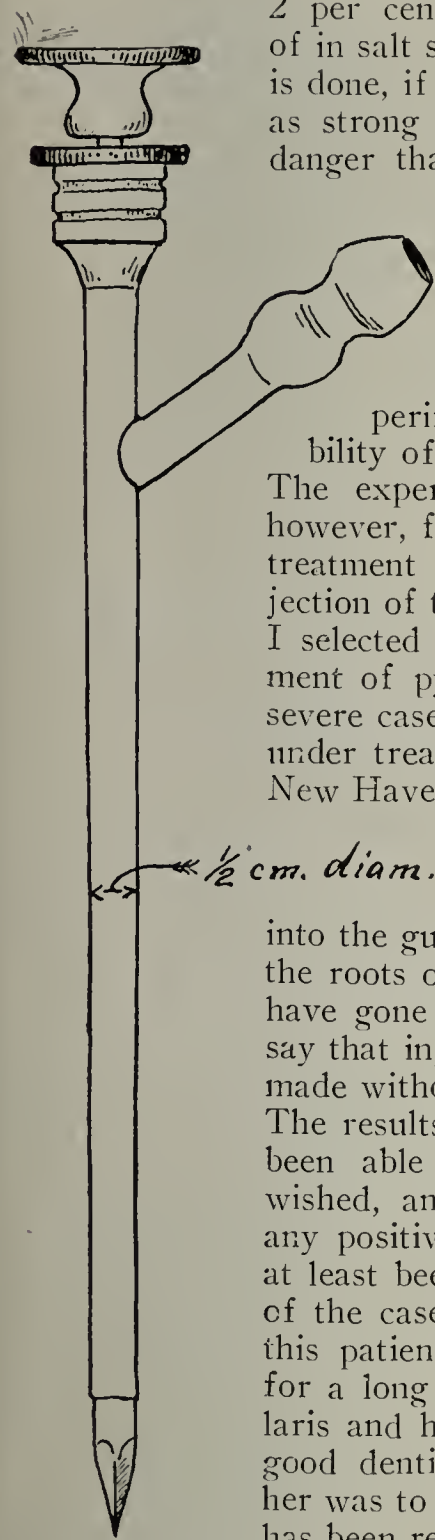


Fig. 7.—Needle used in lavage of the joint, illustrated to emphasize the need for using a needle of large caliber.

I am also studying the effect of staining, with gentian violet, skin infected with parasitic diseases, with the hope that the application of this stain to the surface and its injection under the surface may render the tissue so hostile to parasitic growth as to conquer the infection.

Slackers.—The milkman who takes the temperature of milk with his finger; the grocer who moistens his fingers to lift the tissue paper he puts over butter.—*Pub. Health, Mich.*

I am not sure whether this necrosis is entirely due to the dye itself or to the distention, for I do not think sufficient care was used in these experiments to rule out the possibility of necrosis due to distention.

The experiments went far enough, however, for us to begin the study of treatment of infections by direct injection of the dye into the tissues, and I selected for this purpose the treatment of pyorrhea alveolaris. A few severe cases of this disease have been under treatment by Dr. Gompertz of New Haven, who, under my direction,

has been injecting weak solutions of gentian violet in procain directly into the gum about the pus pockets at the roots of the teeth. These studies have gone far enough to allow us to say that injections of this sort may be made without pain and with impunity. The results in these cases I have not been able to control as well as I wished, and it is too early to draw any positive conclusions. They have at least been encouraging, and in one of the cases were quite striking; for this patient, who had been suffering for a long time with pyorrhea alveolaris and had been advised by a very good dentist that the only hope for her was to have all her teeth removed, has been relieved of practically all her symptoms and still has her teeth. I think, however, that we are not justified in saying more than that this method of treating infections is promising.

THE TREATMENT OF CANCER OF THE LIP BY RADIUM

A REPORT OF TWENTY-FOUR CASES

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Epithelioma of the lip offers favorable conditions for successful treatment, whether by operation or by radium, more frequently than the majority of other forms of epidermoid carcinoma. This circumstance depends, not on less malignant tendencies, but rather on the exposed position of cancer of the lip. A malignant new growth of the lip excites the concern of a patient in a far earlier stage than the same kind of growth inside the mouth. For this reason, patients having cancer of the lip with great regularity seek assistance when their growth is still small and superficial. In these stages cancer of the lip offers particularly favorable conditions for successful treatment by radium. The growth is most accessible and can be completely covered by radium. If it is justifiable to treat any form of early cancer by radium instead of by operation, it is cancer of the lip.

In the report¹ on radium therapy in cancer at the Memorial Hospital for 1915-1916, the results in the treatment of six patients with early cancer of the lip were published. In four of these patients the disease was superficial, but two had considerable submucous infiltration of the substance of the lip. One of these patients (one of the four with the more superficial cancer) has not been traced to date. When last seen his lesion had entirely disappeared, and the lip appeared normal.

The remaining five have been traced to Jan. 1, 1918. In one of them a recurrence has developed. This patient (N. N., Hospital No. 22251) was one of the two with considerable submucous infiltration of the lip. He received his single radium treatment, July 7, 1915. The recurrence developed two years later in the cervical lymphatics, and only his infirmity (he is now 77 years old), rendering him unable for the past few months to leave his home, has been responsible for the failure to remove these glands. He still has no local recurrence, and had it been possible to dissect out the glands in the neck at an early period, it is possible that he would still be free from disease.

The remaining four patients are still free from disease. These patients were first treated as follows:



Fig. 1 (Case 2).—Before treatment, Feb. 21, 1917.



Fig. 2 (Case 2).—After treatment, Feb. 18, 1918.

1. Janeway, H. H.: Radium Therapy in Cancer at the Memorial Hospital, New York (First Report: 1915-1916), New York, Paul B. Hoeber, 1917; The Action of Radium on Cancer, Surg., Gynec. and Obst., 1918, 26, 233.

G. MacK., Nov. 15, 1915; R. O'C., Jan. 27, 1916; F. L. (Hospital No. 22980), March 14, 1916, and C. C. (Hospital No. 23827), Oct. 20, 1916. The full description of lesions and the histories of these patients, with the dosage they received, will be found in the report referred to.

During the past year we have treated eighteen additional cases of epithelioma of the lip with radium. The immediate result has been as favorable as in the first series of cases reported. As we are attempting

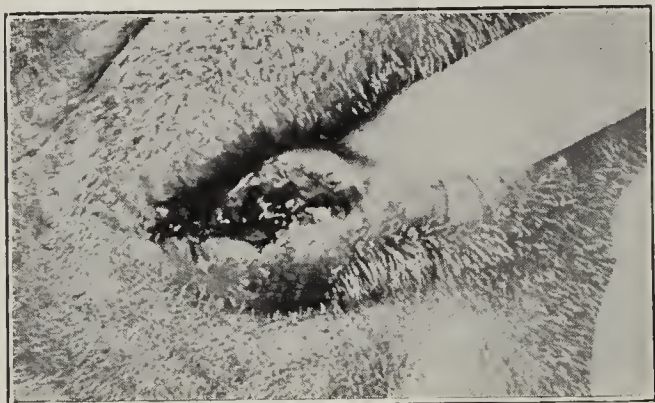


Fig. 3 (Case 5).—Before treatment, May 31, 1917.

to do in the six cases of the previous report, we hope to publish the end-result of all cases later. A microscopic confirmation of the diagnosis was obtained in only a few of the patients in whom it could be made without serious inconvenience to them. The macroscopic appearance of all these lesions was typical, and the diagnosis in each case was confirmed by several observers at the weekly consultation of the attending staff of the hospital. We considered it unjust to subject these patients to the trauma of a removal of a piece of tissue for section purposes merely to meet the criticism of the incredulous.

The microscopic determination of the degree of invasion of the substance of the lip, as Bloodgood has shown, is not of much importance from the standpoint of the ultimate course of the lesion, as all the cases of

All but one were carcinomas of the lower lip. The single case of cancer of the upper lip was in a man.

The average age was 54. The youngest (Patient 11) was 38. The oldest was the woman (Patient 15), aged 84, the next oldest (Patient 1) being 78 years of age. The most frequent etiologic factor seemed to be tobacco, all patients except the woman admitting the use of tobacco in generous amounts.

In only one patient was syphilis admitted. In two patients (22251 and 24492 [Patient 6]), direct trauma

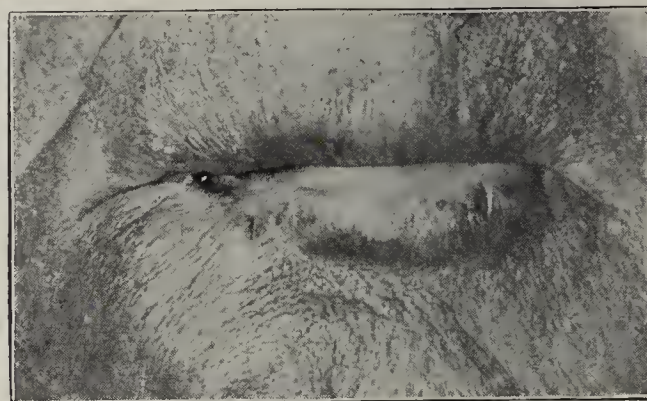


Fig. 4 (Case 5).—After treatment, Sept. 20, 1917; no induration remaining.

seemed to be a factor. In one of these the trauma was caused by the chronic irritation produced by the ragged edge of a decayed tooth. In the other patient

DURATION OF LESION BEFORE TREATMENT

Number of patients	Duration Before Our Treatment
3 (1 early cancerous)	From 1 to 3 months
5 (1 early cancerous)	From 3 to 5 months
2	From 6 to 12 months
7 (1 early cancerous)	From 1 to 2 years
3 (all early cancerous)	From 2 to 3 years
2 (both early cancerous)	4 years
1	8 years
1	12 years
<hr/> 24 (8 early cancerous)	

the injury to the lip was produced by an oyster shell during eating.

The duration of the lesion before the patients came to us for treatment is of much interest. This period



Fig. 5 (Case 6).—Before treatment, June 15, 1917.

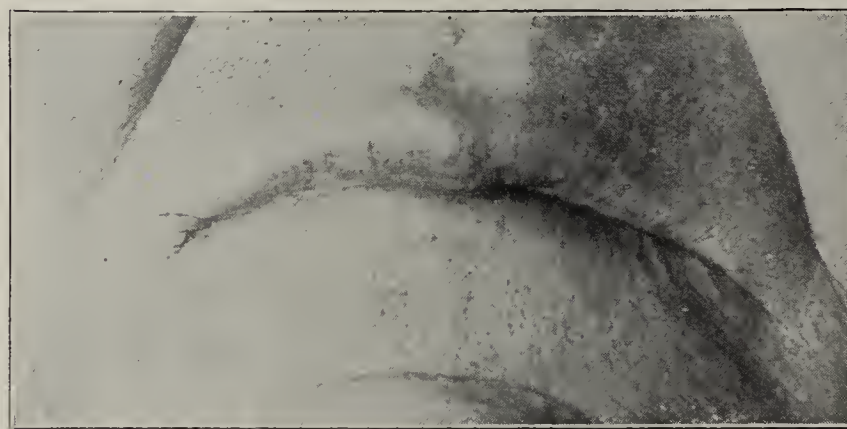


Fig. 6 (Case 6).—After treatment, Feb. 11, 1918.

well established cancer have passed through an early stage indistinguishable from the superficial lesions.

Of the twenty-four cases in this report, eight were judged to be superficial early cancerous lesions, without deep invasion of the muscle. Sixteen were well established cancer, with unquestioned deep invasion of the tissues of the lip. As might be expected, there were no therapeutic failures among the eight superficial lesions.

Of the whole series of twenty-four cases, twenty-three patients were men, only one being a woman.

averaged thirty months, the shortest time being one month, and the longest twelve years. The cases may be classified, with regard to duration, as in the accompanying tabulation.

The duration of the disease before treatment, apart from the character of the growth, has little bearing on the prognosis. Two of the eight early cancerous lesions were stated to have begun to develop four years before treatment, and some of the most malignant had a short period of growth before treatment. The rapidity of growth and size of the lesion are the

all important factors determining the malignancy and affecting the prognosis. A long pretreatment history does not necessarily indicate a benign lesion. The critical factor is the rate at which the lesion is growing at the time of treatment. Many lesions that are stated to have begun months or years before suddenly start to grow rapidly a short time before the patients come for treatment. In fact, it is usually the increased activity of the lesion that alarms the patient. Such increased activity on the part of the growth probably



Fig. 7 (Case 12).—Before treatment, Oct. 2, 1917.

marks the transition between the localized cancerous stage and the true infiltrating cancer.

It is of much importance to recognize what constitutes a beginning or early cancerous lesion of the lip, and that such lesions uncured have all the potential life-destroying power of established cancer. This stage is the most favorable time in which to treat cancer. No more important progress in the therapeutics of cancer could be made than so improving both diagnostic methods and the education of the public that a larger and larger proportion of patients can be treated in the early stage. It is a stage easily



Fig. 9 (Case 13).—Before treatment, Oct. 11, 1917.

recognized on the skin and lip, less easily inside the mouth, where the surfaces are moist and more hidden, and almost impossible of detection in many other locations. It nevertheless should be the aim of medical science to accomplish the treatment of cancer in this early stage.

It is the stage above all others in which radium can be counted on to be successful, a remedy toward which patients will not hesitate to turn, as they so often avoid the knife.

When it has once been definitely established, it is only under the rarest circumstances that the removal of some chronic source of irritation will cure a beginning cancerous lesion. Such removal of chronic sources of irritation may be successful in the incipience of the growth, and in any case should always be insisted on as an important contributory factor to whatever therapeutic measure is employed.

In the stage of which we are speaking, as is also often the case in well established or even advanced

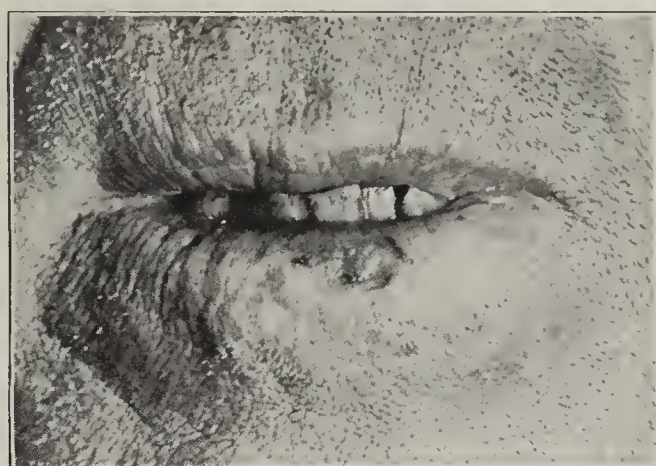


Fig. 8 (Case 12).—After treatment, Feb. 18, 1918; ulceration practically healed; all induration absent.

cancer, a single treatment in experienced hands will produce a cure. In fact, in our cases the best results have followed single treatments.

With the exception of three cases (4, 13 and 14) now under treatment, in all of which the patients are at present doing well, although the ultimate prognosis is doubtful because all three patients had advanced lesions when they applied for treatment, and Case 1, in which the patient had developed multiple glandular metastases at the time treatment was begun, and another patient with a very extensive local disease involving the whole of one cheek (Patient 10), all

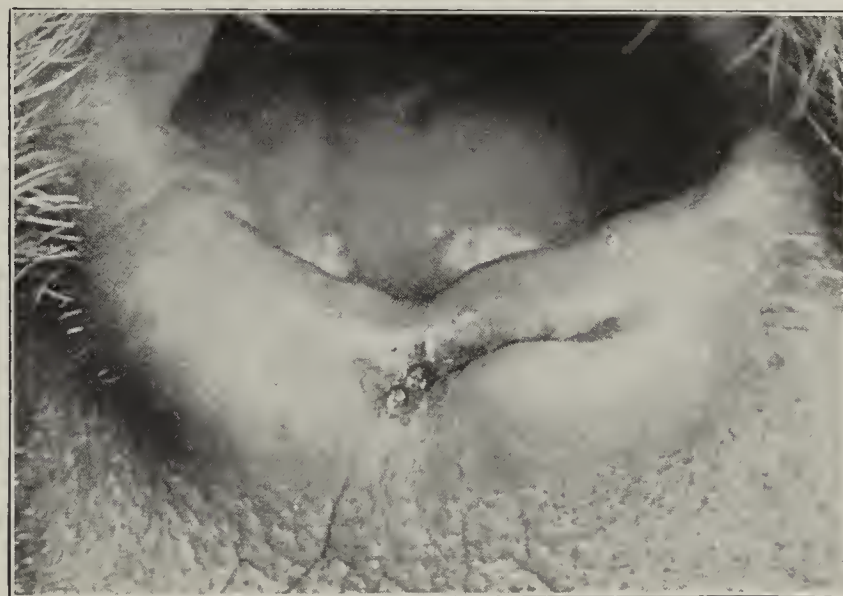


Fig. 10 (Case 13).—After treatment, Feb. 18, 1918.

patients have been healed, and are now free from evidences of their disease.

Although the real value of these results will not be settled until a number of years hence, yet if radium is found to be a reliable therapeutic agent in cancer of the lip, it possesses obvious advantages over excision in the treatment of early and therefore superficial cancer. One of the most important of these is the fact that it attacks the disease from the surface, and therefore in the direction of its shortest diameter. It saves

the patient the unnecessary sacrifice of large amounts of healthy tissue, at the same time not incurring the danger that comes from an excision by a division of the tissues too near to the margin of the disease.

A number of our cases (as 8 and 2) well illustrate the tendency for early cancer of the mucous membranes to spread for some distance on the surface, often far beyond the usual place of excision. Such extensions, although still remaining quite superficial, may have healthy bridges of mucosa between them and the primary starting place of the disease.

We regard the lymphatic extension as embolic, and believe that the cervical lymph nodes perform for a time a conservative function. Obviously enlarged nodes should be removed by clean dissections, after the primary disease has been treated, but if possible not before definite retrogression has been obtained by radium treatment. The early dissection of the triangles of the neck, involving as it often does the sacrifice of normal lymphatic glands, may actually be harmful by removing Nature's barriers and cutting across lymphatic trunks which, if left unsealed, may now drain fresh cancerous emboli into the closed wounds of the neck. In our experience many an unnecessary operation has been saved by delaying the operation on the regional lymphatics until there were definite indications for performing it. No harm has resulted from this delay when patients have been able to obey instructions. Possibly there is less danger of lymphatic extension when the primary disease is treated by radium than when it is excised.

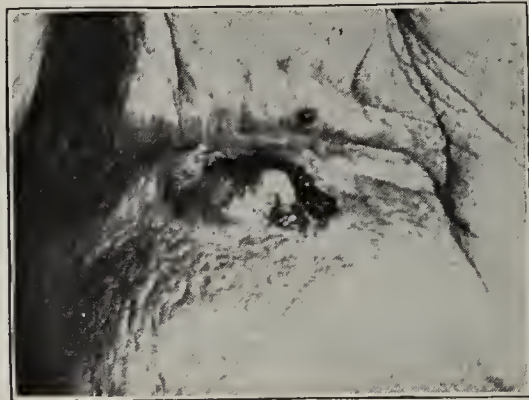


Fig. 11 (Case 15).—Before treatment, Dec. 3, 1917.



Fig. 12 (Case 18).—Before treatment, Dec. 18, 1917.

When neck dissections are performed, we believe that it is an additional safeguard to place radium in the wound against the amputated stump of lymphatic channels descending from the primary lesions.

REPORT OF CASES

The following is a brief summary of the case reports of the second series of cases of epithelioma of the lip treated during the past year at the Memorial Hospital:

CASE 1 (Hospital No. 24106).—P. T., man, aged 78, married, with children, admitted, Jan. 23, 1917, had had the ver-

million border of the right half of the lower lip in part destroyed by an ulcer 2.5 cm. in diameter. The base and edges were hard, and the latter rolled out. There was considerable deep infiltration of the substance of the lip. The lymph glands in both submaxillary and submental spaces were enlarged. Those in the right submaxillary space formed a tumor 5 cm. in diameter at its base. The pathologic diagnosis was epidermoid carcinoma.

The lesion on the lip had first been noticed three years before. Four months before it had first been treated and temporarily improved by an electric needle and four roentgen-ray treatments. The patient had been a heavy smoker. He denied syphilis, and did not indulge in alcohol.

Jan. 23, 1917, 300 millicuries, in twelve tubes of rubber-covered 1 mm. platinum, were applied for one hour.

March 7, not much improvement was noted.

March 12, 240 mc., in twelve tubes of rubber-covered 1 mm. platinum, were applied for two hours on the lip; 1,200 mc., in 2 mm. lead, were placed over the tumor in the neck for six and a half hours.

April 24, there was no change in the tumor of the neck; but the ulcer on the lip was much improved, although there was still much induration left.

May 13, under local anesthesia, the ulcer on the lip was excised with the actual cautery, and the lymph nodes in the submaxillary and submental spaces were removed. It was also necessary to remove a portion of the lower jaw that had been invaded by the glandular tumor of the neck. Eight tubes of rubber-covered 1.5 mm. of platinum, containing 45 mc. each, were inserted into the wound of the neck, and left in place for two hours.

July 11, the patient returned with an extensive recurrence in the deep cervical glands of the right side of the neck. An attempt to remove them completely was unsuccessful, as

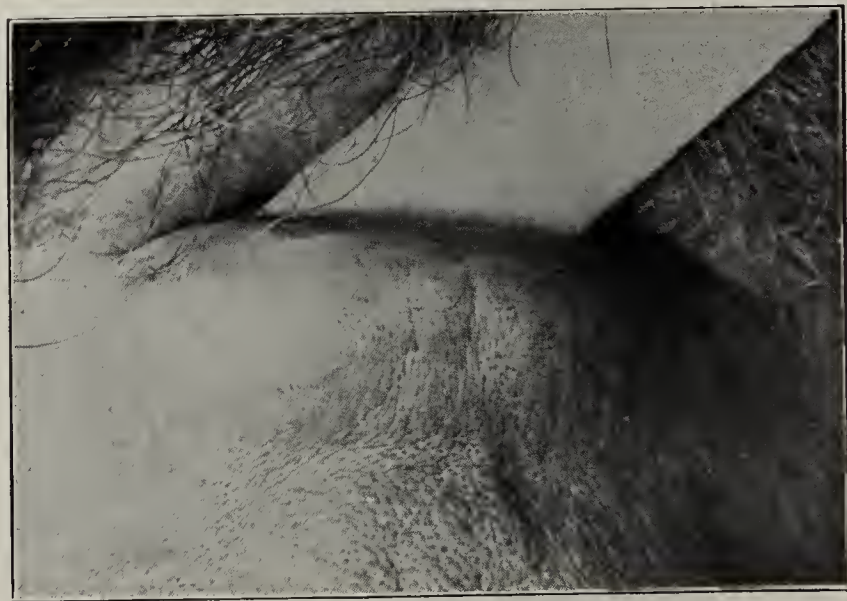


Fig. 13 (Case 18).—After treatment, Feb. 1, 1918.

the capsule of the glands had been penetrated by the disease. November 14, the ulceration had reappeared over the place where the jaw bone was resected, and a hopelessly extensive recurrence had developed in the tissues under the incision through which the glands on the right side of the neck were incompletely removed.

Jan. 16, 1918, the patient died.

CASE 2 (Hospital No. 24159).—T. K., man, aged 48, married, with two children, a motorman, admitted, Feb. 12, 1917, had an ulcer 2.5 cm. in diameter, on the right half of the vermilion border of the lower lip. In its center, the ulcer was crossed by a vertical scar. The ulcer was superficial, but the substance of the lip beneath its base was indurated to a considerable depth along the scar. There were no palpable

lymph nodes. There was a bilateral lupus erythematosus on the face and nose.

The lesion had first been noticed six months before as a pea-sized blister just to the right of the middle line. One week before a wedge-shaped piece had been removed at a dispensary for microscopic examination, and was found to be epithelioma. The patient smoked about one paper of tobacco a week in a clay pipe. He denied syphilis and indulgence in alcohol. His teeth in the neighborhood of the lip showed no jagged, decayed edges, though they had not been kept clean.

Feb. 12, 1917, 280 mc., in eight rubber-covered 1 mm. platinum tubes, were applied for one hour.

May 2, there was no evidence of disease present.

September 27, a new ulcer, with characteristically indurated base and edges, 0.75 cm. in diameter, covered with a coblike scab, had developed on the opposite (left) side of the vermilion surface of the lip. Still no enlarged lymphatics were palpable in the neck.

September 28, 63 mc., in three 0.5 mm. silver tubes, were applied over an area of 3 sq.cm., in dental compound, three hours.

October 9, the lesion treated had disappeared.

Jan. 11, 1918, there was no evidence of disease.

CASE 3 (Hospital No. 24404).—V. V., man, aged 50, married, with no children, admitted, May 14, 1917, had a superficial ulcer, 1.5 cm. in diameter, on the middle of the vermilion surface and adjacent portion of the skin surface of the upper lip. No enlarged cervical lymphatics were palpable.

The lesion had first been noticed two and one half years before, and had slowly grown to its present size. The patient had been a heavy smoker. He had had no previous treatment.

May 14, 1917, 70 mc., in one 2 mm. lead plaque, 2 cm. square, were applied for four hours.

June 29, retrogression was almost complete.

July 23, 65 mc., in five 0.5 mm. silver tubes, set in dental compound, were applied for one and one-half hours.

October 5, there was no evidence of disease.

Feb. 15, 1918, there was no evidence of disease.

CASE 4 (Hospital No. 24422).—P. R., man, aged 44, laborer, married, with children, admitted, May 21, 1917, had an ulcer 2 cm. long and 1.25 cm. wide, in the middle of the vermilion surface of the lower lip. There was slight submucous infiltration. The base and edges were characteristically indurated. The pathologic diagnosis was epidermoid carcinoma.

The lesion had first been noticed as a small nodule, two months before. The patient had been a moderate smoker, and drank only beer in moderation. The teeth had no sharp, decayed edges, although they showed the usual signs of neglect in the laboring class. Syphilis was denied, and the Wassermann reaction was negative.

Treatment:

May 21, 1917, 315 mc., in seven rubber-covered 1 mm. platinum tubes, were applied for one hour. The patient failed to return as requested for a completion of this treatment, which was incomplete, and when next seen, July 20, the old lesion had advanced, forming an ulcer 3.5 cm. long by 1.75 cm. wide, with an infiltration of the substance of the lip to a depth of 0.5 cm. The ulcer had now caused a definite defect in the lip, and a hard lymph node, 2 cm. in diameter, was palpable in the left submaxillary space.

July 24, 156 mc., in twelve 0.5 mm. silver tubes, were applied over an area of 12 sq.cm., in dental compound, for three hours.

August 4, the enlarged node in the left submaxillary space was removed, and found on microscopic examination to contain epithelioma.

September 24, the left half of the lesion had completely retrogressed; at the right extremity an indurated nodule, 1.5 cm. in diameter, was still present; 525 mc., in seven 0.5 mm. silver tubes, were applied over an area of 6 sq.cm., to the right extremity of the lesion.

October 12, a considerable retrogression had occurred in the area treated. Two enlarged lymph nodes had appeared in the submental space.

November 5, 360 mc., in six 1 mm. platinum tubes, embedded over an area 6 sq.cm., to a depth of 5 mm., in a mold of dental compound, were applied for five hours.

November 19, under local anesthesia, the submental glands were removed. Microscopic examination revealed that they were invaded by carcinoma.

Jan. 30, 1918, new enlarged lymphatics were discovered in the right submaxillary region, and the left parotid and deep cervical regions. Complete dissection of both sides of neck, with removal of all glands was performed. Retrogression in the lip was practically complete.

CASE 5 (Hospital No. 24456).—J. F., man, aged 65, married, with seven children, admitted, May 31, 1917, had an ulcer, 2.5 cm. in diameter, with hard, thick base and edges, on the right extremity of the vermilion surface of the lower lip, and involving the angle of the mouth and a small portion of the adjacent portion of the upper lip. No enlarged lymphatic glands were palpable in the neck.

Two years before the present lesion had first been noticed as a thickening of the right extremity of the lower lip. It later ulcerated and increased in size. Nine months before it was excised at Bellevue Hospital. It recurred in two months' time. The patient had smoked a corn-cob pipe all his life, used alcohol in moderation, and denied syphilis and any direct trauma to the lip. The teeth did not appear to have been a causative factor.

June 5, 1917, 336 mc., in fourteen 1 mm. platinum tubes, embedded in a mold of dental composition, were applied for five hours.

September 20, there was no evidence of disease present.

Jan. 17, 1918, there was no evidence of disease.

CASE 6 (Hospital No. 24492).—S. E., man, aged 58, married, with three children, a chauffeur, admitted, June 13, 1917, had an ulcer, 2 cm. in diameter, on the mucocutaneous juncture of the right side of the lower lip. It was slightly elevated, with irregular, nodular, indurated base and edges. There were no enlarged cervical lymphatics in the neck.

Thirteen months before, the lip had been injured at the site of the lesion during the extraction of a tooth. The ulcer so caused never healed, but gradually developed into the present lesion. One month ago an unsuccessful attempt was made to cure the ulcer by an electric needle. The patient smoked a pipe and cigars, and used alcohol in moderation. Syphilis was not demonstrated.

June 13, 1917, 210 mc., in six 0.5 mm. silver tubes, embedded to a depth of 1 mm. in a mold of dental compound, was applied for four hours.

July 27, there was no evidence of disease.

Feb. 11, 1918, there was no evidence of disease.

CASE 7 (Hospital No. 24505).—C. S., man, aged 70, married, with children, a physician, admitted, June 15, 1917, had an ulcer with characteristically indurated base and edges, on the left half of the vermilion surface of the lower lip, near the middle line. The ulcer measured 1.5 cm. in diameter, and there was definite infiltration of the substance of the lip beneath the mucosa.

The patient had first noticed the lesion as a small sore on the lower lip two years before. It had resisted all treatment, which had consisted of various local medicinal applications and fulguration. The patient was an incessant smoker, did not use alcohol, and gave no history of direct trauma or injury from the teeth. He denied syphilis.

June 15, 1917, 106 mc., in seven 0.5 mm. silver tubes, embedded 1 mm. within a mold of dental composition, were applied for two hours.

October 5, absolutely no evidence of disease was present.

December 19, there was a small indurated patch, 2 mm. in diameter, on the right end of the site of the old lesion. The patient since last being seen had continued to smoke incessantly. On this day, 250 mc., in four 0.5 mm. silver tubes, embedded 1 mm. deep in a mold of dental composition, were applied over an area of 3 sq.cm. for three-quarter hour.

Feb. 15, 1918, the reaction from the last treatment had completely disappeared. There still remained a minute thickening at the site of the patch last treated.

CASE 8 (Hospital No. 24566).—H. T., man, aged 72, married, admitted, July 3, 1917, had an indurated ulcer, 0.5 cm. in diameter, on the middle of the vermilion surface of the lower lip. Between this ulcer and the left angle of the mouth was a second ulcer, 1 cm. in diameter. Its base was indurated, and surrounding it there was a definite, though small, submucous infiltration of the substance of the lip. At the left angle of the mouth there was a still larger ulcer with an indurated base and a surrounding submucous infiltration to a depth of 0.5 cm.

The lesion had first been noticed six months before. It had been treated by a course of caustic application, applied twice a week for a period. The patient had been in the habit of smoking six cigars a day, holding them on the left side of the mouth. He denied syphilis, was not addicted to alcohol, and his teeth were in fair condition.

July 3, 1917, 150 mc., in ten tubes of 0.5 mm. silver, over 4 sq.cm. of dental compound, were applied for two hours.

October 22, all ulceration was healed, and retrogression appeared to be practically complete.

December 28, no evidence of disease was present.

CASE 9 (Hospital No. 24567).—J. H., man, aged 55, married, admitted July 3, 1917, had an ulcerated neoplasm on the vermilion surface of the lower lip, midway between the angle of the mouth and the middle of the lip. The base and borders were indurated, and there was a submucous infiltration of about 0.5 cm. The whole lesion measured about 1.75 cm. in both directions. The lesion was diagnosed as epithelioma.

The lesion had first been noticed as a small ulcer, resembling a cold sore, sixteen months before. It was treated with caustic application several times, and carbon dioxid snow three times. It had progressively increased to the present size. Most of the patient's teeth had been removed, and those that remained were in poor condition. He denied syphilis, and had been a heavy smoker, usually using a pipe, which he had held in the left side of the mouth. Two years before, the urine was said to contain sugar, for which condition he received treatment for a short time.

July 3, 1917, 60 mc., in four 0.5 mm. silver tubes, were applied over an area of 3 sq.cm., embedded in dental composition, for two hours.

September 21, there was no evidence of disease.

December 28, there was no evidence of disease.

CASE 10 (Hospital No. 24620).—D. D., man, aged 44, admitted, July 20, 1917, had had the right third of both the upper and the lower lips and the right angle of the mouth destroyed by an ulcer, the base and edges of which were hard and covered with a smooth, sloughing surface, which was noticeably free from the nodular character usually present in epithelioma. No enlarged glands were palpable in the submaxillary space. The adjacent portion of the lower lip was much thickened, but soft. The whole lesion measured 6 cm. long and involved the cheek as far back as the second molar tooth. The pathologic report was epithelioma associated with much granulation tissue. A search for spirochetes revealed none.

A small sore developed in the right side of the lower lip nine months before. It had progressively increased to the present size. In 1908 the patient believed that he had contracted syphilis in Cuba. He was treated with mercury and iodids, and had received twelve injections of arsphenamin (salvarsan) during the last six months. Three years before, a gastro-enterostomy had been made for ulcer of the stomach, supposed to be syphilitic in origin. Since last March he had been treated at Raybrook, N. Y., for pulmonary tuberculosis. His father and mother both died from cancer. The Wassermann reaction was at present negative.

Aug. 14, 1917, 360 mc., in thirty 0.5 mm. silver tubes in dental compound, were applied over an area 50 sq.cm. for three hours.

September 21, no real improvement was noted. The inflammation in the lesion had increased.

October 8, under local anesthesia, all apparently involved tissue was removed by the cautery. This attempt was unsuccessful; a recurrence took place in the floor of the mouth

and in the submaxillary lymph nodes of the opposite side. The latter were dissected out under local anesthesia, November 14, and the procedure greatly relieved the pain.

December 18, the patient died.

Necropsy revealed cancer of the floor of the mouth on the edges of the cauterized region, which were hard and covered with necrotic tissue. The tissues in the left submaxillary space were necrotic and devoid of induration. There was advanced pulmonary phthisis of the right lung, and miliary tuberculosis of the upper lobe of the left lung. No cancer was noted elsewhere in the body.

CASE 11 (Hospital No. 24775).—O. H., man, aged 38, married, with two children, soldier, admitted, Sept. 19, 1917, had an ulcer 2.5 by 1.25 cm. in diameter, in the middle of the vermilion border of the lower lip. It was covered with a scab, beneath which was an elevated papillary and indurated base.

The lesion had first been noticed four months before, when it resembled a cold sore on the lower lip. It became covered with a scab, and gradually increased to the present size. It had been frozen once with carbon dioxid snow, which caused a temporary disappearance of the lesion. The patient denied syphilis, gave no history of direct trauma, and did not indulge to any extent in alcohol. His teeth were in good condition, and he smoked only in moderation.

Sept. 19, 1917, 203 mc. in seven 0.5 mm. silver tubes, were applied over an area of 7 sq.cm. in dental compound for two hours.

October 29, retrogression was complete.

November 27, the lesion was entirely healed, with the exception of a minute radium ulcer on the lingual surface of the lip.

CASE 12 (Hospital No. 24823).—J. McF., man, aged 49, married, admitted, Oct. 5, 1917. On the middle of the vermilion surface of the lower lip was a flattened ulcer, 1.5 by 1 cm., with an indurated base, which formed with the submucous infiltration and thickened edges a button-like mass, at least 1 cm. thick. A short distance to the right of this ulcer was another ulcer, 5 mm. in diameter; and about 0.5 cm. to the left was a third ulcer, 0.75 cm. in diameter. Both these lateral ulcers were devoid of deep infiltration.

One year before, an ulcer had appeared in the middle of the vermilion surface of the lower lip. Five months before, another ulcer appeared on the left; and three months before, a third appeared on the right of the first lesion. No previous treatment had been given. The patient had smoked moderately, and gave no history of trauma or injury from the teeth. Eight years before, he was supposed to have had active pulmonary tuberculosis; and thirty years before, he had a chancre, followed by treatment for only one month.

Oct. 6, 1917, 162 mc., in nine 0.5 mm. silver tubes, embedded over an area of 4.5 sq.cm., 5 mm. deep in dental compound, were applied for two hours.

Jan. 21, 1918, no evidence of disease was present.

CASE 13 (Hospital No. 24843).—G. S., man, aged 61, married, admitted, Oct. 12, 1917, had an ulcer, 2 cm. long, in the middle of the vermilion surface of the lower lip. Its edges and base were hard and nodular, and there was definite infiltration of the substance of the lip beneath the base and under the margins. A small pea-sized nodule of uncertain significance was palpable in each submaxillary space.

Two years before, a small ulcer had developed in the center of the lower lip. It remained fairly stationary till two months before, and since then had steadily increased in size. The patient had always smoked excessively. There had been no other trauma, and he denied syphilis.

Oct. 12, 1917, 420 mc., embedded over an area 10 sq.cm., in 0.5 mm. silver tubes, 5 mm. deep in dental composition, were applied for one and one-half hours. Following this treatment a very satisfactory retrogression resulted; December 27, however, enough thickening remained to indicate another treatment.

December 27, 133 mc., in seven 1 mm. platinum tubes, distributed over an area of 7 sq.cm., at distance of 0.5 cm., were applied for five and one-third hours.

Feb. 11, 1918, retrogression was almost complete.

CASE 14 (Hospital No. 24910).—A. F., man, aged 58, married, admitted, Nov. 2, 1917, had an ulcer, 1.25 cm. in diameter, just to the right of the middle line on the vermilion surface of the lower lip. The surrounding tissues of the lip were infiltrated to a depth of 1 cm., both around the margins and beneath the lesion.

Seven years before, a small ulcer had appeared at the site of the present lesion. It scabbed over from time to time, and increased in size. Two years before, the patient had received a series of roentgen-ray treatments, during a period of six months. These apparently healed the lesion, but about seven months before it had again ulcerated, and steadily increased in size in spite of a continuation of the roentgen-ray treatment. The patient formerly had been a heavy smoker. There was no other history of trauma or injury from the teeth. He denied syphilis.

Nov. 2, 1917, 115 mc., in three 0.5 mm. silver tubes, embedded 5 mm. deep in dental compound, were applied for one and one-half hours. A temporary improvement, noted November 16, was followed by a marked increase in the size of the lesion, noted November 30.

December 3, 832 mc., in seven 1 mm. platinum tubes, were applied over an area of 10 sq.cm., from 0.5 to 1 cm. deep in dental compound, for one and one-fourth hours. Retrogression proceeded satisfactorily until Feb. 13, 1918, when a slight increase in the thickening of the lip had developed.

Feb. 13, 1918, 202 mc., in 1 mm. platinum tubes, over an area of 28 sq.cm., 5 mm. distant, were applied for twelve hours.

CASE 15 (Hospital No. 24987).—S. D., woman, aged 84, a widow, who had had fifteen children, admitted, Nov. 30, 1917, had an elevated, nodular ulcer, 2.25 by 1.5 cm., on the vermilion surface of the left half of the lower lip, but extending to a greater distance below on the skin surface. The edges and base were indurated, but the lesion was superficial, with practically no deep infiltration of the submucous tissues. There were no enlarged cervical lymphatics.

Twelve years before, the patient had first noticed a small pimple on the left half of the lower lip. This was irritated from time to time by scratching. It ulcerated and gradually developed into the present lesion. There was no history indicating syphilis or direct trauma or chronic irritation from tobacco. The patient had been edentulous for many years.

Nov. 30, 1917, 109 mc., in five mm. silver tubes, were applied over an area of 5 sq.cm., embedded 1 mm. deep in dental compound, for three hours.

Jan. 29, 1918, no evidence of disease was present.

CASE 16 (Hospital No. 24994).—H. B., man, aged 72, married, admitted, Nov. 30, 1917, had an indurated ulcer surrounding the left angle of the mouth, which had been contracted at this end by a previous operation. The ulcer involved 2 cm. of the vermilion surface and a small part of the adjacent portion of the upper lip. Beyond the angle of the mouth the whole thickness of the cheek was infiltrated for a distance of 1 cm., and beneath the portion of the ulcer on the upper and lower lip, to a depth of 0.5 cm.

Ulceration first developed on the lower lip, eight years before. It followed an injury to the lip, produced by a clam shell during eating. Two months later the ulcer was excised. Two years later glandular metastases were excised from the neck. The present local recurrence was first noticed from six to seven months before.

Dec. 10, 1917, 921 mc., in seven 1 mm. platinum tubes, covering an area of 15 sq.cm., in dental compound, at a distance of from 0.5 to 1 cm. from the lesion, were applied for one and one-half hours.

Feb. 15, 1918, retrogression was almost complete, only a slight thickening at the angle of the mouth remaining.

CASE 17 (Hospital No. 25007).—J. K., man, aged 52, married, carpenter, admitted, Dec. 4, 1917, on the vermilion surface of the lower lip, a little to the right of the middle line, had a partly ulcerated, warty mass, 2.5 by 1 cm., formed by the apparent coalescence of three papillomatous growths. The lesion was superficial without apparent infiltration beneath the mucosa.

Three years before, a small "sore" developed on the right side of the lower lip. It would alternately crust over and bleed. In the last three months the lesion had increased rapidly in size.

Dec. 10, 1917, 266 mc., in seven 0.5 mm. silver tubes, distributed over an area of 9 sq.cm., at a depth of from 2 to 4 mm. in a mold of dental compound, were applied for three hours (88.5 per sq.cm.).

Jan. 4, 1918, no evidence of malignant tissue was present. There was a superficial, painless ulceration, caused by the radium, which was not entirely healed.

February 1, the lip had completely healed, and all induration was absent.

CASE 18 (Hospital No. 25059).—J. H., man, aged 45, married, admitted, Dec. 21, 1917, had a superficial, indurated ulcer, 1.5 by 1 cm., on the vermilion surface of the right half of the lower lip. From near the center of the ulcer there arose a hard, hornlike scab, 0.5 cm. high. The teeth showed no jagged edges, and were in a fair state of preservation, though very dirty, and surrounded with advanced pyorrhea.

Two years before, the lesion had begun as a small ulcer, which had been excised fifteen months before. It had recurred in eight weeks, and had gradually grown to the present size. The patient smoked a pipe excessively, having formerly held it in the right side of the mouth. He denied syphilis, and drank moderately.

Dec. 21, 1917, 448.2 mc., in three tubes of 0.5 mm. silver, over an area of 2.5 sq.cm. in dental compound, were applied for half an hour.

Feb. 8, 1918, no evidence of disease was present.

COMMENT

The degree of success that we have obtained in the treatment of operable cancer of the lip by radium in the series of cases reported above, and the maintenance to date with such regularity of the healed condition in the earlier cases treated, justifies a continuation of the use of radium in operable cancer of the lip. It may be that the lapse of time will require some modification of this judgment. This method of treatment includes the careful observation of the patients after treatment for the possible development of metastatic lymph nodes, and the operative removal of such when they occur, with the implantation of radium in the wound. We believe that the treatment of cancer of the lip by radium will encourage earlier attention to this disease by the patient.

We recommend the application of radium emanation embedded in molds of the dental compound, and filtered through the thinnest material for the most superficial lesions. As a matter of convenience we have used 0.5 mm. of silver uniformly for all but the lesions with deep infiltration. While 0.5 mm. of silver has been unnecessarily heavy for the most superficial lesions, it has given uniformly satisfactory results in our cases. For the deeper lesions, however, nothing has surpassed the progressive, smooth and complete retrogression produced by filtration through 1 mm. of platinum. The tubes should be sunk 5 mm. in the dental compound, and for the ordinary lesion the dose should be 60 millicurie hours per square centimeter, when the filtration is through 0.5 mm. of silver, and 100 millicurie hours per square centimeter when through 1 mm. of platinum.

The use of emanation instead of radium element facilitates uniform distribution over the lesion. Provision for uniform distribution is the most important factor in obtaining a successful result. It is true that it is possible to approach the uniform distribution obtained by emanation with the radium element, provided this is put up in many minute tubes; but few

users of radium element find it practical to divide their radium thus, and the attempt to treat these lesions by merely placing on them single tubes of radium element is inaccurate and often inadequate.

The superior adaptability of radium emanation for the treatment of cancer makes the use of the element itself obsolete, and for the vast majority of cancers it is inefficient.

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ENTRANCE CONDITIONS IN MEDICAL SCHOOLS *

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This brief paper can claim no merit as being entertaining; unfortunately it is unable to present a great deal of definite data; it is intended to present a point of view, and to elicit discussion and the necessary data from which to draw a conclusion.

Permit me to say in starting that I am in entire sympathy with the new ideal standard for medical entrance advocated by the Council on Medical Education of the American Medical Association—the two year college standard with certain required courses. Since its inception in 1905, the University of North Dakota School of Medicine has had requirements for admission somewhat higher than high school graduation. For ten years, or since 1907, it has been on the two year premedical college basis, with a course laid out for premedical students essentially the same as that outlined by the Special Committee of the Council on Medical Education, the Association of American Medical Colleges and the Association of American Universities. The chief difference between our curriculum and that of the committee is that we have always required a little more of modern foreign language and of some of the premedical sciences, and allowed less opportunity for election. While we have liked our own standard, I prefer for the general requirement the slightly more flexible outline suggested by the Special Committee, with which you are all familiar. I agree entirely that anything less than this standard of admission fails to give the student the necessary foundation; but while I am glad to see some medical colleges requiring a higher standard, and while I advise certain students every year to complete a four year college course before they begin the study of medicine, I should not like to see a higher standard than two years of college work become general.

The subject of this discussion is the discontinuing of the possibility of entrance conditions after Jan. 1, 1918. Last year you will remember that this Association voted to permit certain conditions until the beginning of 1918. The Council on Medical Education has heretofore also recognized the necessity for certain conditions, but always, perhaps, with the indication that the time would soon come when they would no longer be desirable; in its report, as published in *THE JOURNAL*, Aug. 18, 1917, page 547, published also as a reprint, and in the revised pamphlet, "Making the Right Start," the Council outlines the conditions that were permissible last fall, and indicates that first year medical students after Jan. 1, 1918, must be admitted

only without conditions. Several medical schools have already announced a policy of admitting only those who satisfy all entrance requirements in every particular. Is it desirable to allow no entrance conditions?

In favor of the policy of no entrance conditions it may be urged that:

1. The student needs every bit of the required college work to enable him to pursue his medical studies satisfactorily.
2. Like the higher entrance requirements, it is demanded by the best interests of society.
3. If any entrance conditions are permitted at all, there would be a tendency on the part of both administrative officers and students to abuse the privilege; or schools cannot be trusted to administer conditions.
4. It would be simpler; making simpler bookkeeping, reports and records, obviating no little call for the exercise of judgment on the part of enrolling officers, and obviating possible conflicts in the student's program.

In favor of recognizing the necessity for continuing the well guarded entrance condition, I would urge that:

1. Well prepared and promising students who are slightly deficient in the requirements do present themselves for medical entrance.
2. The laws of many states and the requirements of state boards and medical schools demanding that the student attend four annual sessions of a recognized medical school will operate harshly on many good students unless some provision can be made for entrance conditions.
3. There is no sound pedagogic reason why a student of suitable age and general satisfactory preparation cannot carry part, not all, of the first year of the medical curriculum at the same time that he is finishing a small part of the required premedical work; many medical schools are now so related to a college of liberal arts that such a mixed enrolment is possible. Or if the medical school does not enjoy the relation to the college of liberal arts that makes such an enrolment possible, there is no sound reason why the selected student may not carry the first year of medicine with a condition in a small part of the required premedical work, and be permitted to remove the condition in the following summer.
4. Well conducted summer terms or quarters in many parts of the country make it possible for the student to make his standing regular by permitting him to take either the part of the first year of medical work that he failed to carry in the one instance above, or the required premedical work that has been postponed in the other.
5. There have been so many improvements in the ideals and standards of medical education, that a school that is worthy of continued existence might well be trusted to administer entrance conditions.

When I suggest this subject for discussion or for a possible paper, I had thought that should I be asked to prepare the paper, I should send out a questionnaire to ascertain the opinions of the deans of other medical schools, and attempt to get definite figures as to the number of students that would probably be involved. When the call for the paper came, however, the time seemed so short that I decided to omit the questionnaire, and to depend on the discussion at this time to supply more complete data.

REASONS FOR THE ENTRANCE CONDITIONS

To discuss briefly from my own experience the reasons that I have given for continuing the entrance condition, and incidentally to outline the way I have been accustomed to handle certain cases in the past, I might continue as follows:

1. There are many strong and promising students who present themselves with more or less irregularity

* Read at the Annual Congress on Medical Education and Licensure, Chicago, Feb. 5, 1918.

in their entrance credits. In the fall of 1917, I reported to the Council on Medical Education as first year medical matriculants eighteen students. Ten of these had survived our own premedical course in the University of North Dakota or had graduated in our own College of Liberal Arts with our medical requirements ever before them. These students were perfectly regular in every way, with total college credits varying from $64\frac{1}{2}$ semester hours to 125 semester hours and the bachelor's degree; all of the ten presented all of the required work in English, modern foreign language, and the premedical sciences. The eight others were enrolled with conditions. One had the bachelor's degree and a year of graduate work from a neighboring state university, he was all right in English and the sciences, and could be given some advanced subject credit; but he lacked part of the second year of foreign language. A second had the bachelor's degree from a standard college, and had all of the required subjects excepting a year of physics. A third had 134 semester hours of college work, more than enough to receive the bachelor's degree, but he had failed to satisfy the language requirements of our College of Liberal Arts; he was all right for medical entrance except for one semester of German. A fourth presented college credits that would have admitted him to the senior year of the College of Liberal Arts, but, for unconditioned medical entrance, he lacked a second year of French. A fifth presented $70\frac{7}{8}$ semester hours with all required work except four semester hours in biology. So far, I am sure all would agree that the cases are worthy, and that in every case conditioned entrance was permissible last fall. The remaining cases are nominally not quite so good. Without stopping to analyze them, I shall simply say that they represent promising students with by far the greater part of all of the required work accomplished who were given mixed arts medical enrolments, as I shall explain a moment later, and attention was called to their status in the report.

Whether we count it five out of fifteen or eight out of eighteen, the point is that under the rules of last fall our proportion of conditional entrances was large. Similar analyses, all based on our own two year college requirements, could be given for 1916, when four out of seventeen were lacking in a small part of the required work, and for every year the school has been in existence. I should suppose that $33\frac{1}{3}$ per cent. would represent our average of the conditioned matriculations in the past.

What the situation is in other schools I cannot say. A recent letter from the dean of a large state university medical school shows that had the two year entrance requirement with no conditions been enforced in his institution last fall, only forty-one instead of 165 students could have been admitted, or that 75 per cent. of the present first year class in that medical school either have conditions, or would have them if the entrance requirement were two years of college work as outlined by the Special Committee.

2. With state laws, regulations of state boards, and requirements of probably all complete medical schools all calling for four years of residence and work in a lawfully established and reputable medical college, to say nothing of the fifth or intern year, I consider it an undesirable and an unnecessarily difficult handicap to place on a large proportion of promising students to deny them admission until they can enter without a condition. If there were no legal demands regarding time there would, of course, be no occasion for this

discussion. It is not a sufficient answer to say that the student should have acquainted himself with medical entrance requirements and been prepared. Much of the literature of the Council on Medical Education, and the prominence given to premedical curriculums in many colleges and universities, are helping to make the situation better, and will continue to do so. In spite of all of this, however, many a good student does not come into contact with the literature and the announcements so familiar to us; many a student for one reason or another begins his college work and perhaps graduates in a college that still stresses the humanities, and in which it is difficult to secure all of the desirable courses for medical entrance no matter how alert the student may be; many a student in his early years of college work has not yet decided on his vocation, nor do I consider it either necessary or wise to expect every boy as he leaves high school and enters college to have made up his mind as to what his life work shall be; many good students change their minds even after receiving the bachelor's degree. If such a student lacks a great deal of the required work for medical entrance, he must, of course, spend a year or more in preparation; he should by all means have had the first year of chemistry and of modern foreign language and the greater part of the total requirements; but why should a student who is in general well prepared be denied admission, or required to wait a year, when a condition of from four to eight semester hours of college work in physics, biology, second year chemistry, or second year modern foreign language would enable him to begin his medical studies?

3 and 4. There is no valid pedagogic reason why certain conditions should not be permitted, and summer terms or quarters offer the student the opportunity to make his course regular. While I believe thoroughly in a proper sequence of courses, both in the arts and in the medical curriculum, and while I recognize the value of all the required premedical work as a foundation for the study of medicine, I see no reason why a strong student cannot handle gross anatomy at the same time he is studying physics or organic chemistry, or physiology while he is taking his second year of French or German; nor would the situation be materially different should he carry the first year of the medical curriculum regularly, and leave a required premedical subject in which he is deficient to be made up before the second year.

METHOD OF ENROLMENT

Since our school of medicine is closely related to the College of Liberal Arts, it has almost invariably been my practice in enrolling a so-called conditioned student to put on his card first of all the subject or subjects in which he is deficient, and then to fill out his enrolment with such part of the first year's medical curriculum as his time and schedule will permit. I enroll him, for example, in physics and gross anatomy and embryology, requiring him to omit the histology; or in second year French or German or in biology and in embryology and histology, and require him to omit the gross anatomy. I do not overload him or permit him to handle the whole first year of medicine with a premedical subject on the side, though some students might well handle such an enrolment. Sometimes, but rarely, I have enrolled such a student in the regular first year's medical curriculum and allowed him to postpone a small condition, for example, four hours of chemistry or language until the following summer. A

medical school not enjoying the close relation to the College of Liberal Arts that we do would have to handle conditions in the latter way, if at all. We do not generally do so for several reasons: 1. It is better to make up all foundational and required work as early as possible. 2. Our summer term is short, and one cannot well make up a condition amounting to eight semester hours. 3. The student is sometimes unable, or at any rate fails, to make his course regular by the beginning of the second year, and so presents obvious difficulties at that time.

The student is expected to remove the irregularity, rarely a premedical requirement with us, usually a part of the first year's medical curriculum, by work in a summer term or quarter, and in our case this usually means that he goes to some larger neighboring medical school for the summer, since the demand is not sufficient to justify us in offering summer courses in medicine. If the student does this, his work becomes regular for the second year, and if at the close of this year he satisfies all requirements, he is given the bachelor's degree in the combination course, and is certified to clinical schools as having completed two years of medicine. If he fails to make his course regular, and returns to us for the second year, he is enrolled in what he has failed to carry of the first year's curriculum, and so much of the second year's work, as his time and schedule, and the prerequisites of the courses of this year, will permit. In this case he cannot receive the degree in the combination course, and he is certified as having done only such part of the medical curriculum as he has actually completed; if he receives a degree at all it is because he satisfies the requirements of the College of Liberal Arts, and this he may or may not do. A summer quarter's work may now make him eligible for junior standing in a clinical school. The student that does not make his course regular must of necessity take more time.

SCHOLARSHIP OF CONDITIONED MEN

Our experience with conditioned students bears out the contention that they should be given an opportunity; and that they can do the work satisfactorily. In my present freshman class in gross anatomy, the strongest two students are men with conditions. In our present sophomore class the strongest man is one who has been regular from the start, but in the classes graduating in the combination arts-medical course in both 1917 and 1916, the strongest students and the winners of Phi Beta Kappa and of a prize for scholarship given by the local medical society were men who entered with conditions, and who made their work regular by attending summer terms or quarters in other schools between the first and second medical years. Going back to 1915, the strongest man had been regular from the start; but it might be noted in passing that in his first year at the university, or as an arts freshman, he did not enroll in the premedical curriculum, and that it took work in two summer terms to make his medical entrance regular, as it was, at the beginning of his third year; this fact simply illustrates that the course, or curriculum, leading to medical entrance in the briefest time is pretty straight and narrow.

I have looked over our list of students for the last five years carefully, and it is my judgment that while the honors are fairly even, the advantage figured from any point of view is slightly, but clearly, in favor of those that have entered with conditions. I should not

argue from this that to have an entrance condition is a good thing in itself: I should explain the fact by saying that as a class our conditioned students have been a little older and more experienced, a little better prepared in general, though lacking in some particular, and also a little more carefully selected. An enrolling officer must use judgment in any case. We think, for example, that quality in work is quite as essential as quantity in either case, and in our catalogue we announce a plan in our effort to secure quality.

CONSISTENCY OF THE POLICY

I have discussed our way of handling conditions in the past when they were permissible by the rules of this Association and of the Council to attempt to show that they can be handled without violating the principles of pedagogy. Two years of college work and all of the specified English, modern foreign language, and premedical science are undoubtedly necessary to enable the student to pursue medicine successfully; but I see no inconsistency between this principle and a policy that would allow a promising student with 70 semester hours of college work, for example, but who is short 4 semester hours of biology, to begin his status as a medical student, and to handle a condition as I have indicated. College physics I consider absolutely necessary for both the study and the practice of medicine; but the only early medical subject for which I should suppose it ought to be considered a pedagogic prerequisite is physiology, which is usually begun in the second semester of the first year, if not in the second year; it cannot well be urged, then, that a condition might not at times be permitted in physics. Without discussing any of the other subjects in a similar way, permit me to say that it seems to me that it cannot be urged that the best interests of society demand a policy of no conditions. Society is, indeed, vitally interested in the thorough preparation of medical men; it has been a realization of the needs of society that has brought about the desirable changes in medical education; but the plan I have in mind takes nothing from the student's preparation, and allows no substitutions; only when the student satisfies all requirements is he finally passed or approved.

Whether schools can be trusted longer to administer such a policy, or whether the administrative difficulties, both for the schools and the officers of central bureaus such as that of the Council, are insuperable, I cannot say. Surely the great objection to a policy of continuing the possibility of the entrance condition must lie here. The matter seems to me so important, however, that I hope it will be given careful consideration.

I am sure I shall not be misunderstood as pleading for lower standards, or for the weak student who through failure in one or more subjects in his premedical course is unable to satisfy medical entrance in the briefest possible time. In the past, when conditions were permissible by the rules of this Association and of the Council, the University of North Dakota has attempted fairly to extend its usefulness as I have indicated. It has seemed to me that a school of medicine favorably located should do this. Should the Special Committee or any similar body representing the best judgment in medical education not see fit to reestablish the policy, we shall cheerfully acquiesce.

As indicated earlier in the paper, I have been unable to present definite data from the experience of other schools. It is to be hoped that the discussion will bring out these data. The questions are: Is the group

of students who are on the whole well prepared but who lack in some particular sufficiently large to merit consideration? Is it fair to them, or necessary in the effort to secure and maintain proper standards, to deny them medical matriculation, or to require them to spend another year on premedical work before they are accepted? Are such students able to pursue the study of medicine successfully? Can provision be made that will at the same time be fair to them, fair to those who enter with all requirements satisfied, and operable without abuse?

HERPES ZOSTER AND CHICKENPOX

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AND

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During the month of January, 1918, at the Cook County Hospital, there were admitted three patients who had herpes zoster with a simultaneous chickenpox. This was of such unusual occurrence that the literature was consulted. Head,¹ in 1900, described a patient, a boy, who developed a herpes zoster on the fifth dorsal region which in twenty-four hours was followed by a typical chickenpox eruption. Corlett,² in 1905, cited four such occurrences, in adults aged, respectively, 40, 44, 48 and 70 years. Bokay,³ in a period of time extending from 1891 to 1909, observed nine different cases of herpes zoster, of various locations, which in the members of the families exposed only to the herpes, after incubation periods of intervals varying from eight to twenty days, resulted in the production of fifteen cases of chickenpox in their respective families.

Richardson⁴ reports that in a convalescent scarlet fever ward, one of the patients developed a profuse herpes zoster of lower dorsal and upper lumbar distribution. The patient was not isolated, but was nursed in the main ward. Exactly two weeks following, chickenpox broke out in the ward, three patients being affected, and all three had been in the hospital longer than three weeks, the time being thirty, thirty-two and forty days, respectively. All of these patients were isolated, and no more cases of cross infection resulted.

REPORT OF CASES

CASE 1.—A. O., man, aged 53, single, cook, admitted, Jan. 19, 1918, complained of a rash on the body, and of itching. About one week before, the patient had noticed a skin eruption at the side of his chest. This was of a "raw beef" color, and "burned" or tingled. Numerous small blisters formed on it. About three days following the onset, he noticed a series of small pimples and blisters. They were not accompanied by any subjective symptoms, and appeared over the face and trunk. The patient had had typhoid at the age of 25. Chancre and gonorrhea were admitted. He was addicted to the use of alcohol.

On the skin in the area composing the segment in the eighth to the ninth left dorsal region, terminating at the

midline anteriorly and posteriorly, was an irregular patchy area of erythema, surrounded by vesicles in groups, and crusts, in an apparent stage of recrudescence. Over the face and trunk there were discrete, vesicular, pustular and crusted lesions, in various stages; there was an occasional lesion on the legs and arms. The fauces, pharynx and palate also showed a discrete distribution of vesicles and papules. The teeth were carious, and the patient had pyorrhea alveolaris. There was bilateral potential inguinal hernia. Otherwise the examination was negative.

The blood count revealed: leukocytes, 9,400; erythrocytes, 5,200,000. The Wassermann test was negative. A culture in 1 per cent. glucose broth and on Petri plates was sterile after ninety-six hours. The spinal fluid pressure was not increased. There were 6 cells per cubic millimeter. The Ross-Jones test for globulin was negative. Culture in 1 per cent. glucose broth and on blood agar plates was sterile after ninety-six hours. The urine was negative.

CASE 2.—A. G., man, aged 38, married, laborer in a biscuit factory, admitted, Jan. 31, 1918, complained of pain and swelling of the right forehead and eye, with blistering. The patient stated that six days before he had developed a severe pain in his right eye, which became swollen. Next day there was a "burning or itching" feeling in the right forehead. This continued. A crop of blisters appeared which had persisted since. Two days following the onset he noticed a small eruption of pimples on his body; no subjective symptoms preceded this. He had had gonorrhea one year before; otherwise the previous history was negative.

Over the right half of the forehead, well demarcated at the midline, extending back to the hairline and down over the eyebrow, laterally to the upper temporal region, was an area of diffuse erythema, surrounded by large, irregular blebs. The right eye showed chemosis of the lids, with a slight superficial injection of the conjunctiva. Over the body, especially the thorax and abdomen, there was a discrete sprinkling of macules, papules, vesicles and pustules, with occasional crusting, in different stages. Very few of these lesions were seen on the extremities, and none on the face. There were also found adenopathy, posterior cervical, epitrochlear and inguinal; marked pyorrhea alveolaris, and hypertrophied injected tonsils.

The blood count revealed: leukocytes, 10,200; erythrocytes, 4,800,000. The Wassermann test was negative. A culture in 1 per cent. glucose broth and on plates was sterile after ninety-six hours. The spinal fluid was clear. There were 4 cells per cubic millimeter. The Ross-Jones test for globulin was negative. A culture in 1 per cent. glucose broth and on blood agar plates was sterile after ninety-six hours. The urine was negative.

CASE 3.—T. P., man, aged 27, single, sailor, admitted, Jan. 3, 1918, complained of pain and swelling of the right eye. About two weeks before he began to have a sharp pain over the right eyebrow. This pain was not very severe. Two days before, the eye became swollen so that the patient could not open it, and at the same time numerous blisters appeared on the forehead over it. Previous illnesses were denied.

Over the right side of the forehead, extending down to the lower eyelid, and laterally, and midline to a line on a level with the external canthus of the right eye, was a sharply defined elevated reddish area, slightly edematous, covered with vesicles and blebs. The eyelids were markedly chemotic, and could not be opened; a yellowish serum exuded between the lids. The neck, chest, abdomen and back showed a sprinkling of papules and vesicles, the vesicles being clear and having a red areola. Several of the teeth were carious, but otherwise were negative. The urine was negative.

COMMENT

Etiologically, von Bärensprung,⁵ in 1863, first demonstrated herpes zoster as being an acute inflammatory condition of the ganglion corresponding to the region

1. Head, Henry: Herpes Zoster, or Zona, in Allbutt: System of Medicine, New York, 1900, 8, 630.

2. Corlett, W.: Varicella Accompanying Herpes Zoster, Jour. Cutan. Dis., 1905, 23, 289-293.

3. Bokay, J.: Etiologic Relation between Varicella and Herpes Zoster, Orvosi hetil., 1909, Series 3, 1, 736-738.

4. Richardson, G.: Relation between Herpes Zoster and Chicken Pox, Lancet, London, 1913, 2, 1732.

5. Von Bärensprung: Fernere Beiträge zur Kenntniss der Zosters, Ann. d. char. Krankenh., Berlin, 1863, 11, 96.

affected. Head and Campbell,⁶ in 1900, pathologically demonstrated the presence of micro-organisms in the nerve radicles involved, and contended that herpes zoster was an acute specific disease. This was later experimentally proved by Rosenow and Oftedahl,⁷ in their work on specific streptococci selection, by isolating streptococci from tonsils, pyorrheal abscesses, sputum and spinal fluid in man with herpes, and producing herpes, with corresponding ganglionic lesions, by animal inoculation with these strains of organisms.

As to chickenpox, nothing has ever been definitely determined etiologically. Tyzzer,⁸ in a histopathologic study of chickenpox vesicles, found certain bodies enclosed in the nuclei and cytoplasm of the cells involved. These he considered typical of chickenpox, but he was unable to produce new lesions by their inoculation, and had to consider them as nonparasitic. Keysseltz and Mayer⁹ believed that the inclusion bodies of chickenpox were analogous to cytocytes and that they were not in themselves definitely parasites, but contained the infective virus.

Very little else has been discovered.

COLORIMETRIC DETERMINATION OF REACTION OF BACTERIOLOGIC MEDIUMS AND OTHER FLUIDS

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The colorimetric methods in common use for determining and adjusting the reaction of bacteriologic mediums and other fluids involve the use of standard solutions of known hydrogen ion concentration. A variety of such solutions has been described, and they are readily prepared by any one having a moderate chemical equipment and ability. Just now, however, many men with comparatively little chemical training are confronted with problems of this nature, and the method here described has therefore been devised to accomplish a fairly accurate determination of hydrogen ion concentration without the necessity of preparing standard solutions or of depending on those prepared by others. We are here concerned only with reactions lying between 7.0 and 8.0, and only phenolsulphonephthalein has been used as an indicator. Other indicators and other ranges of acidity will be investigated later.

In this method use is made of the principle of superimposing the two extreme colors of the indicator, as used by Clark and Lubs,¹ following Salm,² in determining the so-called half-transformation points of indicators. Within the range of its transition from red to yellow, we may regard the observed color of a

phenolsulphonephthalein solution as composed of a definite amount of red plus a definite amount of yellow, and such a color may be exactly duplicated by superimposing the extreme red and the extreme yellow of the indicator in proper concentrations. Thus, if to one test tube we add 5 c.c. of dilute acid, and to another similar tube 5 c.c. of dilute alkali, and to each add 5 drops of phenolsulphonephthalein solution, a bright yellow will be produced in the first tube and a bright red in the other. But if we look toward the light through both tubes, a color will be observed that is half way between the yellow and the red. In fact, it will be identical with the color produced by 10 drops of the phenolsulphonephthalein solution in 5 c.c. of a standard solution having a p_H of 7.9. This is the half transformation point, and is a definite constant for this indicator. But if instead of using equal amounts of indicator in each of the two tubes we vary the partition of the 10 drops of indicator between them, then by superimposing each pair and viewing them by transmitted light, a series of colors will be produced which will cover the range of usefulness of the indicator; and once such a series is "calibrated" against solutions of known hydrogen ion concentration, it may be used as a standard series for the determination of unknown reactions.

Results obtained by such a procedure in the case of phenolsulphonephthalein, comparison being made with phosphate solutions prepared according to Sørensen,³ are as shown in the accompanying table.

RESULTS WITH PHENOLSULPHONEPHTHALEIN

Acid Tubes Phenolsulphonephthalein Solution, Drops	Alkali Tubes Phenolsulphonephthalein Solution, Drops	p_H
9	1	6.9
8	2	7.2
7	3	7.5
6	4	7.7
5	5	7.9
4	6	8.1

OUTLINE OF METHOD

Apparatus and Chemicals Required.—1. Clean test tubes. These must be of approximately the same diameter. An equal volume of water is measured into a number of tubes, and fifteen or twenty are selected for use in which the water stands at about the same level.

2. A 5 c.c. pipet.

3. A medicine dropper drawn out to a fairly fine point.

4. A buret.

5. An indicator solution. A convenient solution (0.01 per cent.) of phenolsulphonephthalein is prepared by diluting 1 c.c. of the usual solution used for kidney function tests (1 c.c. = 6 mg.) to 60 c.c. with distilled water. No accuracy is necessary, provided the same solution is used throughout.

6. Roughly normal and twentieth normal sodium hydroxid.

7. Hydrochloric or sulphuric acid.

Preparation of Standard Color Series.—Twelve test tubes are placed in two rows of six. Into each tube of one row 5 c.c. of dilute alkali are placed. (The twentieth-normal sodium hydroxid may be used, or any solution sufficiently alkaline to bring out the maximum red color of the indicator.) Into each tube of the other row, 5 c.c. of very dilute acid are placed (One

6. Head and Campbell: The Pathology of Herpes Zoster and Its Bearing on Sensory Localization, Brain, London, 1900, 23, 353.

7. Rosenow, E. C., and Oftedahl, S.: The Etiology and Experimental Production of Herpes Zoster, THE JOURNAL A. M. A., June, 12, 1915, p. 1968; Jour. Infect. Dis., 1916, 18, 477.

8. Tyzzer: Histology of Skin Lesions in Varicella, Jour. Med. Research, 1906, 14, 361.

9. Keysseltz and Mayer: Zur Aetiologie der Varicellen, Arch. f. Protistenk, Jena, 1909, 14, 113.

1. Clark and Lubs: Jour. Bacteriol., 1917, 2, 109, 191.

2. Salm: Ztschr. f. phys. Chem., 1906, 57, 471.

3. Sørensen and Palitzsch: Biochem. Ztschr., 1910, 24, 387.

drop of concentrated hydrochloric or sulphuric acid to 100 c.c. of distilled water is sufficiently strong. Strong acid is to be avoided in the case of phenolsulphonephthalein, on account of its secondary color change.) Into the six acid tubes, 9, 8, 7, 6, 5 and 4 drops, respectively, of indicator are placed. Into the six corresponding alkali tubes, 1, 2, 3, 4, 5 and 6 drops of indicator are placed. If the dropper is held vertically, the drops will be practically of a size. Each pair of tubes thus contain 10 drops of indicator between them, and the series of six pairs, when viewed by transmitted light, will correspond to p_H values of 6.9, 7.2, 7.5, 7.7, 7.9 and 8.1 (as in the table) when compared with 5 c.c. volumes of any solution containing 10 drops of the same indicator solution. In order to determine the hydrogen ion concentration of an unknown solution whose reaction lies within this range, 5 c.c. of it are placed in a test tube, 10 drops of indicator are added, and its color is compared with those of the six pairs of tubes. The use of a second tube containing distilled water to form a pair with the unknown is to be recommended, but does not appear to affect the results appreciably. The color series prepared in this manner is as accurate as that yielded by standard phosphate or other solutions when used in a similar apparatus, and can be prepared anywhere in a few minutes without the use of graduated apparatus or accurate quantitative solutions of any kind. As noted by Clark and Lubs,¹ the use of pairs of test tubes is a device which is "optically very imperfect, but it works fairly well."

TITRATION OF MEDIUMS

One c.c. of the medium to be titrated is added to 4 c.c. of distilled water in a test tube. Ten drops of indicator are added, the color is compared with the color standards if it is desired to determine the initial reaction, and titration to the desired hydrogen ion concentration with twentieth-normal sodium hydroxid is performed. Fifty times the amount used will represent the amount of normal sodium hydroxid to be added to 1 liter of medium. If in carrying out the titration sufficient sodium hydroxid solution is added so that the indicator color is appreciably diluted, the end-point tubes of the comparator should be filled to a similar volume before the final comparison is made. If desired, in comparing colors, use may be made of the block described by Hurwitz, Meyer and Ostenberg,⁴ though practically it has not been found to increase the accuracy appreciably. This is a wooden block in which two pairs of adjacent holes have been drilled to receive two pairs of test tubes. The holes are connected by slits so that each pair may be viewed by transmitted light. In this procedure one pair of holes would contain the acid-alkali pair chosen for an end-point, and the other the diluted mediums and a tube of distilled water. Compensation for colored fluids can usually be accomplished according to the principle introduced by Walpole,⁵ by using in one row of the color standard series 5 c.c. amounts of the fluid made acid (or alkaline).

4. Hurwitz, Meyer and Ostenberg: Bull. Johns Hopkins Hosp., 1916, 27, 16.

5. Walpole: Biochem. Jour., 1910-1911, 5, 207.

Morbidity.—With the full cooperation of the public we may expect that morbidity and mortality rates will decrease; for the prevention of morbid conditions due to wrong living rests with the individual, who understands.—*Health News*.

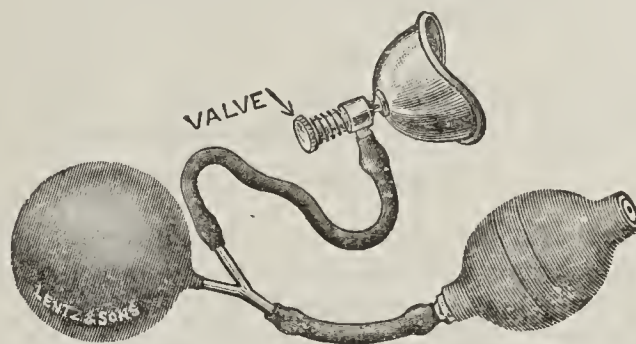
Clinical Notes, Suggestions, and New Instruments

ARTIFICIAL RESPIRATION IN ASPHYXIA NEONATORUM

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Of the classic methods of artificial respiration in asphyxia neonatorum, mouth-to-mouth insufflation has proved more efficient than the methods dependent on manipulation of the child. The manipulative methods of Prochownick (rhythmic compression of the child's chest in inverted suspension), rhythmic flexion and extension of the child's body, and Schultz' swingings are all useful in asphyxia livida, but in the more critical condition of asphyxia pallida, mouth-to-mouth insufflation or insufflation through a tracheal catheter will frequently succeed after these methods have failed.

There are, however, serious objections to mouth-to-mouth insufflation: 1. The delicate air vesicle may be ruptured. Bichat has proved the possibility of blowing air into the vessels near the heart if too much force is used. 2. There is danger of infection of the child by the operator. 3. The insufflated air has already been deprived of much of its oxygen, and is laden with carbon dioxide. 4. The air cannot be changed with sufficient rapidity to oxygenate the blood. 5. The method is laborious and cannot be kept up long by one person. 6. In asphyxia pallida this, as well as all the indirect methods of artificial respiration, is too often futile.



Instrument for artificial respiration in asphyxia neonatorum.

Some years ago I had an instrument made for artificial respiration in infants which has been very satisfactory in these cases. It consists of a syringe bulb connected by rubber tubing with an air valve in the dome of a small helmet-shaped mask, and by a Y tube with an ordinary rubber toy balloon. The latter serves as a reservoir, and, as its expansive tension is about 8 mm. of mercury, it prevents the air pressure in the child's lungs from rising above that point. It also produces a uniform, steady flow of air.

It is essential that the upper respiratory passages be clear before artificial respiration is started. In any case, therefore, in which it is probable that the placental circulation has been cut off before the head is born, as in breech presentation or prolapse of the cord, a tracheal catheter should be introduced and the trachea cleared by suction. After the mouth is cleared out with the gauze-covered finger, a thread on a needle is passed through the tongue to hold that organ well forward, but not outside of the mouth. A towel is wrapped snugly, but not tightly, about the child's abdomen to prevent air from entering the stomach. While an assistant keeps the balloon inflated by compressing the bulb, the operator holds the mask, with its long diameter transversely, over the child's mouth, including the chin, but not the nose. With the index finger of the same hand he manipulates the piston of the air valve, pressure on which allows the air to flow. With the finger and thumb of the other hand he alternately compresses and releases the nostrils through which expiration takes place. Pressing the air valve piston, at the same time compressing the nostrils to prevent escape of air, he inflates the lungs. Simultaneous release of the air valve piston (stopping the air flow) and release of the nostrils allow expiration to

take place through the nostrils. The moment the nostrils are released and the air valve is closed, the natural resiliency of the lungs and thoracic walls causes a partial collapse and the escape of a considerable portion of the air. This alternate simultaneous opening of the air valve and closing of the nostrils (inflation), and closing of the air valve and releasing of the nostrils (expiration), is kept up rhythmically and as rapidly as is consistent with rather full expansion and deflation, and as long as necessary to induce normal respiration.

The advantages of this instrument are that it gets the air into the child's lungs quickly, and with a rhythm and rapid change approaching normal respiration, and does this without danger of injury to the child; and being inexpensive (the rubber parts being readily replaceable) and occupying small space in the obstetric bag, it should be available when needed.

Military Medicine and Surgery

BÁRÁNY CHAIR TESTS AND FLYING ABILITY

A CORRELATION STUDY OF ONE HUNDRED NAVAL AVIATORS

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Since the Bárány chair has been universally used by both the Army and Navy in the selection of candidates for aviation, we thought it desirable to see if there really is any correlation between flying ability and the Bárány tests. We knew, for instance, that trapeze performers and Russian dancers have very little, if any, nystagmus after whirling, and yet their proficiency in their professions depends on their sense of balance. We knew that men who have a so-called "normal" nystagmus time before flying often lose all or a great part of it after numerous flights. It seemed to us, therefore, that for the most part the use of the chair has been taken more or less on faith after the following line of reasoning: A well defined sense of equilibrium is necessary for aviation. The Bárány chair determines the normality or abnormality of function of one's semicircular canals, which have to do with equilibrium. Therefore, by use of the chair, the sense of equilibrium of a candidate for aviation can be established. The question as to whether or not this line of reasoning is theoretically sound we are willing to leave to the otologists for argumentation. What we have interested ourselves in is in seeing whether practically the actual flying ability of an individual bears any definite relationship to what that individual does in a Bárány chair.

To this end we have studied the Bárány tests and flying records of 100 naval aviators. Unfortunately, all of these men had presumably passed a satisfactory Bárány examination on application for admission into the air service. The tests here referred to are those made at the ground school before the men had done any flying; and while, of course, we have only a few gross abnormalities recorded in this group, neverthe-

less there is sufficient variation between the men to make the study interesting.

Several factors were considered:

1. Learning ability: fast, average or slow.
2. Flying aptitude.
3. Temperament: cool, average, nervous, easily discouraged.
4. Judgment at critical moments.
5. Sense of balance and direction in the air.
6. Tendency on turns: too flat, overbank, irregular.
7. Judgment on landing.
8. Control: delicate or stiff.

Basing our judgment of their flying ability on these factors, we have grouped these men into three classes: (1) good; (2) average, and (3) poor. Thirty-five fall in Class 1, forty-four in Class 2 and twenty-one in Class 3. In all fairness to the aviators themselves, it should be stated, however, that twenty-one poor

TABLE 1.—NYSTAGMUS TIMES IN MEN OF GOOD FLYING ABILITY

Name	Right	Variation		Left	Variation	
		Above	Below		Above	Below
1. C. E. H.	25	..	1	23	..	3
2. W. K. B.	28	2	..	27	1	..
3. G. C.	21	..	5	20	..	6
4. L. J. B.	25	..	1	20	..	5
5. F. B.	26	1	..	23	..	3
6. W. H. G.	24	..	2	23	..	3
7. O. E. L.	21	..	5	19	..	7
8. J. C. N.	24	..	2	22	..	4
9. K. B. O.	22	..	4	23	..	3
10. N. N. K.	26	..	..	26	..	..
11. Z. H. P.	26	..	..	26	..	..
12. A. P.	20	..	5	19	..	6
13. E. T. Z.	26	..	..	26	..	..
14. F. W. O.	28	1	..	26	..	..
15. J. D. P.	28	2	..	26	..	..
16. H. M. S.	26	..	..	24	..	..
17. A. F. R.	27	1	..	25	..	1
18. K. L. Y.	28	2	..	28	2	..
19. A. O. P.	31	5	..	29	3	..
20. T. D. S.	20	..	6	19	..	7
21. A. D. C.	25	..	1	25	..	1
22. R. C.	27	1	..	26	..	..
23. T. D.	23	..	3	28	2	..
24. W. H. B.	25	..	1	25	..	1
25. W. W. T.	20	..	6	19	..	7
26. D. B. A.	27	1	..	25	..	1
27. R. H. M.	23	..	3	22	..	4
28. G. A. H.	26	..	..	25	..	1
29. M. E. B.	26	..	..	25	..	1
30. D. H. C.	26	..	..	25	..	1
31. H. D. E.	28	2	..	27	1	..
32. C. E. F.	26	..	..	25	..	1
33. S. H. J.	24	..	2	23	..	3
34. R. T. W.	20	..	6	18	..	8
35. H. J. B.	27	2	..	25	..	1

men out of a hundred is a trifle higher than normal, about 18 per cent. of the men ordinarily falling into the poor class.

In all of these men the tests for past pointing were normal, and in all except one case the falling tests were normal, that case being noted below. The wide variation came in their nystagmus times, which are recorded in Tables 1, 2 and 3. Twenty-six seconds is taken as the normal, and in each case the man's variation above and variation below, both right and left, is noted.

An analysis of these figures is instructive from several different standpoints. In the first place, the average variation from the normal for the poor, average and good men, respectively, is 6.04, 5.72 and 4.65 seconds. In other words, the good fliers differ from the poor fliers in their variation from the normal nystagmus time by less than one and one-half seconds, a difference which is certainly well within the range of reasonable errors. A poor flier, there-

fore, is as likely to approach the normal, so far as nystagmus time is concerned, as a good flier.

Some one has insisted that bilateral equality of nystagmus time is important, so we have analyzed our

TABLE 2.—NYSTAGMUS TIMES IN MEN OF AVERAGE FLYING ABILITY

Name	Right	Variation		Left	Variation	
		Above	Below		Above	Below
36. R. T. W.	19	..	7	20	..	6
37. N. F. W.	24	..	2	23	..	3
38. W. J. W.	24	..	2	23	..	3
39. P. F. W.	27	1	..	25	..	2
40. H. H. T.	26	..	..	28	2	..
41. R. T.	24	..	2	23	..	3
42. F. J. R.	26	..	..	24	..	2
43. J. E. P.	28	2	..	27	1	..
44. W. S. P.	30	4	..	28	2	..
45. C. H. P.	24	..	2	22	..	4
46. S. E. P.	20	..	6	19	..	7
47. G. C. M.	27	1	..	25	..	1
48. G. S. M.	17	..	9	19	..	7
49. H. B. M.	26	..	..	25	..	1
50. W. L. L.	15	..	11	13	..	13
Reversed falling—Nausea						
51. J. D. I.	25	..	1	27	1	..
52. R. H. G.	27	1	..	26	..	..
53. W. R. H.	24	..	2	23	..	3
54. P. J. H.	20	..	6	24	..	2
55. M. J. D.	26	..	..	25	..	1
56. J. H. C.	30	4	..	28	2	..
57. J. B. B.	34	8	..	27	1	..
58. F. A.	29	3	..	28	2	..
59. G. C. A.	30	4	..	30	4	..
60. J. S. A.	26	..	..	27	1	..
61. I. I. A.	33	7	..	29	3	..
62. C. H. A.	25	..	1	21	..	5
63. J. A. J.	28	2	..	28	2	..
64. O. B.	26	..	..	26	..	..
65. R. S. H.	23	..	3	22	..	4
66. A. H. B.	20	..	6	20	..	6
67. S. T. A.	20	..	6	25	..	1
68. W. A. B.	25	..	1	23	..	3
69. W. D.	27	1	..	25	..	1
70. R. F. D.	22	..	4	23	..	3
71. E. D.	24	..	2	23	..	3
72. L. A. H.	27	1	..	26	..	..
73. G. N. G.	28	2	..	26	..	..
74. J. W. H.	28	3	..	25	..	1
75. K. B. H.	30	4	..	28	2	..
76. H. L. R.	24	..	2	25	..	1
77. C. E. H.	22	..	4	23	..	3
78. F. E. H.	26	..	..	30	4	..
79. T. R. M.	23	..	3	24	..	2

figures from that standpoint, measuring the variation between right and left in each individual. We find that the individual variation in the good fliers is 1.37

TABLE 3.—NYSTAGMUS TIMES IN MEN OF POOR FLYING ABILITY

Name	Right	Variation		Left	Variation	
		Above	Below		Above	Below
80. W. H. M.	25	..	1	26	..	..
81. J. H. T.	23	..	2	24	..	1
82. A. E.	28	3	..	27	2	..
83. H. V. M.	25	..	1	26	..	..
84. C. M. N.	22	..	4	24	..	2
85. H. H. T.	25	..	1	24	..	2
86. P. H.	21	..	5	22	..	4
87. R. C. P.	27	1	..	26	..	..
88. H. M. H.	26	..	..	25	..	1
89. W. F. S.	30	4	..	29	3	..
90. J. C. McC.	25	..	1	22	..	4
91. O. R. L.	25	..	1	18	..	8
92. L. —	22	..	4	20	..	6
93. C. N.	33	7	..	32	6	..
94. L. L. S.	22	..	4	21	..	5
95. G. W. G.	29	3	..	30	4	..
96. W. M. H.	24	..	1	24	..	1
97. F. H. M.	25	..	1	25	..	1
98. M. M. W.	22	..	4	22	..	4
99. E. F. H.	18	..	8	18	..	8
100. J. R. G.	33	..	7	28	2	..

seconds, in the average fliers 1.81 seconds, and in the poor fliers 1.47 seconds. Certainly here we do not have even a semblance of correlation between flying ability and individual variation in nystagmus time.

If we take simply the gross average time for each of the three classes of fliers, we find 24.2 seconds for the good, 24.8 seconds for the poor, and 26 seconds for the average fliers, in which case we have a reversed correlation as regards good and poor fliers.

There seems to be an opinion prevalent among men examining candidates for aviation that variation above the normal is more desirable than variation below. In our group of cases, however, the variation of the good fliers below 26 seconds compared to the variation above in the same group is 4.62:1, while in the case of the average and poor fliers, the ratios were 2.31:1 and 2.02:1, respectively.

The only case afforded by this group of 100 men in whom there was evidently a very marked abnormality of semicircular canal function was in W. L. L., No. 50. His nystagmus time was: right, 15; left, 13. He had reversed falling and was excessively nauseated. Nevertheless he has proved thus far to be a very acceptable flier, and in this classification has been put in the average class.

TABLE 4.—SUMMARY OF RESULTS

	Good Fliers (35 men)	Average Fliers (44 men)	Poor Fliers (21 men)
Average variation.....	4.65 seconds	5.72 seconds	6.04 seconds
Average nystagmus time.....	24.2 seconds	26 seconds	24.8 seconds
Individual variation between right and left.....	1.37 seconds	1.81 seconds	1.47 seconds
Ratio of "variation above" to "variation below.....	1:4.62	1:2.31	1:2.02

The evidence, therefore, seems to point to an absence of correlation between equilibrium tests, as established in the Bárány chair, and actual flying ability.

Correlation of Laboratory and Clinical Observations.—In the third annual report of the Medical Research Committee for 1916-1917, it is noted that a special investigation committee has been appointed for the purpose of further combined study of "Shock and the Better Correlation of Laboratory and Clinical Observations," consisting of Prof. F. A. Bainbridge, Prof. W. M. Bayliss, F.R.S.; Prof. Walter B. Cannon, Dr. H. H. Dale, F.R.S. (secretary); Lieut.-Col. T. R. Elliott, F.R.S., R. A. M. C.; Capt. John Fraser, R. A. M. C.; Prof. C. S. Sherrington, F.R.S.; Prof. E. H. Starling, F.R.S. (chairman), and Col. Cuthbert Wallace, C. B. Professor Cannon is making arrangements for coordinating the work of this committee with that of a similar committee of American physiologists. The committee in its report also expresses its gratitude to the Rockefeller Institute for Medical Research, and to Dr. Simon Flexner, director of the institute, for services rendered, and especially mentions the assistance that Professor Richards, with the sanction of the University of Pennsylvania, is giving to research work in its pharmacologic department; the cooperation of Prof. Walter B. Cannon of Harvard University in inquiring into the physiology of surgical and toxic shock; the valuable service of Professor Tileston of Yale University, and other Americans in the work at Hampstead or Colchester on cases of military heart disorder, and the collaboration of American workers in France with the committee. The committee accepts gratefully these individual acts of friendly help for American workers as an earnest of the growing cooperation between this work for the advancement of medical knowledge in the two countries, on behalf of either of them, with the allied armies in France.

THE PNEUMONIAS: STREPTOCOCCUS AND PNEUMOCOCCUS GROUPS

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A conference of medical officers from Fort Sam Houston and Camp Travis was held, Jan. 3, 1918, for the purpose of considering the pneumonia situation. Various points in the determination of the causative organism in pneumonia following measles were considered, methods of procedure were suggested, and the laboratory force was organized to take up the work. A preliminary report¹ was sent to the Surgeon-General of the U. S. Army, Feb. 7, 1918. We present a part of the original report, together with additional cases and comments.

METHODS OF PROCEDURE, AND POINTS TO BE CONSIDERED

1. The presence or absence of type pneumococci and hemolytic streptococci in all cases of measles should be determined by the taking of throat swabs of all patients immediately on their entering the hospital.
2. Carriers of either organism should be segregated and given special care—especially after-care.
3. Cultures for hemolytic streptococci should be made of all patients, now in the convalescent wards, who have had pneumonia following measles.
4. Blood cultures should be made in all pneumonia cases occurring as complications of measles.
5. Cultures in blood agar should be made of all pus specimens from serous cavities for identification of pneumococci and hemolytic streptococci.
6. At necropsy, cultures in blood agar should be made of lung specimens, pleural and pericardial pus and the heart's blood.
7. All organisms isolated should be identified.
8. The presence or absence of agglutinins for organisms isolated from postmortem specimens should be determined in patients convalescing from pneumonia following measles.
9. Determination by throat swabs should be made of the percentage of measles patients who are healthy carriers of pneumococci or hemolytic streptococci—Type III hemolysis.
(a) What percentage of these develop pneumonia?
(b) What percentage of these separate groups come to necropsy?
10. Are the types isolated at necropsy the same as those isolated from throat swabs?
11. The advisability should be considered of vaccinating, by the intravenous method, all measles patients or all who are found to be healthy carriers of specific organisms with the predominating or specific types that are isolated from postmortem specimens. This refers especially to vaccination with hemolytic streptococci.
12. The hemolytic streptococcus pneumonias should be given special consideration in determining whether or not these have been classified as Group Type IV pneumonias.
13. Is there a possibility of a double infection with the type epidemic pneumonia and the streptococcus pneumococcus pneumonia?
14. What percentage of bronchopneumonias are hemolytic streptococcus pneumonias?

15. Is hemolytic streptococcus pneumonia a terminal infection in type pneumonia?
16. All hemolytic streptococci isolated from throats, serous cavity exudates, blood and postmortem specimens should be identified by specific agglutinating.
17. The types or groupings of streptococci should be determined by serologic reactions.

This preliminary report is made for the purpose of setting forth our findings, so that others may make similar investigations elsewhere.

PREVALENCE OF PNEUMOCOCCI AND HEMOLYTIC STREPTOCOCCI IN THROAT SWABS OF MEASLES PATIENTS

In pursuance of the plan to determine the presence or absence of type pneumococci and hemolytic streptococci in all cases of measles on entrance of the patients to the hospital, and to determine the percentage of measles patients who are healthy carriers of pneumococci or hemolytic streptococci, 291 swab cultures were made. Of these, 187 showed Types I and II hemolysis. Among these patients, twenty-five, or 13 per cent., developed complications as follows: otitis media, 5; bronchopneumonia, 4; tonsillitis, 4; scarlet fever, 3; lobar pneumonia, 2; mumps, 2; arthritis, 1; sinusitis,

TABLE 1.—THROAT SWABS FROM MEASLES PATIENTS ON ENTERING HOSPITAL, PERCENTAGE OF COMPLICATIONS FOLLOWING MEASLES *

	No.	Per Cent.	Complications	
			No.	Per Cent.
Total swabs	291	100	..	..
Types I and II hemolysis	187	64	25	13
Type III hemolysis	88	23	36	41
Types I and III hemolysis	16	12	15	94
Total type III	104	35	51	49

* Types I, II and III refer to types of hemolysis, and not to groups of streptococci.

1; acute bronchitis, 1; erysipelas, 1; cellulitis, 1; abscess of gum, 1. Among these twenty-five patients there were twenty-six complications. During the bronchopneumonia complication in the four cases referred to in this group, Type III hemolytic streptococci were isolated.

Of the total swab cultures, 104 showed Type III hemolysis, and among these, fifty-one, or 49 per cent., developed complications. In this group these were: bronchopneumonia, 34; empyema, 9; tonsillitis, 6; arthritis, 2; acute bronchitis, 2; mumps, 1; lobar pneumonia, 1; cellulitis, 1; pleural effusion, 1. Among the fifty-one patients there were fifty-seven complications.

It may be assumed that some of these complications (scarlet fever and mumps [?]) were merely incidental to the measles infection.

If only the pneumonia cases are considered in these two groups of throat findings, it will be noted that among those patients from whom Types I and II were isolated, 3 per cent. developed pneumonia; while among those harboring the Type III hemolytic streptococcus, 33 per cent. developed pneumonia.

The complications here referred to, aside from the pneumonias, are now under investigation in order to determine the causative organism.

From 291 throat swabs from measles patients, 35 per cent. hemolytic streptococcus carriers were revealed, and 33 per cent. of these carriers developed streptococcus pneumonia.

1. Cumming, J. G.: An Investigation to Determine the Causative Organism in Post-Measles Pneumonia Cases.

It has been established that among measles patients in this series of cases, 33 per cent. of the identified streptococcus carriers developed streptococcus pneumonia. Whether or not this percentage is applicable to measles cases among the civilian population is a question as yet not determined.

SWABS FROM AVERAGE THROATS

Seventy swabs from average throats showed only 6 per cent. hemolytic streptococci. This corresponds to the percentage obtained by Smillie in his investigation of hemolytic streptococci. How is the low percentage among these, as compared with the percentage among measles patients on entrance to the hospital, to be accounted for? Is it possible that the streptococcus in the throat prepares the way for measles virus infec-

TABLE 2.—BACTERIOLOGIC FINDINGS AT NECROPSY IN CASES OF THE PNEUMONIAS

Case	Date	Lung	Pleural Exudate	Pericardial Exudate	Heart's Blood	Diagnosis	Type Pneumonia
1	1/24/18	....	....	S*	S	Lobar pneumonia	IV
2	1/25/18	S	S	S	....	Measles pneumonia†	....
3	1/26/18	....	S	....	....	Bronchopneumonia	....
4	1/30/18	....	S	....	....	Bronchopneumonia	....
5	1/30/18	S	S	S	S	Measles pneumonia	....
6	2/ 2/18	S	S	S	S	Measles pneumonia	....
7	2/ 2/18	S	S	....	....	Measles pneumonia	....
8	2/ 2/18	S	S	....	....	Measles pneumonia	....
9	2/ 3/18	S	S	....	....	Measles pneumonia	....
10	2/ 3/18	P†S	P-S	....	....	Lobar pneumonia	IV
11	2/ 4/18	S	S	S	S	Lobar pneumonia	Not identified
12	2/ 4/18	P	P	P	....	Lobar pneumonia	Not identified
13	2/ 5/18	P-S	....	....	P-S	Measles pneumonia	....
14	2/ 5/18	S	S	....	....	Measles pneumonia	....
15	2/ 6/18	P	P	....	....	Lobar pneumonia	Not identified
16	2/ 7/18	S	S	S	S	Measles pneumonia	....
17	2/ 8/18	S	S	S	S	Measles pneumonia	....
18	2/ 8/18	P-S	P	P	P-S	Lobar pneumonia	....
19	2/ 8/18	....	....	....	S	Measles pneumonia	....
20	2/ 9/18	S	S	....	....	Measles pneumonia	....
21	2/10/18	II§	S	P	P	Measles pneumonia	....
22	2/10/18	P	....	P	S	Measles pneumonia	....
23	2/11/18	II	P	S	S	Bronchopneumonia	....
24	2/12/18	S	....	S	....	Bronchopneumonia	....
25	2/13/18	S	S	S	S	Measles pneumonia	....
26	2/14/18	S	S	S	S	Measles pneumonia	....
27	2/14/18	S	S	S	S	Measles pneumonia	....
28	2/13/18	P	....	S	....	Lobar pneumonia	....
29	2/18/18	S	S	S	S	Measles pneumonia	....
30	2/18/18	S	....	....	P	Bronchopneumonia	....
31	2/21/18	S	S	....	S	Bronchopneumonia	....

* S means positive for Type III hemolytic streptococci.
† "Measles pneumonia" means measles followed by pneumonia.
‡ P means positive for pneumococci.
§ II means Type II hemolysis, organism not identified.

tion, and that the latter infection, in turn, produces a condition that is favorable to streptococcus pneumonia (measles catarrh) and an extension of this infection to the pleural and pericardial cavities, blood stream, joints, etc.? Is this supposition applicable to scarlet fever and its complications?

HOSPITAL PROCEDURE FOR THE SEGREGATION OF MEASLES PATIENTS

Carriers of either organism, the streptococcus or the pneumococcus, should be segregated and given special care, especially after-care. On the basis that 35 per cent. of measles patients are streptococcus carriers and that 33 per cent. of these will probably develop pneumonia complications, and that cross infection of those not carriers is an important consideration in prevention, the wards should be divided into three sections. The first of these may be designated the detention

section where all incoming patients are held, until by throat swabs they are identified as carriers or as "clean" patients. This information is obtainable in eighteen hours. The carriers may then be removed to the second or carrier section, and the clean patients segregated in the third section. It is especially important that all patients in the detention section be protected by the sheet method of separation against drop-let infection.

The value of the sheet method is shown in the results of having carriers of hemolytic streptococci cough four times directly at agar plates held at a distance of about 2 feet. One hundred and thirty plates were used in this experiment, and an average of fourteen colonies developed on each. In addition, thirty-two blood agar plates were exposed in the same manner, with the result that the average number of colonies was the same as in the preceding experiment, and 12 per cent. bore colonies of hemolytic streptococci.

BACTERIOLOGIC FINDINGS IN BLOOD CULTURES OF PATIENTS WITH PNEUMONIA FOLLOWING MEASLES

Of patients with pneumonia following measles, twenty-eight blood specimens in all were tested. Of these, twenty-four were negative, while four, or 17 per cent., were positive for hemolytic streptococci; whereas in the series of necropsies reported (Table 2), it will be noted that a much larger percentage (58) of the specimens were positive.

BACTERIOLOGIC FINDINGS IN ANTEMORTEM PLEURAL EXUDATES

Of the sixty-one examinations of pleural exudates from patients in the pneumonia wards, organisms were found in forty-eight specimens. Of forty-one lobar pneumonia specimens, 59 per cent. proved to be pure streptococcus type III hemolysis, and 41 per cent. pneumococcus. Of seven bronchopneumonia specimens, 86 per cent. were streptococci, and 14 per cent. pneumococci. By consolidating these two groups, we find that 63 per cent. were hemolytic streptococci and 37 per cent. pneumococci.

BACTERIOLOGIC FINDINGS AT NECROPSY

In the thirty-one necropsies considered in Table 2, streptococci—Type III hemolysis—were isolated from twenty-one lung specimens, twenty-two pleural exudates, fourteen pericardial exudates, and fifteen heart's blood specimens.

In twenty-six, or 84 per cent., of the specimens from the serous exudates or heart's bloods, the streptococcus was isolated from pure culture, and in three, or 9.7 per cent., of the specimens it was coexistent with the pneumococcus; furthermore, it was found in one or more of these specimens in twenty-nine, or 94 per cent., of the necropsies, lobar pneumonia cases included.

The streptococcus was isolated in each of the twenty-four bronchopneumonia cases. Of these twenty-four cases, eighteen, or 75 per cent., are known to have followed measles.

Of the seven lobar pneumonia postmortem specimens, in only two was the pneumococcus unaccompanied by the hemolytic streptococcus. In two other specimens of this group, only the streptococci were found, and in the remaining three there were both pneumococci and streptococci.

In the lung specimen of Case 13, the ratio of pneumococci to streptococci was 350:2; while in the heart's blood it was 3:200.

In only one necropsy on a patient that had had pneumonia following measles was a type epidemic pneumococcus found, and this was coexistent with the hemolytic streptococcus; while in the seven lobar pneumonia cases, hemolytic streptococci were found, either in pure culture or coexistent with pneumococci, in five, or 71 per cent., of the necropsies.

It would appear that the hemolytic streptococcus was the cause of death in twenty-nine, or 94 per cent., of the thirty-one cases, lobar pneumonia cases included; and since this organism was found in fairly pure cultures in all lung specimens as well as in pure cultures, in either serous exudates or the heart's blood or both, in cases of pneumonia following measles, it may be concluded that the hemolytic streptococcus is the causative organism in this complication following measles, moreover, that it was the immediate cause of death in a large percentage of so-called lobar pneumonia cases.

Assuming that universal vaccination against the predominant type, or types, of the hemolytic streptococcus will protect against infection, it follows that if this procedure is carried out, the case rate as well as the mortality of the pneumonias, both pneumococcus and streptococcus, should be reduced by a large percentage.

BACTERIOLOGIC FINDINGS IN SWAB AND SPUTUM SPECIMENS

In the wards for patients with pneumonia following measles, swab and sputum specimens from twenty-four patients were examined for the hemolytic streptococcus. Of the swabs, 76 per cent. were positive, as were also 87 per cent. of the sputum specimens. In 55 per cent. of the cases the swabs as well as the sputum specimens were positive; while either swab or sputum was positive in 100 per cent. of the cases. These findings show the importance of taking both swab and sputum specimens.

IDENTIFICATION AND CLASSIFICATION OF THE PNEUMONIAS

On account of the unquestioned prevalence of streptococcus pneumonia, both as a complication of measles and as coexistent with lobar pneumonia, it is apparent that a new differential procedure for type identification must be devised.

In none of the lobar pneumonia cases which at necropsy showed both pneumococci and streptococci had an antemortem diagnosis of type epidemic pneumococci other than Type IV been made.

Of twenty specimens of sputum from lobar pneumonia patients submitted to the pneumococcus division for type identification, four were of Type I; four were not identified because the sputum specimens were not satisfactory (streptococcus pneumonia sputum is not always of the coffee-ground character); and twelve were not of Types I or II. All these specimens were submitted to the division of streptococcus investigators, and of the twenty specimens, nine showed Type I or II hemolysis, and the remaining eleven the hemolytic streptococcus—Type III hemolysis.

It is apparent that there is considerable confusion in checking the results of the two divisions of workers, and this is doubtless due to the fact that the strepto-

coccus has not heretofore been recognized as a factor in the pneumonias. In this series of specimens the streptococcus was found in 55 per cent. of the cases, and as the mortality from the infection is high in the so-called "lobar pneumonia" cases, the identification of this organism in the sputum is important in determining the proper therapeutic treatment.

Failures by the mouse method are due to the virulence of the streptococcus for this animal, and to the possibility of a coexistent infection of both pneumococcus and streptococcus. If a double infection exists, either the mouse will not die, because of the small proportion of pneumococci in the sputum, or if it does die, the death may be due either to one of the type pneumococci, or to the predominance of hemolytic streptococci. From this it will be seen that the hemolytic streptococcus is not recognized by the mouse method, and that this method does not rule out hemolytic streptococci and other infecting organisms, as was formerly believed.

Although the Avery method is applicable under favorable conditions to the type pneumococcus pneumonias, it does not include in its procedure the identification of streptococcus pneumonia; and owing to the mucous cloud which is not thrown down by centrifugation, precipitin formation is at times difficult to detect.

From these facts it is apparent that the methods heretofore employed are inadequate for the diagnosis of all the pneumonias, and that an additional procedure must be added which will include the identification of the hemolytic streptococcus.

Since the pneumonias are of two main groups—pneumococcus and streptococcus—and as they may be coexistent, the isolation of the causative organism, or organisms in pure culture is essential to group as well as to type identification. The following procedure, which includes isolation of the hemolytic streptococcus type III in pure culture, is therefore presented:

The sputum is obtained and washed in the usual manner, diluted to 10 c.c. in sodium chlorid solution, and one and two loops are transferred to each of two tubes of 10 per cent. horse blood agar, which are poured into Petri dishes. This technic of isolation is the same as that used by Smith and Brown² and Smillie.³ These are incubated for twenty-four hours.

The pneumococcus colonies—Type I hemolysis—may be easily differentiated by their small greenish halo of hemolysis from the streptococcus colonies, which are lance shaped and have a clear halo of hemolysis from 2 to 3 mm. in diameter, after an incubation of eighteen hours. Type 1 refers to the familiar *Streptococcus viridans* hemolysis; II and III to the alpha and beta types of hemolysis, respectively, of Smith and Brown. The medium should be almost on the border of being liquid, so as to permit of rapid growth and diffusion of hemolyzing products.

The next step in the procedure consists in picking four pneumococcus-like colonies and several streptococcus colonies and their transfer to slide ascitic fluid or serum agar smears. These agar smears are prepared by first placing a couple of layers of filter paper in the bottom of a large Petri dish, and on these a row of slides numbered with a diamond point. The Petri dish and its contents are then sterilized, after which the agar smears are prepared in the same manner as an ordinary blood smear. The picked colonies are transferred to these smears; the filter paper is then moistened to prevent the drying of the smears, and the Petri dish with its contents is incubated for from six to eight hours. The cultures so obtained on the slide agar smears are worked up into a

2. Smith and Brown: Jour. Med. Research, 1914, 31, 455.

3. Smillie: Jour. Infect. Dis., 1917, 20, 45.

homogeneous suspension with a platinum loop in the proper dilutions of pneumococcus Type I serum and streptococcus antiserum. These are of course controlled with dilutions of normal horse serum. This is essentially a "spot" agglutination. As pneumococcus Type I infection is the only one which can as yet be treated with serum, the identification of the other types may be eliminated from consideration, so far as the immediate bacteriologic diagnosis is concerned.

The commercial antistreptococcus serum that we are now using agglutinates in twenty minutes in a dilution of 1:160 the strain of streptococci that were isolated from postmortem specimens. Serum should not be used until it has been tested against the known organism and its agglutinating titer determined.

This method of identification is short, is unencumbered with technical difficulties and gives reliable results.⁴

If the routine procedure for the typing of pneumococci is carried out in conjunction with the blood agar plate method for the identification of the hemolytic streptococcus, the slide agar smear procedure may be eliminated.

The clinical classification of the pneumonias is important, though less so than the classification from the bacteriologic point of view. From the findings here presented it would seem that the disease may be classified according to the causative organism into two main groups, primary pneumococcus and primary streptococcus pneumonia, and a subgrouping, primary pneumococcus and secondary streptococcus pneumonia. The pneumococcus pneumonias are further divided according to Types I, II, III and IV. As to the classification of the streptococcus according to type, however, this particular organism must await further investigation. We now have in stock about eighty antemortem and postmortem strains, and more than 700 from throat swabs which will be studied with the view of possible groupings among them.

VACCINATION AND SERUM TREATMENT

In pursuing this work the following points are to be considered:

(a) The advisability of vaccinating by the intravenous route all measles patients that are found to be hemolytic streptococcus carriers. The time elapsing between the measles onset and the appearance of complications is probably sufficient to allow for immunization by this method.

It was at first contemplated to vaccinate only those patients who proved to be carriers of hemolytic streptococci. But since a comparison between the findings of swab and of sputum examinations in a series of cases shows that 25 per cent. of the carriers may be missed when diagnosis depends on a single swab, all patients should be protected. These are divided into three groups, the ratio of carriers to noncarriers being kept the same throughout the work. Each patient in the first or vaccine group is receiving intravenously 100 million hemolytic streptococci on the first day and 500 million on the third day, then on the fifth day 1,000 million subcutaneously. The second or serum group should receive 10 c.c. of antistreptococcus serum intravenously. The third, or vaccine serum group, is receiving 2 c.c. of antistreptococcus serum with 250 million hemolytic streptococci intravenously on the first day, and two subsequent injections of vaccine of the same dosages and routes as those in the first or vaccine group. The sensitization

of patients in the last two groups to horse serum is tested by an initial dose, and the mixture of vaccine and serum is tested in animals prior to its injection into the patients in order to rule out the presence of anaphylatoxic symptoms. No untoward symptoms have arisen from these intravenous doses of vaccine and serum. This dosage, however, in work in so initial a stage, must not be considered as definitely determined.

Sufficient time has not yet elapsed to permit of a report on this work. We realize, of course, that, at least from theoretical standpoints, there is objection to universal protective injections of antisera; but as hemolytic streptococcus pneumonia is as fatal as plague, a limited investigation as here presented would seem justifiable in order to determine the most efficient method of protection. Owing to the fact that the hemolytic streptococcus is now incriminated as the killing organism in streptococcus pneumonia, as well as in a large percentage of so-called "lobar pneumonia" cases in our series it is now contemplated to institute the foregoing vaccine and serum treatment in the latter group of cases.

(b) The possibility of developing in the horse a high titer antihemolytic streptococcus serum; this to be used as a preventive as well as a curative. Horses are now being immunized by various methods of injections with the particular strains that have been isolated at necropsy from pure blood cultures.

(c) Since approximately 60 per cent. of pneumonias are type epidemic varieties, and at least a large percentage of the remainder hemolytic streptococcus pneumonias, the advisability of carrying out universal vaccination of troops by combining Types I and II pneumonias with the hemolytic streptococcus.

From the findings here presented it would seem that this organism (streptococcus) or group of organisms, is the causative organism in cases of bronchopneumonia, especially those following measles, and the immediate cause of death terminal infection in a certain percentage of lobar pneumonias.

We may now add that the pneumococcus pneumonias in and of themselves are not as fatal as heretofore believed, for in our series of necropsies on cases diagnosed as lobar pneumonia — though not large — the hemolytic streptococcus was isolated from either one of the serous cavities or from the heart's blood in all but two cases. One might ask whether or not this infection in the so-called type pneumonias is common in other parts of the country. We believe it is.

There is no reason to believe that the occurrence of hemolytic streptococcus pneumonia is limited to the Southern Department. This organism is of universal prevalence and has been isolated by us in cases of septic sore throat and scarlet fever in Massachusetts, from septic sore throat and the blood in two cases of fatal septicemia in Michigan, and from scarlet fever and one case of pleural effusion in California. From these facts, universal vaccination of all troops with this organism, as well as with type pneumonias, would seem advisable. From an epidemiologic standpoint, it may be said that this streptococcus is the so-called human type which is often transmitted to cows' udders by milkers, and spread through milk supplies.

This complicating organism is the immediate cause of death, and its terminal extension from the lung explains some of the failures of the antipneumococcus serum. From our series of necropsies it would seem

4. A short (one hour) method of identification of type pneumococci has been perfected by Captain Marshall A. Barber, S. C., U. S. Army, of the Southern Department laboratory, and this will be reported in a short time.

that a specific antistreptococcus serum of a high titer applied in both groups of pneumonias—pneumococcus (in double infections) as well as streptococcus—would be the most efficient agent in reducing the present high mortality of these infections. Especially does this apply to the complicating pneumonias—after measles and scarlet fever—as well as the complications following lobar pneumonias.

It may be regarded as an extremely important point in considering the serum treatment of type pneumonias to determine first whether or not the hemolytic streptococcus is coexistent with type pneumococcus.

In the series of necropsies here reported, the hemolytic streptococcus was found to be the immediate cause of death in 77 per cent. of the cases, it having been found in pure culture in serous exudates or the heart's blood in bronchopneumonia and in common with pneumococci in lobar pneumonia cases.

There is no infection more fatal than hemolytic streptococcus septicemia, and this complication as well as the less serious extension of the lung involvement into the pleural and pericardial sacs must be guarded against by well considered therapeutic treatment. If the invasion by the streptococcus can be limited to the lung tissue it is probable that the mortality from the pneumonias, streptococcus and pneumococcus complicated by streptococcus will be markedly reduced.

From a theoretical consideration, it would seem that vaccination would be of practical value in reducing both the case rate and the mortality in type pneumonias and in broncho streptococcus pneumonias, and especially in the pneumonias following measles as well as other complicating processes after measles.

Since vaccination experiments in animals have shown that a high degree of immunity against both streptococcus and pneumococcus infections can be produced, it would seem reasonable to conclude that a triple vaccine consisting of the hemolytic streptococcus and pneumococci Type I and II would give favorable results.

It may be added that universal vaccination against streptococcus infection should also protect against the complications incident to scarlet fever, as well as against the lung infections of streptococcus and complicated pneumococcus pneumonias.

Amendments to Sanitary Code in 1917.—The January *Bulletin* of the New York State Department of Health reviews the amendments to the Sanitary Code which have been adopted during the past year and calls special attention to the following:

Chancroid gonorrhea and syphilis were added to the list of diseases declared to be communicable; it was made obligatory on every physician, when treating a patient affected with any of these diseases to furnish such a patient with a circular of information approved by the State Commissioner of Health and to instruct them as to the precautions to be taken to prevent the communication of the disease to others. It has been made obligatory on every physician to report to his local health officer all persons bitten by suspected rabid animals and all cases of acute anterior poliomyelitis. In order to inform the local health officers of the occurrence of deaths from communicable diseases other than tuberculosis, it has been made the duty of the local registrar of vital statistics to report immediately to the health officer, the name, age and address of the deceased, whenever a certificate of communicable disease is received, and also the name of the physician who filed the certificate; it is also the duty of the health officer to ascertain whether such person was reported during life as being infected with a communicable disease. A model sanitary code for towns, villages, and third class cities was prepared and recommended for adoption by local authorities. The State Commissioner of Health was given authority to declare extracantonment zones about military camps, and provision has been made for the monthly inspection of such zones by health officers. Regulations were adopted providing for the inspection by health officers of boarding and lodging houses containing people affected with tuberculosis, and licenses are required of boarding houses making a business of boarding children under 12 years of age, away from their parents. More stringent regulations were adopted regulating the practice of midwifery.

A PLEA FOR A MORE FUNDAMENTAL METHOD IN MEDICAL TEACHING

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The recognition of the specialties of medicine made by the Surgeon-General of the United States Army in the early months of the present war represents a step of importance in the progress of medicine, and will obviously promote the efficient care of the wounded. It must to a greater or less extent have an effect on the future of medicine, and it is not unlikely that it may modify medical education, especially as some of the medical schools have in the past few months had experience in the intensive training of groups of military surgeons in the special branches, an experience which in my case has modified extensively my views as to the best methods of teaching.

The experience mentioned has consisted in being associated with four such intensive courses, three at the Harvard Graduate School of Medicine and one at the Army Medical School in Washington. These courses were given to selected military surgeons to acquaint them with some of the fundamentals of orthopedic surgery. To attempt to do more than this in the four, six or eight weeks at our disposal seemed unwise, yet we had in even the shortest of the courses some 130 hours of instruction, far more than any undergraduate would receive in that specialty in any year of his medical course.

Many of these men knew no more orthopedic surgery than is taught in our regular medical school, while others had special experience; but the proposed intensive education naturally had to be adapted for those who knew least. The problem, therefore, was to teach these men as effectively as possible in the time at our disposal. The ordinary method of teaching undergraduates, which consists of instructing the students item by item in the various affections, looked inadequate and proved to be, so that after the first an attempt was made to teach the basic principles of orthopedic surgery and to illustrate these principles clinically.

As the plan apparently proved successful and was intensified in each succeeding course, it has seemed that it might perhaps have a bearing also on the question of undergraduate teaching in this and in other departments in medicine. The matter, therefore, is here discussed from the point of view of a teacher of orthopedic surgery, but with a definite feeling that it has a wider application. I am indebted to my colleague, Capt. Mark H. Rogers, associated with me in the Boston course, for much sympathetic help in the elaboration of the plan.

In the past it has been the custom in general to teach the specialty to the undergraduate by giving didactic or clinical instruction, recitations, or all of them in those different affections which, taken together, might be regarded as constituting orthopedic surgery. Thus scoliosis, clubfoot, the deformities of poliomyelitis, tuberculosis of the spine, flatfoot, torticollis, round shoulders, etc., were taken up one by one, described, demonstrated, illustrated, discussed and dismissed. This is the easy and the obvious way of teaching orthopedic surgery or any allied medical subject, but it is simply making the student, if he

remembers all that he learns, into a medical encyclopedia with separate, unrelated blocks of information necessarily incomplete in number, because of the impossibility of covering every affection. Although this might pass, and has passed, unchallenged in the undergraduate curriculum, it did not stand the test of intensive instruction when instruction became an unusually serious and responsible business.

The plan was adopted of first taking up general principles, and then illustrating these clinically. It thus became the reverse of the so-called "case system," because the student first heard the principles stated, and after being grounded in them, was made familiar with their application. He did not, as in the "case system," learn to deduce his principles from clinical experience. It was felt that in training necessarily short, but which must be comprehensive, no matter how abundant the supply of clinical material might be, it was safer to ground the student in the fundamentals and teach him to apply them to patients. In this way he would, or should, be better able to approach a new and unusual condition which he had not met clinically.

For the carrying out of this plan it became necessary to arrange the subjects to be taught in groups. The different systems or structures of the body, the joints, the muscles, etc., seemed to offer the best basis of correlation, and in these groups were placed the affections of the different systems. The plan adopted for this method of teaching this specialty was as follows:

AFFECTIONS OF THE JOINTS

The anatomy of the joints was briefly spoken of, and their general structure, components and varieties described. The physiology of joints was alluded to, and attention called to the facts that use means increase of synovia, that muscles of normal strength are necessary for good joint function and stability, etc. Then came a short statement of the pathologic reaction of joints to trauma, infection or toxins, and it was shown that in the beginning joints react in the same way to the various abnormal influences; that first come hyperemia of the synovial membrane, swelling and increased secretion, and that from this point on one of four cases is generally followed: (1) recovery with a reversal of the acute process; (2) a chronic condition which is a prolongation of the acute; (3) suppuration, and (4) destruction or degeneration, perhaps leaving an ankylosis. Muscle atrophy was shown to be an early accompaniment of all joint affections, and muscle spasm was demonstrated as a reflex tonic contraction of articular muscles in painful and serious joint affections, while ankylosis was shown to be the result of destruction of some part of the joint and to be regarded as a cicatrix.

Cases of any joint affection were then shown, and the students, when possible by personal examination and questioning, were made to identify the general signs described above and to account for them on general pathologic principles. Etiology and special pathologic processes were not at this time discussed. Traumatic affections of joints were then taken up, and a few words said about the peculiarities of different joints in their reaction to trauma; for example, that in the knee the synovial membrane is accessible to examination, but that it is not so in the hip and spine, and that in the latter one must depend more on stiffness, malposition, etc. Cases of traumatic

joint affections were then presented, general signs were demonstrated by the students, general conclusions and conclusions as to the pathologic process of the individual case were drawn, differential diagnosis was discussed, and a treatment was formulated to meet the pathologic needs of the individual case. Following this, infections of the joints were taken up and the pathologic peculiarities of tuberculosis described and demonstrated by specimens, lantern slides and roentgenograms. Clinical demonstrations followed along the same lines as those employed with traumatic affections. Acute infections, nontuberculous arthritis, syphilis, intermittent hydrops, hemophilia, etc., were taken up in the same way. Finally, ankylosis was further discussed and clinically demonstrated, positions desirable for stiff joints were elaborated, passive motion and ankylophobia were discussed, and the subject of joints was dismissed.

I had the feeling each time this one department was completed that the student had been furnished with an alphabet by which to spell out the conditions as he met them rather than an incomplete encyclopedia, the items of which he might or might not remember correctly. As this division of the subject has been dwelt on at length, the others may be mentioned much more briefly.

DISEASES AND AFFECTIONS OF THE BONES

The general structure of bone, its growth, regeneration and repair were taken up, and next came a consideration of the various pathologic processes affecting bones, with their peculiarities and characteristics, which were demonstrated clinically and by operations. This included acute and chronic osteomyelitis, syphilis, rickets, osteomalacia, fragilitas ossium, achondroplasia, Paget's disease, etc.

AFFECTIONS OF THE MUSCLES OR, MORE PROPERLY, THE NEUROMUSCULAR MECHANISM

The passage of a motor impulse from brain to muscle was described, the upper and lower neurons mentioned, and the distributing function of the synapse showed. The general laws of reflexes were next considered and the general phenomena of muscles discussed, it being pointed out that they are easily fatigued and stretched, always under tension unless paralyzed, and easily developed by exercise. It was then mentioned that the orthopedic surgeon, especially in the field, would have to deal with the deformities caused by focal cord lesions, and lesions of the cerebral motor area and of the peripheral nerves. The essential characteristics of each were pointed out.

The cord lesions were demonstrated, by means of patients, in acute poliomyelitis and fracture of the spine; cerebral lesions, in cerebral spastic paralysis; and peripheral lesions by obstetric paralysis.

STATIC AFFECTIONS

That muscular weakness far short of paralysis might cause deformity was pointed out. The mechanism and anatomy of the foot were described, and its abnormalities under unfavorable conditions of general health, overuse, bad shoeing and overweight were discussed and then clinically analyzed after the general principles had been elaborated. Bad attitude and scoliosis were taken up in the same way, after certain elementary considerations as to the mechanics of the spine and posture in general.

CONGENITAL DEFORMITIES

However comprehensive this or any scheme may be, a heterogeneous group of congenital deformities remains to be considered, and these apparently must be taught by the old itemized method after a short statement of our knowledge, or rather lack of knowledge, of the cause and mechanism of congenital deformities.

APPARATUS

In no part of the subject has the need of generalized instruction been more evident than in the question of apparatus.

This subject has generally been taught through a description by name, in connection with each condition, of some especial apparatus that is used for its treatment, for example, the Thomas splint for hip disease. For the subject of apparatus to be taught effectively, it must be approached in a broader way, and the student made to formulate in each pathologic condition the mechanical requirements, if any, based on the special pathology and his knowledge of joint physiology and mechanics. The student's general attitude is that tuberculosis of the hip requires a brace, the name of which he may or may not recall and of whose mechanical use he knows little or nothing. It is essential to have him learn to recognize that hip tuberculosis requires fixation or traction or both; that this need is determined by the activity and the acuteness of the process in the individual case; that there are many methods of obtaining these ends mechanically, and that the student should recognize the mechanical problem, the crudest way of meeting it, and then the elaboration of crude methods into light and efficient apparatus. This would give the man, especially in the military service, some resource in improvising apparatus, and make him more intelligent in the choice of a method. One would then teach that apparatus was of all kinds: "Wooden splints for fractures are apparatus; so is plaster of Paris. Iron, leather, celluloid, aluminum, papier mâché, etc., also may be. The purposes for which apparatus is used should be shown as being (1) for fixation; (2) for traction; (3) for protection or stilting, and (4) to correct deformity. In short, the student should be taught to state what he is trying to do in the individual case in mechanical terms, to work out the principle in crude material, and then be made familiar with accepted forms of apparatus suited to such a case.

RECONSTRUCTION

The question of the rehabilitation of the wounded man and his vocational training must be considered as a special subject, not only because the man disabled in war must be provided for, but also because our knowledge of the rehabilitation of war cripples must be applied later to industrial conditions, and the man crippled in industrial life will never in the future be neglected as he has been in the past.

The general principles on which the best reconstruction work is founded, and the selective aspect and the man's adaptability to a special job as well as the adaptation of the occupation to the individual, are unfolded.

The use of artificial legs and arms, their measurements and fitting, precautions to be taken with the stump and joints of the limb, adaptive additions to artificial limbs, and similar subjects are covered.

SUMMARY

It will be seen that the crude scheme just described covers all those affections which by the broadest possible interpretation can be included in orthopedic surgery, and that it groups them and gives the student connecting links on which to correlate his impressions, and makes a definite attempt to ground him in fundamentals and to teach him from these fundamentals to elaborate his own details. This method is probably in use in certain departments of medicine and perhaps by some men in all departments; but that it is not the common method would be generally admitted. In the intensive teaching of a special branch to mature men it has been most successful. It would seem as if the undergraduate approaching orthopedic surgery would emerge from his instruction a sounder man if this method were employed than if he merely received instruction in one item after another, however good that instruction might be.

The scheme as presented above is, however, incomplete, because much of the instruction advocated belongs to the departments of anatomy, physiology and pathology, and should be given in those departments and not in orthopedic surgery. However, instruction in most medical schools is imperfectly correlated, and it proved necessary to instruct the men in these special applications of anatomy, physiology and pathology because they did not know them well enough to make practical use of them, and the men in question came from many different schools.

A broader scheme, which it is not wise to advocate under war conditions, would point to a more effective correlation of work between the preclinical and the clinical departments in the medical school of the future, without in any way impairing the principle of proceeding from the general to the special as an educational principle.

Smoking and Rifle Shooting.—Some experiments were conducted by the National War Council of the Y. M. C. A. to determine whether smoking affected accuracy in rifle shooting. Smoking and nonsmoking students of the Y. M. C. A. College at Springfield, Mass., participated. In marking the skill of the shooters both the score and the deviation in score covering a certain number of shots before and after smoking were considered. In the first experiment without smoking, five shots were fired, then a rest of thirty minutes and five more shots. In the second, during the interval one cigar was smoked. In a third, two cigars were smoked during an interval of sixty minutes. In a fourth two cigarettes were smoked. In the fifth the first experiment was repeated. The shooting was at a target from the prone position with a rifle shooting a 0.22 long cartridge. In the first experiment the group average was 38.1 and after resting, 41; before resting the total deviation was 9.23 per cent.; after resting, 7.04 per cent., a decrease in deviation of 12.8 per cent. After one cigar there was a loss of 4.8 in score and an increase in deviation of 24 per cent. After two cigars there was a loss in score of 6 per cent. and an increase in deviation of 26.4 per cent. After two cigarettes there was a loss in score of 1.8 per cent. and a decrease in deviation of 1 per cent. In the last experiment, without smoking, but with a rest of thirty minutes, there was a gain of 13.2 in scoring and a decrease of 9.9 per cent. in deviation. The whole group decreased in efficiency after smoking, greater after two cigars than one, but less after the two cigarettes than after the cigars. The smokers were affected the least by the smoking, but the nonsmokers were the more efficient after rest. The experiments indicate that soldiers and sportsmen would be better marksmen if they did not smoke.

STATE BOARD STATISTICS FOR 1917

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1074 to 1083 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1917. Full reports were obtained from all state licensing boards and were carefully verified.

Tables A and B, when read from left to right, show (a) the number of graduates appearing for examination in each state, (b) whether they passed or failed, (c) the total number examined during the year, (d) the number who passed, (e) the number who failed, (f) the percentage of failures, and (g) the number of states in which graduates of each school appeared for examination. Read from above downward, they give the results by states, showing (h) the number registered and rejected from each college, (i) the total number examined, (j) the total number registered, (k) the total number rejected, and (l) the percentage of rejections. The fact that the majority of graduates take the license examination in the state in which the college is located is shown by the dark diagonal zone made by the grouping of figures passing from the upper left to the lower right corner of each table. This shows also that the states in which low-grade medical schools are permitted to exist are themselves the recipients of the greater portion of the ill-trained output of such schools. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

CAUTION IN FORMING CONCLUSIONS

In making comparisons on the basis of these statistics, several factors should be kept in mind. The number examined is important, since, if all other conditions are equal, the larger the number of graduates examined, the more accurate is the finding. But other conditions are seldom equal. The number of states in which a school's graduates have been examined is important. The larger this number the more accurate will be the conclusions. Again, the character of the board making the examination and the methods employed are important factors to be considered, since some boards hold very careful examinations and include practical laboratory and clinical tests, or they may mark the papers more severely; while others, especially partisan boards, may be very lenient. In this connection it should be stated that, although conditions are undergoing a steady improvement, it is still true that the character of the license examination as usually conducted is such that graduates of colleges conducted largely by quiz-class methods may easily be successful in passing it. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination-information set forth with these statistics in Table D.

GRADUATES OF ALL YEARS EXAMINED IN 1917

Table A shows the results for all candidates who took examinations in 1917, regardless of the years in which they graduated. This shows that altogether 4,730 candidates were *examined* last year, as compared with 4,850 in 1916, 5,313 in 1915, 5,570 in 1914 and 6,435 in 1913. There has been a steady decrease each year since 1906, when 8,035 physicians were examined. The decrease each year has been due largely to (a) the wider extension of reciprocity, and (b) the general diminution in the number of medical colleges, students and graduates. Of those examined this year, 14.1 per cent. failed, as compared with 15 per cent. in 1916, 15.6 per cent. in 1915, 21.6 per cent. in 1914 and 18.6 per cent. in 1913. This reduction in the percentages of failures indicates improved medical teaching, since there is reason to believe that methods of examination have not been relaxed but are more carefully conducted than formerly.

There were 89 medical colleges in the United States granting degrees in 1917 which had graduates examined, the same

number as in 1916. There were 93 in 1915, 96 in 1914 and 99 in 1913. There has been a decrease of 64 since 1905, when 153 medical colleges in the United States had graduates examined. The figures regarding graduates of medical schools which have ceased to exist, either through merger or otherwise, have been included in the line for miscellaneous colleges.

Foreign graduates were examined in 16 states, the total number being 79, and of this number 37, or 46.8 per cent., failed. The largest number of foreigners examined in any state was 18 in New York, where 8, or 44.4 per cent., failed. Graduates of Canadian schools were examined in thirteen states, more appearing, naturally, in the border states. The figures for the Canadian colleges are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 34 candidates from Canadian colleges were examined, of whom 8, or 23.5 per cent., failed. Of all Canadian colleges, the University of Toronto had the largest number examined. The highest percentages of failures were for Queen's University, 50.

UNDERGRADUATES AND OSTEOPATHS EXAMINED DURING 1917

For the last two years no undergraduates have been examined. The number examined each year has constantly diminished since 1906, when 703 undergraduates were examined and 342 were licensed. Colorado is now the only state which will examine nongraduates, but only four have been licensed in that state in twelve years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete.

During 1917, in California, 151 graduates of osteopathic colleges were admitted to the regular examination for licenses as physicians and surgeons, and of this number, 73, or 48.3 per cent., were granted licenses. Of the total examined, 59 were given merely the "oral, practical or clinical" examination, and of this number, 24, or 40.7 per cent., were registered. (See Tables I and J.)

RECENT GRADUATES EXAMINED DURING 1917

Table B gives the results for graduates of 1913 to 1917, inclusive, examined during 1917. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1917, 4,015, or 87.8 per cent., were recent graduates, and of this number, 10.1 per cent. failed, as compared with 12.9 per cent. for all candidates.

OLD PRACTITIONERS EXAMINED DURING 1917

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1912 and previous years (third column), and for graduates of 1917 (fourth column). Of the graduates of 1912 and previous years—"old practitioners"—564 were examined, and of this number 185, or 32.6 per cent., failed, as compared with 10.1 per cent. of failures for recent graduates. This high percentage of failures is due largely to the long time these candidates have been out of college and to the fact that they are required to take the same examination as recent graduates. Justice to these older physicians, who have been licensed, but who, for good reasons, desire to change their locations, is a strong argument for interstate reciprocity in medical licensure; for the use of practical examinations by which they may show their skill in diagnosis and treatment, and for special percentage allowances for years of active practice. The total number of these candidates is diminishing each year as

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22								
		Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan								
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F								
ALABAMA																															
1	University of Alabama School of Medicine.....	13	0								1	0	1	0																	
ARKANSAS																															
2	University of Arkansas Medical Department.....				16	1																1	0								
CALIFORNIA																															
3	College of Medical Evangelists.....					12	0			1	0																				
4	College of Physicians and Surgeons, Los Angeles..			2	0	50	0																								
5	College of Physicians and Surgs., San Francisco..					6	3																								
6	Hahnemann Medical College of the Pacific—H....					16	1																								
7	Leland Stanford Junior Univ. School of Medicine					20	0																								
8	Oakland College of Medicine and Surgery.....					4	0																								
9	University of California Medical School.....			1	0	25	0							1	0																
COLORADO																															
10	University of Colorado School of Medicine.....					0	1	20	0					1	0																
CONNECTICUT																															
11	Yale University School of Medicine.....							9	0												1	0									
DISTRICT OF COLUMBIA																															
12	Georgetown University School of Medicine.....							1	0		2	0									1	0									
13	George Washington University Medical School....				1	0				8	0			1	0	1	0			1	0										
14	Howard University School of Medicine.....							1	0											2	0	0	1								
GEORGIA																															
15	Emory University School of Medicine.....	7	2								3	0	59	0								1	0	1	0						
16	University of Georgia Medical Department.....											11	0									1	0								
ILLINOIS																															
17	Chicago College of Medicine and Surgery.....	1	0	1	0	1	0	1	0	2	0	0	1	1	0	3	0	1	0	155	34	4	0	1	0						
18	Chicago Hospital College of Medicine.....																		15	8											
19	Hahnemann Medical College and Hospital—H....											1	0						27	4											
20	Jenner Medical College.....																		21	5											
21	Loyola University School of Medicine.....	1	0			1	0	1	1										78	15			2	0							
22	Northwestern University Medical School.....			1	0											2	0	28	1		3	0									
23	Rush Medical College (University of Chicago)....			4	0		4	0			1	0	1	0		2	0	91	1		5	0	1	0							
24	University of Illinois College of Medicine.....			2	0		1	0							2	0	35	1		2	1										
INDIANA																															
25	Indiana University School of Medicine.....			1	0			1	0					1	0				25	0	1	0									
IOWA																															
26	State University of Iowa College of Medicine....													1	0	1	0		19	0											
27	State Univ. of Iowa Coll. of Homeo. Med.—H....																		1	0											
KANSAS																															
28	University of Kansas School of Medicine.....																		14	0											
KENTUCKY																															
29	University of Louisville Medical Department.....	1	0		3	0	1	0								2	3	4	0	1	0	1	0	40	5						
LOUISIANA																															
30	Tulane University of Louisiana School of Med. ...	4	1				1	0	1	0			2	0	2	0					1	0		34	1						
MAINE																															
31	Bowdoin Medical School.....			1	0				2	0		1	0									8	0		2	1					
MARYLAND																															
32	Johns Hopkins University Medical Department....	2	0					4	0	1	0	1	0	1	0				2	0	2	0			38	2	7	0	3	0	
33	Univ. of Maryland Sch. of Med. & Coll. of P. & S.			1	1			4	2	2	0	3	0	4	1				1	0					29	4	3	3			
MASSACHUSETTS																															
34	Boston University School of Medicine—H.			1	0																	4	0			27	4				
35	College of Physicians and Surgeons, Boston.....										0	1									1	0	1	0		4	11				
36	Medical School of Harvard University.....					2	0	1	0	4	1		1	0	1	0			2	0			1	0			59	0			
37	Middlesex College of Medicine and Surgery.....																										1	1			
38	Tufts College Medical School.....					2	1		3	4				1	0	1	0									9	0		70	5	
MICHIGAN																															
39	Detroit College of Medicine and Surgery.....																										0	1	50	2	
40	University of Michigan Medical School.....				1	0			0	1				3	0				1	0							3	0	48	1	
41	University of Michigan Homeo. Med. School—H....																												3	0	
MINNESOTA																															
42	University of Minnesota Medical School.....															1	0														
MISSOURI																															
43	Eclectic Medical University—E.				4	1										0	1														
44	Kansas City College of Medicine and Surgery—E.				21	6			3	0																					
45	National University of Arts and Sciences.....														1	0			0	1											
46	St. Louis College of Physicians and Surgeons....					0	1	1	1										1	1											
47	St. Louis University School of Medicine.....			1	0																										
48	Washington University Medical School.....	1	0																3	0		1	0						1	0	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	10	20	21								

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

[illegible]

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							
P	F	P	F	P	F	P	F	P	P	F	P	F	P	F	P	F	P	P	F	P	F	P	F	P	F	P	F	P	F					
Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number	
		1 0	4 2	35 0										0 1				1 0						2 0			3 0	52	48	4	7.7	10	49	
				6 0					1 0									1 0								1 0	7	18	18	0	0.0	2	50	
				15 0														1 0								1 0	1				0.0	4	51	
1 0		1 0					1 0		50 10						1 0		1 0									1 0		63	52	11	17.4	3	52	
			1 0						81 15											1 0								111	96	15	13.5	12	53	
									21 0						1 0	1 0												26	26	0	0.0	6	54	
									48 7						1 0													58	51	7	12.0	3	55	
					1 0				68 3		1 0																	79	75	4	5.1	8	56	
							1 0		54 36	0 1					1 0													105	67	38	36.2	8	57	
		1 0							13 0																			14	14	0	0.0	2	58	
									29 0						1 0					1 0								33	33	0	0.0	5	59	
							1 0	3 0	61 5							1 0												77	72	5	6.5	8	60	
									54 6						3 0	1 0												65	59	6	9.2	4	61	
										13 0							1 0							2 0				22	20	2	4.5	7	62	
			1 0						1 1			22 1			2 0											1 0		36	34	2	5.6	12	63	
									1 0			63 0												1 0		5 0		70	70	0	0.0	4	64	
												8 0																8	8	0	0.0	1	65	
												13 0	1 0		4 0		0 1									1 0		21	20	1	4.8	6	66	
					1 0							32 0			2 0						1 0							38	38	0	0.0	6	67	
									1 1				27 0	1 0			0 2				1 0							36	31	5	13.9	8	68	
			1 0						1 0					9 0											3 0			14	14	0	0.0	4	69	
	2 0	1 0	1 0	1 0					2 2			3 0			11 1		3 0						2 0					23	20	3	13.0	6	70	
		1 0							7 5	12 0		6 0	1 0	3 1	67 2													159	147	12	7.5	31	71	
									5 3	0 1					53 1	1 0												83	77	6	7.2	11	72	
												4 0	2 0		16 0													21	21	0	0.0	5	73	
		1 0					1 0		9 2	6 0		4 0			20 1				1 0	1 0								78	74	4	5.1	26	74	
									7 2	2 0		3 0			21 0													24	24	0	0.0	2	75	
												1 0			9 0													28	26	2	7.1	10	76	
									1 0	1 0							18 4											26	22	4	15.4	4	77	
	1 2	12 8								1 0									7 0									17	13	4	23.5	6	78	
	2 0									4 5		2 1	2 0				1 4		55 3	10 2				1 0		1 0		188	131	57	30.3	22	79	
		2 3															0 1		28 0	3 1								59	54	5	8.5	9	80	
		1 0	1 0						3 0			3 0	1 0				0 1		6 6	1 0								21	9	12	57.1	5	81	
																	0 1		61 0	5 0								97	95	2	2.1	18	82	
		1 0											1 0						13 1	1 0								19	18	1	5.3	6	83	
	1 0																		15 0									17	16	1	5.9	3	84	
																			44 0									47	47	0	0.0	4	85	
									5 2						2 0	1 0		1 0				9 0						37	31	6	16.2	8	86	
									2 3	14 1					1 0	1 0	1 0			0 1			42 4		12 1			93	80	13	14.0	13	87	
	1 0																						11 0					16	16	0	0.0	6	88	
2 0			1 0									1 0															7 0	11	11	0	0.0	4	89	
																												1	1	0	0.0	1	90	
							1 0		2 1							1 0												13	11	2	15.4	8	91	
									4 5																			10	5	5	50.0	2	92	
											1 0																		1	1	0	0.0	1	93
									4 1																				8	7	1	12.5	4	94
																												1	1	0	0.0	1	95	
2 0	3 2	7 0	8 8	2 0	3 0		2 4		10 8			3 0			0 4	1 1			5 0		1 0		6 2		1 0			79	42	37	46.8	16	96	
1 0							0 2		2 2	0 2		1 1	1 1	8 3	4 2	2 0	3 9	1 0	3 0	1 0		0 1		7 3	3 1		3 0	213	124	89	41.7	39	97	

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F
ALABAMA																							
1	University of Alabama School of Medicine.....	13	0								1	0											
ARKANSAS																							
2	University of Arkansas Medical Department.....				14	0																	
CALIFORNIA																							
3	College of Medical Evangelists.....					12	0			1	0												
4	College of Physicians and Surgeons, Los Angeles..			2	0	50	0																
5	College of Physicians and Surgs., San Francisco..					6	3																
6	Hahnemann Medical College of the Pacific.—H.					16	1																
7	Leland Stanford Junior Univ. School of Medicine					20	0																
8	Oakland College of Medicine and Surgery.....					4	0																
9	University of California Medical School.....			1	0	25	0							1	0								
COLORADO																							
10	University of Colorado School of Medicine.....						20	0						1	0								
CONNECTICUT																							
11	Yale University School of Medicine.....							9	0													1	0
DISTRICT OF COLUMBIA																							
12	Georgetown University School of Medicine.....							1	0		2	0										1	0
13	George Washington University Medical School....									7	0								1	0			
14	Howard University School of Medicine.....							1	0											2	0	0	1
GEORGIA																							
15	Emory University School of Medicine.....	7	2								3	0	59	0								1	0
16	University of Georgia Medical Department.....											11	0								1	0	
ILLINOIS																							
17	Chicago College of Medicine and Surgery.....	1	0	1	0	1	0	1	0	0	1		1	0		3	0	155	34	4	0	1	0
18	Chicago Hospital College of Medicine.....																	15	8				
19	Hahnemann Medical College and Hospital—H.											1	0					27	4				
20	Jenner Medical College.....																	20	3				
21	Loyola University School of Medicine.....	1	0			1	1				0	1	2	0				77	13				
22	Northwestern University Medical School.....												1	0	28	1					1	0	
23	Rush Medical College (University of Chicago)....			3	0	4	0			1	0			2	0	90	0		3	0	1	0	
24	University of Illinois College of Medicine.....			2	0	1	0									35	1		2	0			
INDIANA																							
25	Indiana University School of Medicine.....					1	0					1	0						25	0			
IOWA																							
26	State University of Iowa College of Medicine....													1	0		19	0					
27	State Univ. of Iowa Coll. of Homeo. Med.—H.																1	0					
KANSAS																							
28	University of Kansas School of Medicine.....																		14	0			
KENTUCKY																							
29	University of Louisville Medical Department.....	1	0		1	0										4	0	1	0	1	0	39	2
LOUISIANA																							
30	Tulane University of Louisiana School of Med. ...	3	0			1	0	1	0			1	0	2	0					1	0		34
MAINE																							
31	Bowdoin Medical School.....							2	0		1	0									8	0	
MARYLAND																							
32	Johns Hopkins University Medical Department....	2	0					3	0	1	0	1	0					2	0	2	0		
33	Univ. of Maryland Sch. of Med. & Coll. of P. & S.							4	2	2	0	3	0	2	6			1	0				
MASSACHUSETTS																							
34	Boston University School of Medicine—H.																				3	0	
35	College of Physicians and Surgeons, Boston.....										0	1									1	0	
36	Medical School of Harvard University.....					2	0	1	0	4	1		1	0				2	0			1	0
37	Middlesex College of Medicine and Surgery.....																				3	0	
38	Tufts College Medical School.....					1	1		3	4			1	0	1	0					6	0	
MICHIGAN																							
39	Detroit College of Medicine and Surgery.....																						
40	University of Michigan Medical School.....										1	0										1	0
41	University of Michigan Homeo. Med. School—H.																						
MINNESOTA																							
42	University of Minnesota Medical School.....																						
MISSOURI																							
43	Eclectic Medical University—E.				4	1								0	1								
44	Kansas City College of Medicine and Surgery—E.				21	6			3	0													
45	National University of Arts and Sciences.....												1	0	0	1							
46	St. Louis College of Physicians and Surgeons....					1	1																
47	St. Louis University School of Medicine.....														3	0		1	0				
48	Washington University Medical School.....														1	0							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

TABLE B—GRADUATES OF 1913 TO 1917, INCLUSIVE

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
		Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan			
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
NEBRASKA																										
49	John A Creighton Medical College.....					0	1									1	0									
50	Lincoln Medical College, Lincoln, Neb.—E.																									
51	University of Nebraska College of Medicine.....																									
NEW YORK																										
52	Albany Medical College.....							0	1																	
53	Columbia University College of Phys. & Surgs.	1	0			1	0	4	0																	
54	Cornell University Medical College.....					1	0	1	0																	
55	Fordham University School of Medicine.....							2	0																	
56	Long Island College Hospital.....							1	1																	
57	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.			1	0			7	0	2	0											1	1			
58	New York Med. Coll. and Hosp. for Women—H.																						1	0		
59	Syracuse University College of Medicine.....																									
60	University and Bellevue Hospital Med. Col.							2	0							1	0			1	0			1	0	
61	University of Buffalo Department of Medicine.....																									
NORTH CAROLINA																										
62	North Carolina Medical College.....	0	1				1	0			1	0	1	0												
OHIO																										
63	Eclectic Medical College—E.							1	0					1	0	1	0	1	0							
64	Ohio State University College of Medicine.....																									
65	Ohio State University Coll. of Homeo. Med.—H.																									
66	University of Cincinnati College of Medicine.....																									
67	Western Reserve University School of Medicine....											1	0													
OKLAHOMA																										
68	University of Oklahoma School of Medicine.....	0	1																			0	1	1	0	
OREGON																										
69	University of Oregon Department of Medicine.....																									
PENNSYLVANIA																										
70	Hahnemann Medical College and Hospital—H.							1	0	1	0															
71	Jefferson Medical College.....	2	0	1	0	2	0	2	0	3	0	1	0	1	0	1	0	1	0	2	0	3	0	2	0	
72	Medico-Chirurgical College of Philadelphia.....							1	1	2	0			1	0							2	0			
73	Temple University Department of Medicine.....									1	0	1	0									2	0			
74	University of Pennsylvania School of Medicine....	1	0			1	0	0	1	2	0	1	0			1	0	2	0	2	0		2	0		
75	University of Pittsburgh School of Medicine.....																					3	0	1	0	
76	Woman's Medical College of Pennsylvania.....					1	0															2	0	1	0	
SOUTH CAROLINA																										
77	Medical College of the State of South Carolina...										2	0														
TENNESSEE																										
78	Lincoln Memorial University Medical Department.						1	0			1	0				1	0	2	3							
79	Meharry Medical College.....	1	3		5	0		0	1		1	2	2	1	10	1			16	6	2	3	1	1	0	1
80	University of Tennessee College of Medicine.....	2	1		18	0												1	0	0	1					
81	Univ. of West Tennessee Coll. of Med. and Surg.																0	2					0	1		
82	Vanderbilt University Medical Department.....	3	0			3	0	1	0				1	0	1	0		1	0	6	0	1	0			
TEXAS																										
83	Baylor University College of Medicine.....						1	0																		
84	Fort Worth School of Medicine.....																		1	0						
85	University of Texas Department of Medicine.....			1	0														0	1						
VERMONT																										
86	University of Vermont College of Medicine.....					1	0	6	2													3	0			
VIRGINIA																										
87	Medical College of Virginia.....					0	1	0	1			1	0	1	0							4	1			
88	University of Virginia Department of Medicine....	1	0								1	0										1	0			
WISCONSIN																										
89	Marquette University School of Medicine.....																									
CANADA																										
90	Laval University Faculty of Medicine.....																									
91	McGill University Faculty of Medicine.....																					2	0			
92	Queen's University Faculty of Medicine.....																					1	0			
93	University of Manitoba, Manitoba Medical College																									
94	University of Toronto Faculty of Medicine.....																									
95	Western University Faculty of Medicine.....																							1	0	
Foreign Colleges																										
96	Miscellaneous Medical Colleges.....	2	8		2	1	0	2		1	1		0	1	2	1		2	1							
98	Totals by States.....	57	1	12	73	166	31	76	14	26	23	98	8	547	39	39	25	78	47	28	90	230	123			
99	Totals—Examined—Passed	41	1	12	65	156	30	59	14	22	20	96	7	470	38	39	23	67	40	27	80	196	120			
100	Totals—Examined—Failed	16	0	0	8	10	1	17	0	4	3	2	1	77	1	0	2	11	7	1	10	34	3	1		
101	Percentage of Failures.....	28.1	0.0	0.0	11.0	6.0	3.2	22.4	0.0	15.4	13.0	2.0	12.5	14.1	2.6	0.0	8.0	14.1	14.9	3.6	11.1	14.8	2.4	1		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

[illegible]

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1913-1917					Graduates of 1912 and Previous					Graduates of 1917				
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States
ALABAMA																					
1	University of Alabama School of Medicine.....	18	18	0	0.0	5	17	17	0	0.0	4	1	1	0	0.0	1	14	14	0	0.0	
ARKANSAS																					
2	University of Arkansas Medical Department.....	18	17	1	5.6	2	14	14	0	0.0	1	4	3	1	25.0	2	14	14	0	0.0	
CALIFORNIA																					
3	College of Medical Evangelists.....	13	13	0	0.0	2	13	13	0	0.0	2	...	...	...	...	..	11	11	0	0.0	
4	College of Physicians and Surgeons, Los Angeles..	55	55	0	0.0	4	55	55	0	0.0	4	...	...	...	...	..	52	52	0	0.0	
5	College of Physicians and Surgs., San Francisco..	13	10	3	23.1	3	12	9	3	25.0	2	1	1	0	0.0	1	8	5	3	37.5	
6	Hahnemann Medical College of the Pacific.—H. ...	21	20	1	4.8	4	21	20	1	4.8	4	...	...	...	...	..	17	16	1	5.9	
7	Leland Stanford Junior Univ. School of Medicine	22	20	2	9.1	2	22	20	2	9.1	2	...	...	...	...	..	16	16	0	0.0	
8	Oakland College of Medicine and Surgery.....	4	4	0	0.0	1	4	4	0	0.0	1	...	...	...	...	..	4	4	0	0.0	
9	University of California Medical School.....	27	27	0	0.0	3	27	27	0	0.0	3	...	...	...	...	..	25	25	0	0.0	
COLORADO																					
10	University of Colorado School of Medicine.....	27	26	1	3.7	7	26	26	0	0.0	6	1	0	1	100.0	1	22	22	0	0.0	
CONNECTICUT																					
11	Yale University School of Medicine.....	12	12	0	0.0	4	12	12	0	0.0	4	...	...	...	...	..	6	6	0	0.0	
DISTRICT OF COLUMBIA																					
12	Georgetown University School of Medicine.....	5	5	0	0.0	4	4	4	0	0.0	3	1	1	0	0.0	1	1	1	0	0.0	
13	George Washington University Medical School....	22	21	1	4.5	9	16	15	1	6.3	5	6	6	0	0.0	6	5	5	0	0.0	
14	Howard University School of Medicine.....	19	17	2	10.5	11	19	17	2	10.5	11	...	...	...	...	..	6	6	0	0.0	
GEORGIA																					
15	Emory University School of Medicine.....	89	82	7	7.9	10	89	82	7	7.9	10	...	...	...	...	..	70	68	2	2.9	
16	University of Georgia Medical Department.....	16	14	2	12.5	4	16	14	2	12.5	4	...	...	...	...	..	12	12	0	0.0	
ILLINOIS																					
17	Chicago College of Medicine and Surgery.....	266	219	47	17.7	30	261	215	46	17.6	29	5	4	1	20.0	5	169	148	21	12.4	
18	Chicago Hospital College of Medicine.....	23	15	8	34.8	1	23	15	8	34.8	1	...	...	...	...	..	10	10	0	0.0	
19	Hahnemann Medical College and Hospital—H. ...	44	40	4	9.1	10	41	37	4	9.8	8	3	3	0	0.0	3	33	31	2	6.1	
20	Jenner Medical College	27	22	5	18.5	2	24	21	3	12.5	2	3	1	2	66.7	1	14	14	0	0.0	
21	Loyola University School of Medicine.....	127	105	22	17.3	20	122	103	19	15.6	19	5	2	3	60.0	3	57	55	2	3.5	
22	Northwestern University Medical School.....	49	48	1	2.0	14	41	40	1	2.4	10	8	8	0	0.0	7	32	31	1	3.1	
23	Rush Medical College (University of Chicago)....	163	159	4	2.5	24	146	145	1	0.7	21	17	14	3	17.7	11	94	94	0	0.0	
24	University of Illinois College of Medicine.....	73	70	3	4.1	17	64	62	2	3.1	15	9	8	1	11.1	7	40	39	1	2.5	
INDIANA																					
25	Indiana University School of Medicine.....	30	30	0	0.0	6	28	28	0	0.0	4	2	2	0	0.0	2	27	27	0	0.0	
IOWA																					
26	State University of Iowa College of Medicine....	24	24	0	0.0	5	21	21	0	0.0	3	3	3	0	0.0	2	20	20	0	0.0	
27	State Univ. of Iowa Coll. of Homeo. Med.—H. ...	2	2	0	0.0	2	1	1	0	0.0	1	1	1	0	0.0	1	1	1	0	0.0	
KANSAS																					
28	University of Kansas School of Medicine.....	15	15	0	0.0	2	15	15	0	0.0	2	...	...	...	...	..	14	14	0	0.0	
KENTUCKY																					
29	University of Louisville Medical Department.....	85	72	13	15.3	23	60	58	2	3.3	12	25	14	11	44.0	14	50	48	2	4.0	
LOUISIANA																					
30	Tulane University of Louisiana School of Med. ...	68	65	3	4.4	12	61	59	2	3.3	12	7	6	1	14.3	4	47	46	1	2.1	
MAINE																					
31	Bowdoin Medical School.....	15	14	1	6.7	5	13	12	1	7.7	4	2	2	0	0.0	2	11	10	1	9.1	
MARYLAND																					
32	Johns Hopkins University Medical Department....	97	93	4	4.1	21	92	88	4	4.3	20	5	5	0	0.0	4	49	46	3	6.1	
33	Univ. of Maryland Sch. of Med. & Coll. of P. & S.	109	88	21	19.3	22	98	81	17	17.3	21	11	7	4	36.3	6	43	37	6	14.0	
MASSACHUSETTS																					
34	Boston University School of Medicine—H.	44	37	7	15.9	10	37	33	4	10.8	7	7	4	3	42.9	6	29	27	2	6.9	
35	College of Physicians and Surgeons, Boston.....	18	6	12	66.7	4	17	6	11	64.7	4	1	0	1	100.0	1	7	4	3	42.9	
36	Medical School of Harvard University.....	106	103	3	2.8	20	99	97	2	2.0	18	7	6	1	14.3	5	52	52	0	0.0	
37	Middlesex College of Medicine and Surgery.....	2	1	1	50.0	1	2	1	1	50.0	1	...	...	...	...	..	...	...	...	...
38	Tufts College Medical School.....	113	96	17	15.0	11	100	88	12	12.0	10	13	8	5	38.4	5	77	72	5	6.5	
MICHIGAN																					
39	Detroit College of Medicine and Surgery.....	55	52	3	5.5	4	54	52	2	3.7	3	1	0	1	100.0	1	52	50	2	3.8	
40	University of Michigan Medical School.....	70	64	6	8.6	12	59	56	3	5.1	7	11	8	3	27.3	8	50	48	2	4.0	
41	University of Michigan Homeo. Med. School—H. ...	6	4	2	33.3	2	6	4	2	33.3	2	...	...	...	...	..	3	3	0	0.0	
MINNESOTA																					
42	University of Minnesota Medical School.....	39	38	1	2.6	7	36	36	0	0.0	5	3	2	1	33.3	3	31	31	0	0.0	
MISSOURI																					
43	Eclectic Medical University—E.	6	4	2	33.3	2	6	4	2	33.3	2	...	...	...	...	..	7	5	2	28.6	
44	Kansas City College of Medicine and Surgery—E. ...	30	24	6	20.0	2	30	24	6	20.0	2	...	...	...	...	..	30	24	6	20.0	
45	National University of Arts and Sciences.....	46	45	1	2.2	5	44	43	1	2.3	5	2	2	0	0.0	1	38	38	0	0.0	
46	St. Louis College of Physicians and Surgeons.....	23	16	7	30.4	9	15	12	3	20.0	6	8	4	4	50.0	4	5	4	1	20.0	
47	St. Louis University School of Medicine.....	49	48	1	2.0	9	45	44	1	2.2	6	4	4	0	0.0	4	41	40	1	2.4	
48	Washington University Medical School.....	31	31	0	0.0	11	24	24	0	0.0	5	7	7	0	0.0	6	20	20	0	0.0	

H. = Homeopathic; E. = Eclectic.

NAME OF COLLEGE	Graduates of All Years					Graduates of 1913-1917					Graduates of 1912 and Previous					Graduates of 1917					Marginal Number
	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
NEBRASKA																					
John A Creighton Medical College.....	52	48	4	7.7	10	46	42	4	8.7	8	6	6	0	0.0	4	38	36	2	5.3	5	49
Lincoln Medical College, Lincoln, Neb.—E.	7	7	0	0.0	2	6	6	0	0.0	2	1	1	0	0.0	1	5	5	0	0.0	2	50
University of Nebraska College of Medicine.....	18	18	0	0.0	4	18	18	0	0.0	4	...	...	...	...	..	15	15	0	0.0	1	51
NEW YORK																					
Albany Medical College.....	63	52	11	17.4	3	57	46	11	19.3	2	6	6	0	0.0	3	37	32	5	13.5	1	52
Columbia University College of Phys. & Surgs. ...	111	96	15	13.5	12	105	91	14	13.3	8	6	5	1	16.7	6	58	50	8	13.8	3	53
Cornell University Medical College.....	26	26	0	0.0	6	25	25	0	0.0	5	1	1	0	0.0	1	13	13	0	0.0	1	54
Fordham University School of Medicine.....	58	51	7	12.0	3	57	50	7	12.3	3	1	1	0	0.0	1	33	29	4	12.1	2	55
Long Island College Hospital.....	79	75	4	5.1	8	73	69	4	5.5	2	6	6	0	0.0	6	64	62	2	3.1	1	56
N. Y. Homeo. Med. Coll. and Flower Hosp.—H. ...	105	67	38	36.2	8	103	67	36	35.0	7	2	0	2	100.0	2	39	28	11	28.3	3	57
New York Med. Coll. and Hosp. for Women—H. ...	14	14	0	0.0	2	14	14	0	0.0	2	...	...	...	...	..	7	7	0	0.0	1	58
Syracuse University College of Medicine.....	33	33	0	0.0	5	32	32	0	0.0	4	1	1	0	0.0	1	25	25	0	0.0	1	59
University and Bellevue Hospital Med. Coll.....	77	72	5	6.5	8	75	70	5	6.7	7	2	2	0	0.0	2	53	50	3	5.7	1	60
University of Buffalo Department of Medicine....	65	59	6	9.2	4	64	58	6	9.4	3	1	1	0	0.0	1	55	50	5	9.1	1	61
NORTH CAROLINA																					
North Carolina Medical College.....	22	20	2	4.5	7	18	17	1	5.6	6	4	3	1	25.0	4	16	15	1	6.3	6	62
OHIO																					
Eclectic Medical College—E.	36	34	2	5.6	12	33	31	2	6.1	9	3	3	0	0.0	3	29	28	1	3.4	7	63
Ohio State University College of Medicine.....	70	70	0	0.0	4	70	70	0	0.0	4	...	...	...	...	..	69	69	0	0.0	4	64
Ohio State University Coll. of Homeo. Med.—H. ...	8	8	0	0.0	1	8	8	0	0.0	1	...	...	...	...	..	8	8	0	0.0	1	65
University of Cincinnati College of Medicine.....	21	20	1	4.8	6	18	18	0	0.0	3	3	2	1	33.3	3	14	14	0	0.0	2	66
Western Reserve University School of Medicine....	38	38	0	0.0	6	36	36	0	0.0	4	2	2	0	0.0	2	33	33	0	0.0	3	67
OKLAHOMA																					
University of Oklahoma School of Medicine.....	36	31	5	13.9	8	35	30	5	14.3	7	1	1	0	0.0	1	24	24	0	0.0	1	68
OREGON																					
University of Oregon Department of Medicine.....	14	14	0	0.0	4	12	12	0	0.0	3	2	2	0	0.0	2	7	7	0	0.0	3	69
PENNSYLVANIA																					
Hahnemann Medical College and Hospital—H.	23	20	3	13.0	6	23	20	3	13.0	6	...	...	...	...	..	7	7	0	0.0	4	70
Jefferson Medical College.....	159	147	12	7.5	31	140	134	6	4.3	28	19	13	6	31.6	12	27	26	1	3.7	11	71
Medico-Chirurgical College of Philadelphia.....	83	77	6	7.2	11	77	74	3	3.9	9	6	3	3	50.0	5	...	...	...	...	..	72
Temple University Department of Medicine.....	21	21	0	0.0	5	21	21	0	0.0	5	...	...	...	...	..	5	5	0	0.0	4	73
University of Pennsylvania School of Medicine....	78	74	4	5.1	26	65	63	2	3.1	23	13	11	2	15.4	9	32	30	2	6.2	15	74
University of Pittsburgh School of Medicine.....	24	24	0	0.0	2	24	24	0	0.0	2	...	...	...	...	..	...	...	...	...	..	75
Woman's Medical College of Pennsylvania.....	28	26	2	7.1	10	24	22	2	8.3	6	4	4	0	0.0	4	6	6	0	0.0	3	76
SOUTH CAROLINA																					
Medical College of the State of South Carolina...	26	22	4	15.4	4	23	20	3	13.0	2	3	2	1	33.3	3	22	19	3	13.6	2	77
TENNESSEE																					
Lincoln Memorial University Medical Department.	17	13	4	23.5	6	16	13	3	18.7	6	1	0	1	100.0	1	7	5	2	28.6	2	78
Meharry Medical College.....	188	131	57	30.3	22	177	127	50	28.2	22	11	4	7	63.6	9	111	96	15	13.5	15	79
University of Tennessee College of Medicine.....	59	54	5	8.5	9	57	54	3	5.3	7	2	0	2	100.0	2	49	49	0	0.0	5	80
Univ. of West Tennessee Coll. of Med. and Surg. ...	21	9	12	57.1	5	19	9	10	52.6	5	2	0	2	100.0	1	3	2	1	33.3	1	81
Vanderbilt University Medical Department.....	97	95	2	2.1	18	92	91	1	1.1	16	5	4	1	20.0	5	74	74	0	0.0	10	82
TEXAS																					
Baylor University College of Medicine.....	19	18	1	5.3	6	17	16	1	5.9	5	2	2	0	0.0	2	10	9	1	10.0	1	83
Fort Worth School of Medicine.....	17	16	1	5.9	3	17	16	1	5.9	3	...	...	...	...	..	17	16	1	5.9	2	84
University of Texas Department of Medicine.....	47	47	0	0.0	4	46	46	0	0.0	3	1	1	0	0.0	1	43	43	0	0.0	2	85
VERMONT																					
University of Vermont College of Medicine.....	37	31	6	16.2	8	28	24	4	14.3	6	9	7	2	22.2	6	12	10	2	16.7	4	86
VIRGINIA																					
Medical College of Virginia.....	93	80	13	14.0	13	90	79	11	12.2	13	3	1	2	66.7	3	78	70	8	10.3	10	87
University of Virginia Department of Medicine....	16	16	0	0.0	6	15	15	0	0.0	5	1	1	0	0.0	1	12	12	0	0.0	3	88
WISCONSIN																					
Marquette University School of Medicine.....	11	11	0	0.0	4	9	9	0	0.0	2	2	2	0	0.0	2	7	7	0	0.0	1	89
CANADA																					
Laval University Faculty of Medicine.....	1	1	0	0.0	1	...	...	...	...	..	1	1	0	0.0	1	...	...	...	...	..	90
McGill University Faculty of Medicine.....	13	11	2	15.4	8	8	8	0	0.0	6	5	3	2	40.0	4	2	2	0	0.0	2	91
Queen's University Faculty of Medicine.....	10	5	5	50.0	2	7	3	4	57.1	2	3	2	1	33.3	1	1	0	1	100.0	1	92
University of Manitoba, Manitoba Medical College	1	1	0	0.0	1	1	1	0	0.0	1	...	...	...	...	..	...	...	...	...	..	93
University of Toronto Faculty of Medicine.....	8	7	1	12.5	4	1	1	0	0.0	1	7	6	1	14.3	3	1	1	0	0.0	1	94
Western University Faculty of Medicine.....	1	1	0	0.0	1	...	...	...	...	..	1	1	0	0.0	1	...	...	...	...	..	95
Foreign Colleges	79	42	37	46.8	16	16	12	4	25.0	6	63	30	33	52.3	16	1	1	0	0.0	1	96
Miscellaneous Medical Colleges.....	213	124	89	42.2	39	45	23	22	48.9	17	168	101	67	39.9	38	...	...	...	...	..	97
Nondescript colleges	151	73	78	51.7	1	...	...	...	...	..	...	...	...	...	..	...	...	...	...	..	98
Totals	4730	4061	669	14.1	..	4015	3609	406	10.1	..	364	379	185	32.6	..	2605	2456	149	5.7	..	

Marginal Number

COLLEGE

[illegible]

* Twelve medical colleges give only the first two years of the medical course.

1. Rated in Class C when last inspected—1912. Since then it has refused reinspection. Has united with the Chicago Hospital College of Medicine. Both are reported as not recognized by the Illinois Department of Registration and Education.

2. This college is an offshoot of the Eclectic Medical University, an institution which is reported as not recognized by the Missouri State Board of Health.

3. Rated in Class C, June 3, 1912, and since Nov. 14, 1916, has refused to permit a complete reinspection by the Council's official inspector.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the colleges marked by this letter—x.

CONCLUDED FROM PAGE 1073

increased reciprocity relations are established. As a rule, the states which do not have reciprocal relations with other states (as Florida, Montana, Massachusetts, Oregon and Washington, see Table J) examined the largest numbers of old practitioners.

GRADUATES OF 1917 EXAMINED DURING 1917

Table C also gives the results for the graduates of 1917 who were examined during the year by the state boards, and shows that 2,605, or 56.8 per cent., of all candidates examined during the year graduated in 1917, including three who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated

TABLE E.—COLLEGES GROUPED BY STATES
Showing the Number Examined and Percentage of Failures

All Colleges of	Graduates								State Rank According to the Number Examined	Rank According to Successes at Examinations
	Of All Years		Of 1913 to 1917		Of 1912 & Prev.		Of 1917			
	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed		
Alabama.....	18	0.0	17	0.0	1	0.0	14	0.0	24	1
Arkansas.....	18	5.6	14	0.0	4	25.0	14	0.0	24	10
California.....	155	4.8	154	3.9	1	0.0	133	3.0	9	8
Colorado.....	27	3.7	26	0.0	1	100.0	22	0.0	21	5
Connecticut.....	12	0.0	12	0.0	.....	.....	6	0.0	27	1
Dist. of Columbia.....	46	6.5	39	7.7	7	0.0	12	0.0	16	11
Georgia.....	105	8.6	105	8.6	.....	.....	82	2.4	12	14
Illinois.....	772	12.2	722	11.6	50	20.0	449	6.0	1	17
Indiana.....	30	0.0	28	0.0	2	0.0	27	0.0	20	1
Iowa.....	26	0.0	22	0.0	4	0.0	21	0.0	22	1
Kansas.....	15	0.0	15	0.0	.....	.....	14	0.0	25	1
Kentucky.....	85	15.7	60	3.4	25	45.8	50	4.0	13	22
Louisiana.....	68	4.4	61	3.3	7	14.3	47	2.1	16	6
Maine.....	15	6.7	13	7.7	2	0.0	11	10.0	25	12
Maryland.....	206	12.2	190	11.1	16	26.7	92	9.8	6	17
Massachusetts.....	283	14.1	255	11.7	28	35.7	165	6.1	5	20
Michigan.....	131	8.4	119	5.9	12	33.3	105	3.8	10	13
Minnesota.....	39	2.6	36	0.0	3	33.3	31	0.0	17	4
Missouri.....	185	9.2	164	7.9	21	19.0	141	7.1	7	15
Nebraska.....	77	5.2	70	5.7	7	0.0	58	3.4	15	9
New York.....	631	13.6	605	13.7	26	11.5	384	9.8	2	18
North Carolina.....	22	4.5	18	5.6	4	25.0	16	6.3	23	7
Ohio.....	173	1.7	165	1.2	8	12.5	153	0.7	8	2
Oklahoma.....	36	13.9	35	14.3	1	0.0	24	0.0	19	19
Oregon.....	14	0.0	12	0.0	2	0.0	7	0.0	26	1
Pennsylvania.....	416	6.5	374	4.2	42	26.9	77	3.9	3	11
South Carolina.....	26	15.4	23	13.0	3	33.3	22	13.6	22	21
Tennessee.....	382	20.6	361	18.5	21	57.1	244	7.3	4	24
Texas.....	83	2.4	80	2.5	3	0.0	70	2.9	14	3
Vermont.....	37	16.2	28	14.3	9	22.2	12	16.7	18	23
Virginia.....	109	11.9	105	10.5	4	50.0	90	8.9	11	16
Wisconsin.....	11	0.0	9	0.0	2	0.0	7	0.0	28	1
Total Ex. in 1917	4253	10.7	3937	9.5	316	25.6	2600	5.6		

This table gives data relating to the group of colleges in each state. For example, it shows that, of all the medical schools in Massachusetts, 283 graduates of various years were examined by state boards during 1917, and of this number, 14.1 per cent. failed. Of the 255 who graduated in recent years (1913 to 1917 inclusive), 11.7 per cent. failed; of the 28 who graduated previous to 1913, 35.7 per cent. failed, and of the 165 graduates of 1917, 6.1 per cent. failed.

The ninth column gives the rank of each state group of colleges according to the number of graduates examined. The Illinois group of colleges leads, having 772 graduates examined by state boards during 1917, followed by New York with 631, Pennsylvania with 416, Tennessee with 382, Massachusetts with 283, and Maryland with 206.

The last column gives the rank of each state group of colleges according to the success of the graduates at the examinations. It is interesting to compare the figures of these two last columns. While the Illinois group ranks first according to the number examined it ranks seventeenth in the success of its graduates at the examinations. While Tennessee ranks fourth as to the number examined, it ranks as the twenty-fourth in the success of its graduates at the examinations.

3,379 students last year; therefore, 74.1 per cent. of all graduates in 1917 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which doubtless accounts for some of the remaining 25.9 per cent. Of the 1917 graduates examined, 149, or 5.7 per cent., failed. Of the 1916 graduates examined in 1916, 7.4 per cent. failed; of the 1915 graduates examined in 1915,

7.5 per cent. failed, and of the 1914 graduates examined in 1914, 12.7 per cent. failed. A steady improvement in recent years in the qualifications of medical graduates is apparent from these figures.

NONRECOGNITION OF MEDICAL COLLEGES

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "in good standing" or "not in good standing"; some give them as "reputable" or "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. There are thirty states which do not register

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards.....	55
Not recognized by 1 to 3 state boards.....	14
Not recognized by 8 to 24 state boards.....	13
Not recognized by 25 to 37 state boards.....	14
Total.....	96

graduates of a medical college unless such graduates had completed at least two years of collegiate work prior to entering on the study of medicine. This table also shows the latest rating given to each college by the Council on Medical Education.

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 55 medical colleges now having complete recognition in all states. There are 14 others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 27 colleges, he will find on graduation that his diploma is not recognized in from 8 to 37 states!

Without the information published in Table D, these state board statistics would be not merely incomplete—they would be actually misleading. For example, 30 graduates of the Kansas City (Mo.) College of Medicine and Surgery were examined in 1917. Of these, 27 (90 per cent.) were examined by the Arkansas Board of Eclectic Medical Examiners, and 3 were examined elsewhere, and 6, or 20 per cent., failed. Accordingly, this college would appear to belong among the average grade medical schools of the country. How different the picture, however, when the facts are known, as set

TABLE 2.—SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

Graduates of	1910		1917	
	Num-ber	Per Cent.	Num-ber	Per Cent.
Class A medical colleges.....	3,870	67.7	2,837	69.6
Class B medical colleges.....	977	17.1	813	20.0
Class C medical colleges.....	292	5.1	255	6.3
Miscellaneous medical colleges....	311	5.5	124	3.1
Foreign medical colleges.....	70	1.2	42	1.0
Undergraduates	192	3.4	.....	.....
Totals.....	5,712	100	4,061	100

forth in Table D, that this college is reported as not recognized in its home state and in 31 other states, and that for its very existence it depends on the acceptance of its graduates by the sectarian boards of Arkansas and Connecticut.

During the five years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6 and 57.3. This shows a decided improvement in the medical colleges. Forty state licensing boards, to some extent at least, are utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other ten

states, however, and in the District of Columbia, this table indicates that either the practice acts do not give the boards authority to enforce a requirement of reasonable standards, or else the boards are not exercising that authority. It is

TABLE 3.—FAILURE PERCENTAGES ACCORDING TO SOURCE OF APPLICANTS

Graduates of Medical Colleges in	1910				1917			
	Examined	Passed	Failed	Per Cent. Failed	Examined	Passed	Failed	Per Cent. Failed
Class A.....	4,318	3,870	448	10.4	3,046	2,827	219	7.2
Class B.....	1,268	977	291	22.9	997	813	184	18.4
Class C.....	479	292	187	39.0	395	255	140	35.4*
Miscellaneous.....	478	311	167	34.9	213	124	89	41.7
Foreign.....	108	70	38	35.2	79	42	37	46.8
Undergraduates.....	353	192	161	45.6				

* Class C colleges at present, as a rule, are not recognized in from 27 to 37 states. The percentage, therefore, is the result of examinations by partisan boards and in states where the boards do not have, or are not using, the authority to refuse recognition.

evident that if the graduates of low-standard medical colleges are not eligible for license in the majority of states, they will flock to the other ten which still grant them recognition. These ten states—Arizona, California, Idaho, Massachusetts,

Nevada, Oregon, Tennessee, Utah, Washington and Wyoming—and the District of Columbia, therefore, are literally the dumping ground for the output of low-grade medical colleges, and will remain so until the licensing boards obtain the needed legal powers, or until the boards having the authority take action in the matter. Arkansas, Connecticut and Florida are also registering through their separate sectarian licensing boards graduates of medical colleges not recognized in the majority of other states.

Incidentally it should be stated that only such drafted medical students as are enrolled in “well recognized” medical colleges are permitted by the War Department to enter the Enlisted Reserve Corps and thereby be permitted to complete their medical training, and only those medical schools are considered as “well recognized” which are recognized by the majority of state licensing boards. It is evident, therefore, that no medical school shown in Table D will be considered as well recognized by the War Department if it is recognized by less than 50 per cent. of the state licensing boards.

SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

Of the 4,061 physicians registered by examination in 1917, 2,827, or 69.6 per cent., graduated from Class A medical colleges; 813, or 20.0 per cent., were from Class B medical colleges; and 255,¹ or 6.3 per cent., were from Class C medical

1. Of this number, 73 were graduates of osteopathic colleges who were licensed in California as “physicians and surgeons.”

TABLE F.—COLLEGES HAVING FIFTY OR MORE EXAMINED

TABLE SHOWS TOTAL NUMBER EXAMINED, TOTAL NUMBER PASSED, TOTAL NUMBER FAILED, PERCENTAGE OF FAILURES AND NUMBER OF STATES IN WHICH EACH COLLEGE HAD REPRESENTATIVES

COLLEGE	Graduates of All Years					Graduates of 1913-1917					Graduates of 1912 and Previous					Graduates of 1917					Marginal Number, Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Chicago College of Medicine and Surgery.....	266	219	47	17.7	30	261	215	46	17.6	29	5	4	1	20.0	5	169	148	21	12.4	13	17
Meharry Medical College.....	188	131	57	30.3	22	177	127	50	28.2	22	11	4	7	63.6	9	111	96	15	13.5	15	79
Rush Medical College.....	163	159	4	2.5	23	146	145	1	0.7	21	17	14	3	17.7	11	94	94	0	0.0	9	23
Jefferson Medical College.....	158	147	12	7.5	31	140	134	6	4.3	28	19	13	6	31.6	12	27	26	1	3.7	11	71
Loyola University School of Medicine.....	127	105	22	17.3	20	122	103	19	15.6	19	5	2	3	60.0	3	57	55	2	3.5	7	21
Tufts College Medical School.....	113	96	17	15.0	11	100	88	12	12.0	10	13	8	5	38.4	5	77	72	5	6.5	8	38
Columbia University College of Phys. and Surgs.	111	96	15	13.5	12	105	91	14	13.3	8	6	5	1	16.7	6	58	50	8	13.8	3	53
University of Maryland School of Medicine.....	109	88	21	19.3	22	98	81	17	17.3	21	11	7	4	36.3	6	43	37	6	14.0	12	33
Medical School of Harvard University.....	106	103	3	2.8	20	99	97	2	2.0	18	7	6	1	14.3	5	52	52	0	0.0	12	36
N. Y. Homeo. Med. Coll. and Flower Hospital...	105	67	38	36.2	8	103	67	36	35.0	7	2	0	2	100.0	2	39	28	11	28.3	3	57
Johns Hopkins University Medical Department...	97	93	4	4.1	21	92	88	4	4.3	20	5	5	0	0.0	4	49	46	3	6.1	9	32
Vanderbilt University Medical Department.....	97	95	2	2.1	18	92	91	1	1.1	16	5	4	1	20.0	5	74	74	0	0.0	10	82
Medical College of Virginia.....	93	80	13	14.0	13	90	79	11	12.2	13	3	1	2	66.7	3	78	70	8	10.3	10	87
Atlanta Medical College.....	89	82	7	7.9	10	89	82	7	7.9	10						70	68	2	2.9	6	15
University of Louisville Medical Department....	85	72	13	15.3	22	60	58	2	3.3	12	25	14	11	44.0	14	50	48	2	4.0	9	29
Medico-Chirurgical College of Philadelphia.....	83	77	6	7.2	11	77	74	3	3.9	9	6	3	3	50.0	5						72
Long Island College Hospital.....	79	75	4	5.1	8	73	69	4	5.5	2	6	6	0	0.0	6	64	62	2	3.1	1	56
University of Pennsylvania School of Medicine...	78	74	4	5.1	26	65	63	2	3.1	23	13	11	2	15.4	9	32	30	2	6.2	15	74
University and Bellevue Hospital Med. College...	77	72	5	6.5	8	75	70	5	6.7	7	2	2	0	0.0	2	53	50	3	5.7	1	60
University of Illinois College of Medicine.....	73	70	3	4.1	17	64	62	2	3.1	15	9	8	1	11.1	7	40	39	1	2.5	6	24
Ohio State University College of Medicine.....	70	70	0	0.0	4	70	70	0	0.0	4						69	69	0	0.0	4	64
University of Michigan Medical School.....	70	64	6	8.6	12	59	56	3	5.1	7	11	8	3	27.3	8	50	48	2	4.0	3	40
Tulane University of Louisiana School of Med...	68	65	3	4.4	12	61	59	2	3.3	12	7	6	1	14.3	4	47	46	1	2.1	7	30
University of Buffalo Department of Medicine...	65	59	6	9.2	4	64	58	6	9.4	3	1	1	0	0.0	1	55	50	5	9.1	1	61
Albany Medical College.....	63	52	11	17.4	3	57	46	11	19.3	2	6	6	0	0.0	3	37	32	5	13.5	1	52
University of Tennessee College of Medicine....	59	54	5	8.5	9	57	54	3	5.3	7	2	0	2	100.0	2	49	49	0	0.0	5	80
Fordham University School of Medicine.....	58	51	7	12.0	3	57	50	7	12.3	3	1	1	0	0.0	1	33	29	4	12.1	2	55
Detroit College of Medicine and Surgery.....	55	52	3	5.5	4	54	52	2	3.7	3	1	0	1	100.0	1	52	50	2	3.8	2	39
College of Physicians and Surgeons, Los Angeles	55	55	0	0.0	4	55	55	0	0.0	4						52	52	0	0.0	4	4
John A. Creighton Medical College.....	52	48	4	7.7	10	46	42	4	8.7	8	6	6	0	0.0	4	38	26	2	5.3	5	49
Totals.....	2913	2571	342	11.7	....	2708	2426	282	10.4	....	205	145	60	29.4	....	1719	1606	113	6.5		

This table is especially interesting, since it gives data relating to the 30 larger medical colleges arranged according to the number of graduates examined. This allows of comparison between colleges having classes of nearly equal size. For the fifth consecutive year the Chicago College of Medicine and Surgery has had the largest number, the position having been held by the College of Physicians and Surgeons of Chicago in 1906, 1907 and 1912. In 1908, Jefferson Medical College had the highest number examined. In 1909, 1910 and 1911 the University of Louisville Medical Department had the largest number examined. The first place from the standpoint of the number examined, however, does not always mean first place from the standpoint of scholarship. Note the percentages of failures. The highest failure percentages are for the New York Homeopathic Medical College, 36.2; Meharry Medical College, 30.3; and University of Maryland School of Medicine, 19.3.

Of the 10 colleges having 100 or more examined, only 3 have failure percentages of less than 10, while the others stand out prominently

with large failure percentages and for 5 the high percentages hold even of graduates of 1917.

Of the 20 colleges having between 50 and 100 graduates examined, sixteen had failure percentages of less than 10, and four had failure percentages between 10 and 20.

Not one of these colleges had a percentage of failures of 20 or above. The results indicate that colleges having classes of less than 100 students, as a rule, furnish a better training than those having larger classes.

The average percentage of failures for these larger colleges for graduates of 1912 and previous years was 29.4; for graduates of 1913 to 1917 inclusive (recent graduates), 10.4; for graduates of 1917, 6.5, and for graduates of all years, 11.7. Of the 4,253 graduates of the 89 colleges in the United States which had graduates examined by state boards in 1917, these larger (33.7 per cent. of all) schools furnished 2,913, or 68.5 per cent., of the graduates examined.

colleges. Of all candidates examined, 4.1 per cent. came from medical colleges which have ceased to exist and from foreign medical colleges. A comparison of these figures with the results for 1910, as shown in Table 2, will be interesting. The differences would be greater if the classification in 1910 had been as strict as that in 1917. It is interesting to note that in

1910, 3.4 per cent. of all candidates were undergraduates. In 1916 and 1917 not a single undergraduate was registered.

Table 3 will also be interesting, in that the failure percentages of candidates coming from the various groups of colleges support the classifications. It will be noted that graduates of Class A medical schools had a much lower

TABLE G.—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE B.

COLLEGES	Total Examined	Results in Home State			Results in Other States		
		Passed	Failed	Per Cent. Failed	Passed	Failed	Per Cent. Failed
ALABAMA	17	13	0	0.0	4	0	0.0
University of Alabama School of Med.	17	13	0	0.0	4	0	0.0
ARKANSAS	14	14	0	0.0	.....	.....	.....
University of Arkansas Medical Dept.	14	14	0	0.0	.....	.....	.....
CALIFORNIA	154	133	4	2.9	15	2	11.8
College of Medical Evangelists.....	13	12	0	0.0	1	0	0.0
Coll. of Phys. and Surgs., Los Angeles....	55	50	0	0.0	5	0	0.0
Coll. of Phys. and Surgs., San Francisco....	12	6	3	50.0	3	0	0.0
Hahnemann Med. Coll. of the Pacific.....	21	16	1	5.9	4	0	0.0
Leland Stanford Junior University.....	22	20	0	0.0	0	2	100.0
Oakland College of Med. and Surg.	4	4	0	0.0	.....	.....	.....
University of California Medical School....	27	25	0	0.0	2	0	0.0
COLORADO	26	20	0	0.0	6	0	0.0
University of Colorado.....	26	20	0	0.0	6	0	0.0
CONNECTICUT	12	9	0	0.0	3	0	0.0
Yale University	12	9	0	0.0	3	0	0.0
DISTRICT OF COLUMBIA.....	39	9	0	0.0	27	3	10.0
Georgetown University	4	2	0	0.0	2	0	0.0
George Washington University.....	16	7	0	0.0	8	1	11.1
Howard University	19	.....	.....	.....	17	2	10.5
GEORGIA	105	70	0	0.0	26	9	25.7
Atlanta Medical College.....	89	59	0	0.0	23	7	23.3
University of Georgia.....	16	11	0	0.0	3	2	40.0
ILLINOIS	722	447	64	12.5	191	20	9.5
Chicago College of Med. and Surg.	261	155	34	18.0	60	12	16.7
Chicago Hospital College of Medicine....	23	15	8	34.8	.....	.....	.....
Hahnemann Medical College and Hosp. ..	41	27	4	12.9	10	0	0.0
Jenner Medical College.....	24	20	3	13.0	1	0	0.0
Loyola University	122	77	13	14.4	26	6	18.7
Northwestern University	41	28	1	3.4	12	0	0.0
Rush Medical College.....	147	90	0	0.0	56	1	1.8
University of Illinois.....	64	35	1	2.8	27	1	3.6
INDIANA	28	25	0	0.0	3	0	0.0
Indiana University	28	25	0	0.0	3	0	0.0
IOWA	22	20	0	0.0	2	0	0.0
State Univ. of Iowa Coll. of Med.	21	19	0	0.0	2	0	0.0
State Univ. of Iowa Coll. of Homeo. Med.	1	1	0	0.0	.....	.....	.....
KANSAS	15	14	0	0.0	1	0	0.0
University of Kansas.....	15	14	0	0.0	1	0	0.0
KENTUCKY	60	39	2	4.9	19	0	0.0
University of Louisville.....	60	39	2	4.9	19	0	0.0
LOUISIANA	61	34	1	2.9	25	1	3.8
Tulane University of Louisiana.....	61	34	1	2.9	25	1	3.8
MAINE	13	8	0	0.0	4	1	20.0
Bowdoin Medical School.....	13	8	0	0.0	4	1	20.0
MARYLAND	190	66	6	8.3	103	15	12.7
Johns Hopkins University.....	92	38	2	5.0	50	2	3.8
University of Maryland.....	98	28	4	12.5	53	13	19.7
MASSACHUSETTS	255	159	18	10.2	66	12	15.4
Boston University	37	26	3	10.3	7	1	12.5
College of Phys. and Surgs., Boston....	17	4	10	71.4	2	1	33.3
Medical School of Harvard University....	9	59	0	0.0	38	2	5.0
Tufts College Medical School.....	10	69	4	5.5	19	8	29.6
Middlesex College of Med. and Surg.	2	1	1	50.0	.....	.....	.....
MICHIGAN	119	101	3	2.9	11	4	26.7
Detroit College of Med. and Surg.	54	50	2	3.8	2	0	0.0
University of Michigan Medical School....	59	48	1	2.0	8	2	20.0
Univ. of Michigan Homeo. Med. School....	6	3	0	0.0	1	2	66.7
MINNESOTA	36	32	0	0.0	4	0	0.0
University of Minnesota	36	32	0	0.0	4	0	0.0
MISSOURI	164	105	0	0.0	46	13	22.0
Eclectic Medical University*.....	6	.....	.....	.....	4	2	50.0
Kansas City College of Med. and Surg.*..	30	.....	.....	.....	24	6	20.0
National Univ. of Arts and Sciences.....	44	40	0	0.0	3	1	25.0
St. Louis College of Phys. and Surgs.	15	9	0	0.0	3	3	50.0
St. Louis University.....	45	37	0	0.0	7	1	12.5
Washington University	24	19	0	0.0	5	0	0.0
NEBRASKA	70	52	0	0.0	14	4	22.2
John A. Creighton Medical College.....	46	32	0	0.0	10	4	28.6
Lincoln Medical College.....	6	5	0	0.0	1	0	0.0
University of Nebraska.....	18	15	0	0.0	3	0	0.0
NEW YORK	605	474	80	14.4	48	3	5.9
Albany Medical College.....	57	46	10	17.9	0	1	100.0
Columbia University	105	81	14	14.7	10	0	0.0
Cornell University Medical College.....	25	21	0	0.0	4	0	0.0
Fordham University	57	47	7	13.0	3	0	0.0
Long Island College Hospital.....	73	68	3	4.2	1	1	50.0
N. Y. Homeo. Med. Coll. & Flower Hosp.	103	54	35	39.3	13	1	7.2
N. Y. Med. Coll. and Hosp. for Women..	14	13	0	0.0	1	0	0.0
Syracuse University	32	29	0	0.0	3	0	0.0
Univ. and Bellevue Hosp. Medical College.	75	61	5	7.6	9	0	0.0
University of Buffalo.....	64	54	6	10.0	4	0	0.0
NORTH CAROLINA	18	12	0	0.0	5	1	16.7
North Carolina Medical College.....	18	12	0	0.0	5	1	16.7
OHIO	165	138	1	0.7	25	1	3.8
Eclectic Medical College.....	32	22	1	4.4	9	1	10.0
Ohio State University College of Med.	70	63	0	0.0	7	0	0.0
Ohio State Univ. College of Homeo. Med.	8	8	0	0.0	.....	.....	.....
University of Cincinnati College of Med.	18	13	0	0.0	5	0	0.0
Western Reserve University.....	36	32	0	0.0	4	0	0.0
OKLAHOMA	35	27	0	0.0	3	5	62.5
University of Oklahoma.....	35	27	0	0.0	3	5	62.5
OREGON	12	8	0	0.0	4	0	0.0
University of Oregon.....	12	8	0	0.0	4	0	0.0
PENNSYLVANIA	374	196	4	2.0	162	12	6.9
Hahnemann Medical College and Hosp.	23	11	1	8.3	9	2	18.2
Jefferson Medical College.....	140	66	2	2.9	68	4	5.6
Medico-Chirurgical Coll. of Philadelphia..	77	53	1	1.9	21	2	8.7
Temple University	21	16	0	0.0	5	0	0.0
University of Pennsylvania.....	65	20	0	0.0	43	2	4.4
University of Pittsburgh.....	24	21	0	0.0	3	0	0.0
Woman's Medical College of Pennsylvania	24	9	0	0.0	13	2	13.3
SOUTH CAROLINA	23	18	3	14.3	2	0	0.0
Medical College of South Carolina.....	23	18	3	14.3	2	0	0.0
TENNESSEE	361	155	7	4.3	139	60	30.2
Lincoln Memorial University.....	16	7	0	0.0	6	3	33.3
Meharry Medical College.....	177	53	3	5.4	74	47	38.8
University of Tennessee.....	57	28	0	0.0	26	3	10.3
University of West Tennessee.....	19	6	4	40.0	3	6	66.7
Vanderbilt University	92	61	0	0.0	30	1	3.2
TEXAS	80	71	1	1.4	7	1	12.5
Baylor University	17	12	1	7.7	4	0	0.0
Fort Worth School of Medicine.....	17	15	0	0.0	1	1	50.0
University of Texas.....	46	44	0	0.0	2	0	0.0
VERMONT	28	9	0	0.0	15	4	21.1
University of Vermont.....	28	9	0	0.0	15	4	21.1
VIRGINIA	105	53	3	5.4	41	8	16.3
Medical College of Virginia.....	90	42	3	6.7	37	8	17.8
University of Virginia.....	15	11	0	0.0	4	0	0.0
WISCONSIN	9	7	0	0.0	2	0	0.0
Marquette University	9	7	0	0.0	2	0	0.0
Totals.....	3938	2538	197	7.2	1024	179	14.9

* These two colleges are reported as not recognized by the licensing board of the home state—Missouri—and they could not exist were it not for their being recognized elsewhere.

In this table the graduates of each college who were examined in the state in which the college is located are grouped in one column, while graduates of that college examined in other states are in another column. For example, under Louisiana, this table shows that of the 61 graduates of the Tulane University School of Medicine who were examined by state boards during 1917, 35 were examined in Louisiana, of which number 34 passed and 1, or 2.9 per cent., failed, while 26 were examined in other states, of which number 25 passed and 1, or 3.8 per cent., failed.

This table shows that in many instances the graduates have better chances of passing examinations in the state in which their colleges are located than they have elsewhere. This should always be considered in making comparisons between colleges. A low standard college by having all its graduates examined in the home state, or by a partisan

board, may show a lower percentage of failures than a college of much higher grade which has graduates examined by several states.

The heavy-faced figures give the results by states. The first column of heavy-faced figures, preceded by the + and - signs, shows the differences between the percentages of examination in the home state and the examination elsewhere. The plus sign indicates that graduates have better chances of success in the state where the colleges from which they graduated are located; the minus sign indicates that the chances are better elsewhere. The most marked variations in 1917 were in the examination of the graduates of the colleges of Oklahoma, 62.5 per cent.; Tennessee, 25.9; Georgia, 25.7; Michigan, 23.8; Nebraska, 22.2; Missouri, 22.0; Vermont, 21.1, and Maine, 20.0, in all of which the chances of the graduates were better in the home state. The marked variations where the graduates' chances were better elsewhere were in South Carolina, 14.3, and New York, 8.5 per cent.

The totals show that, on the average, the chances of success were 7.7 per cent. better if the graduate took the examination in the state where his college was located.

percentage of failures than graduates of colleges in Classes B and C. In this connection it should be stated that the percentage of failures for Class C medical colleges would doubtless be higher except for the fact that graduates of several of these colleges were examined largely, if not entirely, by partisan or sectarian boards, and not by single boards which examine graduates of all schools. It should be remembered also that the graduates of Class C colleges, as a rule, are refused examination by all but a few state boards, and that in the latter, as a rule, the examinations are not as severe as in the other states.

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages as compared with previous years is of interest. The total examined in 1917—4,730—is the lowest number of candidates examined for license in any year since the compiling of these statistics began. (See Table 4.) The number examined was 120 less than in 1916, 583 less than in 1915 and 3,305 less than in 1906, when 8,035 candidates were examined. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables I, J, K and L. By all methods—examination, reciprocity, under exemption, etc.—5,423 physicians were licensed during 1917, or 38 less than in

TABLE 4.—TOTAL RESULTS
Comparison with Previous Years

Year	All Candidates Examined				Recent Graduates		Older Graduates		Non-Graduates		Registered with- out Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	.....	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	.....	1362	5423

1916, 449 less than in 1915, and 2,442 less than in 1906, when 7,865 physicians were licensed.

Other deductions from the larger tables presented in Tables E to H are worthy of special study.

STUDY OF COLLEGES BY STATE GROUPS

Table E gives the results for the group of colleges located in each state. It shows what states are furnishing the largest number of physicians, and the failure percentages indicate the kind of training these colleges are furnishing, so far as may be judged from the results of state board examinations. Of the thirty-two states having medical colleges which grant degrees, twelve furnished 100 or more candidates examined, six states furnished more than 200 each, and four furnished over 300 each. Illinois furnished 772 graduates, the largest number, followed by New York with 631, Pennsylvania with 416 and Tennessee with 382. Of the thirty-two groups of colleges, twenty-two had failure percentages of less than 10 per cent., nine had failure percentages between 10 and 20, and only one had 20 per cent. or more of failures. The highest failure percentage was obtained by the Tennessee group, with 20.6. Other deductions are given in the legend to the table.

STUDY OF LARGER COLLEGES

Table F is also based on the three large tables, and gives the results of state board examinations as they affect the thirty largest medical colleges. Although these colleges represent 33.7 per cent. of the 89 medical colleges in the United

States having graduates examined, they furnish 68.5 per cent. of all candidates for license coming from medical schools of the United States. This table shows, however, that the graduating of large classes by a medical college does not prove excellence of teaching, since two of the colleges having 100 or more examined have high failure percentages. The larger the college from the standpoint of students and graduates, the more serious is inferior teaching ability, as indicated by a high failure percentage. In fairness both to

TABLE H.—PHYSICIANS EXAMINED BY STATE BOARDS,
1913 TO 1917, INCLUSIVE

STATES	1913		1914		1915		1916		1917		Totals		
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Percentage Rejected
Alabama.....	90	57	115	60	79	45	55	36	45	21	603	384	219 36.3
Alaska.....	...	...	4	0	6	0	11	1	2	0	24	23	1 4.2
Arizona.....	26	9	26	16	10	7	33	9	32	5	173	127	46 26.6
Arkansas.....	91	28	97	16	75	7	67	11	80	12	484	410	74 15.2
California.....	163	36	113	45	137	39	146	8	235	94	1016	794	222 21.9
Colorado.....	53	5	31	1	19	5	25	8	38	2	187	166	21 11.2
Connecticut.....	77	51	46	8	46	17	41	20	72	22	400	282	118 29.5
Delaware.....	12	1	18	0	13	0	13	2	14	0	73	70	3 4.1
Dist. of Columbia...	55	5	47	12	51	13	33	14	26	7	263	212	51 19.3
Florida.....	116	49	106	37	83	25	68	18	44	12	558	417	141 25.2
Georgia.....	171	24	179	21	176	17	133	7	100	2	830	759	71 8.5
Idaho.....	21	2	19	2	23	1	29	0	20	2	119	112	7 5.9
Illinois.....	567	98	484	110	439	64	517	91	487	101	2958	2494	464 15.6
Indiana.....	101	1	48	2	49	3	49	4	39	2	298	286	12 4.0
Iowa.....	107	4	77	1	85	4	82	2	45	1	408	396	12 2.9
Kansas.....	89	7	77	4	29	4	32	1	24	3	230	211	19 8.2
Kentucky.....	78	12	59	7	83	7	66	10	68	16	406	354	52 12.8
Louisiana.....	69	20	76	24	69	21	68	10	44	13	414	326	88 21.2
Maine.....	46	9	54	11	63	6	25	2	33	1	250	221	29 11.6
Maryland.....	108	40	105	27	111	29	96	30	82	11	639	502	137 21.4
Massachusetts.....	215	74	226	97	238	65	166	40	219	42	1382	1064	318 23.0
Michigan.....	99	3	138	2	120	6	135	5	125	3	636	617	19 2.9
Minnesota.....	71	4	47	3	59	6	56	1	60	0	307	293	14 4.5
Mississippi.....	61	19	51	17	84	15	48	29	23	5	352	267	85 24.1
Missouri.....	200	25	195	33	200	22	161	13	166	12	1027	922	105 10.2
Montana.....	57	16	58	25	48	16	38	14	43	24	339	244	95 28.0
Nebraska.....	87	2	66	6	70	6	52	0	63	0	352	338	14 3.9
Nevada.....	10	3	7	3	12	1	10	1	8	0	55	47	8 14.5
New Hampshire.....	17	3	36	6	6	1	19	0	6	0	85	75	10 11.8
New Jersey.....	69	7	41	13	71	8	72	10	26	6	323	279	44 13.6
New Mexico.....	6	1	8	2	5	0	5	1	.....	.....	28	24	4 14.3
New York.....	511	205	501	169	618	165	523	159	600	146	3597	2753	844 23.4
North Carolina.....	77	34	81	37	106	30	96	18	65	10	554	425	129 23.2
North Dakota.....	16	13	15	1	10	5	15	5	6	1	87	62	25 28.7
Ohio.....	189	3	146	18	149	3	182	5	185	4	884	851	33 3.7
Oklahoma.....	58	5	48	12	50	13	52	8	52	2	300	260	40 13.3
Oregon.....	112	36	76	42	56	30	38	17	37	7	451	319	132 29.2
Pennsylvania.....	345	59	101	22	208	24	233	33	241	12	1278	1128	150 11.7
Rhode Island.....	28	4	27	5	26	6	27	7	22	1	153	130	23 15.0
South Carolina.....	99	47	68	37	53	36	53	24	37	29	483	310	173 35.8
South Dakota.....	30	1	25	4	25	0	18	2	18	1	124	116	8 6.5
Tennessee.....	306	94	149	205	101	4	128	20	167	10	1184	851	333 28.1
Texas.....	168	11	152	11	136	11	90	13	119	5	716	665	51 7.1
Utah.....	24	3	13	3	21	1	15	0	11	0	91	84	7 7.7
Vermont.....	24	2	28	0	36	0	17	0	13	1	121	118	3 2.5
Virginia.....	87	19	98	10	100	8	99	8	64	4	497	448	49 9.8
Washington.....	63	22	92	5	75	14	48	4	57	7	387	335	52 13.4
West Virginia.....	58	17	51	4	70	7	58	2	45	7	319	282	37 11.5
Wisconsin.....	98	8	81	4	74	10	72	4	40	3	394	365	29 7.3
Wyoming.....	10	1	4	0	13	0	17	0	13	0	58	57	1 1.7
Totals.....	6434	5570	5313	4850	4730	26896							
Registered.....	5235	4370	4486	4123	4061	22275							
Rejected.....	1199	1200	827	727	669	4622							
Per Cent. Rejected...	18.6	21.6	15.6	15.0	14.1	17.2							

This table gives the number of candidates registered and rejected on examination by each state during each of the last five years. The last four columns give the totals for the five years and the percentage rejected by each state.

Four states registered over 1,000 candidates by examination in the five years, these being New York, Illinois, Pennsylvania and Massachusetts. Over 2,000 were registered in only two states, New York with 2,753 and Illinois with 2,494. Altogether 22,202 physicians were registered by examination in five years, an average of 4,440 each year.

The seven highest percentages of rejections for the five years were in Alabama, 36.3; South Carolina, 35.8; Connecticut, 29.5; Oregon, 29.2; North Dakota, 28.7; Tennessee, 28.1; and Montana, 28.0. Until 1916 Massachusetts, Oregon and Tennessee included nongraduates among those examined during the last five years, and for that reason would be expected to have higher percentages rejected. On the other hand, in several states the boards refused to recognize certain colleges and eliminated many candidates prior to the examination by a careful scrutiny of credentials and as a result the percentages of failures at the examinations are lower than otherwise would be the case. For example, Ohio rejected only 3.7 per cent. of those who took their examinations, but graduates of nineteen medical colleges are not eligible for admission to the examinations. This table therefore should be studied in connection with Table D.

The lowest failure percentages were in Wyoming, 1.7; Vermont, 2.5; Michigan and Iowa, each 2.9; Ohio, 3.7; and Nebraska, 3.9.

medical students and to the public, such schools should strengthen their teaching facilities or reduce the size of their classes.

RESULTS IN HOME STATES AND ELSEWHERE

Table G is of much interest, because it shows for each college the results of examinations in the state in which the college is located, as compared with the results of examinations in other states, where there is less probability of local influence. Of the 3,938 recent graduates examined in 1917

TABLE I.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1917

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1917	Graduates, 1912 and Previous	Graduates of Nondescript Colleges			
Alabama.....	41	4	....	....	3	48
Alaska.....	1	1	....	....	....	2
Arizona.....	12	20	....	....	....	32
Arkansas.....	65	15	....	31	....	111
California.....	156	6	73	204	1	440
Colorado.....	30	8	....	62	....	100
Connecticut.....	59	13	....	11	1	84
Delaware.....	14	....	....	3	....	17
District of Columbia.....	22	4	....	7	....	33
Florida.....	20	24	....	....	....	44
Georgia.....	96	4	....	22	....	122
Idaho.....	7	13	....	5	....	25
Illinois.....	470	17	....	33	....	520
Indiana.....	38	1	....	40	....	79
Iowa.....	39	6	....	46	....	91
Kansas.....	23	1	....	43	....	67
Kentucky.....	67	1	....	8	....	76
Louisiana.....	40	4	....	7	....	51
Maine.....	27	6	....	9	....	42
Maryland.....	80	2	....	18	....	100
Massachusetts.....	196	23	....	....	....	219
Michigan.....	120	5	....	72	1	198
Minnesota.....	55	5	....	43	....	103
Mississippi.....	23	....	....	14	....	37
Missouri.....	150	16	....	40	....	206
Montana.....	23	20	....	....	....	43
Nebraska.....	57	6	....	36	....	99
Nevada.....	2	6	....	16	....	24
New Hampshire.....	5	1	....	12	....	18
New Jersey.....	24	2	....	96	....	122
New Mexico.....	....	....	....	....	67	67
New York.....	567	33	....	26	9	635
North Carolina.....	62	3	....	21	....	86
North Dakota.....	5	1	....	18	....	24
Ohio.....	176	9	....	60	....	245
Oklahoma.....	45	7	....	90	....	142
Oregon.....	19	18	....	....	....	37
Pennsylvania.....	234	7	....	17	....	258
Rhode Island.....	18	4	....	....	....	22
South Carolina.....	33	4	....	....	....	37
South Dakota.....	10	8	....	6	....	24
Tennessee.....	161	6	....	....	....	167
Texas.....	108	11	....	57	....	176
Utah.....	11	....	....	8	1	20
Vermont.....	12	1	....	....	....	13
Virginia.....	64	....	....	18	....	82
Washington.....	34	23	....	....	....	57
West Virginia.....	41	4	....	39	....	84
Wisconsin.....	38	2	....	27	....	67
Wyoming.....	9	4	....	14	....	27
Totals.....	3609	379	73	1279	83	5423

This table shows the total number registered during 1917 in each state by the various methods. The first three columns show those registered by examination: the first column showing the recent graduates registered, the second column the old practitioners (graduates of 1912 and previous years) and the third column shows those licensed who were graduates of institutions not generally recognized as medical colleges. The fourth column shows the number licensed through reciprocity and the fifth column shows those licensed under various exemption clauses in the practice acts, such as because of national fame or by recognition of diplomas (New Mexico). California granted the physician's license to 73 out of 151 applicants who graduated from osteopathic colleges. Of these, 24 were given merely an "oral, practical or clinical examination."

It is interesting to note that as a rule states which registered large numbers through reciprocity, New Jersey, Oklahoma and Michigan, for example, examined very few old practitioners. The large registration through reciprocity in California is due to the liberal provision in the recent medical practice act providing for the recognition of licenses granted in other states. There were no reciprocal registrations reported for thirteen states, including Alaska.

The last column shows the total number of physicians registered by all methods in each state during the year. Only three states registered over 300 each, these being New York, 635; Illinois, 520, and California, 440. Seventeen states registered less than 50 each. The largest registration was 635 in New York and the smallest was 2 in Alaska. The total registered by all methods was 5,423, a decrease of only 38 below the total registered in 1916.

who came from the eighty-nine medical colleges of the United States which had graduates examined, 2,538, or 64.5 per cent., took their license examinations in the states in which were located the colleges from which they graduated. Of this number, 7.2 per cent. failed on the average, whereas, of the 1,024 graduates examined in other states, 14.9 per cent. failed. This would indicate that, on the average, the student has 7.7 per cent. better chances of passing the license examination by taking it in the state in which the college is located. Of the medical colleges located, respectively, in Oklahoma, Georgia, Nebraska, Missouri, Vermont, North Carolina and the District of Columbia, all graduates who were examined in the home state passed. On the other hand the graduates of the colleges of the above states, when examined in other than the home state, failed in the following percentages, respectively: 62.5, 25.7, 22.2, 22.0, 21.1, 16.7 and 10.0. Attention is called to the glaring fact that thirty-six graduates of two low-grade medical colleges of Missouri—who were not admitted to the examinations in their home states because those colleges were not, and still are not, recognized in Missouri—were admitted to examinations by the Eclectic Boards of Arkansas and Connecticut, and twenty-six of them passed and were granted licenses to practice. The people of Arkansas and Connecticut should be made aware of this fact. It is they who will suffer and not the people of Missouri.

TOTAL RESULTS FOR FIVE YEARS

Table H shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 18, 1917, p. 598, Table 12) shows—what would be expected—that the states having the largest number of medical graduates examined the largest number of physicians. New York leads, having examined 3,597 candidates in five years, followed by Illinois with 2,958. The five states having the next highest numbers are Massachusetts with 1,382, Pennsylvania with 1,278, Tennessee with 1,184 and Missouri with 1,027.

TOTAL REGISTRATION IN 1917

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table I, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 5,423 physicians were registered by all methods during 1917, as compared with 5,461 in 1916, 5,872 in 1915, 5,797 in 1914 and 7,865 in 1906. There has been a constant decrease in the totals licensed by all methods until 1915, when there was an increase of 79. In 1917 the total registered was 38 less than in 1916 and 449 less than in 1915. By reciprocity or under exemption clauses, 1,362 were licensed in 1917, as compared with 1,338 in 1916, 1,386 in 1915, 1,427 in 1914 and 1,265 in 1913. No undergraduate has been registered in any state during the last two years.

Over 100 were registered by all methods in seventeen states, over 200 in seven and over 300 in three, the largest numbers registered being 635 in New York, 503 in Illinois and 440 in California. Of those licensed in California, 204, or 46.4 per cent., were registered by the endorsement of licenses granted by the boards of other states. California also registered as physicians and surgeons 73 graduates of osteopathic colleges.

MEDICAL TRAINING OF APPLICANTS LICENSED

Table J is of special interest, since it shows for each state the character of the medical training of the candidates licensed during 1917. Of the 5,423 candidates licensed, 4,061 were by examination and 1,362 were by reciprocity or on presentation of acceptable credentials. In considering the colleges from which reciprocal candidates graduated, the classification is not applied to any one who graduated prior to 1907 when the first classification of medical colleges was completed by the Council on Medical Education. Of the 4,061 candidates licensed by examination, 2,827, or 69.6 per cent., were from Class A schools; 813, or 20.0 per cent., were

from Class B schools, 255, or 6.3 per cent., were from Class C schools, and 166 were graduates of colleges which merged with others, or became extinct prior to 1907. Among the graduates of Class C schools are included 73 graduates of osteopathic colleges who were granted the physician and surgeon's license in California. Of the 1,362 candidates licensed by reciprocity, 603, or 44.3 per cent., graduated prior to 1907, and are, therefore, included among miscellaneous, or unclassified colleges; 542, or 39.8 per cent., were graduates of Class A medical schools; 175, or 12.8 per cent., were grad-

Class C graduates registered in Arkansas were licensed by the Eclectic board. Illinois registered 273 Class B graduates, the largest number, followed by California with 97, Tennessee with 63, New York with 57 and Oklahoma with 52. Arkansas, California, Illinois and Oklahoma licensed more graduates of Class B and Class C colleges than graduates of Class A medical schools. Only Class A graduates were registered either by examination or reciprocity in New Hampshire and Rhode Island.

TABLE J.—CHARACTER OF PHYSICIANS LICENSED IN 1917

STATES	By Examination					On Reciprocity or Credentials					Totals Registered From				Grand Totals
	Medical Colleges in Class				Totals	Medical Colleges in Class				Totals	Medical Colleges in Class				
	A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.	
Alabama.....	39	3	0	3	45	2	0	0	1	3	41	3	0	4	48
Alaska.....	1	1	0	0	2	...	...	...	...	...	1	1	0	0	2
Arizona.....	23	3	0	6	32	...	...	...	...	...	23	3	0	6	32
Arkansas.....	22	24	25 ¹	9	80	5	10	1	15	31	27	34	26 ¹	24	111
California.....	64	81	83 ²	7	235	50	16	5	134	205	114	97	88 ²	141	440
Colorado.....	29	5	1	3	38	21	6	0	35	62	50	11	1	38	100
Connecticut.....	58	8	3	3	72	3	1	2	6	12	61	9	5	9	84
Delaware.....	11	3	0	0	14	1	0	0	2	3	12	3	0	2	17
Distrlct of Columbia.....	20	4	0	2	26	3	0	2	2	7	23	4	2	4	33
Florida.....	30	4	0	10	44	...	...	...	...	...	30	4	0	10	44
Georgia.....	78	17	0	5	100	13	2	0	7	22	91	19	0	12	122
Idaho.....	12	1	1	6	20	3	1	0	1	5	15	2	1	7	25
Illinolns.....	178	265	37	7	487	13	8	3	9	33	191	273	40	16	520
Indiana.....	34	4	0	1	39	16	9	0	15	40	50	13	0	16	79
Iowa.....	40	5	0	0	45	20	15	1	10	46	60	20	1	10	91
Kansas.....	22	2	0	0	24	9	2	4	28	43	31	4	4	28	67
Kentucky.....	47	21	0	0	68	3	2	0	3	8	50	23	0	3	76
Louisiana.....	37	5	0	2	44	7	0	0	0	7	44	5	0	2	51
Maine.....	30	1	1	1	33	4	0	0	5	9	34	1	1	6	42
Maryland.....	78	3	1	0	82	7	1	1	9	18	85	4	2	9	100
Massachusetts.....	202	6	6	5	219	...	...	...	...	...	202	6	6	5	219
Mlehigan.....	114	8	1	2	125	36	10	0	27	73	150	18	1	29	198
Minnesota.....	57	0	0	3	60	29	3	0	11	43	86	3	0	14	103
Mississippi.....	15	5	0	3	23	2	4	1	7	14	17	9	1	10	37
Missouri.....	84	20	55	7	166	17	7	6	10	40	101	27	61	17	206
Montana.....	28	7	0	8	43	...	...	...	...	...	28	7	0	8	43
Nebraska.....	53	2	6	2	63	9	5	2	20	36	62	7	8	22	99
Nevada.....	4	0	1	3	8	4	2	1	9	16	8	2	2	12	24
New Hampshire.....	6	0	0	0	6	6	0	0	6	12	12	0	0	6	18
New Jersey.....	23	1	0	2	26	59	12	1	24	96	82	13	1	26	122
New Mexico.....	...	...	...	...	...	28	4	1	34	67	28	4	1	34	67
New York.....	515	56	17	12	600	15	1	0	19	35	530	57	17	31	635
North Carolina.....	47	18	0	0	65	8	1	1	11	21	55	19	1	11	86
North Dakota.....	4	2	0	0	6	12	2	0	4	18	16	4	0	4	24
Ohio.....	141	40	0	4	185	29	3	1	27	60	170	43	1	31	245
Oklahoma.....	19	30	2	1	52	16	22	4	48	90	35	52	6	49	142
Oregon.....	23	2	4	8	37	...	...	...	...	...	23	2	4	8	37
Pennsylvania.....	215	22	0	4	241	9	2	0	6	17	224	24	0	10	258
Rhode Island.....	19	0	0	3	22	...	...	...	...	...	19	0	0	3	22
South Carolina.....	31	3	0	3	37	...	...	...	...	...	31	3	0	3	37
South Dakota.....	15	2	0	1	18	6	0	0	0	6	21	2	0	1	24
Tennessee.....	95	63	6	3	167	...	...	...	...	...	95	63	6	3	167
Texas.....	84	27	2	6	119	17	11	3	26	57	101	38	5	32	176
Utah.....	9	2	0	0	11	6	1	0	2	9	15	3	0	2	20
Vermont.....	11	1	0	1	13	...	...	...	...	...	11	1	0	1	13
Virginia.....	61	3	0	0	64	11	1	1	5	18	72	4	1	5	82
Washington.....	35	8	1	13	57	...	...	...	...	...	35	8	1	13	57
West Virginia.....	33	9	0	3	45	19	5	1	14	39	52	14	1	17	84
Wisconsin.....	25	14	0	1	40	19	3	0	5	27	44	17	0	6	67
Wyoming.....	6	2	2	3	13	5	3	0	6	14	11	5	2	9	27
Totals.....	2827	813	255	166	4061	542	175	42	603	1362	3369	988	297	769	5423

1. Of the 111 physicians licensed in Arkansas, the Regular Board licensed by examination 22 Class A, 22 Class B, and 9 miscellaneous graduates and by reciprocity 5 Class A, 10 Class B, 1 Class C, and 14 miscellaneous graduates, a total of 83. The Eclectic Board licensed by examination 2 Class B and 25 Class C graduates, a total of 27. The Homeopathic Board reported no candidates licensed by examination and only one (miscellaneous) by reciprocity.

2. Of the 83 graduates of Class C colleges licensed in California, 73 were graduates of eight osteopathic colleges which are not generally recognized as medical colleges by state licensing boards, and only one of the colleges has been reported so recognized by the California board. Altogether 151 osteopaths were admitted to the examination for licensure as physicians and surgeons and 73 were so licensed.

This table shows the classification of the colleges from which most of the physicians graduated who were licensed in 1917. Graduates of colleges which became extinct prior to 1907 who were examined, and are reciprocity licentiates who graduated prior to 1907, are unclassified and

uates of Class B schools, and 42, or 3.1 per cent., were from Class C schools. Altogether, of the 5,423 graduates registered in 1917, 3,369, or 62.1 per cent., were graduates of Class A medical schools; 988, or 18.2 per cent., were from Class B schools, 297, or 5.3 per cent., were from Class C schools, and for 769, or 14.4 per cent., the colleges are unclassified.

As will be noted, the largest numbers of Class C graduates were licensed in California, with 88; Missouri, with 61; Illinois, with 40, and Arkansas, with 26. All but one of the

included under "miscellaneous" since it was in 1907 that the Council on Medical Education completed its first classification of all medical colleges.

It will be seen that nine states accepted Class C graduates through reciprocity where they did not license any by examination. On the whole, however, more were licensed by examination than through reciprocity.

By both examination and reciprocity, the largest numbers of Class C graduates were licensed in California, 88 (including 73 osteopaths); Missouri, 61; Illinois, 40; Arkansas, 26 (25 were licensed by the Eclectic Board); and New York, 17. The largest numbers of Class B graduates were licensed in Illinois, 273; California, 97; Tennessee, 63; New York, 57; and Oklahoma, 52.

Of all physicians licensed, 3,369, or 62.1 per cent., were graduates of Class A medical schools; 988, or 18.2 per cent., from Class B schools; 297, or 5.3 per cent., from Class C schools, and 769, or 14.4 per cent., from miscellaneous colleges.

It is evident that in several states particularly, more care should be taken in the recognition of medical colleges, or better methods of examination should be adopted which will provide better safeguards against those not having adequate education.

Table K gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state. This is commonly referred to as "reciprocity," which conveys the idea that the state

which accepts the license of another must be granted the same courtesy by the state issuing the original license. The term does not always apply, however, since some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina as examples—accept the physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the thirty-seven states shown in Table K, 1,269 physicians—many of whom have been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination.

Table L shows in what states were granted the original licenses of those who were registered elsewhere under the

in those states. The first and third columns show, respectively, when the one year and the two years of premedical college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all graduates are affected by the increased requirements. This table shows the remarkable progress which has been made in state board requirements since 1908, prior to which no state was requiring more than a four-year high school education as the minimum standard of preliminary education. As will be noted, there are now thirty-eight states which have adopted the higher standard, and of these, thirty require as a minimum *two years* of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology.

In Table N the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in thirty-eight states as referred to in Table M. The next greatest increase

TABLE N.—ADVANCES IN STATE LICENSE REQUIREMENTS IN FOURTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1918	Increase	
Preliminary Education—				
Any requirement	20	46	26	3 ¹
A standard four-year high school education or higher.....	10	44	34	5 ²
One year or more of college work..	0	38 ³	38	11
Two years of college work as a minimum	0	30 ³	30	19
That all applicants be graduates of a medical college.....	36	49	13	0
That all applicants undergo an examination for license.....	45	48	3	1 ⁴
Requirement of practical tests in the license examinations	1	16	15	33
Hospital intern year required.....	0	7 ⁵	7	42
Full authority by board to refuse recognition to low-grade colleges.....	14	43	29	6 ⁶
Boards refusing to recognize low-grade colleges*	5	40	35	9 ⁷
Reciprocal relations with other states..	27	41	14	8 ⁸
Single boards of medical examiners....	36	42	6	7 ⁹

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges.
1. District of Columbia, Massachusetts and Wyoming.
2. Idaho, Oregon and the states named in Footnote 1.
3. See Table M.
4. New Mexico.
5. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; North Dakota and Rhode Island, 1918; Illinois, 1921, and Michigan, 1922.
6. District of Columbia, Idaho, Massachusetts, Oregon, Utah and Wyoming.
7. California, Nevada, Tennessee and the states named in Footnote 6.
8. Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island and Washington. To this list should be added the outlying territories of Alaska, Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
9. Multiple boards still remain in Arkansas, Connecticut, Delaware, District of Columbia, Florida, Louisiana and Maryland.

(thirty-five) is in the number of states—now forty—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and a more general and larger use of practical tests in the examinations.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners, which was organized in 1915, consists of fifteen members, including the Surgeon-Generals of the Army, Navy and Public Health Services, and one other representative of each of those services, three representatives of the state medical licensing boards and six members appointed at large. Up to December, 1917, three examinations had been held, the first in October, 1916; the second in June, 1917, and the third in October, 1917. The first two were held in Washington, and the third in

The first two were held in Washington, and the third in

reciprocity provision during the last five years. Of the 6,432 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 914, who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois,¹ only 411 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-two other states, while New York has established such relations with only seven.

IMPROVED STANDARDS OF LICENSURE

Table M shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine

1. See Table 12, THE JOURNAL A. M. A., Aug. 18, 1917, p. 544.

Chicago. At these three examinations altogether fifty applicants were examined, of whom thirty-six passed and fourteen failed, the percentage of failures being 28 per cent.

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
October, 1916	Washington	10	5	5	50.0
June 1917	Washington	12	9	3	33.3
October, 1917	Chicago	28	22	6	21.5
Totals		50	36	14	28.0

Twelve medical schools were represented and the results were as follows:

College	Total Examined	Passed	Failed	Per Cent. Failed
Howard University School of Med.	1	0	1	100.0
Atlanta Medical College.....	1	1	0	0.0
Northwestern Univ. Med. School..	11	8	3	27.3
Rush Medical College	20	16	4	20.0
State Univ. of Iowa, Coll. of Med.	1	0	1	100.0
Johns Hopkins Univ. Med. Dept...	4	3	1	25.0
Med. School of Harvard Univ....	3	3	0	0.0
Univ. of Michigan Med. School...	2	1	1	50.0
Columbia Univ. Coll. of P. and S.	1	1	0	0.0
Univ. & Bellevue Hosp. Med. Coll.	1	0	1	100.0
Univ. of Penn. School of Med....	4	3	1	25.0
McGill Univ. Faculty of Med.....	1	0	1	100.0
Totals	50	36	14	28.0

Holders of certificates from the National Board will be registered without further examination in Colorado, Delaware, Idaho, Kentucky, Maryland, New Hampshire, North Carolina, North Dakota, Pennsylvania, Rhode Island and Vermont. When the permanency of the National Board is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all states.

IN CONCLUSION

In the gathering and publication of these statistics, the endeavor has been to give a fair presentation of facts, a knowledge of which is always beneficial. This annual presentation of the results of state license examinations has had a powerful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. For the verification of all figures the reports and data furnished by medical colleges have been of much value. We have no doubt that the information here published will be of service not only to the medical colleges and to the state boards, but also to the public, since the end-result is better qualified physicians.

RECOGNITION OF EXAMINATION OF
NATIONAL BOARD OF MEDICAL
EXAMINERS

The National Board of Medical Examiners was organized in 1915. It is a voluntary organization, the object of which is to conduct examinations of physicians so thorough as to prove without doubt their qualifications for the practice of medicine. The value of its certificates, aside from a qualification of merit, depends on the recognition given to it by state medical licensing boards. Such recognition has already been given, or assured, by the licensing boards of the following eight states:

Colorado	Maryland	Pennsylvania
Delaware	New Hampshire	Rhode Island
Idaho	North Carolina	Vermont
Kentucky	North Dakota	

It is hoped that the certificate will eventually receive universal recognition.

A successful applicant may enter the Reserve Corps of either the Army or Navy without further professional examination if his examination papers are satisfactory to a board of examiners of these services. The certificate of the National Board will also be accepted as qualification for admission to the Graduate School of the University of Minnesota, including the Mayo Foundation.

The board consists at present of fifteen members, including the three Surgeon-Generals of the United States Army, Navy

and Public Health services and one other representative from each of those services, two representatives of state licensing boards and seven members appointed at large. As soon as expirations of terms of office will permit, there are to be three representatives of state licensing boards and six members appointed at large. The three Surgeon-Generals serve as long as they hold their respective offices, and thereafter their places will be filled automatically by their successors. The other twelve members were divided by lot into three groups of four, their terms being two, four and six years. Hereafter all appointments will be for a term of six years. The personnel of the board at present is as follows:

Admiral William C. Braisted, Surgeon-General, United States Navy; Surgeon-General William C. Gorgas, United States Army; Surgeon-General Rupert Blue, United States Public Health Service; Commander Edward R. Stitt; Col. Louis A. LaGarde; Assistant Surgeon-General William C. Rucker; Dr. Victor C. Vaughan; Dr. Horace D. Arnold; Dr. Austin Flint; Dr. Walter L. Bierring; Dr. Henry Sewell; Dr. E. Wyllys Andrews; Dr. Louis B. Wilson; Dr. Herbert Harlan, and Dr. Isadore Dyer.

The examinations of the board are held in Washington, D. C., and other large cities. The subjects of the examination and their values are: anatomy, 100; physiology, 75; chemistry and physics, 75; pathology and bacteriology, 100; materia medica, pharmacology and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 100; hygiene and sanitation, 50; medical jurisprudence, 25. The passing grade is 75 per cent.

The first two examinations were held in Washington, D. C., Oct. 16-20, 1916, and June 13-21, 1917, respectively. The third examination was held in Chicago, Oct. 10-18, 1917, and the fourth in New York City, Jan. 9-17, 1918. Examinations are now being held at Fort Oglethorpe, Ga. (April 8-19), and at Fort Riley, Kan. (April 8-25). The only fee is \$5.00 for registration. There is no examination fee.

The educational requirements of applicants are (a) a four-year high school course; (b) two years of acceptable college work, including courses in physics, chemistry, biology and a modern language; (c) graduation from a medical school rated in Class A by the American Medical Association; and (d) a year spent in an acceptable hospital as an intern or in a laboratory. These requirements apply to graduates of medical schools in 1912 and thereafter. The board may accept equivalent credentials of applicants who graduated prior to 1912. Credentials must be presented to the board prior to the examination sufficiently early to permit of investigation.

For further particulars address Dr. J. S. Rodman, secretary, 310 Real Estate Trust Building, Broad and Chestnut streets, Philadelphia.

RECOGNITION OF GOVERNMENT
EXAMINATION

The examination given under federal authority, which should be generally recognized by all state licensing boards as a qualification for license to practice medicine, is that given to medical officers of the United States Army, Navy, and Public Health Service. In fact, retired officers from the services mentioned are now eligible to receive licenses without further examination in

Alabama	Illinois	Virginia
California	North Dakota	Wisconsin
Colorado	Porto Rico	

The Simulation of Disease.—In an article in *Public Health Reports*, Nov. 9, 1917, A. G. Dumez, of the Public Health Service, gives a long list of diseases and skin lesions of various sorts which have been found to be artificially produced by means of various drugs, chemicals, and septic materials, by persons who attempt to evade military duty. The various troubles, some of the means by which they are produced and the methods of detection are set forth in the article. This information is important at the present time for the use of military medical examiners and exemption boards.

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SATURDAY, APRIL 13, 1918

STATISTICS OF STATE BOARD
EXAMINATIONS

We publish this week, for the fifteenth consecutive year, tabulated statistics based on official reports of examinations conducted by state medical licensing boards. Reports have been received from all state boards; thus the statistics are complete.

IMPORTANCE OF THESE STATISTICS

The importance of these statistics may not be appreciated by the casual reader. In our fifty states there are fifty different medical practice acts, providing for sixty-one different licensing boards, no two of which entirely agree in the details either of the methods followed or of the standards enforced. In some states the public is well protected against illiterate and incompetent physicians; in others because of poor laws, or because of the existence of two or more independent and conflicting boards, the right to practice medicine may be secured even by grossly incompetent applicants. The publication of accurate information is the only way in this country to secure the correction of such conditions. The statistics published this year will, we hope, prove to be as effective toward this end as have the statistics of previous years.

FACTS REGARDING EACH STATE

The tables show for each state the number of candidates that appeared for examination, the colleges from which they graduated, the total number registered, and the total number and percentage of those rejected. The tables permit comparisons of the totals and the percentages of one state with those of other states. The figures show that if a state harbors a low-grade medical college, the people of that state are the principal sufferers. They also reveal conditions in a few states to which special attention should be called. For instance, 151 graduates of osteopathic colleges were admitted to the examinations in California, and seventy-three were licensed to practice medicine and surgery in that state! Again, two low-grade colleges, located at Kansas City, Mo., are not recognized by the

Missouri state board and, hence, their graduates cannot secure licenses in that state. Nevertheless, thirty-five graduates of those colleges were examined by the Eclectic licensing boards of Arkansas and Connecticut, and twenty-eight (twenty-five in Arkansas and three in Connecticut) passed and were given licenses to practice medicine! The people of Arkansas and Connecticut evidently believe in sectarian boards; the facts just related may lead them to change their belief.

Table G shows that, as a rule, the examinations of state boards are more lenient toward graduates of medical schools located in the respective home state than toward graduates of colleges located in other states. Table H shows that the percentage of applicants rejected by some states is high, while in other states low percentages are rejected. A low percentage may mean that a state board is lax in its duty and has not established adequate safeguards against incompetent physicians. This may be determined by a study of Tables D and J. If a state board is admitting to its examinations graduates of any and all colleges, osteopathic or otherwise, then a high percentage of rejections would be expected. If, however, the board has refused to "recognize" low-grade colleges and is admitting to its examinations only the graduates of the better institutions, then a low percentage of failures might result even with thorough examinations.

Tables I, J and K show, respectively, the totals registered by all methods, the classification of the colleges in which most of the applicants licensed obtained their medical training, and the number of candidates licensed through reciprocity. Table M gives the standards of preliminary education that have been adopted by the different states, and the dates when the higher requirements are effective. Table N shows the remarkable progress that has been made in state board requirements during the last fourteen years. In brief, these statistics call attention to the kind of protection the people of each state have against incompetent or ill trained physicians.

FACTS REGARDING EACH COLLEGE

The statistics also give valuable information regarding medical colleges. Tables A and B show in what states graduates of each college were examined, and the results of the examinations. The results for several colleges would seem to indicate fair teaching methods, but this misconception is prevented by a knowledge of the facts set forth in Table D, which may show that the graduates of these colleges are refused examination by all but a few lenient states. Table E shows the results of the examinations for the group of colleges located in each state. Table F gives data regarding the colleges having fifty or more graduates examined during the year, and allows of comparison between colleges of nearly equal size. These

statistics throw an important side-light on the facts regarding medical colleges which are published in August each year in the Educational Number of THE JOURNAL.

TOTAL REGISTRATION IN ALL STATES

These statistics show the number of candidates coming not only from each medical school in this country and Canada, but also coming from Europe and abroad. An accurate record is given of the number, the source and the character of the medical training of those who are entering the practice of medicine each year in this country. Altogether, by examination and by reciprocity, 5,423 physicians were licensed in this country during 1917—thirty-eight less than in 1916. Of these, 3,369, or 62.1 per cent., were graduates of Class A medical colleges; 988, or 18.2 per cent., were from Class B; 297, or 5.3 per cent., were graduates of Class C medical colleges, and 769, or 14.4 per cent., graduated prior to 1907, when the first classification of medical colleges was prepared.

INFLUENCE OF THESE STATISTICS

Excellent systems of record keeping are now in use by state boards in many states where formerly no records whatever were kept, or where the systems were far from perfect. This publication of accurate data each year has indicated other directions in which improvements were needed, and many advances have been made in medical licensure, as indicated in Table N. The statistics also have aided largely in the improvement of medical education. Before the publication of these statistics, medical faculties did not know how frequently their graduates failed at the state license examinations, and that knowledge has led to important developments in the colleges, particularly in the securing of better equipment and better teachers and in the adoption of better teaching methods.

COOPERATION MUTUALLY ADVANTAGEOUS

The collection and publication of these statistics were begun by THE JOURNAL in 1903; since 1905 that work has been continued and developed as one of the functions of the Council on Medical Education. During all these years the work has had the hearty support and cooperation of the secretaries of the various state licensing boards, who have furnished reports of their examinations. Every report received has been carefully checked with alumni lists furnished us by the medical colleges. By this cross-checking, errors are avoided, and when discovered the state boards are notified. Thus, not only are state records corrected, but also these statistics are made accurate and reliable. We express our acknowledgments for the splendid cooperation of both the state licensing boards and the medical colleges by which the publication of these statistics has been made possible.

THE BÁRÁNY TESTS IN THE EXAMINATION OF AVIATORS

Our readers are no doubt aware that up to this time great emphasis has been placed on the Bárány equilibrium tests in connection with the examination of aviators. Already, however, there seems to be developing a reaction against assigning too great importance to these tests.

As Fridenberg¹ recently said: "It has been generally assumed that a normal labyrinth is the sine qua non and the only essential for equilibration." As he points out also, while nothing has been said about vision in its relation to flying, the questions of hypersensitiveness to bright light, the sureness of the sense of motion, the acuity of vision in lowered illumination, the appreciation of contrast in form, color and light, a rapid and accurate judgment of distance, direction and size and depending on all of these, pace, are an "interesting and practical problem." A further evidence is the finding of Assistant Surgeons Parsons and Segar² of the U. S. Navy, that in many cases the best ratings as aviators were obtained by men who had made the worst showing under the Bárány tests.

Surgeon H. Graeme Anderson,³ attached to the Royal Navy Service and as an adviser to the special medical administrative committee recently constituted by Great Britain, in an address before the Medical Society of London last month, presented the subject from every point of view based on his extensive experience. He corroborates the changing attitude toward the equilibration tests. "It has been assumed," he says, "that sound equilibration and muscle sense is essential to flying, so that the aviator would be conscious of his position in space, realize at once any deviations therefrom and correct these quickly. But in fog it has been found almost impossible to detect any deviation during flight. Time and again aviators coming out of the dark clouds or fog have found themselves flying one wing down, and it has been recorded that some have flown upside down without knowing it. Thus it is obvious that most of the impressions which control balance in flying come through the eyes." In fact, Surgeon Anderson, as an experiment, had himself blindfolded and his ears plugged with a telephonic connection to the pilot. The latter performed certain evolutions and Surgeon Anderson attempted to describe the position in space at various times. He was able to do this during the climbing and flying with right wing down and with the first spiral downward to the right. After that he was all at sea and thought the plane was climbing up continuously when in reality it was spiraling down to

1. Fridenberg, Percy: Visual Factors in Equilibration, Especially Aviation, THE JOURNAL A. M. A., April 6, 1918, p. 991.

2. Parsons, R. P., and Segar, L. H.: A Correlation Study of Bárány Chair Tests and Flying Ability of One Hundred Navy Aviators, this issue, p. 1064.

3. Anderson, H. G.: The Selection of Candidates for the Air Service, Lancet, London, 1918, 1, 395.

the left. He believes that this experiment goes far to prove that the aviator is for the most part dependent on impressions conveyed through the eyes for his sense of balance. He would not discard the equilibration, muscle sense and vestibular reactions, however, until further investigation has confirmed these points.

ACETYLSALICYLIC ACID, OR "WHAT'S IN A NAME?"

Under the caption "What's In a Name?" the current (April) issue of the *Journal of Industrial and Engineering Chemistry* has an editorial dealing with the nomenclatures—common and proprietary—of acetylsalicylic acid. The editorial was prompted by an article by Dr. Leech printed in the same issue. Replying to its own question:

"The answer to this question in so far as it applies to acetylsalicylic acid (popularly known as aspirin) is the difference between eighty-eight cents, the price the druggist must pay for every one hundred tablets of Bayer aspirin, and forty cents, the cost of an equally pure American product. Naturally, this difference in cost is passed on to the individual consumer.

"That no scientific justification exists for this difference in cost is clearly shown in the contribution by Dr. Paul Nicholas Leech, of the Chemical Laboratory of the American Medical Association, page 288 of this issue.

"On the other hand, the excess profit fully warrants the extensive and shrewdly-worded advertising campaign now in progress, a campaign which must eventually fail, because in the first place, it is contrary to the prevailing spirit of modern advertising, the motive of which is constructive rather than destructive, and, in the second place, it appeals merely to the temporary ignorance of the public at large, and has no basis in fact.

"We have been informed that the Custodian of Alien Enemy Property has taken charge of the stock interests of alien enemies in the company conducting this propaganda. Surely the Custodian will not care, even in a trustee capacity, to continue as a participant in a misleading campaign whose sole purpose is the perpetuation of a monopoly hitherto enjoyed under full patent protection."

The article to which the editorial refers is a somewhat technical one giving the findings of an examination made, at the request of the Council on Pharmacy and Chemistry, in the Chemical Laboratory of the American Medical Association by Paul Nicholas Leech, Ph.D., of various American brands of acetylsalicylic acid (aspirin). The result of the investigation may be summed up briefly in the statement that there are on the American market, made by American firms, several brands of acetylsalicylic acid that are just as good as, if not better than the Bayer product.

THE JOURNAL has called attention to the misleading propaganda on the part of the Bayer Company (Farbenfabriken vorm. Friedr. Bayer & Co.), in its attempt to perpetuate the monopoly granted under our inequitable patent laws. This is done by conveying the inference that the only pure acetylsalicylic acid on the market is that known as "Aspirin-Bayer." Physicians should again be reminded of the facts in the case of aspirin: Practically no other country in

the world, and certainly not Germany, the original home of aspirin, would grant a patent either on acetylsalicylic acid, itself, or the process for making it. The United States granted both! As a result no one in this country except the Bayer Company could for seventeen years manufacture or sell acetylsalicylic acid either under its chemical name or under any other name. Nor was it permissible for hospitals or individuals to import it. While the monopoly held, the American people were compelled to pay from six to ten times as much for acetylsalicylic acid as were the people of Great Britain, France, Germany, Austria-Hungary, Denmark, Holland, Norway or Sweden. At a time when American druggists were compelled to pay 43 cents an ounce for acetylsalicylic acid as aspirin, just across the border in Canada it sold for about one-third the price.

About a year ago the Council on Pharmacy and Chemistry announced that "Aspirin-Bayer" had been deleted from New and Nonofficial Remedies while the scientific term, acetylsalicylic acid, was retained along with standards to insure its quality. The necessity for a standard becomes evident when it is remembered that acetylsalicylic acid is not yet an official drug, and its purity, therefore, is not subject to the control of the federal Food and Drugs Act. It is worth while at this time to remind physicians that several brands of acetylsalicylic acid (aspirin) have been found to comply with the standards set by the Council on Pharmacy and Chemistry and have been admitted to New and Nonofficial Remedies.¹ These, of course, are thereby subject to the control of the federal law to conform to the standard to which they profess.

Leech's report gives still greater weight to the suggestion that has been made for some time, viz., that physicians should prescribe acetylsalicylic acid under its scientific name rather than its proprietary name, even though, in the opinion of THE JOURNAL, the proprietary name, aspirin, has become common property since the expiration of the acetylsalicylic acid patent. Every consideration of public interest, of patriotism and of ordinary common sense should prompt physicians to specify acetylsalicylic acid in writing prescriptions.

1. The following brands of acetylsalicylic acid conform to the standards of the Council and are in New and Nonofficial Remedies:

"Aspirin—L. and F.": Lehn & Fink, New York.

"Acetylsalicylic Acid—Squibb": E. R. Squibb & Sons, New York.

"Acetylsalicylic Acid—Merck": Merck & Co., New York.

"Acetylsalicylic Acid—Milliken": John T. Milliken & Co., St. Louis.

"Acetylsalicylic Acid—M. C. W.": Mallinckrodt Chemical Works, St. Louis.

"Acetylsalicylic Acid—Monsanto": Monsanto Chemical Works, St. Louis.

"Acetylsalicylic Acid—P. W. R.": Powers-Weightman-Rosengarten Company, Philadelphia.

Tuberculosis in Asia.—Tuberculous affections are much more active in Siberia than in Central Asia, though much less than in European Russia. The disappearance of the native tribes, the Buriats, the Yakuts, the Tunguses and others, which is rapidly being brought about by many social, political and other causes, is hastened by tuberculous disease among them.—Frank G. Clemou, *The Geography of Disease*, p. 456.

Current Comment

A CALL FOR FIVE THOUSAND MORE MEDICAL OFFICERS

If there is any one lesson that this war has taught the world it is that of preparedness. If it were not that it stands for a principle which is axiomatic, the reiteration of the word "preparedness" would become monotonous. As it is, the tremendous importance of the principle undoubtedly has prompted the appeal of the Surgeon-General, which appears on another page, for five thousand more volunteers for the Medical Reserve Corps. At present there are approximately 18,300 members in the Corps and in addition, about 1,500 men have been offered commissions who have not yet accepted. Thus there is a sufficient number for present needs and for the immediate future. But it is the ultimate future—it is what may develop in four, in eight, in twelve, in eighteen months for which preparations must be made. It will be noticed that the Surgeon-General calls for five thousand more volunteers for the Medical Reserve Corps now. The call is made on the organized profession. It is up to us, to the medical profession of the United States, to respond to this call—the call of our government, of our country. The Association is preparing, and has about ready for publication, a survey of the response the medical profession has already made. This survey will show in what states, in what counties and in what communities the profession has shown its patriotism and its self-sacrificing spirit in responding, and in which communities it has lagged behind. THE ORGANIZED PROFESSION WILL RESPOND TO THE CALL OF THE SURGEON-GENERAL! So far as possible the response must be made with the consideration of the actual needs of the public—not as expressed by the individual physician himself, but by the profession as a whole in his community, county and state. Preparations are already in the making for conducting the "drive" for this new increment of five thousand physicians. Let every reader ask himself the question: Is it my duty to volunteer? And then let him answer it honestly!

THE PHYSICIAN AND THE AVIATION SERVICE

It has been appreciated both here and abroad that the aviator is a peculiar type—a "strange bird," as it were. It is therefore especially interesting to follow the development of the regulations concerning the physical examination of aviators and to study the large experience of our allies; this experience has apparently modified the point of view regarding the physical qualities associated with special aptitude for flying. That the great importance of this matter has been recognized in Great Britain is shown by the appointment of a special medical service for the air forces. The character of the men selected for this division of the British military services is a further

recognition of the special consideration to be given to this subject.¹ The British Air Medical Service has had placed at its disposal special wards in naval and military hospitals in order to study the physiology and pathology of aviators. All of the medical arrangements of the air forces are to be centralized under its direction. Our man power has not been picked and repicked and selected to such an extent as has that of our allies. Our universities and colleges and athletic organizations contain thousands of men of the type specified as particularly adapted for aviation. In the first sorting of this material the experience of the European nations should be utilized so that in the future we shall not have to retrace our steps to make good unnecessary losses.

ENTRANCE CONDITIONS IN MEDICAL SCHOOLS

One of the problems which has lately come uppermost in dealing with medical schools is that relating to entrance conditions. The various phases of this problem are discussed in an article by Dr. Harley E. French² published in this issue of THE JOURNAL. Two state licensing boards recently have adopted rules absolutely prohibiting the admission of students with conditions. This rule is an extreme reaction against the practice in former years of a considerable number of medical colleges—and of a much smaller number at present—of admitting students with an overabundance of conditions. To adopt so extreme a measure, however, in an effort to regulate a few medical colleges which are unwilling voluntarily to enforce reasonable entrance requirements, would seriously interfere with the administration of requirements for admission in a large majority of the medical schools which are conscientiously enforcing them. As with any other regulation applying to medical schools, the rule relating to conditions should not be so rigid as to prevent the entrance examiners of our high grade medical schools—who, after all, are the highest authorities on this question—from dealing wisely with each individual student who applies for admission. As a matter of fact, certain students may meet the technical requirements of the rule who are not mentally qualified to take up the study of medicine. These would be accepted by the low-standard colleges, but would be rejected by the examiners of our leading medical schools. On the other hand, in the experience of medical deans, there are many students who have had more than the minimum amount of training required, who are mature and, in fact, are fully equipped mentally to enter on the study of medicine

1. The staff consists of the Director-General, Navy Medical Service, as chairman; the Director-General, Army Medical Service; a medical administrator of the air force; Flying Surgeon R. C. Munday, R. N., who receives the rank of Surgeon-General; an assistant medical administrator, Major C. B. Heald, who becomes lieutenant-colonel; a neurologist, Dr. Henry Head, F.R.S.; a physician, Surgeon-General H. D. Rolleston, R. N.; a surgeon, Capt. Raymond Johnson, R. A. M. C.; a physiologist, Dr. Leonard Hill; and Sir Walter Fletcher, F.R.S., secretary of the Medical Research Committee. Most of these men have already had some experience in connection with the medical work of the Royal Flying Corps. It is expected that temporary air force commissions will be granted to others, including Major J. L. Burley, Major H. C. T. Langdon and Surgeon H. Graeme Anderson, R. N., and Major Martin Flack, who have had special experience in this work.

2. French, H. E.: Entrance Conditions in Medical Schools, *THE JOURNAL A. M. A.*, this issue, p. 1058.

but who lack a portion of the technical requirements specified in the rule. The latter, with conditions, will undoubtedly make better medical students than the former without conditions. Meanwhile, the decision as to whether conditions are to be allowed or not is necessarily a part of the problem of administering entrance requirements and should be left to those who are expert in that work. Given an experienced and intelligent entrance examiner—an essential of every approved educational institution—and he should be left free to administer the details of entrance qualifications, even to the allowing of conditions where that appears to be justified. Should the privilege be abused, the fact would soon be discovered by standardizing agencies, which could then withdraw their approval from the college until such abuses were corrected. All rules governing medical education which are worth while have emanated from the better grade of our teaching institutions. Any rule, therefore—including the rule in regard to conditions—which would prevent such action as our leading educational institutions may find desirable, would prevent the further development of educational ideals and methods.

RECIPROCITY IN MEDICAL LICENSURE

Thirty-nine states have established reciprocal relations with seven or more other states by which the license to practice medicine is accepted in lieu of a second written examination. Generally speaking, the methods by which such reciprocal relations are being administered at the present time tend toward the lowering of educational standards. There appear to be three distinct provisions under which such relationships are established. A few states take the ground that under the reciprocal agreements they must accept all candidates who apply for registration holding licenses from the other states. Under the widely differing standards held by the various boards, such an agreement would leave a wide open door whereby poorly educated physicians as well as others could secure a license in any of the states included under such an agreement, and the lowest educational standard enforced by any of the states would be the highest standard which could be effective. To limit the relationships to only a few states merely decreases the evil, since even the best regulated state board will occasionally register candidates who may not in all respects meet the requirements of some of the other reciprocating states. Furthermore, to limit reciprocal relationships to only a few states is to deprive the physicians of the state of the wider privileges which they should have through interstate reciprocity. Another basis for reciprocity, adopted by a larger number of states, provides that the license of the other state be accepted in lieu of the written examination only, and that the applicant must meet the educational and moral requirements of the state which accepts him under the reciprocal arrangement. In other words, each board retains the right to use its discretion in the acceptance of any candidate for registration under reciprocity. This plan is superior to the first one mentioned, in that it enables each board

not only to establish relationships with a larger number of states, but also to uphold its educational standards for every applicant registered. Unfortunately, a few states, even with this arrangement, are not administering its provisions as strictly as might be desired. The third plan is that under which any well qualified physician who has been licensed in any state will be accepted no matter whether that state reciprocates or not. Eight states¹ have now adopted this plan and the number should be increased. It is the best provision for all parties concerned. The well qualified physician who desires to move from one state to another is not prevented from so doing through the lack of legal provision for reciprocal relations or through the arbitrary refusal of a licensing board to provide for such relationships; the state law is upheld since the board accepting such candidates lays strong emphasis on the moral and educational qualifications of the physician and, finally, this plan upholds the best interests of the public since only well qualified physicians may care for the sick and injured in the states which thus accept them.

DANGERS FROM CHLORIN SHORTAGE

A situation full of peril for many cities in this country has recently developed as a result of the interference with normal railway transportation due to war emergencies.² Several hundred cities and towns have become dependent on chlorin treatment for safeguarding their public water supplies. Even a temporary interruption of chlorination has been followed with disastrous results. We have called attention to several instances, notably in Milwaukee, Wis., and Quincy, Ill., in which stopping of chlorin treatment has led to serious outbreaks of water borne typhoid. It now appears that inability to obtain liquid chlorin as a sterilizing agent is becoming widespread. With singular lack of foresight a general order on February 1, designed to give some relief in the shipping of liquid chlorin from the manufacturing plants to the waterworks, failed to specify the return of the empty cylinders. In consequence it is said that empty cylinders are accumulating in railroad freight houses, in filtration plants and in scores of isolated places all over the country. As a result the manufacturers' reserve of empty cylinders is practically exhausted. A number of municipalities appear to have been on the verge of serious trouble from this cause. Shipments have been sent by express, chlorin has been borrowed from local chemical plants, and waterworks managers have resorted to a variety of emergency methods. The danger from cessation of chlorin treatment is all the more serious, because many cities have come to rely on this method for the treatment of rather badly polluted waters and have no other means of safeguarding the quality. During the years the chlorin treatment has been in use, the pollution of some of these supplies has certainly not lessened, so that any interruption of the treatment may be fraught with exceedingly serious consequences. The situation deserves immediate attention at Washington.

1. These states are Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina.
2. Engineering News-Record, April 14, 1918, p. 688.

Medical Mobilization and the War

A CALL TO THE AMERICAN MEDICAL ASSOCIATION

WAR DEPARTMENT
OFFICE OF THE SURGEON-GENERAL
WASHINGTON

From: The Surgeon-General.
To: American Medical Association.
Subject: Medical Reserve Corps.

April 3, 1918.

1. A memorandum of plan has recently been submitted to the Secretary of the American Medical Association for the utilization of the organization and machinery of the Association, in addition to the activities of the other bodies, viz., the Medical Section of the Council of National Defense and the different sections and organizations of the American Medical Association for the purpose of securing future increment to the Medical Reserve Corps and for keeping the numerical strength of the Corps up to the requirements of the service.

2. This plan contemplates a close cooperation between the office of the Surgeon-General and the officials of the American Medical Association, through the officials of the different state and county medical societies and through the different section organizations of the American Medical Association.

3. The present needs of the service will require all of the officers of the Medical Reserve Corps who have received their commissions and who are ready for active service. The additional increase in the Army during the next few months will probably necessitate the service of 5,000 physicians who as yet have not made application for a commission in the Medical Reserve Corps.

4. Under the present authorization for the Army it is estimated that the Medical Reserve Corps will need a steady increase of at least 2,500 applicants a year during the continuance of the war, for the purpose of replacements due to casualties, resignations and discharges, and to provide a medical personnel for organizations not at this time authorized. Under the present arrangement the Surgeon-General is authorized to maintain a strength of 3,600 medical officers in the training camp for medical officers for the purpose of instruction.

5. It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.

6. To this end the department desires the closest cooperation and assistance of the American Medical Association, its officers and its allied organizations, believing that through its organizations the additional increment to the Medical Reserve Corps can be most satisfactorily obtained and the necessary increment for replacements be secured without in any way depriving any community of physicians whose services are necessary to its welfare and without depriving any manufacturing or other concern of its medical personnel when such personnel cannot be spared.

7. It is believed that by working through the Association and the subordinate bodies of the state and county medical societies, the best possible results can be obtained and the needs of the service can be supplied with competent and efficient professional men to meet not only the present necessities of the service, but to supply its future needs in the way of officers for the Medical Reserve Corps.*

8. In making request of the American Medical Association for its cooperation in this great work, I am appreciative of the very valuable assistance which has been rendered the department by the Association in the past and feel well assured that with the cooperation of the American Medical Association the department will in no way be handicapped for lack of competent, efficient medical officers for its Reserve Corps.

W. C. GORGAS, Surgeon-General, U. S. Army.

Officers Needed for Regular Medical Corps

There are at present approximately 650 vacancies in the regular Medical Corps of the Army, and examinations are being held throughout the country on the first Monday of each month to secure men for these positions. Full information concerning the examination may be procured on application to the Surgeon-General, Washington, D. C. The qualifications have been given many times in THE JOURNAL, but in order to save unnecessary correspondence the following essential qualifications are repeated:

QUALIFICATIONS

The applicant must be a citizen of the United States between 22 and 32 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and shall have had at least one year's postgraduate hospital internship. There are numerous attractions to this service as a career; the greatest inducement, however, at this time is the country's great need for men to fill these vacancies.

* NOTE.—An application blank and a list of the examining boards will be sent by THE JOURNAL on request.

Personnel of the Medical Department

For the week ending April 5, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 838, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 175 majors, 2 captains and 492 lieutenants.

MEDICAL RESERVE CORPS: 18,279, including 1,135 majors, 4,310 captains and 12,834 lieutenants. On active duty: 15,388, including 1,036 majors, 3,801 captains and 10,551 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,212, including 16 lieutenant-colonels, 251 majors, 151 captains and 794 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 100, including 3 brigadier-generals, 11 colonels, 78 lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,182, of whom 1,358 are on active duty; DENTAL CORPS, N. G., 259; VETERINARY CORPS, 18; VETERINARY RESERVE CORPS, 1,428, of whom 784 are on active duty; VETERINARY CORPS, N. G., 53; VETERINARY CORPS, N. A., 347; SANITARY CORPS, 1,032, and AMBULANCE SERVICE, 151, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number			
	MRC	MC,NG	DC,NG	San. C.
Physical disability	502	36	6	4
Inaptitude	190	14	0	1
Other branches of the service.	428	9	2	41
Domestic troubles	50	1	0	1
Resignations	143	44	5	8
Needed by the community....	35	1	0	0
Deaths	43	3	0	0
Dismissals	3	2	0	0
	1,394	110	13	55

Medical Military Legislation

The House Committee on Military Affairs has favorably reported the bill (S. 3863), which passed the Senate, to provide quarters or commutation thereof to commissioned officers in certain cases.

Medical Officers Wounded in Action

The following medical officers from Pennsylvania are reported as recently wounded in action: Lieut. John B. Nutt, formerly an intern of the University of Pennsylvania Hospital and a practitioner of Williamsport, Pa.; and Capt. Edward B. Hodge and Lieut. Henry K. Diller with the Pennsylvania Base Hospital Unit No. 10, which is under British command.

Transportation of Wounded Soldiers

According to the *Army and Navy Register*, the question of hospital ships in connection with the return of wounded soldiers from abroad has been settled, and the Navy Department has taken charge of the transportation on returning transports. The transports will not be fitted out as hospital ships, but the sick bay is to be increased. The *Army and Navy Register* states that there has been suggested a possible objection to using transports in that they do not have the protection of the Geneva cross and that General Gorgas realizes that there will be a great deal of criticism if one of these transports, loaded with sick and wounded, is sunk. It states, however, that he believes the large transports should be made use of for comfort and real safety, as it is now well known that the Germans do not recognize any hospital ship flags.

Hospitals for Reconstruction of Disabled Soldiers

It is announced that the following hospitals will be used in beginning the work of physical reconstruction: General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 3, Colonia, N. J.; General Hospital No. 4, Fort Porter, N. Y.; General Hospital No. 6, Fort McPherson, Ga.; General Hospital No. 7, Roland Park, Baltimore; General Hospital No. 9, Lakewood, N. J.; General Hospital No. 13, Dansville, N. Y.; General Hospital No. 14, Fort Oglethorpe, Ga.; Army and Navy General Hospital, Hot Springs, Ark.; Walter Reed General Hospital, Takoma Park, Washington, D. C.; Letterman General Hospital, San Francisco; Base Hospital at Fort Des Moines, Iowa; Base Hospital at Fort Riley, Kan.; Base Hospital at Fort Sam Houston, Texas.

The hospital at Fort McHenry is now being constructed, and work is under way connecting several structures with large wooden corridors about 15 feet in width. The administration building is a modern two story stone structure at present occupied by the staff of Major Purnell, commanding officer. A Red Cross house, under the direction of the Baltimore chapter of the Red Cross is also being built at this point. This building will be in the shape of a Greek cross, and the site selected is a high point overlooking the bay. It will contain a sun parlor, diet kitchen, reception room, library, large assembly room and other accommodations for convalescent soldiers. Major Wilson Henderson is in charge of the rehabilitation work at the reconstruction hospital.

It is understood that insane patients will be cared for at General Hospital No. 4, Fort Porter, N. Y.; the blind and deaf at General Hospital No. 7, Roland Park, Baltimore, Md.; epileptics and neurotics at General Hospital No. 13, Dansville, N. Y.; and special provisions made for amputation work at Walter Reed and Letterman Hospitals.

DISEASE CONDITIONS AMONG TROOPS
IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the
Surgeon-General for the Week Ending
March 29, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):	
All Troops	1,522.0
National Guard Camps	1,103.5
National Army Camps	1,814.7
Regular Army	1,513.8
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	49.4
National Guard Camps	39.1

National Army Camps	58.7
Regular Army	44.4
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):	
All Troops	9.8
National Guard Camps	3.6
National Army Camps	14.0
Regular Army	10.1

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE
WEEK ENDING MARCH 29, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Dis. Only)	Noneffective per 1,000
Wadsworth.....	2	..	..	14	8	1	4	1	628.4	22.3
Hancock.....	..	..	..	24	5	..	1	4	413.2	26.2
McClellan.....	5	..	1	17	..	1	..	1	838.4	29.6
Sevier.....	6	..	1	15	2	..	..	1	1,044.9	37.5
Wheeler.....	4	..	4	36	..	..	..	4	773.7	36.3
Logan.....	8	..	..	45	4	1	..	4	1,060.0	34.2
Cody.....	5	..	..	10	..	..	1	5	673.7	30.8
Doniphau.....	11	..	..	46	..	..	..	3	1,981.3	44.5
Bowie.....	23	..	1	35	..	..	..	2	2,534.6	67.0
Sheridan.....	2	..	..	14	..	..	1	1	438.4	24.2
Beauregard.....	13	..	8	21	..	1	..	1	1,472.5	53.8
Shelby.....	..	..	..	25	1	..	1	2	1,117.2	50.9
Kearny.....	..	..	..	34	..	..	3	0	1,337.2	53.7
Devens.....	16	..	..	16	10	2	3	4	1,360.4	46.9
Upton.....	16	..	..	60	13	..	1	9	811.2	28.4
Dix.....	4	..	..	9	7	1	1	4	969.2	35.7
Meade.....	19	..	..	5	11	..	6	6	578.6	32.5
Lee.....	2	..	..	180	15	1	..	6	1,295.5	60.5
Jackson.....	17	..	..	31	22	6	..	6	1,730.4	56.4
Gordon.....	9	..	..	19	16	3	1	2	1,433.5	45.3
Sherman.....	16	..	..	53	2	..	20	6	1,328.5	53.2
Taylor.....	30	..	..	10	107	1	2	2	2,028.0	78.9
Custer.....	5	..	..	24	4	..	8	5	1,712.3	45.1
Grant.....	11	..	..	4	6	..	5	5	704.6	26.2
Pike.....	42	..	1	58	17	2	7	20	3,531.4	87.0
Dodge.....	44	..	..	25	83	2	12	15	2,741.1	52.8
Funston.....	24	1	..	10	11	2	3	18	1,679.2	82.2
Travis.....	25	2	8	39	38	3	..	6	4,789.2	90.1
Lewis.....	9	..	..	40	13	..	17	4	3,087.6	94.7
Northeastern Dept. .	6	..	..	20	2	..	1	0	1,673.5	44.6
Eastern Dept.	3	..	1	23	15	1	..	5	1,170.3	30.0
Southeastern Dept. .	11	..	2	34	30	5	4	3	1,199.1	50.2
Central Dept.	31	..	..	23	17	..	25	9	2,219.2	50.4
Southern Dept.	13	2	..	67	15	2	11	8	1,242.4	43.1
Western Dept.	9	..	..	48	9	1	7	2	1,747.8	37.9
Aviation, S. C.	62	2	..	165	105	6	56	30	1,462.5	41.4
Camp Greene.....	11	..	..	38	22	1	5	4	1,004.8	39.0
Camp Fremont.....	4	..	1	28	7	..	..	0	1,739.9	73.3
El Paso.....	..	..	..	11	3	..	1	0	932.8	7.4
Columbus Bks.	1	..	..	15	4	..	4	1	2,054.2	65.6
Jefferson Bks.	21	..	..	59	16	..	5	2	3,128.1	112.5
Fort Logan.....	5	..	..	3	7	..	2	2	2,562.9	78.5
Fort McDowell.....	5	..	..	2	11	..	3	2	2,329.8	51.9
Fort Sloeum.....	3	..	..	13	3	..	..	4	2,085.7	45.1
D. B. Alcatraz.....	..	..	..	..	..	..	..	0	1,561.6	27.0
D. B. Fort Leavenworth.....	15	..	..	..	..	..	..	2	3,864.5	56.6
A. A. Humphreys.....	1	..	..	4	..	..	..	0	654.8	3.7
J. E. Johnston.....	1	..	..	24	4	..	1	1	1,152.3	39.2
Camp Merritt.....	43	..	2	45	8	..	12	9	1,303.4	57.8
Camp Stuart.....	40	..	..	29	6	1	3	5	2,170.4	53.4
West Point, N. Y. ....	..	..	..	..	..	..	..	1	1,484.8	9.3
Edgewood-Aberdeen	2	..	..	4	1	..	..	0	2,313.9	25.8
Provisional Depot for Corps and Army Troops.....	2	..	..	24	12	2	3	0	1,451.7	31.4
Camp Holabird.....	..	..	..	1	..	..	..	0	6,246.2	3.0
Camp Raritan.....	..	..	..	..	2	1	..	0	..	..
General Hospitals...	1	..	1	31	2	1	..	2	..	..
Nat'l Guard Depts. .	2	..	..	8	2	..	..	3	..	..
Nat'l Army Depts. .	28	..	..	91	41	..	29	7	..	..
Fort Thomas.....	4	..	..	6	2	..	..	0	1,573.3	64.4
Total (all troops).	692	7	31	1,745	741	48	269	249	1,522	49.4

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending Mar. 29, 1918	Regulars in U. S., Week Ending Mar. 29, 1918	National Guard, All Camps, Week Ending Mar. 29, 1918	National Army, All Camps, Week Ending Mar. 29, 1918	Expeditionary Forces, Week Ending Mar. 21, 1918
Pneumonia.....	31.7	43.4	13.0	34.9	46.4
Dysentery.....	0.3	0.5	0.0	0.3	0.5
Malaria.....	1.3	0.7	2.5	1.1	0.2
Venereal.....	74.3	87.2	55.4	70.4	59.0
Paratyphoid.....	0.0	0.0	0.0	0.0	0.2
Typhoid.....	0.0	0.0	0.0	0.0	0.0
Measles.....	31.5	37.7	3.3	45.3	8.9
Meningitis.....	2.1	2.5	0.6	2.8	3.5
Scarlet fever.....	11.4	17.9	1.8	10.4	22.6

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

APRIL 5, 1918.

PERSONAL

Major R. C. Turck has been promoted to lieutenant-colonel and transferred to Camp Doniphan, Fort Sill, Okla., where he will be division surgeon of the Thirty-Fifth Division, National Guard. The news reached him while sick in the base hospital, and was cheering to him as well as pleasant to his many friends, who were nevertheless sorry to see him leave the Thirty-First Division.—Major Job Patterson has returned from Camp Merritt.—Major Rugh of the orthopedic branch of the S. G. O., is organizing the orthopedic work, which had not heretofore been done.—Major O'Connell has returned from a visit to his family, where five of his children were sick.—A lieutenant of one of the regiments is about to be tried for making charges to enlisted men for administering salvarsan and other drugs.—A dental surgeon was recently tried and convicted of charging enlisted men for dental work.

SURVEYS

Major Arthur S. Pendleton expects to begin a second neurological survey of the troops soon. It is hoped that the frequent and various surveys with their resulting eliminations, will not reduce the division to zero, but one sometimes sees the vanishing point in the distance.

Another board on food conservation has arrived. Boards on various subjects continue to arrive and depart. It is presumed that they accomplish some useful purpose; but in some cases the effect is difficult to detect.

BASE HOSPITALS

There are now 679 patients in the base hospital and a total sick of but 688 in the division. There are now but eighteen cases of mumps, two of measles, one meningitis, no scarlet fever and 105 remaining cases of pneumonia. Most of the pneumonias are old convalescent cases. The sick rate is now down to 3.7 per cent., which is below the average in all camps.

INSPECTION

Lieutenant-Colonel McCormack, M. C., is expected to arrive soon for inspection of the sanitary train. Although the sanitary train is one of the most important organizations in the division, yet in six months it has never been inspected by any officer outside the division. Much benefit is expected from Colonel McCormack's visit.

Eighty-Fourth Division, Camp Zachary Taylor,
Louisville, Ky.

APRIL 8, 1918.

The system of regimental guards over sick prisoners at the base hospital has been discontinued. The camp adjutant daily details a guard consisting of six privates, a sergeant and a corporal, who report at 4 o'clock each afternoon to Lieut.-Col. Will L. Pyles at the hospital. They will be used to guard prisoners sick in the wards and will be rationed and quartered at the institution during the twenty-four hours they are on duty.

COLONEL ALLEN EXONERATED

"Not guilty" was the finding of the general court martial that tried Lieut.-Col. John H. Allen, medical officer of Camp Zachary Taylor, charged with negligence in the death of Private Otha Murray of Cumberland County, and also charged with showing disrespect toward his commanding officer. The findings of the court martial were approved by the reviewing authorities and Colonel Allen is permitted to continue in the same capacity at the local camp as he held before the charges were brought against him.

The court convened on March 5, at which time Colonel Allen and several other officers of the Medical Corps were called to the witness stand. The charges against Colonel Allen stated that he acted without the proper investigation and regard for the health of Private Otha Murray in recommending his discharge from the base hospital. During the trial attempts were made by the prosecution to prove that the accused had not investigated the case of Otha Murray and had, without taking steps to learn the man's condition, asked for his release from the base hospital. No condemning evidence was brought out against the colonel on these grounds.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

APRIL 6, 1918.

The sick rate at this camp is probably the lowest of any National Army camp in the country. The noneffective rate was 2.61 and the annual admission rate was 704 per thousand.

Major McKinney has gone East on a short trip and Captain Hutchings is taking his place as sanitary inspector pro tem.

QUARANTINE

Patients with mumps are not quarantined in this camp, although those suffering from other contagious diseases are being quarantined. The quarantine is maintained by Company Guard: that is, an armed sentry is placed at every entrance, preventing any one but authorized officers from entering or leaving the building. However, the company may, and should be, taken out for drill as a unit, but must not be mixed up with any other organization at drill or at any other time. Members of the company are not permitted to attend any public entertainment.

ORTHOPEDIC UNIT

An orthopedic unit for field work has been established in one of the buildings of the Depot Brigade in charge of Lieutenant McCormack. The unit was established by Major Peters, visiting orthopedist from the Surgeon-General's Office, and it is just beginning operation. The main object is to examine and care for deficient feet by means of proper exercises under the guidance of competent orthopedists. A chiropodist is attached to the unit.

CORRECTION

Under "Orders to Officers of the Medical Reserve Corps," issue of March 23, appears this order: *Honorably discharged* on account of physical disability existing prior to his entrance into the service, Lieut. CARL R. DOTEN, Providence, R. I. This order should read: *Honorably discharged* on account of physical disability incident to the service.

ORDERS TO OFFICERS OF THE MEDICAL CORPS
AND OF THE MEDICAL CORPS OF
THE NATIONAL ARMY

To Camp Cody, Deming, N. M., base hospital, from San Francisco, Major JOHN B. ANDERSON. For duty, from Fort Snelling, Capt. HARRY J. O'BRYAN.

To Camp Crane, Allentown, Pa., for inspection, and on completion to his proper station, Col. EDWARD L. MUNSON. For duty, from Camp Doniphan, Lieut.-Col. WILLIAM T. DAVIDSON; from Camp Upton, Lieut. HARVEY E. WEBB.

To Camp Dix, Wrightstown, N. J., Camp Merritt, N. J., Camp Upton, Long Island, N. Y., Lakewood, N. J., for duty, and on completion to his proper station, Col. FREDERICK F. RUSSELL. To Camp Dix, base hospital, from San Francisco, Major ROBERT H. WILDS.

To Camp Dodge, Des Moines, Ia., base hospital, from San Francisco, Major FLETCHER C. McFARLAND.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Wheeler, Lieut. ALBERT E. PAGAN.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Fremont, Major RAY W. BRYAN.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Lieut. LEON H. CORNWALL.

To Camp Lee, Petersburg, Va., base hospital, from Camp Sherman, Major ALEXANDER W. WILLIAMS.

To Camp Lewis, American Lake, Wash., base hospital, from San Francisco, Lieut.-Col. WILLIAM R. DAVIS.

To Camp Logan, Houston, Tex., Camp MarArthur, Waco, Tex., Camp Bowie, Fort Worth, Tex., for consultation, and on completion to his proper station, from Camp Beauregard, Lieut.-Col. GEORGE F. LULL. To Camp Logan, base hospital, from Camp Logan, Lieut. ALBERT AISENSTADT.

To Fort MacArthur, Calif., for physical examination to determine his fitness for active duty, and on completion to his home, Capt. CLARENCE E. LAUDERDALE.

To Camp Meade, Annapolis Junction, Md., base hospital, from Surgeon-General's Office, Lieut.-Col. HOWARD H. JOHNSON. As orthopedic surgeon, from Camp Devens, Lieut. EDWARD B. MACON.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Myer, Major JULIAN M. CABELL.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Sherman, Lieut.-Col. EDWARD G. HUBER.

To Camp Upton, Long Island, N. Y., base hospital, from Army Medical School, Lieut. CALVIN H. GODDARD.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Jackson, Major JAMES D. JOHNSTON.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Riley, Major LEONARD S. HUGHES.

To Fort Christy, Tex., for special inspection and on completion to his proper station, Col. WILLIAM F. LEWIS.

To Fort Des Moines, Ia., base hospital, from Camp Sherman, Major LEOPOLD MITCHELL.

To Fort Ethan Allen, Vt., base hospital, from Camp Beauregard, Lieut.-Col. GEORGE F. LULL; from Fort Oglethorpe, Major WILLIAM B. ALLEN.

To Fort Jay, N. Y., for temporary duty, from Camp Upton, Lieut. FREDERICK E. HERPEL.

To Fort McHenry, Md., base hospital, from Fort Oglethorpe, Major WILLIAM D. HERBERT.

To Fort Oglethorpe for instruction, from Camp Beauregard, Major HOMER SCOTT.

To Fort Riley for duty, from Camp Crane, Major CHARLES L. GANDY; from Fort Riley, Major ROBERT H. DUENNER.

To Laurel, Md., for inspection, and on completion to his proper station, Col. PERCY M. ASHBURN.

To New Orleans, La., Charity Hospital, for instruction, and on completion to their proper stations, from Camp Sevier, Majors ALEX. M. BRAILSFORD, JR., LARKIN SMITH; Lieuts. WILLIAM R. CROSS, JAMES H. S. MORISON.

To New York City for duty, and on completion to his proper station, Col. ROBERT E. NOBLE. For instructions, from Panama Canal Department, Lieut. DAVID N. W. GRANT.

To report in person to the commanding general, Western Department for duty, Lieut.-Col. EDWIN W. RICH; Major EUGENE L. SWIFT.

To Rochester, Minn., Mayo Clinic, as assistant director of course in war surgery and fractures, Major JAMES C. MASSON.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, from Hoboken, Major HARRY N. KERNS.

Resignations of Major VAN BURAN KNOTT, and Lieut. CHARLES E. SCHWARTZ, accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. ROBERT C. BLACK, Birmingham.

To Camp Hancock, Augusta, Ga., for duty, from Camp Hancock, Capt. MACK ROGERS, Birmingham.

To Camp Jackson, Columbia, S. C., to examine the command for mental and nervous diseases, from Philadelphia, Lieut. TOOMBS LAWRENCE, Tuscaloosa.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. BENJAMIN J. LEWIS, Samson.

To Fort Oglethorpe for instruction, Lieut. WILLIAM R. K. BECK, Birmingham; from Fort Oglethorpe, Lieut. HENRY C. HARRIS, Birmingham.

Resignations of Lieuts. AUGUSTUS D. MATTHEWS, Arifton, and GEORGE F. LITTLEPAGE, Muscle Shoals, accepted.

Arizona

To Fort Riley for instruction, Lieut. LAWRENCE D. DUSCH, Superior.

Arkansas

To Canal Zone, Panama, Canal Department, for duty, from Fort Oglethorpe, Capt. DOWELL GANN, JR., Little Rock.

To Fort Riley for duty, from Fort Riley, Lieut. FOSTER JARRELL, Huttig. For instruction, Lieut. CHARLES G. HINKLE, Batesville.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Sevier, Lieut. ARTHUR C. HANEY, Atkins.

To Rockefeller Institute for instruction in laboratory work and on completion to Army Medical School for duty, Lieut. JOHN S. WILSON, Plantersville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. SYLVESTER DOGGETT, Bradford.

California

To Fort Ethan Allen, Vt., base hospital, Capt. ERNEST D. CHIPMAN, San Francisco.

To Fort Oglethorpe for instruction, from Chicago, Capt. EMIL P. THOLEN, Los Angeles.

To Fort Riley for instruction, Capt. LEROY M. WHITE, National City; JAMES R. REED, Pasadena; Lieuts. JOSEPH K. SMITH, Bakersfield; ERNEST H. PAPE, Berkeley; HENRY T. ROONEY, Colfax; DAVID B. ZBINDEN, Downey; BUDD ROBBINS, Hanford; ORRA C. HYDE, Lincoln; PHILIP J. CUNNANE, FRANK THOMAS, Los Angeles; HENRY A. STEPHENSON, CALVIN A. WALKER, San Francisco; WILLIAM J. MARNEY, Sebastopol. From Douglas, Ariz., Capt. WILLIAM L. GRANT, Los Angeles.

To Portland, Ore., Aviation Section, Signal Corps, for duty, Major SANDFORD B. WHITING, Los Angeles; Capt. WILLIAM T. LUM, Alameda; JULIAN L. WALLER, San Francisco; HUMPHREY P. PALMER, Vacaville; Lieuts. ALEXANDER D. McLEAN, Exeter; JAMES THORNTON, Los Angeles; CHARLES F. GRIFFIN, San Francisco.

To San Francisco, Calif., for instruction, and on completion to Camp Lewis, American Lake, Wash., base hospital, Lieut. ALBERT C. GERMANN, Los Angeles.

Honorably discharged, Lieut. CHARLES F. CURTIS, Los Angeles.

Resignation of Major GILBERT M. BARRETT, San Francisco, accepted.

Colorado

To Camp Cody, Deming, N. M., base hospital, Major JOHN W. AMESSEE, Denver; Lieuts. RAYMOND E. PEEBLER, Boulder; WILLIAM D. FLEMING, Denver; JOHN R. ESPEY, Trinidad; from Camp Bowie, Lieut. HAROLD G. MACOMBER, Denver; from Camp Cody, Major EDWARD F. DEAN, Denver; from Camp Dodge, Capt. AMOS L. BEAGHLER, Denver; from Camp Doniphan, Lieut. ARTHUR W. STAHL, Denver; from Camp Logan, Capt. OLIVER LYONS, Denver; from Denver, Capt. CUTHBERT POWELL, Denver; from Fort Logan, Capt. WILLIAM W. WILLIAMS, Denver; from Fort Riley, Major CHARLES D. STOUGH, Colorado Springs; Capt. WILLIAM C. FINOFF and Lieut. ALBERT W. DEWEY, Denver; from New York City, Capt. LEWIS H. McKINNIE, Colorado Springs; CYRUS I. PERSHING, Denver.

To Camp Doniphan, Fort Sill, Okla., base hospital, Major HARRY S. FINNEY, Denver.

To Camp Kelly, San Antonio, Tex., for duty, Capt. GEORGE H. CRUIKSHANK, Steamboat Springs.

To Fort Riley for instruction, Lieut. GORDON E. HEIN, Pueblo.

Connecticut

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. ROBERT D. ROLLER, JR., Bridgeport.

To Camp Sherman, Chillicothe, Ohio, as commanding officer of base hospital, from Camp Sherman, Major LOUIS I. MASON, Willimantic.

To Camp Wadsworth, Spartanburg, S. C., as a member of a board to examine the command for tuberculosis, from Camp Meade, Lieut. ELLIOTT H. METCALF, Rockville.

To Fort Oglethorpe for instruction, Capt. ROBERT S. STARR, Hartford.

To Rockefeller Institute for instruction, and on completion to Camp MacArthur, Waco, Texas, base hospital, Lieut. HAROLD F. OWENS, Bridgeport.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CHARLES J. GREENSTEIN, Mcriden.

District of Columbia

To Camp Gordon, Atlanta, Ga., base hospital, from Camp McClellan, Lieut. JAMES H. ALLEN, Washington.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. JOHN B. PIGGOTT, Washington.

To Camp Zachary Taylor, Louisville, Ky., to examine the command for mental and nervous diseases, from Fort Thomas, Capt. JOHN J. MADIGAN, Washington. Base hospital, from Fort Oglethorpe, Lieut. RALPH H. DAVIS, Washington.

To Hoboken, N. J., for duty, Capt. WILLIAM M. HUNT, Washington.

Florida

To Camp Doniphan, Fort Sill, Okla., as division surgeon, from Camp Wheeler, Major RAYMOND TURCK, Jacksonville.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. ROBERT H. TRUMMELL, Muskogee.

To Camp Jackson, Columbia, S. C., for duty, from Camp Sevier, Capt. JOHN HALTON, Sarasota.

To Camp Meigs, Washington, D. C., for duty, from Camp Greene, Capt. MURDOCH L. CRUM, Bowling Green.

To Fort Oglethorpe for instruction, Lieut. STERLING E. WILHOIT, Hosford.

Georgia

To Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. CHESTER O. MIDDLEBROOKS, Bogart.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. CARL B. WELCH, Tifton.

To Camp Gordon, Atlanta, Ga., base hospital, Major EDWARD C. DAVIS, Capt. EDGAR G. BALLENGER, Lieut. JOHN S. DEER, Atlanta; from Arcadia, Lieut. DAN H. DUPREE, Athens; from Camp Beauregard, Lieut. CECIL STOCKARD, Atlanta; from Camp Gordon, Major FRANK K. BOLAND, Capt. CHARLES R. DOWMAN, Atlanta; from Camp Hancock, Capt. ALLEN H. BUNCE, Atlanta; from Camp Jackson, Lieut. JAMES A. McALLISTER, Atlanta; from Camp Lee, Lieut. LESLIE L. BLAIR, Marietta; from Fort Oglethorpe, Lieuts. JOSEPH R. BARFIELD, EDGAR E. GREENE and HENRY C. SAULE, Atlanta; from New York City, Capt. WELDON E. PERSON, Atlanta.

To Camp Jackson, Columbia, S. C., for duty, from Camp Jackson, Capt. FRANCIS X. MULHERIN, Augusta.

To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, Major WILLIAM A. CHAPMAN, Cedartown.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. GROVER C. COLE, JAMES J. MARTIN, Atlanta.

Idaho

To Fort Bliss, Tex., for duty, Lieut. ROY W. QUICK, Weston.

To Fort Riley for duty, from Fort Riley, Lieut. JOHAN C. WIIK, Moscow.

Illinois

To Camp Grant, Rockford, Ill., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. WILLIAM J. RILEY, Chicago. With the board examining the troops for cardio-vascular diseases, Lieut. WILLIAM H. TAYLOR, Chicago.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. JOSEPH C. BROOKHART, Greenup.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. CHARLES C. RENTERO, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, Lieuts. GEORGE S. MICKELSON, Chestnut; FRANCIS V. GARBERRY, Chicago.

To Camp McClellan, Anniston, Ala., base hospital, from Camp Forrest, Lieut. WALTER S. CONN, Naperville.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. IRWIN H. CUTLER, Chicago.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. WADE H. SCHOTT, Alexander.

To Camp Travis, Fort Sam Houston, Tex., to examine the command for mental and nervous diseases, from Fort Riley, Lieut. JAMES K. POLLOCK, Elgin.

To Camp Upton, Long Island, N. Y., for duty Lieuts. WILLIAM RAIM, Chicago; PHILIP F. ROBERTS, Osceola. With the board examining the troops for cardio-vascular diseases, from Army Medical School, Lieut. FRED M. SMITH, Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. HAYES W. CARLIN, Chicago.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Beauregard, Capt. GEORGE H. MILLER, Chicago.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Custer Capt. PAUL E. BAIN, Pleasant Plains; from Camp Grant, Lieut. PHILIP LEWIN, Chicago.

To Cape May, N. J., for temporary duty, from Camp Sherman, Lieut. CHARLES A. BURKHOLDER, Chicago.

To Fort Brady, Mich., for duty from Camp Pike, Capt. CHARLES J. POOLE, Mt. Vernon.

To Fort Ethan Allen, Vt., base hospital, Lieut. IRA C. COPELAN, Springfield; from Camp Upton, Lieut. GEORGE E. O'GRADY, Chicago.

To Fort Leavenworth, Kan., for duty, from Fort Riley, Capt. CLARENCE W. CHAPIN, Weldon.

To Fort Oglethorpe for instruction, Lieuts. GEORGE E. ARZT, EDWARD F. DOMBROWSKI, EVAN H. M. GRIFFITHS, JOHN G. O'MALLEY, FRANCIS E. TURGASEN, Chicago; CHARLES H. BEADLES, Morrison; ARTHUR S. CAMPBELL, Oak Forest; GLADSTONE C. CONKLIN, Springfield; from Camp Zachary Taylor, Lieut. MAT J. MINKER, Chicago; from Chicago, Lieuts. SAMUEL C. FLEMING, HARRY E. VANDERBOGART, Chicago; from duty as a private at Fort Oglethorpe, Lieut. CONSTANTINE J. KOURSOUIMIS, Chicago.

To Fort Riley base hospital, Capt. JOHN C. GUNN, Belleville. For instruction Capt. JAMES A. KLEINSMID, Aledo; FRANK CARY, EDWARD M. MIKKELSON, SAMUEL D. NIXON, ROGER T. VAUGHAN, Chicago; IRA J. SCOTT, Danville; BRUCE D. PARRISH, Mattoon. Lieuts. ANDREW J. CASNER, Bloomington; GEORGE R. BLACKSTONE, Bushnell; HARVEY H. ROGERS, Canton; JOHN M. McSPARIN, Carrier Mills; JESSE H. McINTOSH, Chambersburg; FRANKLIN W. PALMER, Chatsworth; JAMES N. BUCHANAN, EDWARD A. CORCORAN, JOSEPH EISENSTAEDT, CARLETON A. HARKNESS, DANIEL B. HAYDEN, ARTHUR W. OGDEN,

ROLAND H. PHILLIPS, WILLIAM RUPP, WALTER L. SACHTELEBAN, Chicago; EDWARD W. SIKES, Freeport; CARL H. NIELSEN, Grant Park; OLIVER I. STATLER, Huntley; ROBERT N. CANADAY, Irving; JOHN W. KROHN, Joliet; JOHN W. CEIGER, La Salle; WALTER A. BRESSNER, Latham; PAUL G. POMEROY, Lawrenceville; ORRIS M. THOMPSON, LeRoy; MALFRED HAMM, Madison; DAUSA D. HARTWELL, Marion; AUGUST H. ARP, Henry S. BENNETT, Moline; SAMUEL P. COLEHOUR, Mt. Carroll; JOHN E. BURNS, New Dennison; BURTON W. BIVINS, Oak Park; WALTER J. PRICE, Peoria; NORMAN W. CONNAWAY, Sheridan; LOUIS SCHWANBACK, Varna; from Fort Riley, Lieuts. CHARLES M. FOX, ELMER A. GUNDERSON, and WILLIAM ISRAELSON, Chicago.

To Fort Sill, Okla., for duty, from Fort Riley, Major WALTER H. ALLPORT, Chicago.

To Hoboken, N. J., base hospital, from Ann Arbor, Major DEAN D. LEWIS, Chicago.

To Lakewood, N. J., for conference, and on completion to his proper station, Major PAUL B. MAGNUSON, Chicago.

To Millington, Tenn., Park Field, from Camp Pike, Lieut. ROBERT B. MILLER, Rock Island.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. ROBERT F. KNOLL, Chicago.

To New York City for duty, and on completion to his proper station, Major HARRY E. MOCK, Chicago.

To San Francisco, Calif., for instruction, and on completion to his proper station, from Camp Lewis, Lieut. WILLIAM P. RICE, Chicago.

To Washington, D. C., for duty in the Surgeon-General's Office, Lieut. ALFRED S. BAILEY, Chicago.

Honorably discharged, Lieut. THEODORE A. KREUSER, Chicago. On account of physical disability existing prior to entrance into the service, Lieuts. ERNEST C. ASBURY, O'Fallon; WALTER D. MURFIN, Vernon.

Resignation of Lieut. HOSEA J. NICHOLS, Quincy, accepted.

Indiana

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Devens, Capt. HARRY S. OSBORNE, Glenwood.

To Camp Sherman, Chillicothe, Ohio, to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. CLYDE C. ILLER, New Castle.

To Camp Upton, Long Island, N. Y., for duty, Lieut. JOHN G. HUBER, Evansville.

To Chicago, Ill., for instruction, Lieut. HELMUTH C. W. ERNST, East Chicago.

To Fort Oglethorpe for instruction, Capt. MITCHELL C. CLOKEY, Huntington; DAVID COHEN, Jeffersonville; Lieuts. MARSHALL B. CATLETT, Fort Wayne; JOHN B. TALMAGE, Lagoda; HAROLD S. HATCH, Oaklandon; C. SAMUEL WHITE, Rosedale; AUGUST O. TRUELOVE, Warsaw; DANIEL E. LYBROOK, Young America.

To Fort Riley for duty, from Camp Pike, Lieut. CHARLES H. JONES, Indianapolis.

To Rockefeller Institute for instruction and on completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Riley, Lieut. JOHN W. THOMSON, Garrett.

To San Francisco, Calif., for instruction, and on completion to Camp Kearny, Linda Vista, Calif., base hospital, from Douglas, Ariz., Capt. JOHN E. METCALF, Gary.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HENRY V. LOGAN, Rushville.

Iowa

To Camp Dodge, Des Moines, Ia., as Captain in the Medical Reserve Corps, from duty as Captain in the National Army, Capt. JOHN R. GARDNER, Lisbon.

To Camp Grant, Rockford, Ill., to examine the command for mental and nervous diseases, from Fort Ontario, Capt. RICHARD G. EATON, Cherokee.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Major JAMES W. THORNTON, Ackley.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from Fort Riley, Lieut. IRA D. KELSHEIMER, Paxton.

To Fort Oglethorpe for instruction, Lieut. GEORGE H. STEELE, Belmond; from Chicago, Capt. CALVIN W. HARNED, Des Moines; Lieut. GEORGE R. NARRLEY, Keokuk.

To Fort Riley for instruction, Capt. CHARLES F. SMITH, Des Moines; Lieuts. DONALD ENFIELD, Clarinda; SIDNEY B. BELINGER, Council Bluffs; ROY C. JACKSON, Independence State Hospital; THOMAS A. KING, West Union. Base hospital, from Fort Riley, Lieut. CHARLES D. SHELTON, Bloomfield.

To Fort Sam Houston, Tex., for duty, from Fort Riley, Lieut. WILLIAM M. HUBBARD, Rembrandt.

Kansas

To Camp Logan, Houston, Tex., base hospital, from Camp Logan, Lieut. ROBERT L. HOFFMAN, Wichita.

To Fort Oglethorpe for instruction, from Chicago, Capt. JOHN F. HASSIG, Lieut. LOT D. MABIE, Kansas City.

To Fort Riley for instruction, Capt. JAMES W. MAY, Kansas City; Lieuts. CHESTER P. SHEPARD, Independence; CAREY C. KERR, LeCompton; BAHNSON WEATHERS, Osawatomie.

To Fort Sam Houston, Tex., for duty, from Fort Riley, Lieuts. LEWIS M. GORE, Galva; ORVILLE O. MOORE, Topeka.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ROBERT G. KOGER, Norwich.

Resignation of Capt. JAMES C. BUTLER, Stafford, accepted.

Kentucky

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. HOMER L. NICKELL, Salt Lick.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. WILLIAM B. GODDARD, Harrodsburg.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Chicago, Lieut. CHARLES E. VIDT, Russell.

To Camp Upton, Long Island, N. Y., for duty, from Camp Meade, Capt. MORTON M. MOSS, Bowling Green; Lieut. SMITHFIELD KEFFER, Ashland. To examine the command for mental and nervous diseases, from New York City, Lieut. ERMIN L. RAY, Louisville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Major DAVID BARROW, Capt. ROBERT M. COLEMAN, Lieuts. GEORGE H. WILSON, Lexington; CALVIN G. ARNOLD, CHARLES W. JEFFERSON, MARION E. PIRKEY, Louisville; from Camp Beauregard, Capt. ROBERT LOCKHART, Owensboro; from Camp Zachary Taylor, Major WALTER O. BULLOCK, Lexington; Capt. JOHN J.

MOREN, Louisville; Lieuts. CLAUDE WILSON, Greenville; WILLIAM D. REDDISH, WALTER S. WYATT, Lexington; DAVID H. MCKINLEY, Winchester; from Fort Oglethorpe, Major JULIAN T. McCLYMONDS, Lexington; Lieuts. SEPTIMAS T. TAYLOR, Central City; JUDSON P. BOULWARE, Louisville; OLIVER H. P. PARIGIN, Mill Springs; from Fort Riley, Lieut. VIRGIL G. KINNAIRD, Lancaster; from New York City, Lieut. JAMES A. RYAN, Covington. To Fort Oglethorpe for instruction, Lieuts. HUGH H. RICHESON, Campbellsville; JOHN M. RYAN, Carrollton; from Army Medical School, Capt. GRIFFIN C. KELLY, Louisville.

To Fort Ontario, N. Y., for duty, from Washington, D. C., Capt. MALCOLM H. YEAMAN, Henderson.

To Fort Riley for duty, from Camp MacArthur, Lieut. MARION W. PAGE, Sedalia.

To Rockefeller Institute for instruction and on completion to Williamsbridge, N. Y., for temporary duty, Capt. THOMAS C. HOLLOWAY, Hazard.

Louisiana

To Camp Beauregard, Alexandria, La., base hospital, Lieut. THEODORE T. BATSON, New Orleans. For duty, from Camp Beauregard, Lieut. ALONZO T. PALMER, Oakdale.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Capt. DELAND S. CALHOUN, Ruston.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. WALTER H. REILLEY, New Orleans.

To Camp Jackson, Columbia, S. C., base hospital, Capt. RALPH HOPKINS, New Orleans, from Fort Oglethorpe, Lieut. GEORGE W. WRIGHT, Monroe. For duty, from Fort Oglethorpe, Lieut. MATTHIAS M. COLLINS, Houston.

To Camp Pike, Little Rock, Ark., base hospital, Lieuts. HAROLD D. VAN SCHAICK, Elizabeth; WALLACE L. DIXON, Hope Villa; EDWIN R. YANCY, Jonesville.

To Fort Oglethorpe for instruction, Lieuts. DANIEL M. SILVERMAN, Franklin; CLARENCE B. ERICKSON, EUGENE B. SIMPSON, Shreveport.

To the inactive list, from Camp Beauregard, Major WHYTE G. OWEN, White Castle.

Maine

To Camp Wheeler, Macon, Ga., for duty, from Camp Gordon, Lieut. HERBERT L. WILLIAMS, Auburn; from Fort Oglethorpe, Lieut. HAROLD F. ATWOOD, Buckfield.

To Portland, Me., Coast Defenses, for duty, Capt. NORMAN R. COOK, Brooks; DANIEL W. WENTWORTH, Sanford; Lieuts. THOMAS ARNESON, Climax; WILLIS E. GOULD, Livermore.

To New York City Neurological Institute, for intensive training, Lieut. ARTHUR C. WRIGHT, Augusta.

Maryland

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. CHARLES C. HABLSTON, DAVID C. STREET, Baltimore; from Camp Meade, Majors CARY B. GAMBLE, JR., ARCHIBALD C. HARRISON, Capt. WILLIAM K. WHITE, Lieuts. THOMAS K. GALVIN, FRANK C. MARINO, HARRY M. STEIN, Baltimore; from Camp Sheridan, Capt. EUGENE K. HAYWARD, Baltimore; from Fort Des Moines, Lieut. EDWARD S. JOHNSON, Baltimore; from Fort Oglethorpe, Capt. EDWARD A. LOOPER, Lieuts. FRANK L. JENNINGS, Baltimore; RAYMOND K. FOXWELL, Cambridge.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. DORSEY P. ETZLER, Baltimore.

To Camp Upton, Long Island, N. Y., to examine the command for mental and nervous diseases, from New York City, Lieuts. PHILLIP PEARLSTEIN, Baltimore; JOHN G. RUNKEL, Catonsville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Oglethorpe, Lieut. ALBERT G. HAHN, Baltimore.

To New York City, Cornell Medical College, as instructor in the school of military roentgenology, Major FREDERICK H. BAETJER, Baltimore. For instruction, and on completion to Hoboken, N. J., base hospital, Lieut. JOHN EVANS, Baltimore.

To Rockefeller Institute for instruction, and on completion to his proper station, from Camp Meade, Major PAGE EDMUNDS, Baltimore.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM T. FORNEYHOUGH, Baltimore.

Massachusetts

To Camp Dodge, Des Moines, Ia., to examine the command for mental and nervous diseases, from Camp Pike, Lieut. WALTER A. JILLSON, Westboro.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and nervous diseases, from Camp Joseph E. Johnston, Lieut. JAMES A. GOULD, Westboro.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. FRANK E. HARRIMAN, Worcester.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. WALTER H. LACEY, Boston. To examine the command for mental and nervous diseases, from Boston, Lieut. CYRUS B. PARTINGTON, Fall River.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. MALCOLM SEYMOUR, Boston.

To Camp Pike, Little Rock, Ark., Camp Shelby, Hattiesburg, Miss., Camp Sheridan, Montgomery, Ala., for conference and on completion to his proper station, from Camp McClellan, Major WILLIAM H. ROBEY, Boston.

To Camp Upton, Long Island, N. Y., to examine the command for mental and nervous diseases, from New York City, Lieuts. HARVEY M. WATKINS, Palmer; WINFRED OVERHOLSER, Westboro.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. WILBERT G. HARDY, Boston.

To Fort Ethan Allen, Vt., base hospital, from Fort Ethan Allen, Capt. ARTHUR P. JAMES, Boston.

To Fort Jay, N. Y., for temporary duty, Lieut. CHARLES W. WRIGHT, North Adams.

To Fort Oglethorpe for duty, from Army Medical School, Lieut. DAVID B. MEDALIA, Boston. For instruction, Lieuts. ERNEST M. MORRIS, Fall River; ABRAHAM F. THOMAS, Newburyport; JAMES H. COOK, Quincy; HARRY A. WALKER, Somerville.

To New York City, for duty, and on completion to his proper station, Major HORACE D. ARNOLD, Boston. To New York City and Boston for inspection and on completion to his proper station, Major ALLEN GREENWOOD, Boston.

To Rockefeller Institute for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, Lieut. CHARLES D. McCANN, Brockton. On completion to Camp Devens, Ayer, Mass., base hospital, Lieut. HORACE K. SOWLES, Boston. On completion

to Williamsbridge, N. Y., for temporary duty, Lieut. THOMAS W. WICKHAM, Boston.
To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. GEORGE L. CURRAN, North Adams.
To Washington, D. C., for duty, in the Surgeon-General's Office, Major SAMUEL J. MIXTER, Boston.
Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. WILLIAM E. BAXTER, Topsfield.
Revocation of discharge, Major WALTER B. LANCASTER, Boston.

Michigan

To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. LOWELL M. BUSH, Corruna.
To Camp Sherman, Chillicothe, Ohio, to examine the command for mental and nervous diseases, from Camp McClellan, Lieut. ARTHUR R. TIMME, Detroit.
To Camp Travis, Fort Sam Houston, Tex., to examine the command for mental and nervous diseases, from Fort Riley, Lieut. GORDON H. BAHLMAN, Flint.
To Detroit, Mich., for duty, Capt. ROBERT R. FOX, Detroit.
To Fort Bliss, Tex., as division tuberculosis specialist, from Fort Oglethorpe, Lieut. WILLIAM A. O'BRIEN, Detroit.
To Fort Des Moines, Ia., base hospital, from Fort Riley, Lieut. JOHN D. STEWART, Hartford.
To Fort Ethan Allen, Vt., base hospital, from Fort Oglethorpe, Lieut. THEODORE H. SMITH, Detroit.
To Fort Oglethorpe for instruction, Lieut. GORDON H. YEO, Big Rapids.
To Fort Riley for instruction, Capt. WILLIAM DEV. LYMAN, Grand Rapids; ANDREW A. McKAY, Manistee; EMIL P. W. RICHTER, Saginaw; Lieuts. BRUNO B. BRUNKE, GEORGE L. KOESSLER, Detroit; ROY DUB. TUPPER, Redford. For duty, from Fort Riley, Lieuts. RUSSELL R. HUSTON, Copemish, WILLIAM GRAMLEY, Detroit; PAUL H. LIPPOLD, Escanaba.
To Houston, Tex., for duty, from Fort Riley, Lieut. ROBERT J. BEEBY, West Branch.
To Millington, Tenn., Park Field, from Camp Pike, Lieut. JOHN L. MEDDAUGH, Rolling.
To Mount Clemens, Mich., Aviation Section Signal Corps, for duty, Capt. ROBERT V. GALLAGHER, Battle Creek; Lieut. NELSON ABBOTT, Lake City.
To Rockefeller Institute for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, from Fort Riley, Lieut. CHARLES D. COLLINS, Ironwood.

Minnesota

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. ARTHUR E. MARK, Rochester.
To Camp Grant, Rockford, Ill., base hospital, Lieut. ARTHUR IRVING ARNESON, Emmons.
To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Major HARLEY G. BICKFORD, Minnesota Lake; from Fort Riley, Lieut. HAROLD L. GOSS, Minneapolis.
To Camp Travis, Fort Sam Houston, Tex., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. JOSEPH H. COSGROVE, Duluth.
To Fort Myer, Va., as orthopedic surgeon, from Fort Oglethorpe, Capt. ROBERT H. MONAHAN, International Falls.
To Fort Riley for duty, from Fort Riley, Capt. GUSTAV H. LUEDTKE, Fairmont; from Camp Logan, Lieut. VIRGIL H. MOATS, Minneapolis. For instruction, Capt. FRANK S. WARREN, Faribault; STEPHEN H. BAXTER, LOUIS L. TEN BROOCK, Minneapolis; JAMES C. FERGUSON, St. Paul; Lieuts. CHARLES GERMO, Balaton; AXEL W. SWEDENBURG, Cannon Falls; JOHN STEVENS, Convik; ALPHONSE CYR, Barnesville; FREDERICK BARRETT, Gilbert; MORRILL E. WITHROW, International Falls; WILLIAM H. PHILLIPS, Jordan; DANIEL W. McDOUGALD, Le Sueur; ERIHARD A. RUMREICH, Mahanomen; JOSEPH STOMEL, Minneapolis; GEORGE E. McCANN, Nevis; ERNEST W. COWERN, North St. Paul; ABRAHAM F. STRICKLER, Sleepy Eye; EDWARD SCHONS, HENRY I. TWISS, WILLIAM H. VON DER WEYER, St. Paul; WILLIAM C. SCHIELE, Virginia; BALDWIN BORRESON, Warren; HARRY B. WEINBURGH, Waterville.
To Mineola, Long Island, N. Y., Hazelhurst Field, Signal Corps, Aviation School, from Fort Riley, Lieut. ROY C. LOWE, Fairmont.
To Williamsbridge, N. Y., for temporary duty, from Camp Crane, Capt. RALPH T. KNIGHT, Minneapolis.
To the inactive list, from the Surgeon-General's Office, Major CHARLES H. MAYO, Rochester.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WALTER W. NAUTH, Minneiska.

Mississippi

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. HAL G. JOHNSON, Dundee.
To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. THOMAS T. BOX, Columbus.
To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. RILEY B. YATES, Sidon.
To Camp Kelly, San Antonio, Tex., for duty, Lieut. WILLIAM L. NEWTON, New Albany.
To Camp Lee, Petersburg, Va., for duty, from Camp Devens, Lieut. ELI E. FARMER, Dockery; from Fort Oglethorpe, Lieut. WILLIAM J. AYCOCK, Hohenlinden.
To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Major NOLAN STEWART, Jackson.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. CHARLES H. HARRISON, Philadelphia.
To Fort Oglethorpe for instruction, Lieut. GEORGE E. JOHNSON, Hudsonville.
To New Haven, Conn., for observation, treatment and report, Lieut. ELI E. FARMER, Dockery.
Honorably discharged on account of physical disability incident to the service, Capt. HENRY L. NOEL, Lexington.

Missouri

To Fort Riley for duty, from Camp Travis, Lieut. CHRISTOE A. ABRAMOPOULOS, Kansas City; from Fort Riley, Lieuts. BEN A. SALZBERG, Kansas City; ANDREW J. GETTINGER, WILLIAM B. YORK, St. Louis. For instruction Lieuts. JOHN A. MALLEY, Monroe City; CHARLES A. BARNARD, Portage De Sioux; PAUL S. LOWENSTEIN, St. Louis; from Kansas City, Lieut. GEORGE E. BELLOW, Kansas City.

To Fort Totten, N. Y., for duty, from Camp Dodge, Capt. ROBERT MIDDLEBROOK, Kansas City.
To Hoboken, N. J., for duty, Major WILLIAM T. COUGHLIN, St. Louis.
To Millington, Tenn., Park Field, to conduct a nutritional survey and on completion to Lonoke, Ark., Ebberts Field, for the same duty, and on completion to Dallas, Tex., Love Field, for the same duty, and on completion to Waco, Tex., Rich Field, for the same duty, from Jefferson Barracks, Capt. DON R. JOSEPH, St. Louis.
To San Antonio, Tex., Kelly Field, to examine the command for mental and nervous diseases, from Camp Bowie, Lieut. HAROLD W. FAY, St. Louis.
To the inactive list, from Kansas City, Capt. ROGER B. BREWSTER, Kansas City.
Honorably discharged, Lieut. CHARLES E. MANESS, Stella.

Montana

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. CLINTON V. REED, Three Forks.
To Fort Riley for instruction, Capt. ELLIS A. JOHNSTON, Helena.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. FRANK LACKNER, Musselshell.

Nebraska

To Camp Dodge, Des Moines, Ia., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. VERNARD A. LANPHER, Sutton.
To Camp Hancock, Augusta, Ga., for duty, from Camp Zachary Taylor, Lieut. HENRY M. FITZGIBBON, Omaha.
To Camp Kelly, San Antonio, Tex., for duty, Lieut. NEIL L. CRISS, Omaha.
To Champaign, Ill., University of Illinois, for duty, from Omaha, Lieut. SAM D. COWAN, Falls City.
To Fort Omaha, Neb., for duty, Capt. WILLIAM H. BETZ, Omaha.

Nevada

To San Francisco, Calif., for instruction, and on completion to his proper station, from Camp Lewis, Capt. BENJAMIN F. CUNNINGHAM, Reno.

New Hampshire

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. ROBERT FLANDERS, New York City.
To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. RALPH S. PERKINS, Exeter.
To Camp Wheeler, Macon, Ga., for duty, from Camp McClellan, Capt. WILLIAM C. W. NOBLES, Littleton.

New Jersey

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. JOS. C. WINANS, Belleville.
To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Lieut. GORDIE C. PATTEN, Carney's Point.
To Camp Upton, Long Island, N. Y., base hospital, Lieut. MATTHEW S. LEVITAS, Newark.
To Fort Monroe, Va., for duty, from Fort Monroe, Lieut. JOHN A. BOTTI, Jersey City.
To Fort Oglethorpe for instruction, Capt. PALMER A. POTTER, East Orange; Lieuts. GEORGE H. GEHRMANN, Parlin; LAWRENCE B. BOYLAN, Paterson; SAMUEL BLAUGRUND, Trenton.
To Newark, N. J., as president of the board of examiners, Major JOSEPH MACDONALD, Jr., Orange.
To Rockefeller Institute for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. FRANK J. McLOUGHLIN, Jersey City.

New Mexico

To Fort Riley for instruction, Lieuts. ETHAN ST. C. MILFORD, Albuquerque; ROBERT T. LUCAS, Carrizozo; DENNA C. DANIEL, JOHN W. MUIR, Clayton; WILLIAM G. BASSETT, Des Moines; GEORGE W. SAMMONS, Farmington; WILLIAM C. MATTHEWS, Roswell; LOUIS F. MURRAY, Santa Fe.
To San Francisco, Calif., for instruction, and on completion to Camp Fremont, Palo Alto, Calif., base hospital, Lieut. HARRY D. SEWELL, Parkview.

New York

To Camp Crane, Allentown, Pa., base hospital, Capt. JEROME KINGSBURY, New York City; from Army Medical School, Lieut. MELVIN G. HERZFELD, New York City; from Camp Meade, Lieut. SAMUEL PARNASS, Brooklyn; from Camp Upton, Lieut. MAURICE LENZ, New York City; from Fort Oglethorpe, Capt. EDWIN H. HALL, Briarcliff Manor; from Hoboken, Major DANIEL A. SINCLAIR, New York City; from Walter Reed General Hospital, Lieut. MILTON W. PLATT, New York City. For duty, from Fort Oglethorpe, Lieut. DAVID H. HALLOCK, New York City.
To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. LEON C. COTE, Albany. To examine the command for mental and nervous diseases, from New York City, Lieut. WALTER F. STILLGER, New York City.
To Camp Devens, Ayer, Mass., to examine the command for mental and nervous diseases, from New York City, Capt. GEORGE A. SHARP, Beacon; Lieut. JOHN P. McNEILL, Central Islip.
To Camp Dix, Wrightstown, N. J., as orthopedic surgeons, from Fort Oglethorpe, Lieuts. FRANK G. WALZ, Buffalo; EDWARD A. FLYNN, New York City. Base hospital, Lieuts. THEOBALD P. DOESCHER, Albany; SOLOMON HENDLEMAN, Brooklyn; EDGAR BIERBER, Byron. For duty, from Fort Oglethorpe, Lieuts. WILBUR F. MACDONALD, Delanson; LOUIS E. McCANNA, Elmira. To examine the command for mental and nervous diseases, from New York City, Lieut. ELIAS C. FISCHBEIN, Sonyea.
To Camp Doniphan, Fort Sill, Okla., base hospital, from Camp Doniphan, Major CURTENIUS GILLETTE, New York City.
To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. CHARLES H. ERWAY, Elmira; STANMORE L. CASH, New York City; STEPHEN A. MAHADY, Utica. As divisional tuberculosis specialist, from Camp McClellan, Capt. HAROLD D. BREWSTER, New York City. As orthopedic surgeon, from Fort Oglethorpe, Lieut. RAYMOND B. MORRIS, Olean.
To Camp Gordon, Atlanta, Ga., as a member of the board to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. HENRY M. SPOFFORD, Batavia. Base hospital, from Fort Oglethorpe, Lieuts. PATRICK H. J. BUCKLEY, Buffalo; PHILIP L. TURNER, New York City. To examine the command for mental and nervous diseases, from New York City, Lieut. HAROLD R. ROBERT, Dannemora. With the

board examining the troops for cardiovascular diseases, and on completion to *Camp Wheeler*, Macon, Ga., base hospital, from *Camp Wheeler*, Lieut. MORRIS J. RADIN, New York City.

To *Camp Greene*, Charlotte, N. C., for duty, from *Camp Greene*, Capt. REED B. BONTECOU, Ithaca; THOMAS A. ROGERS, Plattsburgh.

To *Camp Hancock*, Augusta, Ga., base hospital, Lieut. JOHN D. VERRILLI, Brooklyn; from *Fort Oglethorpe*, Lieuts. ROBERT P. REYMOND, New York City; FRED L. RITTER, Pulaski.

To *Camp Jackson*, Columbia, S. C., base hospital, from *Fort Oglethorpe*, Lieuts. MERRILL N. FOOTE, WILLIAM K. PUDNEY, Brooklyn; FRANK L. MELENEY, New York City. For duty from *Fort Oglethorpe*, Lieuts. RAYMOND F. A. KIRCHER, Albany; CHESTER F. DURYEA, Brooklyn; ANTHONY LACOVARA, New York City.

To *Camp Lee*, Petersburg, Va., for duty, and on completion to his proper station, Major EDWARD K. DUNHAM, New York City; from *Fort Oglethorpe*, Lieuts. DAVID DAVIDSON, Brooklyn; ARNOLD M. GOODHART, New York City; ALBERT F. A. BARRY, Stony Point.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, from *Williamsbridge*, Capt. GEORGE F. SAMMIS, Brooklyn; from *New York City*, Lieut. JOHN C. KNAPP, Philmont. To examine the troops for cardiovascular diseases, Lieut. MORRIS H. KAHN, New York City.

To *Fort McDowell, Calif.*, for temporary duty, from *Fort Riley*, Capt. KENT E. WILLIAMS, Rome.

To *Fort McHenry, Md.*, for duty, from *Fort McHenry*, Lieut. HERMAN W. JOHNSON, Gowanda.

To *Fort McPherson, Ga.*, for temporary duty, Lieut. JOHN C. HOLSBERGER, Jr., Brooklyn.

To *Fort Oglethorpe* as instructor, from *Fort Hancock*, Lieut. EDWARD P. EGGLE, Flushing. For instruction, Lieuts. SALVATOR C. LOJACONO, Buffalo; WILLIS E. CLARKE, ALBERT B. FERGUSON, BERRYMAN GREEN, Jr., MAXWELL L. VOLK, JACOB J. WEISS, New York City; from *Camp Logan*, Lieut. WARD W. MILIAS, Rome; from *Camp Sherman*, Lieut. JOSEPH SCHAPIRO, New York City; from *Fort Oglethorpe*, Lieuts. FRANK J. MANGOLD, Brooklyn; DANIEL J. SWAN, Flushing; JOHN L. BYRNES, Hudson Falls.

To *Mineola*, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Capt. THOMAS F. BRIDGMAN, New York City; Lieut. WILLIAM B. WHITE, Jamestown, N. Y.

To *Newport News, Va.*, for temporary duty, and on completion to his proper station, Major GEORGE DRAPER, New York City.

To *New York City*, Cornell Medical College, as assistant instructor, from *Williamsbridge*, Lieut. WEBSTER W. BELDEN, New York City.

To *Niagara Falls, N. Y.*, for duty, and on completion to his proper station, Lieut. LESTER L. ROOS, New York City.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School* for duty, Lieut. FRANCIS J. LAWLER, Pulaski. For instruction, and on completion to *Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. ALBERT G. MOTT, Youkers. On completion to *Camp Wheeler*, Macon, Ga., base hospital, Lieut. PERCEVAL M. BARKER, New York City.

To *St. Paul, Minn.*, training school, for duty, from *Camp Kelly*, Capt. EDWARD C. LYON, New York City.

To *Walter Reed General Hospital*, Takoma Park, D. C., for duty, from *New York City*, Lieut. CHARLES WOLF, New York City.

To *Williamsbridge, N. Y.*, for duty, Lieut. EDWARD L. BERGER, Brooklyn.

Honorably discharged, Capt. ARTHUR D. DRYFOOS, New York City. On account of physical disability incurred in line of duty, Capt. FREDERICK CROUNSE, Albany. On account of physical disability existing prior to entrance into the service, Lieuts. WILLIAM E. BARON, Addison; PERCY H. AUSTIN, Castletown.

Resignation of Lieut. WILLIAM I. MERLIS, Brooklyn, accepted.

North Carolina

To *Camp Beauregard*, Alexandria, La., as commanding officer of base hospital, from *Camp Beauregard*, Major JOHN T. BURRUS, High Point.

To *Camp Forrest*, Chickamauga Park, Ga., for duty, from *Fort Oglethorpe*, Major CHARLES O'H. LAUGHINHOUSE, Greenville.

To *Camp Lee*, Petersburg, Va., for duty, from *Fort Oglethorpe*, Lieut. HARVEY ROBINSON, Reidsville.

To *Camp Meigs*, Washington, D. C., for duty, from *Camp Greene*, Lieut. BURTON B. STURDIVANT, Sunburst.

To *Fort McPherson, Ga.*, base hospital, Lieut. FREDERICK R. TAYLOR, High Point. For temporary duty, Lieut. MILES T. LONG, Newland.

To *Fort Oglethorpe* for instruction, Capt. CHARLES S. JORDON, Asheville.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to *Camp Bowie*, Fort Worth, Texas, base hospital, from *Jackson Barracks*, Lieut. HOLMAN BERNARD, Pinnacle.

To *Washington, D. C.*, for duty in the Surgeon-General's Office, Capt. RALPH PEMBERTON, Asheville.

North Dakota

To *Camp Cody*, Deming, N. M., base hospital, from *Fort Riley*, Capt. JUDD H. KIRKHAM, Langdon.

To *Fort Riley* for instruction, Lieut. GUY S. FROGNER, Parshall.

To *Rockefeller Institute* for instruction, and on completion to *Camp Jackson*, Columbia, S. C., base hospital, from *Fort Riley*, Capt. GEORGE A. CARPENTER, Fargo.

Ohio

To *Camp Beauregard*, Alexandria, La., for duty, from *Camp Bowie*, Lieut. PAUL A. MURR, Galion.

To *Camp Dix*, Wrightstown, N. J., as orthopedic surgeon, from *Fort Oglethorpe*, Lieut. HARRY E. WOODBURY, Akron. Base hospital, from *Fort Oglethorpe*, Lieut. HARRY E. WOODBURY, Akron; from *Fort Oglethorpe*, Lieut. ARTHUR N. SMITH, Upper Sandusky. Base hospital, New York City, Lieut. LOUIS A. MITCHELL, Newark.

To *Camp Hancock*, Augusta, Ga., for duty, from *Fort Oglethorpe*, Lieut. LEWIS R. CARR, Prairie Depot.

To *Camp Jackson*, Columbia, S. C., for duty, from *Camp Sevier*, Lieut. ELGIE R. SHAFFER, Columbus; from *Fort Oglethorpe*, Lieut. JOHN H. RAMEY, Rock Camp.

To *Camp Pike*, Little Rock, Ark., base hospital, from *Camp Pike*, Capt. CURTIS C. WILLIAMS, Niles.

To *Fort Oglethorpe* for instruction, Lieut. WILLIAM H. CAREY, Bellefontaine; from *Camp Sherman*, Lieuts. DANIEL C. HANDLEY, Cincinnati; JOHN D. WAKEFIELD, Loveland.

To *Fort Riley* base hospital, thence to *Camp Travis*, Fort Sam Houston, Texas, base hospital, from *Fort Riley*, Lieut. ROBERT P. BAUSCH, Columbus. For duty, from *Fort Riley*, Lieut. WILLIAM J. TOP-

MOELLER, Cincinnati. For instruction, Lieut. JOHN W. CLARK, Vinton; from *Cleveland*, Capt. FRANKLIN E. CUTLER, Cleveland. With the board examining the troops for cardiovascular diseases, from *Fort Riley*, Capt. ERNEST R. BROOKS, Cleveland; Lieut. SYDNEY J. HAVRE, Kenmore.

To *Mineola*, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Lieut. WILLIAM W. SAUER, Marietta.

To *Rockefeller Institute* for instruction, and on completion to *Camp Wadsworth*, Spartanburg, S. C., base hospital, from *Fort Riley*, Lieut. ULYSSES M. BACHMAN, Cleveland.

Honorably discharged on account of physical disability incurred in line of duty, Lieut. DAVID R. KLINE, Cleveland. On account of physical disability existing prior to entrance into the service, Lieut. JAMES T. SUGGS, Cleveland.

Oklahoma

To *Camp Beauregard*, Alexandria, La., base hospital, Lieut. JAMES J. CAVINESS, Altus.

To *Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. MARION H. FOSTER, Alderson.

To *Camp Crane*, Allentown, Pa., base hospital, from *Camp Zachary Taylor*, Lieut. CHONNER P. CHUMLEY, Oklahoma City.

To *Camp Dix*, Wrightstown, N. J., for duty, from *Fort Oglethorpe*, Lieut. FRANCIS A. DEMAND, Oklahoma City.

To *Camp Pike*, Little Rock, Ark., base hospital, Capt. WILLIAM R. BARRY, Bradley; Lieut. RAYMOND G. SHERWOOD, Ochelata.

To *Fort Oglethorpe* for instruction, Major RUSSELL L. KURTZ, Nowata; from *Army Medical School*, Lieut. JEFFREY J. BILLINGTON, Enterprise.

To *Fort Riley* for instruction, Capt. CHARLES W. HEITZMAN, Muskogee; Lieuts. MARION H. FOSTER, Alderson; LESLIE D. CONN, Cowlington; WILLIAM T. POLK, Maysville; FREDERICK A. COCHRAN, HERBERT V. L. SAPPER, Oklahoma City; GEORGE E. HARTSHORNE, Spiro.

To *Fort Sill, Okla.*, Aviation Section, Signal Corps, for duty, Capt. WILLIAM R. CLEMENT, Tulsa; Lieuts. ELMER E. HEADY, Buffalo; ROBERT L. BAKER, Wynnewood.

To *Rockefeller Institute* for instruction, and on completion to *Camp Hancock*, Augusta, Ga., base hospital, from *Fort Riley*, Lieut. LOUIS BAGBY, Vinita.

Oregon

To *Camp Lewis*, American Lake, Wash., base hospital, Major ROBERT C. YENNEY; Capt. EDWIN W. MORSE, RALPH A. PENTON, WILLIAM H. SKENE; Lieuts. KARL P. MORAN, Portland; THOMPSON COBERTH, The Dalles.

To *Fort Oglethorpe* for instruction, from *Chicago*, Lieut. GARRETT L. RYNSON, Portland.

To *Fort Riley* for instruction, Capt. ROGER BISWELL, Haines; RIDEN R. HAMILTON, Klamath Falls; HARRY A. LITTLEFIELD, Newberg; FRED GULLETTE, Portland; Lieuts. JOSEPH O. VAN WINKLE, Jefferson; OREL A. WELSH, Oregon City; ARTHUR J. FAWCETT, Riddle; CLARENCE D. FULKERSON, Warm Springs; HENRY Z. THARP, Weston; from *Douglas, Ariz.*, Lieut. JOHN L. GARNER, New Pine.

To *Portland, Ore.*, Aviation Section, Signal Corps, for duty, Capt. HERBERT L. UNDERWOOD, La Grande; EVERETT MINGUS, Marshfield; Lieuts. WILLIAM H. VOSE, Clackamas; JOHN W. GEARHART, Portland.

To report by wire to the Commanding General, Western Department, for assignment to duty, Capt. JOEL C. BOOTH, Lebanon; Lieut. DAVID P. LOVE, Junction City.

To *San Francisco, Calif.*, for instruction, and on completion to *Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. HARRY J. ANDERSON, Corvallis.

To *Talmage, Calif.*, Mendocino State Hospital, for intensive training, Lieuts. KENNETH W. KINNEY, Astoria; CLARENCE U. SNIDER, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CLAUDE M. PEARCE, Baker.

Pennsylvania

To *Camp Lee*, Petersburg, Va., for duty, from *Fort Oglethorpe*, Lieut. WALTER J. SENER, Altoona.

To *Camp Logan*, Houston, Texas, base hospital, from *Fort Oglethorpe*, Lieut. WILLIAM P. NOLAN, New Kensington.

To *Camp Upton*, Long Island, N. Y., base hospital, Lieut. HARRY W. ALLISON, Timblin. To examine the command for mental and nervous diseases, from *New York City*, Lieut. WALTER R. KRAUSS, Farview.

To *Camp Wadsworth*, Spartanburg, S. C., for duty, from *Fort Oglethorpe*, Capt. ALEXANDER H. DAVISSON, Philadelphia. Base hospital, Lieut. HARRY GOODFRIEND, Scranton.

To *Camp Wheeler*, Macon, Ga., for duty, from *Camp Sheridan*, Lieut. JOHN C. CALHOUN, Pittsburgh; from *Fort Oglethorpe*, Lieut. JOHN J. SOSNOWSKI, Pittsburgh.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. CARL H. BAILEY, Jamestown.

To *Columbus Barracks, Mo.*, for duty, from *Fort Oglethorpe*, Lieut. WILLIAM T. PALCHANIS, Pittsburgh.

To *Fort Ethan Allen, Vt.*, for duty, from *Philadelphia*, Major ELIJAH H. SITER, Philadelphia. Base hospital, from *Camp Lee*, Lieut. OSCAR J. KINGSBURY, Nesquehoning.

To *Fort McHenry, Md.*, for inspection, and on completion to his proper station, Major DAVID SILVER, Pittsburgh. For observation and treatment, Capt. HENRY C. WELKER, Norristown.

To *Fort McPherson, Ga.*, for temporary duty, Lieuts. PERRY McD. TIBBINS, Beech Creek; WALTER M. BORTZ, Greensburg; ABE A. DATTNER, Kingston; CHARLES E. PIKE, Philadelphia; FRANCIS C. O'MALLEY, Pittston.

To *Fort Oglethorpe* for instruction, Lieuts. HARRY H. LEWIS, Ashland; JOHN P. HALL, Pittsburgh; from *Camp Devens*, Capt. HARRY S. CARMANY, Philadelphia; from *Camp Meade*, Lieuts. WARREN H. BUTZ, Macungie; ROBERT R. ROTH, Philadelphia; from *Camp Sherman*, Lieut. JAMES A. SHAFFER, Loysburg.

To *Garden City*, Long Island, N. Y., for duty, from *Ithaca, N. Y.*, Lieut. EDWARD R. SIBLEY, Elkins; from *Philadelphia*, Lieut. BEN C. GILE, Philadelphia.

To *Hoboken, N. J.*, for duty, from *Hoboken*, Major PHILIP NORRIS, Philadelphia.

To *Lakewood, N. J.*, for duty, Major JOSEPH McFARLAND, Philadelphia.

To *Mineola*, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Lieut. ROBERT T. M. DONNELLY, Philadelphia.

Hazelhurst Field, for temporary duty, Lieut. JAMES DEW. JACKSON, Erie.

To Philadelphia, Pa., for instruction, in orthopedic surgery, from Camp Greene, Capt. WALTER B. HARVEY, Pittsburgh.

To Rockefeller Institute for instruction, and on completion to Camp MacArthur, Waco, Texas, base hospital, Lieut. ANDY J. SEDWICK, Kittanning.

To St. Paul, Minn., Training School, for duty, from Camp Kelly, Lieut. JOHN E. STRUTHERS, Danville.

To the inactive list, from Fort Oglethorpe, Major WILLIAM PEPPER, Philadelphia.

Dismissed according to cablegram from General Pershing, Lieuts. EMMETT BLACK, Bentleyville; WILLIAM F. SATCHELL, Saxton; JOHN WHANN, JR., Soldier.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CHARLES B. SHORTLIDGE, Lima; ELI H. PORCH, Philadelphia; RAYMOND T. FRANCIS, Waynesboro.

Rhode Island

To Mineola, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Capt. ARTHUR W. STEVENSON, Newport.

South Carolina

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. OLIN D. BUSBEE, Springfield.

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson, Lieut. GARY L. BOYKIN, Lamar.

To Rockefeller Institute for instruction, and on completion to Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. WILLIAM H. JOHNSON, Charleston.

South Dakota

To Camp Kelly, San Antonio, Texas, for duty, Lieut. PORT McWHORTER, Miller.

To Camp Travis, Fort Sam Houston, Texas, with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. JAMES D. EDGAR, Henry.

To Fort Riley for instruction, Capt. WILLIAM M. HUNT, Murdo; Lieut. JESSE W. FOSTER, Aurora.

To Houston, Texas, for duty, from Fort Riley, Lieut. JAMES G. CARNEY, Parkston.

Tennessee

To Camp Pike, Little Rock, Ark., base hospital, Lieuts. JAMES F. LANE, Greenville; WILLIAM A. WATSON, Memphis; from Fort Oglethorpe, Lieut. STARNES E. WALKER, Bradford; from Fort Riley, Lieut. LEON M. LANIER, Nashville.

To Camp Upton, Long Island, N. Y., for duty, from Camp Devens, Lieut. BENJAMIN C. ARNOLD, Jackson.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieuts. SAMUEL D. JOHNSON, Knoxville; JOHN C. WITHERINGTON, Munford.

To Camp Zachary Taylor, Louisville, Ky., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. IRA OSCAR PARK, Union City.

To Fort Oglethorpe for instruction, Lieuts. RUSSELL B. KILPATRICK, Gold Dust; CLAUDE J. FULLER, Morristown; from Army Medical School, Lieut. SHIELDS ABERNATHY, Memphis; from Fort Oglethorpe, Lieut. JAMES M. SMYTH, Camden.

To Rockefeller Institute for instruction, and on completion to Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. ROBERT M. YOUNG, Knoxville.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. JOHN W. RAGSDALE, Memphis.

Resignation of Lieuts. WILLIS S. ALEXANDER, Ridgely, and CLAUDE M. BANKS, Springfield, accepted.

Texas

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. JOHN J. GILL, Lamasco.

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. THOMAS L. GOODNIGHT, Caldwell.

To Camp Grant, Rockford, Ill., as a member of the tuberculosis examining board from Camp MacArthur, Capt. JOHN T. BERNARD, Dallas.

To Camp Logan, Houston, Texas, base hospital, Capt. EUGENE R. CARPENTER, El Paso.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. HERBERT DONNELL, Waxahachie.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Lieut. CHARLES H. WARREN, Gainesville.

To Camp Upton, Long Island, N. Y., for duty, from Fort Riley, Lieut. WILBUR CARTER, Sherman.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. ARCHER B. WORSHAM, Brashear.

To Fort Bliss, Texas, base hospital, from Camp Stanley, Lieut. EMANUEL TOOMIN, Waco.

To Fort Logan H. Roots, Ark., base hospital, from Fort Riley, Lieut. WILLIAM H. CADE, Galveston.

To Fort Riley for instruction, Capt. DAVID C. WYLIE, Aspermont; WILLIAM H. MORROW, Dunn; Lieuts. LAWRENCE W. HOLLIS, Abilene; ROBERT T. SPENCER, Arlington; BRUNS P. HOLLAND, Beaumont; CHARLES R. GOWEN, Cristobal; ROBERT W. COWART, ROLLAND T. TRAVIS, Dallas; SAMUEL B. LOCKER, Mercury; VICTOR E. LONGMIRE, Temple; JESSE L. DAWSON, Valley View.

To Millington, Tenn., Park Field, from Fort Oglethorpe, Lieut. MAURY J. PERKINS, Alice.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. RUSSELL E. TYLER, Newlin.

Honorably discharged on account of physical disability incident to the service, Lieut. WILLIAM A. JENNINGS, Dallas.

Resignation of Lieut. ISADOR BRAUN, Shinor, accepted.

Utah

To Fort Riley for instruction, Lieut. LEROY C. POTTER, Provo.

Vermont

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. BERT D. GEORGE, Hardwick.

To Camp Upton, Long Island, N. Y., to examine the command for mental and nervous diseases, from New York City, Lieut. HENRY E. ST. ANTOINE, Wincoski.

To Fort Ethan Allen, Vt., for duty, from Camp Dix, Major WILLIAM W. TOWNSEND, Rutland.

Virginia

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. FRANK L. WYSOR, University.

To Camp Crane, Allentown, Pa., base hospital, from Camp Lee, Lieut. JUNIUS E. WARRINER, JR., Richmond.

To Camp Custer, Battle Creek, Mich., base hospital, from Fort Oglethorpe, Lieut. WESLEY R. PUTNEY, Amelia C. H.

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. RAYMOND C. HOOKER, Richmond.

To Camp Greene, Charlotte, N. C., as commanding officer of base hospital, from Camp Greene, Major GEORGE A. RENN, Norfolk. Base hospital, from Fort Oglethorpe, Lieut. JAMES O. MUNDY, JR., Raccoon Ford. For duty, from Fort Oglethorpe, Lieut. FORREST T. SUMMERS, Snowville.

To Camp MacArthur, Waco, Texas, for duty, from Camp MacArthur, Capt. HORACE T. HAWKINS, Richmond.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. CLYDE L. BAILEY, Sutherlin.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. HUNTER S. WOODBERRY, University.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Shelby, Lieut. CHARLES C. CARR, Tom's Creek.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM T. WIMBISH, Clarks-ville.

Resignation of Lieut. WILLIE S. HODNETT, Richmond, accepted.

Washington

To Camp Crane, Allentown, Pa., for duty, from Fort Worden, Lieut. ALBERT P. DURYEE, Everett.

To Camp Grant, Rockford, Ill.; Camp Dodge, Des Moines, Iowa, base hospitals, and on completion to his proper station, from Camp Lewis, Major HORACE J. WHITACRE, Tacoma.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. EARLE V. SHEAFE, Winlock.

To Fort Oglethorpe for instruction, from Chicago, Capt. WARNER M. KARSHNER, Puyallup.

To Fort Riley for instruction, Capt. JULIUS G. HEWGORD, Everett; FRANK C. ROBINSON, Walla Walla; Lieuts. HARRY MARTIN, Cashmere; WILLIAM A. MITCHELL, Colfax; RALPH F. GOETTER, Colville; JOHN F. MACDONALD, Hoquiam; LEGRAND SPAULDING, Kannevick; EDMOND G. KLAMKE, Port Gamble; WILLIAM R. L. REINHARDT, Spokane.

To Portland, Ore., Aviation Section, Signal Corps, for duty, Lieut. WILLIAM R. BRANDT, Auburn; GEORGE W. CORNETT, Yakima.

To San Francisco, Calif., for instruction, and on completion to his proper station, from Camp Lewis, Capt. JOHN W. HUNT, Seattle; HERBERT E. WHEELER, Spokane.

Honorably discharged, Lieut. GEORGE W. OVERMEYER, Aberdeen.

West Virginia

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Capt. CHARLES O. STAATS, Spencer; Lieut. ALVAH L. PARSONS, Charleston.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. HERBERT H. HAYNES, Clarksburg; from Camp Meade, Lieut. ERNEST F. GOTT, Bluefield.

To Fort McPherson, Ga., for temporary duty, Lieuts. WILLIAM D. LEWIS, Beckley; WATSON S. ROWAN, Branwell.

To Fort Oglethorpe for instruction, Lieuts. IVY G. SHIRKEY, Carbon; CHARLES M. TRUSCHEL, Wheeling; from Chicago, Lieut. WILLIAM C. WILLIAMS, Caretta.

Wisconsin

To Camp Crane, Allentown, Pa., base hospital, from Newport News, Lieut. CHARLES B. RYDELL, Superior.

To Camp Devens, Ayer, Mass., to examine the command for mental and nervous diseases, from Camp Devens, Lieut. CHARLES C. ROWLEY, Winnebago.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. HARRY C. MIN, Green Bay.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and nervous diseases, from Camp Joseph E. Johnston, Lieut. WILLIAM J. FLEMING, Wauwatosa.

To Camp Upton, Long Island, N. Y., for duty, from Fort Riley, Capt. CONRAD W. WILKOWSKI, Chippewa Falls.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. ERWIN G. LINKMAN, Milwaukee.

To Camp Zachary Taylor, Louisville, Ky., for duty, and on completion to his proper station, Major NELSON M. BLACK, Milwaukee.

To Chicago, Ill., Northwestern University Dental School, for inspection and instruction, and on completion to Toledo, Ohio, for inspection, and on completion to his proper station, Major ROBERT H. IVY, Milwaukee.

To Fort Leavenworth, Kan., for duty, from Fort Riley, Lieut. ALEXANDER J. BERGER, New Holstein.

To Fort Riley for duty, from Fort Riley, Lieuts. CHARLES M. GRISWOLD, Alma Center; RUSSELL R. HEIM, Marinette. For instruction, Lieuts. WILLIAM F. BAKER, Birnamwood; PETER L. SCANLAN, Prairie du Chien; FRANCIS J. BROGHAMMER, Superior.

To Jefferson Barracks, Mo., for duty, Capt. NORMAN E. McBEATH, Livingston.

To Lakewood, N. J., for duty, from Ann Arbor, Capt. OSCAR C. WILHITE, Lake Geneva.

To New York City, Cornell Medical College, for instruction, in military roentgenology, from Fort Riley, Lieut. JOSEPH C. BAIRD, Eau Claire.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, from Army Medical School, Lieut. HENRY F. HOESLEY, Shullsberg.

To San Francisco, Calif., for instruction, and on completion to his proper station, from Camp Cody, Lieut. CLARK O. DECKER, Crandon.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CLARK L. CAIN, Elmwood; DANA B. DISHMAKER, Kewaunee.

Wyoming

To Camp Dodge, Des Moines, Iowa, with the board to examine the troops for cardiovascular diseases, Lieut. DURWARD B. PARK, Laramie.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Upholding Venereal Disease Regulations.—An attempt at San Jose to obtain the release by habeas corpus proceedings of persons quarantined for venereal diseases under the regulations of the state board of health was prevented by Judge J. R. Welch in the superior court, who dismissed the case and remanded the infected persons to the care of the health officer. The regulations have been similarly upheld at San Diego and Los Angeles.

Personal.—Dr. Alice G. H. Anderson, Los Angeles, has been appointed head of the medical department of the woman's division of the state hospital, Patton, and assumed her new duties, April 1.—Dr. Frederick W. Rinkenberger has succeeded Dr. William H. Harrison at the Emergency Hospital, San Francisco, and Dr. Charles H. Peterson has been appointed to the position vacated by Dr. Joseph H. D. Roger.—Dr. La Verne C. Wright, Oakland, left March 30 for France, where she will do relief work among the refugees.—Dr. Wilfred H. Kellogg, director of the bureau of communicable diseases of the state board of health, was made secretary of the board to succeed Dr. Wilbur A. Sawyer, who has joined the colors.

FLORIDA

Drive for a New Hospital.—The campaign to raise funds to build the Good Samaritan Hospital, Palm Beach, closed March 11. Palm Beach has subscribed \$32,000 and West Palm Beach, \$12,000, to the fund of \$60,000. As \$25,000 had been raised last year, the fund was oversubscribed by \$9,000.

Sanitation for Shipyards.—The state board of health has taken steps to place and keep the district surrounding the plant of the Pensacola Shipbuilding Company, in a thoroughly sanitary condition. The plan includes the installation of a sewage disposal system. The zone extends for a radius of three quarters of a mile about the plant.

Referendum for County Sanatorium.—The Florida Anti-tuberculosis Association is planning a campaign to secure the establishment of a tuberculosis hospital for Duval County, and will, it is expected make this question an issue at the next general election in June. It is said that there is no public institution in the state for the treatment of tuberculosis.

GEORGIA

New Sanitary Officer.—W. C. Howard, Pensacola, Fla., has been made city health and sanitary officer of Albany.

Society Entertains Staff.—The members of the medical staff of the Atlanta and Fulton County Antituberculosis Society were entertained at dinner by the president and officers of the organization, March 26. During 1917, 1,336 patients were examined in the clinics maintained by the society, including 864 new patients, of whom 136 were children. The medical staff is now headed by Dr. George M. Niles.

ILLINOIS

Lake Forest Establishes Hospital in France.—A hospital has been established in St. Cloud near Paris, by a group of people of Lake Forest headed by Mr. and Mrs. Harold Bryant, for the use of American soldiers, with accommodations for twenty-five patients.

Personal.—Dr. George A. Lighte, Tallula, has been appointed resident medical officer for the Rock Island Military District.—Dr. Joseph P. Comegys, Rock Island, has been appointed federal physician for the examination of prisoners arrested in the sanitary zone around the Rock Island Arsenal.

To Promote Hospital Efficiency.—A joint meeting of the medical staffs of the hospitals of Peoria was held at St. Francis Hospital, March 18, in order to unify the work of the institutions and promote efficiency. At the meeting Dr. William Engelbach, St. Louis, gave an illustrated lecture on "Diseases of the Ductless Glands."

Epileptic Home Ready Next Month.—The state epileptic colony, Dixon, in the establishment of which \$1,000,000 has

been expended, will be ready to receive patients, May 1. The plant consists of seventeen buildings located on a plot of 1,100 acres on Rock River, above Dixon. Eventually 2,000 patients will be accommodated, but at first groups of fifty will be admitted. Dr. Henry B. Carriel, Jacksonville, is superintendent of the institution.

CHICAGO

Personal.—Dr. Frank W. Taussig, chairman of the United States Tariff Commission, has been placed at the head of the special committee to conduct an inquiry into the milling industry.

Expensive Expectoration.—March 21, 235 persons were arrested, charged with violating the city ordinance prohibiting expectoration on sidewalks and in public places. Of the accused 226 pleaded guilty, and were each fined \$1.

Hospital Unit Leaves.—Base Hospital Unit No. 11, commanded by Major Nelson M. Percy, M. C., U. S. Army, and composed of 152 enlisted men and 100 nurses from St. Joseph's, St. Mary of Nazareth, and Augustana hospitals, left Chicago for Des Moines, Iowa, April 2.

Doane's Work in Washington.—Under the direction of Major Philip Schuyler Doane, M. R. C., U. S. Army, the Emergency Fleet Corporation in Washington is organizing a welfare service for its thousands of employees in that city and in the shipyards on the sea coast and the Great Lakes.

Writ Denied.—March 27, Judge Oscar M. Torrison entered an order overruling the motion of counsel for Drs. Arthur L. Blunt and Isaac Hodgins, for a writ of certiorari to compel the state board of registration and education to produce in court the records of the proceedings by which that body revoked the licenses of the two physicians.

MARYLAND

Personal.—Dr. Charley I. Hammond, Baltimore, was taken suddenly ill recently and rushed to Mercy Hospital where it was found that he was suffering from uremic poisoning. His condition is reported improved.—Dr. Frank J. Flannery, resident physician of Mount Hope Retreat, suffered a severe nervous shock and was badly shaken up in a collision between his automobile and a motor bus; he is reported as much improved.

Hospital Fund Raised.—The \$10,000 emergency fund of the University of Maryland Base Hospital Unit No. 42 has been completed. Subscriptions amounting to \$5,854.51 were received by Dr. James M. H. Rowland, dean of the University of Maryland, who is treasurer of the fund, and the executive committee of the Maryland branch of the Red Cross gave \$5,000. This oversubscribes the amount. It is expected that orders to leave for the port of embarkation will be received within the next two weeks.

MISSISSIPPI

Personal.—Dr. Francis E. Harrington of the United States Public Health Service has succeeded Dr. J. A. Watkins in charge of the Mississippi cantonment work at Hattiesburg.—Dr. Matthew J. L. Hoyer has been appointed superintendent of the East Mississippi Insane Hospital at Meridian, to succeed Dr. James M. Buchanan who served in that office for twenty-seven years.—Dr. Charles D. Mitchell, Pontotoc, has been appointed superintendent of the Mississippi Insane Hospital, Jackson, in place of Dr. Robert M. Butler, Liberty, resigned. He assumed his new duties, April 1.—Dr. W. E. Noblin, Yazoo City, has been appointed county health officer to succeed Dr. Orrin H. Swayze.

Miscellaneous.—Through Dr. Oscar Dowling of the Louisiana State Board of Health, Dr. Waller S. Leathers, University, executive officer of the state board of health, has made arrangements to take care of two lepers from Harrison County on the Mississippi Gulf Coast. They will be treated in the state institution.—An appropriation of \$25,000 will be asked from the legislature for the building of a new hospital at Biloxi.—The reports of the committee on eleemosynary institutions on the charity hospital at Vicksburg and the state tuberculous sanatorium at Magee, which were submitted to the state department of health, show both institutions to be in good condition and well managed. Dr. Hicks of the charity hospital of Vicksburg asked for an appropriation of \$18,000 for improvements. The committee reported that the support fund should be increased about 20 per cent. on account of the increased cost of food, and also recommended the transfer of the property to the state. The tuberculosis hospital had not been entirely completed at the time of the report and

many recommendations for additional buildings and equipment were made.

NEW JERSEY

Personal.—Dr. Edward B. Rogers, Collingswood, captain in the Medical Reserve Corps, was reelected to the school board, March 22.

Tuberculosis Society Formed.—The Burlington County Antituberculosis Association was organized at Mount Holly, March 2, with Dr. Marcus W. Newcomb, Brown Mills, president.

NEW YORK

Brooklyn Hospital Needs Funds.—The Holy Family Hospital, Brooklyn, has started a campaign to raise \$5,000 with which to purchase new ambulances and other equipment. The ambulances of this hospital answered 3,213 calls in 1917.

Licenses Revoked.—At a meeting held March 28, the New York Board of Regents revoked the licenses of Dr. William L. Owen of New York City and Dr. Henry Seligman of Brooklyn. Dr. Owen was recently convicted of repeatedly failing to record the disposition of heroin and has been sentenced to the federal prison at Atlanta, Ga. Dr. Seligman was convicted of conspiracy in an attempt to discharge and exempt Joseph Levy from the requirements of the selective service act.

War Hospital at Mineola.—Announcement was made, April 4, that the fair grounds at Mineola, L. I., will be turned over to the government for a convalescent hospital. They comprise 63 acres which have been used as an aviation field. When the present buildings have been remodeled, they will house 10,000 patients. At present convalescents from the various army cantonments will be cared for, but later it is probable that the institution will be used for soldiers returning from overseas.

New York City

Personal.—Dr. Stephen Smith has resigned as a member of the state board of charities. During the period since 1881, with the exception of six years, from 1882 to 1888, when he was a member of the state commission on lunacy, Dr. Smith has served continuously on the board. He was 95 years old, February 19.

Investigate Powdered Glass Reports.—The New York City Health Department has analyzed in its laboratory more than 100 samples of bread, rolls, candy and other foodstuffs said to contain powdered glass. No glass was found. Fifty per cent. of the samples contained sand or grit. The department states that in normal times only 5 per cent. of persons finding sand or grit in their food would report it, while at the present time 75 or 80 per cent. would report the fact to the department. The department warns the public against the wave of hysteria that seems to be the result of these unfounded reports.

NORTH DAKOTA

Hospital Opened.—The new main building of Parrott Hospital, Winston-Salem, which was recently completed at a cost of more than \$65,000, has been opened to receive patients.

Clean-Up Week.—The period from April 5 to April 20, has been set apart as the time in which there is to be throughout the state a general clean-up of all waste material that might harbor disease germs. The state authorities ask that the municipalities cooperate with them in this laudable sanitary endeavor.

OHIO

Army Tuberculosis Victims.—The state is short of funds to erect two required buildings at the Mount Vernon Tuberculosis Sanatorium to care for men discharged from the Army for tuberculosis. To an inquiry from the state, the War Department has responded that it regards the state as responsible for the care of these patients, and the state is looking to the Red Cross to provide funds to the amount of \$50,000 for the necessary buildings.

State Venereal Disease Campaign.—The state department of health has announced the details of its campaign against venereal diseases in conformity with the plan of the federal authorities for suppressing these diseases, and Dr. H. N. Cole, of Western Reserve University, Cleveland, has been placed in charge. The campaign will be carried on purely as a matter of public health, divorced from all moral issues. The cities will cooperate with their separate organizations. The campaign will include such measures as education through placards and leaflets, a bureau of sex advice, free Wassermann and other laboratory tests, cooperation with local

authorities in organizing clinics and providing hospital beds, and cooperation with the military authorities in locating and treating sources of infection.

PENNSYLVANIA

Personal.—Dr. William H. Glick has resigned as medical inspector of the Bethlehem public schools.—The successor of the late Samuel G. Dixon, commissioner of health has not yet been appointed. Among those reported to be recommended for the position are: Dr. Wilmer Krusen, health director of Philadelphia; Dr. E. G. Davis, head of the medical advisory board in the draft service, and Dr. Edgar M. Green of Easton.

Miscellaneous.—A systematic effort throughout the state to ascertain the opinion of physicians regarding the present compensation law is being made. The law at present allows compensation to physicians for fourteen days. Many physicians think this time should be lengthened to twenty-one or thirty days. This was the consensus of opinion at a meeting of the Westmoreland County Medical Society, at which the law was discussed.

Philadelphia

Charitable Bequests.—The will of the late Henrietta A. Widdafeld directs that a trust fund of \$25,000, which is to be held for her husband until his death, shall then be divided among various charitable institutions and \$5,000 will go to the Women's Homeopathic Association.—The St. Vincent's Home and Maternity Hospital will benefit to a large extent in the estate of the late James P. McMahon, who left an estate of \$13,000 to be divided between a number of charitable institutions.

Pennsylvania Hospital Off.—Base Hospital Unit No. 20 of the University of Pennsylvania left Philadelphia on April 1 on the beginning of its journey to France. The unit was organized last fall and started training, November 1. It consists of 150 men of whom probably more are athletes than in any other similar organization of men sent to France from this country. Major John B. Carnett is the medical head of the unit and his staff includes Major George M. Piersol, former surgeon at Camp Dix, Wrightstown, N. J., Capt. T. M. Edwards and William Bates who had charge of the field hospital at Fort Oglethorpe, Ga. The military commander is Major Thomas H. Johnson, U. S. Army.

RHODE ISLAND

Election of Officers.—At the meeting of the Pawtucket Medical Association at Pawtucket, the following officers were elected: Dr. Ardashes H. Merdinyan, president; Dr. Earl J. Mathewson, vice president; Dr. Conrad E. Thibodeau, secretary, and Dr. Stephen F. Hughes, treasurer.

Examinations of Practitioners, Etc.—In future examinations of candidates to practice medicine in the state, practical as well as written examinations will be required.—An appropriation of \$1,000 has been asked for by the state board of health to stop illegal practice in the state.—Blanks have been sent out to all physicians on which to report venereal disease which have now been made reportable to the state board.

SOUTH DAKOTA

Officers Elected.—At the meeting of the state board of health and the state medical examiners at Pierre, Dr. Hampton Kenaston, Bonesteel, was made president; Dr. Charles E. McCauley, Aberdeen, vice president, and Dr. Park B. Jenkins, Waubay, secretary. The other members of the board are Dr. Arthur S. Jackson, Lead, Charles A. Bower, Mitchell. At the meeting, eleven applicants took the examination for licenses.

Personal.—Dr. Thomas B. Christian, South Bend, Ind., bacteriologist and pathologist, has been appointed city health officer of Aberdeen.—Dr. Daniel L. Scanlan has been elected president of the Volga Hospital Association which conducts a cooperative hospital.—Dr. Albert Sherrill, Camp Crook, suffered the loss of a finger on his left hand which had to be amputated on account of blood poison.—At a recent meeting of the Black Hills Medical Association, Dr. John W. Freeman, Lead, who recently retired as a member of the staff of the Homestake Hospital, was presented with a bronze loving cup suitably engraved. Honorary memberships in the association and in the state association were conferred on Dr. Freeman.—Dr. Charles E. McCauley, Aberdeen, a member of the state board of health has been given charge of the

work of enforcement of war measures in regard to venereal disease. He has appointed as assistant Dr. Robert S. Hart, Groton.

WASHINGTON

Miscellaneous.—At Spokane, work on the new \$100,000 tuberculosis sanatorium at Edgecliff was started, March 18. —The physicians of Everett, March 17, decided to shorten their working hours in order to keep up their civic, professional and patriotic duties during the war. They will close their offices in the evening.

Personal.—The mayor of Tacoma has appointed Dr. Edwin A. Layton health commissioner of schools and city health officer. The city council will give Dr. Layton a fund of \$5,000 to be expended within the next thirty or sixty days to combat communicable diseases. —Dr. John B. Anderson, city health officer of Spokane, visited Portland, March 21, to study the details of Portland's system of handling and treating women suffering from social diseases, with the view of inaugurating a similar plan in Spokane.

WISCONSIN

Free Dental Work.—Among the cities in the state having provision for free dental work for schoolchildren not able to pay for such work are Milwaukee, Oshkosh, Racine, Janesville, Madison and Wausau.

Officers Elected.—At the meeting of the Fox River Valley Medical Society at Green Bay, Dr. Victor F. Marshall, Appleton, was elected president; Dr. Maurice D. Bird, Marinette, first vice president; Dr. Alfred P. Holz, Seymour, second vice president; Dr. Emile G. Nadeau, Green Bay, secretary-treasurer, and Dr. Charles J. Chloupek, Green Bay, was reelected censor.

Residential Sewage Disposal.—The October-December (1917) number of the state board of health *Bulletin* gives plans with details and numerous illustrations for water supply systems and sewage disposal plants for dwellings in unsewered towns and country districts. The plans for sewage disposal provide for tank disposal, dry well, filter bed and spray disposal of effluent, etc., with specifications of materials required, and advice as to the best method of installation.

CANADA

Public Health Department for New Brunswick.—The question of the establishment of a department of public health for New Brunswick is under consideration by the legislature of that province.

Personal.—Col. Charles A. Hodgetts, Ottawa, medical adviser to the Canadian Conservation Commission, who has been overseas for three years or more as Red Cross commissioner, has resigned and his resignation has been accepted.

General News.—The Ontario Temperance Act has been amended in that section relating to physicians writing prescriptions for medicinal purposes. The law now requires that, when writing an order on the vendor, the physician must attach thereto a certificate to the effect that "the quantity of liquor therein mentioned is the minimum quantity necessary for the patient for whom it is ordered." —Fifth year medical students of McGill University, Montreal, will again dispense with their summer holidays this year, and by studying until next autumn will win their degrees earlier and go overseas with the Canadian Army Medical Corps. The request for this was made by the students themselves, of whom there are seventy-one enrolled in the class. —Free distribution of diphtheritic antitoxin was begun in the province of Saskatchewan last September.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

The United Hebrew Charities, New York City, \$400,000, other Jewish charities from \$6,000 to \$75,000, amounting to more than \$1,000,000, after the death of testator's widow, by the will of Ludwig Dreyfus, New York City.

Examination of Unduly Toxic Arsphenamin by Hygienic Laboratory.—In view of the reports in current medical literature of untoward results from the use of arsphenamin and neo-arsphenamin, Dr. G. W. McCoy, director, Hygienic Laboratory, Washington, D. C., requests that samples of any lots of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination. In sending these samples it should be ascertained that the lot number is the same as that of the ampules used on patients.

The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result; that is, whether fatal or not.

A Warning.—THE JOURNAL has repeatedly published warnings against fraudulent canvassers and collectors. The most frequently worked swindle during the past few years has been an attempt to secure subscriptions on the grounds that the solicitor is a contestant for a prize in the form of a scholarship in some educational institution to be awarded to the one who sends in the most business in a certain length of time. This scheme has been worked under the names of the Cornell Educational Association, the Michigan Educational Association, the National Educational Association, the National Society of Universities, etc. The most recent is from Kokomo, Ind., where a physician has been swindled by a solicitor working under the name of the Pennsylvania Engineering Committee of Pittsburgh. Again we remind our readers that no one is authorized to solicit subscriptions or collect money for any of the publications of the American Medical Association unless he carries credentials bearing the seal of the Association.

CENTRAL AND SOUTH AMERICA

Public Health in Honduras.—It is announced that a Direccion General de Salubridad has been created in Honduras.

Prohibition in Colombia.—The authorities in Colombia are studying the question of drastic legislation for repression of alcoholism.

Ankylostomiasis in Ecuador.—The government of Ecuador has recently voted funds to enable the public health service to carry on an active campaign against this disease.

Prohibition in Peru.—The legislature has recently passed a law which has been signed by the president and which prohibits the sale of alcoholic liquors on Saturdays and Sundays.

Medical School in Paraguay.—The medical department of the national university of Paraguay, at Asuncion, has been closed for some time. Steps are now being taken to reopen it.

Lengthening of the Medical Course in Uruguay.—The *Cronica* of Havana states that the medical department of the University of Montevideo has petitioned the government to lengthen the medical course to seven years.

Banquet to Professor Gastañeta.—In New York, the Rockefeller Institute recently tendered a banquet to Dr. G. Gastañeta, subdean of the medical department of the University of Lima, Peru, who has been on a brief visit to the United States.

Scholarship for Nicaragua Student.—The Rockefeller Foundation has awarded a scholarship to Miss de Estrada of Nicaragua to continue her studies in bacteriology, tropical medicine and preventive medicine at the University of Pennsylvania and at Johns Hopkins.

Interchange of Professors.—Drs. C. Chagas and V. Brasil of Rio de Janeiro have been appointed by the Rockefeller Foundation president and secretary of the consulting board for Brazil to pass on the professors for interchange and the candidates for the Foundation's pensions.

Garcia Treatment of Leprosy a Failure.—A committee appointed by the Academia de Ciencias of Cuba to study the Garcia plan of treatment of leprosy has reported that the Hansen bacilli were found still in the lymph and mucous secretions of patients after a thorough course of this treatment, and the improvement in the general health observed in some of the patients was no more than can be realized by the usual measures. The verdict was therefore unfavorable.

Antivenereal Dispensaries at Montevideo.—Five conveniently located and well equipped free dispensaries have been opened at various points in Montevideo, in addition to the central dispensary, for consultation and treatment in venereal diseases. They are installed in hospitals or similar public institutions, and are in charge of specialists selected by the Consejo Nacional de Higiene or the Asistencia Publica. No discrimination is to be made as to social station among the applicants. The work is under the auspices of the board of the Asistencia Publica Nacional, of which Dr. Martirene is president.

The Medical Journals of South and Central America.—In every one of the twenty-one countries of South and Central America from one to twenty-three medical, pharmaceutical, dental or veterinary journals are published regularly. Brazil

has the largest number, Cuba has twenty-two, and Argentina sixteen. A list of 104 was recently published in the *Vida Nueva* of Cuba—a total of seventy-seven strictly medical journals and four or five pharmaceutical in the twenty republics south of the United States. Their articles are authorities on tropical medicine, snake bites, leishmaniasis, echinococcus disease and a number of other lines in medicine. Now that the German medical journals are in eclipse, so far as America is concerned, the world begins to realize that much of the prestige of the German medical journals was due to the fact that the exceptionally important articles by workers in other lands were often sent to be published in German medical journals at the same time that they were published in the writers' home journals. Naturally, the German medical journals got the credit for the articles because they had a wider circulation.

FOREIGN

Pneumonic Plague in China.—Dr. Percy T. Watson, in charge of the medical work of the American Board of Commissioners for foreign missions at Fanchow, states that the plague of pneumonia which has recently appeared in Mongolia, and in that part of the Shang-Si province which is north of the great wall, has been definitely demonstrated to be pneumonic plague.

Testimonial to Pikelharing.—The seventieth birthday of the well known authority on physiologic chemistry and histology, Prof. C. A. Pikelharing, of the University of Utrecht, falls on July 18, and his friends and pupils are collecting a fund to erect a tablet in his honor or endow the laboratory for physiologic chemistry there. Besides his early work on beriberi, fibrin ferment and the functions of the lymphoid tissue, he has recently published works on the influence of inorganic salts on the lipase of the pancreas, of phosphatids on coagulation, on the activation of blood serum, etc. The secretary of the committee in charge of the testimonial is Dr. C. J. van Hoogenhuyze, Banstraat 8, Amsterdam.

Deaths in the Profession Abroad.—G. Filomusi-Guelfi, professor of legal medicine at the University of Pavia and author of numerous works on forensic medicine, aged 62.—G. A. Petrone, docent in pediatrics at the University of Naples, aged 44.—The *Nederlandsch Tijdschrift* reports the death of the physiologist, Prof. E. Hering of Leipzig, aged 84. He occupied the chair of physiology at Vienna and Prague for a time but has been connected with the University of Leipzig since 1895. Some of his numerous works on physiology have been translated into other languages, including his "Memory and the Specific Energies of the Nervous System."—It reports further the death of the urologist, Prof. H. Lohnstein of Berlin, editor of the *Allg. med. Central-Zeitung* and founder in 1895, with Casper, of the *Monatsberichte der Krkten des Harn- und Sexualapparates*, aged 53.—D. E. Sulzer, a leading ophthalmologist of Paris, on the editorial staff of the *Annales d'Oculistique*, aged 60.—T. de Speyr, also a well known Swiss ophthalmologist, residing at Chaux-le-Fonds, aged 50.

CORRECTION

Distinguished Service Award.—We are informed that the award mentioned April 6, p. 1006, was to Lieut. Raymond Neel Davis, M. R. C., formerly of South Carolina.

PARIS LETTER

PARIS, March 7, 1918.

Prostheses for the War Cripples

In order that a war invalid who has a crippled arm or leg or a stump may take up useful work, he has to be supplied with an appropriate apparatus. The minister of war regards a prosthesis of this kind as an integral part of the care which should be given the wounded by the Service de Santé. His aim is to give each war invalid an artificial arm or leg, not merely the simplest form, the peg leg, but in each case the apparatus needed to overcome the effects of the mutilation so that the man can practice a trade or other remunerative occupation. It must be realized, however, that the carrying out of this ideal is far from being an easy matter, not only on account of the expense but also because of the lack of workmen to make the artificial limbs. When the state issued these orders, the delivery of the needed appliance was delayed in some instances for a long time, so that more than once the Service de Santé was forced to let these mutilated men who needed an artificial leg leave with a peg leg, stiff and hard. To be sure, private initiative and funds have supplemented and completed the work of the state. One of these institutions is the *Fédération nationale d'Assistance aux*

mutilés des Armées de terre et de mer, which was established toward the end of 1914 and has since donated these appliances to the war cripples. Although the minister of war had requisitioned the entire production of prostheses, at the request of the federation, he authorized the manufacture of apparatus after an examination of each case. The federation has also adopted the principle of donating apparatus only when the prosthesis furnished by the state is insufficient to meet the professional needs of the patient. In fact, its activities are restricted almost entirely to those mutilated who have had a limb or limbs amputated and who are resident in the schools of reeducation and whose special needs the federation is able to appreciate thoroughly.

EVOLUTION IN CONSTRUCTION OF PROSTHESES

It is interesting to note the evolution that has taken place since the beginning of the war in the construction of these appliances for the mutilated. At first, the complicated prostheses, fragile and cumbersome, were considered to be veritable prodigies of ingenuity. Now these complicated appliances have been discarded by the great institutions in France for vocational rehabilitation of the wounded, as well as by the industrial establishments which employ these mutilated. The principle held in view is that the patient should rely mainly on what physical aptitude he has left, and when he has to use an orthopedic appliance, it should be a simple apparatus, solid, not expensive, one which can be replaced or repaired easily. At first the aim was to construct a sort of universal claw (*pince universelle*) in cases of mutilation of the upper extremity so as to have an apparatus that will be useful generally and supply all needs. Among the more ingenious apparatus of this kind are the claw of Dr. Amar, the claw of Louis Lumière, and the claw d'Estor. All these appliances are of value. They enable the wearer, with experience and training, to do certain kinds of work with some skill, as, for instance, the work of a joiner or a fitter. On the other hand, these appliances are not suited for the agriculturist. It must be remembered, however, that it is impossible to create an apparatus that is suitable for all occupations. In each trade it is necessary to supply the mutilated with a carrying tool or claws of various forms adapted to the different needs.

WORKING "HANDS"

This has led to the designing of artificial working hands, *mains de travail*. There is the hand of the gardener; the hand of the wine grower; the hand of the laborer, and the hand of the digger; the hand of the joiner, the chair caner, the jeweler, the printer, the letter carrier, and even the mechanic. These artificial working hands do not conform to the shape of the anatomic hand. The mechanism is extremely simple, often rudimentary, not expensive, but adapted to the complementary movements that the patient needs. The object is not to restore the anatomic shape, but to restore function. How were the *mains de travail* created? The thing is very simple. When the mutilation involves the right arm, the man should first be taught to become left handed, that is to say, he should learn to use his left hand just as well as he formerly used his right. This once accomplished, it follows that after loss of one arm, either the right or the left, there is need to supply only the missing arm or hand. Consequently, one need only create a complementary left member, a simple auxiliary of a healthy right arm. It is sufficient, to meet the exigencies of any trade, to specify the functions of the left hand during the course of working, and to seek artificial means to supply that left hand. For this it was necessary to study at first on normal, non-mutilated workers the movements, attitudes and different positions of the left hand in each trade. By dissecting thus, as it were, carefully the various phases of the work of the left hand it was possible to trace, step by step, all the things that the left hand had to do in the practice of the trade. It was found, strange to say, that the movements of the left hand, in general, are very simple, not very numerous, acting only along a single axis and often in a constant direction. It was this method of dissociation of the movements that has enabled Dr. Boureau to supply a left hand for many trades with the aid of one or two simple devices. He has thus created a whole series of *mains de travail* which are very ingenious and which render excellent service, notably for the readaptation of the mutilated for agricultural work.

Death of Dr. Baréty

Dr. Alexander Baréty, former intern in the hospitals of Paris, administrator of civil hospitals, former vice president of the *Conseil général des Alpes-Maritimes*, recently died in Nice, aged 74.

LONDON LETTER

LONDON, March 12, 1918.

Compulsory Rations

As stated in a previous letter, a system of compulsory rationing is in vogue for the whole civilian population. The allowance per week is 1¼ pounds of meat, 4 ounces of butter or margarin, and 8 ounces of sugar. Other articles of diet, such as bread or fish, have not yet been rationed. A general scheme such as this cannot be applied to every person regardless of health or the work performed. It has been found necessary, therefore, to introduce the following regulations on the advice of the Committee of Reference of the Royal College of Physicians and of Surgeons, and of the Central Medical War Committee, that for the time being these can be allowed only as follows: 1. Extra sugar shall be allowed only those persons having difficulty in swallowing solids because of organic disease, for example, in cancer of the tongue, cancer of the esophagus, and gunshot wounds of the jaws. 2. Extra meat and fat may be allowed for patients suffering from diabetes and from tuberculosis, and also from celiac disease and pancreatic insufficiency. No extra meat can be allowed for making beef juice, beef tea or broth. 3. Priority may be granted for milk as follows: In cases of acute illness, for example, pneumonia, typhoid and acute abdominal conditions, the physician in attendance may give a certificate, on the receipt of which the milkman shall be empowered to supply the quantity of milk for one week. This certificate shall not extend for longer than one week, unless permission has been obtained from the local food office. Extra milk may also be allowed for pregnant and suckling women, for invalids suffering from the following chronic diseases: nephritis, tuberculosis, certain gastric and intestinal conditions, for example, gastric and duodenal ulcers, gastrostaxis, enteritis, dysentery and diarrhea; recognized diseases and disorders associated with malnutrition, and for patients who are unable to take solid food. There is no disease for which cream is allowed. For tuberculous persons in sanatoriums and hospitals, the following is the weekly allowance:

WEEKLY ALLOWANCE FOR TUBERCULOUS

	For Persons without Much Constitutional Disturbance		For Persons with Constitutional Disturbance	
	Men	Women	Men	Women
Milk	14 pints	14 pints	21 pints	21 pints
Meat (including suet) ..	3½ lb.	3 lb.	3½ lb.	3 lb.
Bacon	½ lb.	½ lb.	½ lb.	½ lb.
Fish	½ lb.	½ lb.	1 lb.	1 lb.
Cheese	½ lb.	½ lb.	4 oz.	4 oz.
Oatmeal	½ lb.	½ lb.	½ lb.	½ lb.
Pulses	½ lb.	½ lb.	.....	.....
Bread	4 lb.	3 lb.	3 lb.	3 lb.
Flour	½ lb.	½ lb.	½ lb.	½ lb.
Potatoes	5 lb.	4 lb.	2 lb.	2 lb.
Cereals	¾ lb.	¾ lb.	¾ lb.	¾ lb.
Sugar	½ lb.	½ lb.	½ lb.	½ lb.
Jam, syrup, etc.	¾ lb.	¾ lb.	¾ lb.	¾ lb.
Margarin and other fats..	10 oz.	10 oz.	10 oz.	10 oz.

The scale for children under 10 will be three fifths of the corresponding scale for the adult woman. It will thus be seen that the dietaries for the tuberculous considerably exceed the allowances for the general population.

The Future of the International Red Cross

In my last letter the torpedoing of the seventh hospital ship by the Germans was described. It is feared that there is no longer any doubt that seven officers and forty-seven of other ranks of the Army Medical Corps as well as eight women nurses have lost their lives. In the face of this barbarity the *British Medical Journal* asks, What is to become of the International Red Cross? Germany, which was a party to the conventions, has persistently broken, both on sea and on land, all her undertakings. Can she be admitted to any international organization of the Red Cross in the future? What guarantees can she give that any nation can accept? Further, what is the position of the Austrian Red Cross? It held an international Red Cross conference less than a year before the war, and though few atrocities have been traced to the Austrian empire, it has supported the Germans through thick and thin.

Smallpox in London

An outbreak of smallpox has occurred in the East End of London. Six cases have been reported. The public health authorities, especially those responsible for soldiers in training camps, are making every effort to localize the outbreak, and the soldiers have been warned about approaching the infected area.

Deaths

Ernest Charles Reyer, Indianapolis; Medical College of Indiana, Indianapolis, 1885; Bellevue Hospital Medical College, New York City, 1889; aged 53; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; formerly president of the board of health and charities in Indianapolis, and professor of diseases of the mind and nervous system in the Medical College of Indiana; died suddenly at his home, March 24, as a result of injuries suffered in a fall.

William Ogden McDonald, Brooklyn; New York Medical College, New York City, 1855; aged 81; a veteran of the Civil War; a pension examiner from 1877 to 1884, and later professor of anatomy and gynecology in the New York Homeopathic Medical College; a member of the American Institute of Homeopathy; died at his home, March 25, from senile debility.

Percival Lantz, Alaska, W. Va.; College of Physicians and Surgeons, Baltimore, 1891; aged 46; formerly a Fellow of the American Medical Association; a member of the West Vir-



Died in the Service
WHILE ON FURLOUGH FROM CAMP WHEELER
CAPT. SAMUEL CHANDLER BAKER, M. R. C.,
U. S. ARMY, 1867-1918
(See *The Journal*, April 6, p. 1023)

ginia State Medical Association; formerly postmaster of Frankford, W. Va.; died at the South Baltimore Eye, Ear and Throat Hospital, March 23, from acute nephritis.

William Aloysius Dunn, Boston; Harvard University Medical School, Boston, 1875; aged 64; a member of the Massachusetts Medical Society; formerly a trustee for the Institution for the Feeble-minded and the Boston City Hospital; for six years a member of the school board; died at St. Vincent's Hospital, New York City, March 28.

Charles Harvey Glidden, Little Falls, N. Y.; College of Physicians and Surgeons, Columbia University, New York City, 1881; aged 61; a Fellow of the American Medical Association; a member of the staff of the Little Falls Hospital; died while on a visit to his sister in Holley, N. Y., March 25.

William Eugene Buell, San Francisco; College of Physicians and Surgeons, San Francisco, 1900; aged 42; formerly a Fellow of the American Medical Association; died at the Union Iron Works Company Employees Hospital, San Francisco, February 4.

Rolandus G. Walker, Denver; Cleveland College of Physicians and Surgeons, 1904; aged 50; formerly a Fellow of the

American Medical Association; a member of the Colorado State Medical Society; died at his home, March 21, from pneumonia.

Lemuel Offut, Greensburg, Pa.; University of Maryland, School of Medicine, Baltimore, 1876; aged 66; a Fellow of the American Medical Association; at one time president of the Westmoreland (Pa.) Hospital staff; died at his home, March 25.

Lieut. Mark Beach, M. R. C., U. S. Army, Clinton, Kan.; Kansas Medical College, Topeka, 1903; aged 44; formerly a Fellow of the American Medical Association; a member of the Kansas Medical Society; died at Fort Sill, Okla., February 15.

Edward James Caldwell, West Chester, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1902; aged 45; formerly a member of the Iowa State Medical Society; died at his home, March 21, from Bright's disease.

Alexander A. E. McCandless, Pittsburgh; Jefferson Medical College, Philadelphia, 1870; aged 68; former coroner, treasurer and sheriff of Allegheny County; died in the Allegheny General Hospital, Pittsburgh, March 23, from pneumonia.

Capt. Harry James O'Bryan, M. C., Minn. N. G., Watertown, S. D.; Barnes Medical College, St. Louis, 1902; aged 49; a Fellow of the American Medical Association; died on duty at Fort Snelling, Minn., April 3, from pneumonia.

John Henry Joyce, Buffalo, Texas; Missouri Medical College, St. Louis, 1877; aged 63; formerly a Fellow of the American Medical Association; a member of the Texas State Medical Association; died at his home, March 23.



Saram R. Ellison, New York City; McGill University, Faculty of Medicine, Montreal, 1873; aged 66; formerly a member of the Medical Society of the State of New York; died at his home, March 26, from pneumonia.

Columbus Epaminondas McCoy, Bozeman, Mont.; Vanderbilt University Medical Department, Nashville, Tenn., 1895; aged 46; a Fellow of the American Medical Association; died at his home, March 22, from aneurysm.

James Robert Kistler, Kansas City, Mo.; Jefferson Medical College, 1879; aged 63; formerly a member of the Missouri State Medical Association; died at his home, March 23, from heart disease.

James Molland Greenslade, Lima, Ohio; Rush Medical College, Chicago, 1899; aged 65; for eleven years superintendent of the schools of Lima; died at the City Hospital, March 21.

Theron Dickey Lockhart, Chicago; Trinity Medical College, Toronto, 1896; aged 45; formerly a member of the Illinois State Medical Society; died in Birmingham, Ala., March 22.

George W. Grimes, Carlisle, Ky.; University of Kentucky, Medical Department, Louisville, 1883; aged 58; formerly a urologist; died at his home, March 22, from uremic poisoning.

Oscar August Bast, Brooklyn; Long Island College Hospital, Brooklyn, 1905; aged 35; founder of the Ridgewood Sanitarium; died at his home, March 27, from pneumonia.

John Augustus Walther, New York City; Columbia University, College of Physicians and Surgeons, New York City, 1876; died suddenly at the Memorial Hospital, March 27.

Marriages

Capt. Urban Bunyon Harris, M. R. C., U. S. Army, on duty at Camp Funston, Kan., to Miss Mary Holabird, both of Chicago, March 30.

Mathilda Olsen Ennis, Chicago, to Mr. George A. Cowan of El Centro, Calif., at San Diego, Calif., January 1.

Lieut. James Walter Wells, M. C., Ill. N. G., to Miss Melissa Kirkpatrick, both of Waltonville, Ill., March 22.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

HALL'S CATARRH CURE

Another Victim Tries to Get the Hundred Dollar Guarantee

"Hall's Catarrh Cure" is well known to readers of THE JOURNAL. This mixture of alcohol, potassium iodid, sugar and small amounts of some vegetable extractives has for many years been advertised under the claim that its manufacturers would pay "\$100 Reward for any Case of Catarrh that can't be cured" by it. It was the manufacturer of "Hall's Catarrh Cure," Cheney, a power in the "patent medicine" world, who devised the "Red Clause." Mark Sullivan showed in *Collier's*, how this clause, when introduced into the advertising contracts made by "patent medicine" manufacturers with newspapers, effectually whipped the papers into



CANADA

UNITED STATES

Photographic reproduction (reduced) of the labels of "Hall's Catarrh Medicine" as sold in Canada and the United States, respectively. Comparison of the labels shows that the presence and amount of alcohol is admitted where the law demands it (in the United States), but no mention is made of it in Canada. While the stuff is called a "cure" in Canada, where there is no penalty for false and fraudulent therapeutic claims, it is a "medicine" in the United States. In the United States also the "\$100 Reward" does not appear on the trade package.

line to defeat any public health legislation that might be inimical to the "patent medicine" business.

Long after the word "cure" had been taken off the labels and trade packages of the "patent medicines" made by the smaller fry in the nostrum world "Hall's Catarrh Cure" blatantly continued to defy the federal authorities. It is only within comparatively recent times that the name of the nostrum has been changed to "Hall's Catarrh Medicine" and this, as THE JOURNAL pointed out not long ago, only in the United States. It is still a "cure" in Canada!

The utter worthlessness of the hundred dollar "guarantee" to "cure catarrh" has been commented on before. Some years ago THE JOURNAL recounted the case of a man who, after taking twenty-six bottles of "Hall's Catarrh Cure" declared that he was worse instead of better and asked for the hundred dollars. F. J. Cheney & Co.'s reply was that they would "not feel at all justified in refunding the money paid for this

trial [!] of the medicine" as "many cases require much more than you have taken for a cure"! Nearly three years ago we received a letter from a man who claimed to have taken thirteen bottles without results. He had written, he said, to the Cheney concern asking, not for the hundred dollars reward, but "for only one-half the price of the medicine." But: "They will not return a cent." The man was even so unsophisticated as to complain to his two home papers, that were carrying the Hall "guarantee," and expressed surprise that he was unable to get any satisfaction and, in fact, "the deceitful advertisements still appear in both papers."

Now come some letters from a Canadian, which speak for themselves:

AMERICAN MEDICAL ASSOCIATION,

Dear Sirs:—I heard of your Association through a circular published by the Metropolitan Life Insurance Co. I have catarrh and last July I commenced taking Hall's Catarrh Cure. After taking thirty (30) bottles of this medicine and receiving no benefit whatever, I wrote F. J. Cheney & Co. re their guarantee. They sent me the enclosed letter dated Dec. 20, 1917.

Here is the second letter, that of December 20:

Dear Sir: As before stated, while many cases of catarrh have been greatly relieved by the amount of Hall's Catarrh Cure which you have taken, others require long continued treatment as cases vary and the medicine does not act alike upon all persons.

Hall's Catarrh Cure will do what we claim for it,—cure catarrh or deafness caused by catarrh. We do not claim to cure any other disease.

In your case, we would suggest that you increase the dose and see if you can obtain more relief from the larger doses. Of course, if the stomach should become deranged, decrease the dose. The addition of a third teaspoonful of ordinary baking soda in the water in which the medicine is taken is sometimes greatly beneficial.

Our guarantee is just as advertised.

Yours,

F. J. CHENEY & Co.

The last letter, that of March 7 and the gem of the collection, follows:

Dear Sir: We have gone over your correspondence carefully and cannot find wherein you have stated anything whatever about your case. Kindly write us fully stating symptoms of the disease, action of the medicine upon you, when you commenced taking Hall's Catarrh Medicine and when you discontinued its use.

In regard to our guarantee, will say that we require that the patient prove that he has catarrh not complicated with any other disease; that he has taken strictly according to directions a sufficient number of bottles of Hall's Catarrh Medicine to cure his particular case and that he has not been cured. We believe that these restrictions are fair and are only such as would be required in any business transaction.

Hall's Catarrh Cure and Hall's Catarrh Medicine are one and the same. The name will be changed in Canada as soon as our advertising can be changed.

Yours,

F. J. CHENEY & Co.

One gathers from the last letter of F. J. Cheney & Co. that before a victim can get his hundred dollars he has to prove (1) that he has taken enough Hall's Catarrh Cure "to cure his particular case" and (2) that his particular case "has not been cured"! Did ever a thimble rigger, caught at cheating, put up a flimsier defense?

Our Canadian correspondent's request that we suggest some one in the Ohio State Legislature to

whom he might write relative to the matter discussed must, perforce, remain unanswered. Long experience has shown that state legislators are strongly averse to doing anything that will hurt local industries, especially when such industries are extensive advertisers in the local newspapers.

The information contained in the closing paragraph of the Cheney letter to the effect that Hall's Catarrh Cure and Hall's Catarrh Medicine are one and the same and that the Canadian labels will, before long, more nearly tell the truth, is interesting. We wonder whether the Cheney concern will also take off the Canadian label the hundred dollar "guarantee" which now appears on it. This guarantee does not appear on the United States label. Possibly the fact that the federal Food and Drugs Act makes lying on the label irksome may have something to do with it.

Health Officers.—An energetic health officer can control the local death rate if given a few years to do it; but to expect great results in the time he ordinarily holds office is beyond human power.—Public Health, Michigan.

TANLAC TESTIMONY FROM THE TOMBS!

[No. 3]

Cumberland Evening Times.

FRIDAY MARCH 15, 1918

FOOD REPELLED FOR MANY YEARS

Cumberland Grocer Says Tanlac Brings Back His Lost Health

A. L. Wingert, 171 North Centre Street, had been in the grocery business for fifteen years in Cumberland, prior to his recent retirement because of ill health.

"I have not felt as I should in many years, declared Mr. Wingert. "I had absolutely no desire for food. Pains in the stomach and a dull listless feeling after eating were not uncommon. I sent for a bottle of Tanlac and began using it, according to directions.

"Tanlac has done me a wonderful lot of good. My health is surely coming back to me. I have a ravenous appetite and everything I eat digests easily—thanks to Tanlac. I sincerely recommend Tanlac to anyone in Cumberland who suffers as I did."

Tanlac is now being specially introduced and explained in Cumberland at Eichenstein's drug store, by Mr. Rivenburgh, the Tanlac Man.—Advertisement.

A TRUE COPY. CERTIFIED.		STATE OF MARYLAND CERTIFICATE OF DEATH	
PLACE OF DEATH County <u>Allegany</u>		Registration Dist. No. <u>5</u>	
Village or City <u>Cumberland</u>		(If death occurred in a hospital or institution, give its NAME instead of street and number.)	
FULL NAME <u>Alfred Lenahan Wingert</u>			
PERSONAL AND STATISTICAL PARTICULARS			
SEX <u>Male</u>	COLOR OR RACE <u>White</u>	MARRIED <u>Single</u>	DATE OF DEATH <u>Mar. 9, 1918</u>
DATE OF BIRTH <u>Feb. 16, 1863</u>		I HEREBY CERTIFY, That I attended deceased from <u>Nov. 1st, 1918</u> to <u>Mar. 9, 1918</u> , and that death occurred on the date stated above, at 11 P.M.	
OCCUPATION <u>Merchant</u>		The CAUSE OF DEATH was as follows: <u>Chronic Interstitial Nephritis.</u>	
BIRTHPLACE <u>Pa.</u>		Contributory <u>Chronic Endocarditis</u>	
NAME OF FATHER <u>John Wingert</u>		Length of Residence <u>10</u> years	
NAME OF MOTHER <u>Eliza Wright</u>		Place of Birth <u>Cumberland, Md.</u>	
PLACE OF BIRTH <u>Pa.</u>		Length of Residence <u>171 No. Centre St.</u>	
THE ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE		PLACE OF BURIAL OR REMOVAL <u>Mar. 12, 1918</u>	
Signature <u>John Wingert</u>		Signature <u>Mar. 12, 1918</u>	
Address <u>171 No. Centre St.</u>		Signature <u>Mar. 12, 1918</u>	
Date <u>Mar. 12, 1918</u>		Signature <u>Mar. 12, 1918</u>	

Note: The writer of the testimonial had been dead nearly a week when his testimonial appeared.

I answered this and received the one dated December 20, 1917. After some inquiry, I discovered that they could not advertise this medicine as a "cure" in the U. S. A., therefore, it is "Hall's Catarrh Medicine." I wrote and told them all this and also that it would not cure catarrh, and asked them to live up to the terms of their guarantee. In answer I received the letter dated March 7, 1918. I am writing them today enclosing a druggist's certificate that I bought and paid for the medicine, and a certificate from a local doctor that I am suffering from nothing except catarrh. I also told them I was taking the matter up with your Association.

Any information which you might give me as to how to proceed would be appreciated. Can you tell me who to write to in the State Legislature in the Capital of Ohio?

Here is the letter of December 7, referred to above, received from F. J. Cheney & Co.:

Dear Sir: It is very seldom that anyone takes as much medicine as you claim without deriving some benefit from its use. The only way we can account for this is that your trouble is complicated with some other disease, which, however slight, tends to retard the action of the medicine.

Hall's Catarrh Cure will do what we claim for it,—cure catarrh or deafness caused by catarrh—and if your trouble is wholly catarrhal, we can see no reason why you as well as so many others cannot be cured by its use.

Yours,

F. J. CHENEY & Co.

Correspondence

"THE GROUND GLASS OBSESSION"

To the Editor:—The editorial with this title (THE JOURNAL, March 23, 1918, p. 852) I fear is far from the truth, especially in this part of the country. I wish you really knew how much there is going on along this line. Enclosed are a few cuttings; these are absolutely authentic reports from headquarters. If it stopped at ground glass it might be easy; but steel filings, stone, sand of a very irritating kind, aluminum or wire filings, and brassy metal powders have all been found, and chemicals, such as potassium bitartrate. In fact, it is a growing evil, and it does not stop at flour stuffs. We reported to the attorney's office cases of delicatessen canned goods all "doctored," and had a big round up this week after a most serious finding. I regret the necessity of asking you to withhold my name from publication for this time, but I am an old member and am on war and secret service work, and after the continual fires and explosions here, we cannot be too careful. In fact, we are not sufficiently careful in our subways and other important points. Hence, I advise research in lines scarcely dreamed of, and I am sure Prof. E. M. Chamot of Cornell can bear me out in this. There is urgent need of work of a microchemical nature, for example, in the steel and wood work of aircraft. In these, supports have been cut and lead substituted in such a way as to be undiscovered except by metallomicro-analysis. In one instance this resulted in three machines coming down and killing our boys. Hence, as a matter of government, war and medical necessity, THE JOURNAL, our standby and support in this great medical, scientific and serious work, should urge closer and more careful work and far more methods of discovery to combat this powerful and wide awake enemy.

AN ARMY SURGEON.

THE USE OF IODIN IN THE PREPARATION OF THE PATIENT FOR DELIVERY

To the Editor:—The use of tincture of iodine in the preparation for abdominal section has become so general that its value as an antiseptic is well established. That its use in obstetrics has not become more general is surprising, especially when its many advantages are considered. The maintenance of asepsis even in the normal delivery offers many problems that are not encountered in surgical work.

The main objection to the use of iodine in this connection seems to be that first, many skins in the region of the vulva cannot tolerate its use, and secondly, many patients complain bitterly of burning and smarting subsequent to its application.

During the past few months at the Grace Hospital we have used several preparations or strengths of the tincture and have concluded that tincture of iodine, one-third strength, or tincture of Iodine, U. S. P., one part, Alcohol, two parts, offers a preparation that is almost ideal for use in obstetric work. Tincture of iodine of this strength has been used in the preparation for delivery of nearly 200 patients, and in no instance have there been any signs of dermatitis or any complaint of undue smarting or burning on the part of the patients. I have also used this preparation as a final procedure for delivery in private practice practically as a routine measure during the past four months.

At the hospital our technic of preparation of the patient for normal delivery is as follows: At the onset of labor the usual bath and enema are given, and the patient is clipped and shaved at the vulva. At the time of delivery or vaginal examination, the vulva and inner thighs are washed carefully with sterile green soap and sterile warm water. The vulva and thighs are now irrigated from above with 2 quarts of mercuric chlorid, 1:1,000, poured from a pitcher. If delivery is not to follow immediately, a sterile towel is wrung out in the mercuric chlorid solution and folded over the vulva. If, however, delivery is to follow shortly, the skin and vulva are dried by means of a cotton sponge on a stick and the prepara-

tion of iodine described above is applied by this same means. An area about 9 inches square should be covered beginning at the labia, then to the mons, the inner surface of the thighs, and lastly the anus. Every point within the area should be covered by the stain. The sterile drapings are now put in place by the physician or nurse so that only those parts of the vulva and thighs that have been stained are exposed.

By means of this painting or staining and only by this means are we positive that every part of our field has been treated by a suitable antiseptic. We can see just what has been covered.

I feel that the iodine in this connection gives a finishing touch to our preparation that makes for better technic, and that this extra precaution against infection gives added assurance to the obstetrician.

In cases of precipitate birth in which, owing to lack of time, the proper preparation is impossible, it is nearly always possible to use the iodine at least.

It seems to me also that if the iodine preparation could become more general in patients in poor surroundings, among midwives and the like, owing to its staining properties disinfection might be made more thorough.

HERBERT THOMS, M.D., New Haven, Conn.

OPPOSITION TO THE NEW YORK HEALTH INSURANCE BILL

To the Editor:—THE JOURNAL (April 6, 1918, p. 1017) states that on the hearing on the New York health insurance bill, the bill had "the unanimous endorsement of the State Federation of Labor, the Women's Municipal League, Women's Trade Union League, and the Consumer's League of New York."

It ought to be of interest to the readers of a purely medical journal to hear that this bill was opposed by every county medical society in New York State as represented by Dr. Henry Lyle Winter, chairman of the Committee on Economics of the state society, and also by Dr. James F. Raney, chairman of the Legislative Committee of the state society. The New York County Medical Society had four representatives to voice its opposition. The city of New York was represented by its new health commissioner, Dr. J. L. Amster, also in opposition to that bill. These are facts that others like myself, members of the American Medical Association and patrons of THE JOURNAL, are entitled to know as matters of vital interest and important news.

JOHN P. DAVIN, M.D., New York.

PREVENTION OF BLOOD CLOTTING BY DAKIN'S SODIUM HYPOCHLORITE SOLUTION

To the Editor:—We wish to record here very briefly a few facts with regard to the action of Dakin's solution on clotting. The solution used was obtained from the War Demonstration Hospital (Rockefeller Institute) freshly prepared every morning. Dog's, cat's and rabbit's blood flowed from an artery directly into Dakin's solution, one part of Dakin's solution to every five parts of blood. Such blood remains unclotted for ten or more days. For older solutions larger proportions must be used. The addition of a sufficient quantity of a calcium salt does not produce clotting. Neither does the blood become clotted by the addition of a foreign body, nor does fibrin form by whipping. The solution in this proportion produces a gradual laking of the red cells. When blood is drawn into an oxalate and centrifugalized, a clear plasma is obtained; when Dakin's solution is added to such plasma and the oxalate then neutralized by calcium salts, a clear, unclotted solution is obtained which can be kept for some time.

The addition of a tissue extract (thromboplastic substance, Howell) causes clotting of blood with Dakin's solution at any time. Blood which runs into Dakin's solution over body tissues is likely to clot. Whipping of blood kept fluid by Dakin's solution does not prevent subsequent clotting by tissue

extract. The prevention of clotting by Dakin's solution is evidently due to its action on the thrombin. Dakin's solution does not seem to prevent clotting of guinea-pig's blood in the proportion effective for dogs and rabbits. Blood of rabbits which received epinephrin clots in Dakin's solution within twenty-four hours.

The blood of dogs or rabbits which received intravenously Dakin's solution in the proportion of 7.5 c.c. to 1 kg. of body weight, drawn within four hours of the injection and kept at room temperature, remains fluid for several days. As a rule, such animals succumb sooner or later to such an injection. The sodium hypochlorite solution which we received from the hospital was slightly alkaline, but a simple alkaline solution equal in alkalinity to such a solution did not prevent clotting.

Our observations have among others the following practical significance: Dakin's solution employed in wounds with capillary bleeding does not sustain the continuation of a hemorrhage. This is probably on account of the presence of tissue fluid which neutralizes the anticoagulating effect of the solution employed. A detailed report will appear in the *Journal of Experimental Medicine*.

T. S. GITHENS, M.D., and S. J. MELTZER, M.D.,
New York.

Department of Physiology and Pharmacology, Rockefeller
Institute for Medical Research.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CHRONOLOGIC SCIENTIFIC DATA

To the Editor:—I am desirous of obtaining information as to the exact dates of certain events in medical history. If possible, please furnish me with the information requested below:

1. Exact date on which Dr. O. W. Holmes published his paper, discussing the contagious nature of puerperal fever.
2. Exact date in 1888 on which the Pasteur Institute was established.
3. Exact date in 1885 on which Pasteur began inoculation against hydrophobia.
4. Exact date in 1894 on which the use of diphtheritic serum was announced.
5. Exact date on which typhoid vaccination was announced.
6. Exact date on which chloroform was first used as an anesthetic.
7. Exact date in May, 1905, on which the discovery of the organism causing syphilis was announced.
8. Exact date on which American Medical Association was organized.
9. Exact date on which American Red Cross was organized.

R. C. WILLIAMS, M.D., Assistant Surgeon, U. S. P. H. S., Miami, Ariz.

ANSWER.—1. Feb. 13, 1843, Oliver Wendell Holmes read to the Boston Society for Medical Improvement his paper on "The Contagiousness of Puerperal Fever," which was published in the *New England Quarterly Journal of Medicine and Surgery*, April, 1843.

2. Nov. 13, 1888.

3. July 6, 1885.

4. *Deutsche medizinische Wochenschrift*, Dec. 4, 1890.

5. *Deutsche medizinische Wochenschrift*, Nov. 12, 1896.

6. Nov. 10, 1847.

7. Published simultaneously in the *Deutsche medizinische Wochenschrift*, May 4, 1905, and in the *Berliner klinische Wochenschrift*, May 29, 1905.

8. The American Medical Association was organized when a convention, representing all the organized medical societies, "resolved itself into the American Medical Association." This action was taken, May 7, 1847.

9. There was a Red Cross organization in the United States as far back as 1869. It was incorporated in 1881 and again in 1893 and in 1900. In 1904 the American Red Cross was entirely reorganized, and Jan. 15, 1905, Congress passed an act incorporating the present American National Red Cross and establishing the conditions that should shape its career. The incorporation papers for the Red Cross organization in 1881 were filed, October 7, at 3 o'clock.

CONTRACT SURGEONS

To the Editor:—Kindly give me some information about contract surgeons in our Army. Do salaries vary or are all paid the same amount? What is the salary? Would a specialist be assigned to his specialty in this contract service, or to any kind of work where he would be needed?
A. G.

ANSWER.—According to the Act of Feb. 2, 1901: "In emergencies the Surgeon-General of the Army, with the approval of the Secretary of War, may appoint as many contract surgeons as may be necessary, at a compensation not to exceed \$150 per month." According to the Manual for the Medical Department, contracts are entered into only by the Surgeon-General or by his authority. They are either general or special. A general contract obligates the contract surgeon to take station and change station as ordered. He is furnished quarters and receives pay as stipulated in the contract, and the travel, fuel and light allowances of a first lieutenant. He is expected to give his entire time to the public service. If the exigency requiring the employment of a contract surgeon is likely to be temporary, contracts are made for a term of three months or less; if its longer continuance is probable, the term is one year. In either event, it is subject to annulment when the services of the physician are no longer required.

Special contracts are for local service only at stations designated where the amount of service called for is not sufficient to warrant the assignment of a medical officer. No travel is required under such contracts. The physician contracted with is not expected to take station at the post or to give up his private practice except so far as it is necessary to do so in order to carry out his public duties. He is not furnished quarters or other allowances.

CONTRIBUTIONS FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—A number of times recently I have noticed requests for surgical instruments to be donated and sent to various fields of usefulness. A woman whose husband was a prominent physician here up to the time of his death wishes to know where to send the balance of his instruments that they may be of the most service. They are in good condition, are for the greater part of the old style ebony handle days, are mostly bone amputating sets, etc., and include an old fashioned light wooden splint outfit.

C. W. ELLYSON, M.D., Waterloo, Iowa.

ANSWER.—The instruments may be sent to Dr. W. W. Keen, 1729 Chestnut Street, Philadelphia. Dr. Keen has asked those who have surgical instruments to spare to donate them to the civilian physicians of Belgium and France. Even old fashioned instruments can be disinfected, and they will prove of the greatest use when these physicians return to their devastated homes.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 14. Sec., Regular Board, Dr. T. J. Stout, Brinkley; Sec., Homeopathic Board, Dr. W. B. Hughes, 900 Scott St., Little Rock; Sec., Eclectic Board, Dr. C. E. Laws, Ft. Smith.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu. MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

Scarcity of Mercury in Denmark.—S. Lomholt writes to the *Ugeskrift for Læger* of Copenhagen to warn of the necessity for strict economy in the use of mercury. He says that most unexpectedly it has been found that the supply is cut off by the new American blockade policy, just when the supplies on hand were unusually low. He doubts whether the condition can be much improved, as mercury is used in the manufacture of munitions. No one seems to have foreseen the possibility of a scarcity of mercury. He suggests that mercury be given in treatment of syphilis by intravenous injection instead of the wasteful inunction method, with which only about 1 per cent. is absorbed.

Book Notices

FRESH-WATER BIOLOGY. By Henry Baldwin Ward, Ph.D., Professor of Zoology in the University of Illinois, and George Chandler Whipple, Professor of Sanitary Engineering in Harvard University. With the Collaboration of a Staff of Specialists. Cloth. Price, \$6. Pp. 1111, with 1,547 illustrations. New York: John Wiley & Sons, 1918.

Fresh-water biology in North America has hitherto been a comparatively untilled field, as the earliest records of biologic research date back scarcely fifty years. The studies of Ward and Whipple, prepared with the aid of twenty-five skilled collaborators and recently published for textbook and reference use, give the literature an auspicious start. Each chapter concerns a simple group of organisms, whose life history is given in condensed form. Especially valuable for the student are the descriptions of the various methods of collecting, preserving and studying the organisms of the different groups. The first few chapters discuss general biologic factors. This discussion, however, is not confined to the introductory pages, as a later chapter on Rotifera includes an admirable description of the life processes that apply to all groups of many-celled organisms. Fresh-water life is roughly divided into two groups—plant and animal organisms. The plant group comprises the bacteria, or lowest type in water, the higher plants, and the omnipresent algae, the last being exhaustively treated. Classified at even greater length are the twelve animal groups, ranging from the Protozoa and the sponges up to the Mollusca and the aquatic vertebrates. The final chapter is an interesting study of those technical and sanitary problems that vex municipal health authorities and sanitary engineers. Here Whipple considers fresh water as a medium for conveying diseases either indirectly, through the breeding of mosquitoes, as in yellow fever and malaria, or directly, through the infection of drinking water and the aquatic food supply, as in typhoid, Asiatic cholera and dysentery. The chapter furnishes a wealth of practical information on such subjects as the elimination of bacteria in water by means of filtration, aeration and the use of chemicals; the treatment of sewage; the disinfection of swimming pools, and the various methods of killing algae and animal organisms and of checking their growth in reservoirs and standpipes.

SURGERY AND DISEASES OF THE MOUTH AND JAWS. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilray Papin Blair, A.M., M.D., F.A.C.S., Professor of Oral Surgery in the Washington University Dental School. Third Edition, Revised so as to Incorporate the Latest War Data Concerning Gunshot Injuries of the Face and Jaws. Compiled by the Section of Surgery of the Head, Subsection of Plastic and Oral Surgery, Office of the Surgeon-General of the Army, Washington, D. C. Cloth. Price, \$6. Pp. 733, with 460 illustrations. St. Louis: C. V. Mosby Company, 1917.

The enormous number of injuries in battle involving the mouth parts, with a large percentage of jaw fractures, which require the combined services of both the general and the oral surgeon, caused the Surgeon-General to establish a special division composed of general surgeons especially trained in plastic operations on the face and neck, and dental surgeons especially trained in the treatment of fractures and other jaw injuries. As chief of this division, Major Blair saw the need of a book covering this particular field, and therefore incorporated in this edition of his book the latest data relative to gunshot injuries of the oral region, thus correlating the mass of recent literature on this subject. The book reflects close association with the rapid changes in methods that have occurred since the opening of the war, and merits careful reading by every member of the Medical and Dental Corps. The chapters on plastics of the face and neck, fractures of the jaws, and anesthesia are exceptionally well presented and fully illustrated. The chapter on plastics occupies thirty-one pages and has thirty-five illustrations, many from cases in the author's practice; the chapter on fractures of the jaws occupies sixty pages and contains fifty-nine illustrations. The book is not confined to war surgery; it covers the entire field of oral surgery. The more important chapter titles include cleft palate, which is fully presented and illustrated, the regional anatomy, infections, hemorrhage,

shock, wounds; ankylosis of the temporomandibular joint, fractures of the nasal bones and deformities of the nose, infections in and adjacent to the teeth, chronic infections of the mouth, diseases of the maxillary sinus, tumors of the mouth and jaws, affections of the salivary glands, tuberculosis of the cervical lymphatics, diseases involving the pharynx, motor derangements, and tic douloureux.

Medicolegal

Knowledge of Nature and Duration of Disease is Privileged

(*Lombard vs. Columbia National Life Insurance Co. (Utah)*,
168 Pac. R. 269)

The Supreme Court of Utah holds that there was no error in this section on a life insurance policy, in excluding, as privileged, the testimony of a physician, who attended the insured, as to the nature and duration of the disease of which the latter died. The court says that, under the Utah statute, the question as to how or when the physician acquired the information sought to be proved is immaterial. If it was information acquired while attending the patient which was necessary to enable the physician to prescribe or to act for the patient, then, under the statute, it would be privileged. The facts proposed to be proved in this case were that the insured died of cancer of the stomach and liver; that, after the physician had ascertained the fact of the disease, he considered it due the afflicted man to tell him of the seriousness of his condition and that it was incurable, and that after that the man wept and then voluntarily told the physician, without any further inquiry, that he had been sick for two years suffering with his stomach and pains in his back. Under the authorities the question of the admissibility or inadmissibility of the foregoing proposed testimony, under statutes similar to that of Utah, is not easily determined. And this court has determined, in common with many other authorities, that not all communications made to the attending physician are excluded under the provisions of the statute. But the fact that the insured was afflicted with cancer could become known to the physician only while attending the patient, and was, of course, necessary to enable him to prescribe for him. The knowledge that the patient died of that disease would also be a matter the physician would ascertain from his treatment of the patient. Clearly such facts would be privileged as being information acquired while attending the patient. The further fact proposed to be proved by the physician, as to the statement made by the insured, would not, standing alone, without other aid or explanation, prove or tend to prove the insured died of cancer, or prove the nature of the disease that caused his death. In addition, it must, the court thinks, be accepted as a fact, universally recognized not only by the medical profession but by every one, that a physician, in attending or prescribing for a patient, of necessity ought to know and does know, and does ascertain for that purpose from his patient, the duration of the disease, which, of necessity, must aid him in determining the nature of the treatment to be given, the patient's strength or ability to undergo surgical operations or take other severe treatment, and the likelihood of such treatment proving beneficial or proving fatal, as it did in this case. Such would seem to be accepted as a matter of common everyday knowledge, and, as such, recognized and enforced by the courts. The fact as to whether the disease to be treated is chronic or acute—in other words, its duration—surely is a part of the information that every physician would want to know and would need to know in the intelligent discharge of his duties, to enable him to prescribe for and treat his patient. Whether the physician acquired the information, as stated above, from voluntary statements of the patient, or whether it was acquired from investigation or inquiry on his part, it would, nevertheless, be included within the information privileged under the statute.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.
 Alabama State Medical Association, Birmingham, April 16.
 Alpha Omega Alpha Society, Chicago, June 10.
 American Climatological and Clin. Assn., Boston, June 5-6.
 American Dermatological Association, Philadelphia, May 23-25.
 American Gastro-Enterological Association, Atlantic City, May 6-7.
 American Gynecological Society, Philadelphia, May 16-18.
 American Laryngological Association, Atlantic City, May 27-29.
 American Médico-Psychological Association, Chicago, June 4-7.
 American Orthopedic Association, Washington, D. C., April 22-23.
 American Otolological Society, Atlantic City, May 28-29.
 American Pediatric Society, Lenox, Mass., May 27-29.
 American Proctologic Society, Chicago, June 10-11.
 American Therapeutic Society, Richmond, Va., June 7-8.
 Arizona Medical Association, Phoenix, April 24-25.
 Arkansas Medical Society, Jonesboro, May 7-9.
 Association of American Physicians, Atlantic City, May 7-8.
 California State Medical Society, Del Monte, April 16-18.
 Connecticut State Medical Society, Hartford, May 15-16.
 Georgia State Medical Association, Savannah, April 17-19.
 Illinois State Medical Society, Springfield, May 21-23.
 Iowa State Medical Society, Fort Dodge, May 8-10.
 Kansas Medical Society, Kansas City, May 1-3.
 Louisiana State Medical Society, New Orleans, April, 16-18.
 Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
 Massachusetts Medical Society, Boston, June 18-19.
 Michigan State Medical Society, Battle Creek, May 7-9.
 Mississippi State Medical Association, Jackson, May 14-15.
 Missouri State Medical Association, Jefferson City, May 6-8.
 Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
 Nebraska State Medical Association, Omaha, May 7-9.
 New Hampshire Medical Society, Concord, May 15-16.
 New Jersey Medical Society, Spring Lake, June 25-26.
 New York State Medical Society, Albany, May 21-24.
 North Carolina State Medical Society, Pinehurst, April 16-18.
 North Dakota State Medical Association, Fargo, June 19-20.
 Oklahoma State Medical Association, Tulsa, May 14-16.
 Oregon State Medical Association, Portland, June 27-29.
 South Carolina Medical Association, Aiken, April 16-18.
 South Dakota State Medical Society, Mitchell, May 21-23.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

March, 1918, 77, No. 3

- 1 Functions of Woman's Hospital in Large City. E. B. Cragin, New York.—p. 353.
- 2 *Preliminary Report of an Operation for Cystocele. R. M. Rawls, New York.—p. 359.
- 3 Conflict of Clinical with Microscopic Evidence in Diagnosis of Tubal and Ovarian Pregnancies. J. W. Bovée, Washington, D. C.—p. 370.
- 4 *Effect of Ingestion of Desiccated Placenta During First Eleven Days of Lactation. Preliminary Report. L. G. McNeile, Los Angeles.—p. 377.
- 5 Pyelitis Complicating Pregnancy. A. B. Davis, New York.—p. 383.
- 6 Estimate of Radium Therapy in Uterine Cancer. W. S. Stone, New York.—p. 390.
- 7 *Unusual Ulcerative Process of Vulva. H. Schiller, Chicago.—p. 398.
- 8 Report of Fibromyxomatous Degeneration of Chorion with Four Consecutive Pregnancies in Same Patient. J. C. Applegate, Philadelphia.—p. 400.
- 9 Surgical Treatment of Cancer of Large Intestine. H. Shann, Brooklyn.—p. 403.
- 10 Disease Conditions in Older Babies Attributable to Prenatal Influences. R. G. Freeman, New York.—p. 459.
- 11 How Pediatrician and Obstetrician Can Cooperate. J. C. Litzenberg, Minneapolis.—p. 463.
- 12 What Pediatrician Can Do to Reduce Mortality in First Month of Life. G. Lippmann, St. Louis.—p. 469.
- 13 War Work in England, France and Germany with Special Reference to Care of Women During Pregnancy and Labor. M. Belt, Baltimore.—p. 474.
- 14 Reduction of Infant Mortality Due to Prenatal and Obstetric Conditions. F. V. Beitler, Baltimore.—p. 481.
- 15 Review of Wisconsin "Eugenics Legislation." M. F. Guyer, Madison, Wis.—p. 485.

2. New Operation for Cystocele.—The technic offered by Rawls is an extraperitoneal operation with a free mobilization of the bladder and its pillars. A small volsellum forceps is applied to the mucous membrane of the anterior vaginal

wall about 1 cm. above the cervix and another forceps about 1 cm. below the external urethral orifice. Between these forceps a vertical incision is made through the mucosa and superficially into the underlying tissues. The incision is carefully carried forward until, in the midportion, the bladder can be demonstrated by blunt dissection. This blunt dissection is continued downward until the cervical attachment of the bladder pillars and the so-called uterovesical ligaments are demonstrated. The latter is cut with scissors, keeping well in midline to avoid severing any of the cervical attachments of the bladder pillars. The bladder is separated by blunt dissection, from the cervix upward to the peritoneal reflection and laterally well out to either side, and from the underlying pillars upward to the urethra and well out on either side. If there is a urethrocele, the dissection is carried up to the external urethral orifice. When the bladder is well mobilized, the bladder pillars are dissected from the underlying vaginal mucosa. The bladder and its lateral true ligaments are now freely mobilized and the latter are overlapped from side to side by transverse mattress sutures of medium kangaroo tendon, at the level of the internal os one or two sutures enter the cervical tissue. These sutures prevent anteroposterior shortening of the anterior wall of the vagina and draw the underlying fascia smoothly under the overlapping fascia. In addition the cervical suture reattaches the fascia to its original place on the cervix and forms a shelf on which the bladder rests. After the mattress sutures are tied, the free edge of the overlapping fascia is sutured, by interrupted sutures of fine kangaroo tendon, to the underlapped fascia. The paper-thin vaginal mucosa flap, caused by dissection, is now excised for a short distance on either side. Its edges are approximated in midline by interrupted suture of ten-day chromic catgut. To prevent a dead space between the fascia and mucosa a vaginal pack of iodoform gauze is used and is removed the fourth day after operation. The method is said to be applicable to all forms of cystocele, but when there is a complete prolapse of the uterus, other methods must be used in addition, to relieve the injury to the posterior segment of the "holding apparatus" and the injury to the supporting apparatus.

4. Effect of Desiccated Placenta on Lactation.—The results of McNeile's investigation do not warrant any definite conclusions. In the patients fed desiccated placenta there was apparently some change in the chemical composition of the milk during the first eleven days postpartum. The most marked change was an increase in the percentage of lactose and this was accompanied by a slight increase in the percentage of protein, and a slight decrease in the percentage of fat. There was no deficiency in the amount of milk in any of the cases receiving desiccated placenta, but the reverse was true in the cases which did not receive this agent. There was apparently a slight decrease in the initial loss of weight in the infants of mothers receiving the desiccated placenta, over those whose mothers did not receive it. At the end of eleven days the babies whose mothers received the agent were about 4 ounces heavier than those that did not.

7. Ulceration of Vulva.—Schiller's case was one of acute ulceration of the vulva, which was preceded and accompanied by chills and fever, burning and general malaise, acute ulcerations which had all the characteristics of ulcer mollior or soft chancre. The presence of a peculiar form of bacilli in all smears, the absence of all other microbes and the rather unusual clinical picture show this was not a case of one of the known and well studied and recognized ulcerative processes of the vulva, but with a lesion not previously described.

American Journal of Roentgenology, New York

March, 1918, 5, No. 3

- 16 Development of Foreign Body Localization by Means of Roentgen Rays. J. T. Case, Battle Creek, Mich.—p. 113.
- 17 Inverted Comma Sign in Pulmonary Roentgenology. A. W. Crane, Kalamazoo, Mich.—p. 124.
- 18 Roentgenologic Study of Effects of Dust Inhalation on Lungs. H. K. Pancoast, T. G. Miller and H. R. M. Landis, Philadelphia.—p. 129.
- 19 Classification of Pulmonary Tuberculosis; Comparative Analysis of Different Methods Employed. F. H. Heise and H. L. Sampson, Trudeau.—p. 139.

American Review of Tuberculosis, Baltimore

March, 1918, 2, No. 1

- 20 *Prognosis and Treatment of Tuberculous Lesions of Larynx. J. Dworetzky, Otisville, N. Y.—p. 1.
- 21 *Tobacco and Throat Complications in Pulmonary Tuberculosis. W. S. Duboff, Edgewater, Colo.—p. 21.
- 22 *Effect of Inhalation of Cigaret Smoke on Lungs. G. B. Webb.—p. 25.
- 23 *Typhoid Bacteremia During Course of Miliary Tuberculosis. A. Bloomfield, Baltimore.—p. 28.
- 24 Control of Careless Consumptive. D. R. Lyman, Wallingford, Conn.—p. 36.

20. **Treatment of Tuberculous Lesions of Larynx.**—Summarizing the treatment of tuberculosis of the larynx, Dworetzky says that the most important measures are: (1) the local and general prophylaxis; (2) the general treatment; (3) vocal rest in selected cases; (4) topical applications with a solution of iodine in increasing strengths.

21. **Tobacco and Throat Complications in Tuberculosis.**—A statistical study made by Duboff to determine the influence of tobacco as an etiologic factor in laryngeal involvement during the course of pulmonary tuberculosis. One thousand histories of tuberculous cases were studied. Of the 1,000 cases there were 793 males and 207 females (3.8-1). There were 299 throat cases (29.9 per cent.). Among the 793 men there were 240 throat cases (30 per cent.) and 368 (46 per cent.) light, moderate or excessive smokers. Of these 368 smokers 133 (36.1 per cent.) developed "throats," while among 425 nonsmokers there were 107, or 25.2 per cent. Among 207 women 59 had throat involvement (29 per cent.). Duboff concludes therefore that throat complications are probably no more frequent in tobacco users than in those who use no tobacco. Laryngitis, whether of specific character or not, is as equally common among women as among men in the course of pulmonary tuberculosis. In an equal number of men and women with pulmonary tuberculosis, the majority of throat involvements will be associated with a negative tobacco history. Tobacco obviously does not predispose to laryngeal complications.

22. **Effect of Cigaret Smoke on Lungs.**—There is no doubt in Webb's mind that the inhalation of cigaret smoke produces ronchi. The majority of cigaret smokers examined by him revealed the presence of bronchial ronchi, whereas the majority of nonsmokers, of pipe smokers and of cigar smokers do not show such evidence. Bull Durham causes more irritation than other tobaccos. In addition to ronchi, medium and coarse râles were observed in many heavy cigaret smokers. These râles would usually disappear after several coughs. Occasionally a very quiet vesicular murmur was observed. Regarding the soldiers who were found tuberculous and deemed unfit for service by Webb and his co-workers on War Department tuberculosis boards, the table indicates that a somewhat larger percentage of nonsmokers were discharged than smokers. Adding to the nonsmokers those who do not inhale and who do not show evidence of the production of ronchi, namely, the pipe and cigar smokers, the observation was made that 30 per cent. of those discharged, on account of pulmonary tuberculosis did not inhale cigarets. These studies would at least suggest that the inhalation of the smoke of cigarets does not aid in the outbreak of pulmonary tuberculosis.

23. **Typhoid Bacteremia in Miliary Tuberculosis.**—Two cases are reported by Bloomfield which are probably to be looked on as cases of miliary tuberculosis in whom an accidental invasion of the blood with typhoid bacilli occurred. A previous carrier state would most adequately explain the source of the organisms.

Annals of Surgery, Philadelphia

March, 1918, 67, No. 3

- 25 *Effect of Trauma on Laryngeal Nerves. E. S. Judd, G. B. New and F. C. Mann, Rochester, Minn.—p. 257.
- 26 *Pneumococcus Peritonitis. P. Syms, New York.—p. 263.
- 27 Obstructive (Malignant) Jaundice. J. F. Erdmann, New York.—p. 273.
- 28 Acute and Subacute Pancreatitis; Report of Seven Cases. S. H. Watts, Charlottesville, Va.—p. 278.
- 29 Case of Accessory Pancreas with Intussusception. A. E. Benjamin, Minneapolis.—p. 293.
- 30 Splenectomy in Splenomegalies. A. J. P. Pacini, Brooklyn.—p. 299.

- 31 Inflammatory Tumors of Abdomen. P. I. Nixon, San Antonio, Texas.—p. 336.
- 32 *Osseous Cysts and So-Called Giant-Cell Sarcoma. E. Platou, Christiania, Norway.—p. 312.
- 33 Regeneration of Bone. A. A. Berg and W. Thalhimer, New York.—p. 331.
- 34 Traumatic Luxation of Sacro-Iliac Symphysis without Fracture of Pelvis. J. A. Simpson, San Francisco.—p. 348.
- 35 Fibrocystic and Cystic Lesions in Bone. G. Barrie, New York.—p. 354.

25. **Effect of Trauma on Laryngeal Nerves.**—From time to time, a complete or partial paralysis of the vocal cords is seen following thyroidectomy. The purpose of this research was to determine if possible the cause of such paralysis. The method of experimentation consisted in traumatizing the laryngeal nerves in a manner similar to that which could occur in an operation and subsequently to study the function of the vocal cords. It was seen that section of the recurrent laryngeal nerve produces complete paralysis of the vocal cord of the corresponding side which in all probability will be permanent. Ligation of the recurrent laryngeal nerve with linen, chromic catgut or plain catgut produces complete and probably permanent paralysis of the vocal cord of the corresponding side. Stretching the recurrent laryngeal nerves acutely in a manner similar but of longer duration and intensity than occurs in operation does not impair the function of the vocal cord. Stretching the recurrent laryngeal nerves for a long period, as over muscles, impairs the function of the vocal cords, but the impairment is probably due to the operative trauma and not to the stretching. Pinching the recurrent laryngeal nerves with a hemostat in a manner similar to that which may occur in an operation, produces temporary paralysis of the vocal cords. Restoration of function always occurs, the length of time necessary for restoration depending on the anatomic point at which the nerve was crushed. The time found necessary for complete regeneration of the nerve when injured in the areas usually traumatized by operation varies between thirty and sixty days. Exploration of the recurrent laryngeal nerves produces an effect on the vocal cords depending on the amount of trauma to which the nerves are subjected. Careful dissection will probably not produce any effect; the paralyzes noted were probably due to pinching and other traumatic procedures.

26. **Pneumococcus Peritonitis.**—Syms maintains that idiopathic peritonitis does occur. Pneumococcus peritonitis is a rare disease, particularly affecting girls under 15 years of age. It may occur (1) as a single lesion, that is, alone; (2) as a sequel to some other site of infection, as the lung, pleura, etc.; (3) it may be followed by invasion of other localities, lung, pleura, etc.; (4) it may be a local manifestation of a general septicemia. Syms suggests that probably it is always that. Pneumococcus peritonitis is found in two forms: (1) the diffuse; (2) the encysted. These forms may represent different types or varieties of the disease or they may represent different stages of the disease. This is yet to be demonstrated. When the peritonitis is encysted the prognosis is good, spontaneous recovery may take place in one of several ways. Operation results in a high percentage of recoveries (86 per cent.). When the peritonitis is diffuse the prognosis is bad—death is the rule. Operation results in very high mortality (86 per cent.; in some series 100 per cent.). We recognize a symptom syndrome which should make diagnosis reasonably certain in typical cases. Operation should not be performed in the diffuse form. Operation should always be performed in the encysted form.

32. **Osseous Cysts and Giant-Cell Sarcoma.**—Platou reports cases showing that osteitis fibrosa with formation of tumor is not very rare. It occurs most often in young persons, but may also be found in persons of 50 to 60. Trauma appears in many cases to be an etiologic factor, although we are unable to explain how it can cause the disease or influence its genesis. The course of the disease is chronic with comparatively slight symptoms, rheumatic pains, and a slow swelling of the affected bone. The general health is good. Spontaneous fracture or bending of the bones may occur. The roentgenogram is often typical, but sometimes it is impossible to decide whether the diagnosis might not with equal correctness be given as sarcoma. The treatment is

exclusively surgical, all diseased tissue must be carefully removed, albeit with an obligation to be as conservative as possible. When the bone is opened the cavity is found to be more or less filled with a brownish red or sometimes yellowish, crumbling tumor tissue. The borderline is, as a rule, sharply drawn, although the same tissue may be found outside the periosteum. Under the microscope the destruction of the bone is seen to take place in a connective tissue with few cells, that is, fibrous marrow. Formation of new bone is also seen. The tumor-like tissue is built up partly by very polymorphous cells with numerous and uncommonly large giant cells, partly from a fibrous tissue with few cells. Mucous tissue with softening and formation of cysts also occurs. It is sometimes difficult to decide that the diagnosis is not sarcoma. The disease is benign even when the periosteum is perforated.

Archives of Ophthalmology, New Rochelle, N. Y.

March, 1918, 47, No. 2

- 36 Distortions of Visual Fields in Cases of Brain Tumor: Chiasmal Lesions, with Especial Reference to Homonymous Hemianopsia with Hypophyseal Tumor. C. B. Walker and H. Cushing, Boston.—p. 119.
- 37 Headache as Result of Eyestrain. J. Dunn, Richmond, Va.—p. 146.
- 38 Ocular Anaphylaxis. Experimental Iridocyclitis. A. C. Woods, Philadelphia.—p. 161.
- 39 Surgical Treatment of Corneal Suppuration in Exophthalmic Goiter. A. Knapp, New York.—p. 173.
- 40 Narrowing of Pupil Does Not Lower Normal Intra-Ocular Tension (100 Cases). A. M. Carr, Urbana, Ill.—p. 77.
- 41 Dental Infection in Eye Diseases. W. F. C. Steinbugler, New York.—p. 182.
- 42 Eye Manifestations in Case of Polycythemia. M. Cohen, New York.—p. 192.

Archives of Pediatrics, New York

February, 1918, 35, No. 2

- 43 *Pus Corpuscles in Infant Stool. J. Zahorsky, St. Louis.—p. 65.
- 44 Nineteen Cases of Hyperphasia of Thymus, Treated by Roentgen Rays. J. E. Benjamin and S. Lange, Cincinnati.—p. 70.
- 45 State Care of Feeble-minded. C. W. Burr, Philadelphia.—p. 77.
- 46 Cyanosis, Icterus and Hemoglobinuria in Newborn (Winckel's Disease). M. H. Bass, New York.—p. 84.
- 47 Comparison of Three Methods of Determining Defective Nutrition. F. A. Manny, New York.—p. 88.
- 48 Care of Children of Pre-School Age. L. T. Royster, Norfolk, Va.—p. 95.

43. **Pus Corpuscles in Infant Stool.**—For two years Zahorsky has made a study of the infant stool for the presence or absence of pus corpuscles. He has reached the conclusion that a pus index of more than 10 indicates an infection of the intestinal mucous membrane; that an infectious process of some solitary follicles (or some other part of the mucous membrane) exists in many cases which are diagnosticated fermentative diarrhea. The so-called summer diarrhea is generally an infectious process.

Boston Medical and Surgical Journal

March 21, 1918, 178, No. 12

- 49 Value of Physician and of Nurse in Social Service Work in Tuberculosis; Responsibility of Each to State and to Patient. J. B. Hawes, 2d, Boston.—p. 381.
- 50 Cases of Spontaneous Pneumothorax. P. H. Pierson, San Francisco.—p. 385.
- 51 Disabled Shoulders, with Especial Reference to Subacromial Bursitis. H. F. Day, Boston.—p. 389.
- 52 *Red Streak; Sign of Disease. E. A. Tracy, Boston.—p. 392.
- 53 Welfare Insurance and Factory. J. F. Curran, Worcester.—p. 394.
- 54 Control of Smallpox Epidemic by Vaccination. A. G. Gould, Akron, Ohio.—p. 395.
- 55 Preoperative Diagnosis by Roentgen Ray of Hair Cast of Stomach. F. W. O'Brien, Boston.—p. 396.

52. **Red Streak; Sign of Disease.**—The red streak is defined by Tracy as the reflex diastole lasting over fourteen seconds, evoked by stroking the face with a suitable instrument, such as a smooth wooden tongue depressor, with a pressure of approximately 2½ ounces. Preferably, a cheek is stroked, otherwise the forehead. When present in nonmedicated cases, invariably a diseased bodily condition was also present. The red streak may be taken, therefore, as a sign of disease. This view is based on a study of 392 cases in which the red streak

was found present. In 310 of the cases—79 per cent. of them—a purulent condition in some part of the body was found; the remaining eighty-two cases being nonpurulent disease conditions of the body. For this reason, in nonmedicated cases, when the red streak is constantly present when tested for, the first thought is of pus. If thorough search excludes a pus focus, there is present infection, or a disturbance within the domain of endocrinology—a disturbance in the balance of the internal secretions—and manifested by lymphatism, hyperthyroidism, hyperplastic thymus, diabetes mellitus, etc. The relation of the red streak to the thyroid secretion has been shown in cases of mild myxedema, in which the normal reflex diastole of the face to stroking was absent. In these cases, on administering to them thyroid extract, the red streak appeared. Digitalis medication can also lengthen the normal reflex diastole of the peripheral blood vessels, and so give the red streak; likewise, pilocarpin. Functional heart cases—so-called nervous heart—is found associated with the red streak. Twelve cases were met with and tested. All gave the red streak. In four of these cases, the phenomenon of partial fading and intensifying of the streak, that is, active systole and diastole of the peripheral vessels, was visible. A practical illustration of the value of the red streak in diagnosis is furnished in focal infection. In several cases of apical abscesses, a positive diagnosis was made from the presence of the red streak associated with slight tenderness to pressure over the root that had at a previous period been opened and treated. The diagnosis in these cases of apical abscess was confirmed by roentgenogram or by evidence furnished on root extraction.

Bulletin of Canadian Army Medical Corps, Ottawa

March, 1918, 1, No. 1

- 56 *Spur-Like Formations of Bone Following Amputation. J. D. Morgan.—p. 2.
- 57 *Infectious Ulceromembranous Stomatitis and Gingivitis: Vincent's Disease or "Trench Mouth." F. B. Bowman.—p. 4.
- 58 *Studies on Streptococci Recovered from Sick and Wounded Soldiers in France. R. H. Malone and L. J. Rhea.—p. 6.
- 59 Importance of Early Diagnosis of Syphilis and Relation of Dark Field Examination and Wassermann Reaction to Diagnosis. A. B. Jackson.—p. 11.
- 60 The Ballenger "Sealed-in" Abortive Treatment for Gonorrhea. A. B. James.—p. 12.

56. **Spur-Like Formations of Bone Following Amputation.**—In the routine roentgen-ray examination of amputation stumps following on war wounds, Morgan has seen, in the majority of cases, a shadow projecting from one or other (usually the internal or posterior) border of the bone shaft near its extremity. In one case this represents but a small spicule; in another, a large thick spur; in a third, the impression given has been of the presence of a "wing" of bone. As a rule these project in an upward direction. They are frequently the source of considerable pain and discomfort, and are responsible for the persistence of a discharging sinus. Their presence, consequently, often necessitates a reamputation. Occasionally they recur following this operation. The presence of these spurs is one of the principal causes necessitating the reamputation of a stump. These operations have been very frequent during the past three years. It is obviously a matter of great practical importance, therefore, to prevent the formation of these spurs in the first place. Can this be done? Morgan agrees with Steiger that satisfactory results can be obtained by any of the three methods, provided (1) that the operation is properly performed; (2) that primary union occurs, and (3) that the stump is at an early stage accustomed to bear weight, and can thus adapt itself rapidly to its new functions.

57. **Infectious Ulceromembranous Stomatitis and Gingivitis.**—One thousand men were examined by Bowman in camp, both clinically and bacteriologically, to learn, if possible, the number of men who cleaned their teeth carefully and the number of men who did not, and the number of men in each of these groups showing Vincent's organisms present in numbers sufficient to be diagnostic; also the numbers of cases of clinically infectious gingivitis in each of these groups. The men examined may be divided into two classes: those with

clean and those with unclean teeth. In the first group there were 816 men, and 314, or 38.4 per cent., of these showed Vincent's organisms present, but very few in number; 20, or 6.4 per cent., showed large number of spirochetes and fusiform bacilli, and were, clinically, positive cases. In the second group there were 184 men, and 139, or 75.6 per cent., of these showed a few Vincent's organisms present; while in 59, or 32 per cent., the organisms were present in preponderating numbers, and these cases were all clinically positive. Thus it is shown that not only are Vincent's organisms much more prevalent in mouths in cases in which the teeth are not cared for, but clinically infectious gingivitis is also much more prevalent, and corresponds practically with the bacteriologic findings. "Trench mouth" may be described as an infectious disease of the mucous membranes of the mouth due to a spirochete and fusiform bacillus (Vincent's organisms), causing severe inflammation which may progress to ulceration, accompanied by constitutional disturbances, such as fever, gastric disorder, loss of weight, and marked depression.

58. Streptococci Recovered from Sick and Wounded Soldiers.—A series of cases examined by Malone and Rhea showed that in direct injuries of the knee joint and indirect injuries with fracture of the femur or tibia, streptococci are usually found before the fifth day. In secondary infections where there has been no fracture into the joint, streptococci are recovered from the knee-joint fluid from the eighth to the twentieth day. In thoracic injuries with infected hemothorax these organisms are found between the seventh and fourteenth day after injury. Nonhemolytic streptococci are an uncommon cause of the surgical complications of wounds, except in cases of hemothorax, in cases in which they are usually of the types found normally in the respiratory tract. *Streptococcus pyogenes* is the type most commonly found in infected wounds. It is also the most pathogenic. The evidence to support the latter view is as follows: Of eight cases of infection in the knee joint, five developed secondary abscesses in the thigh or calf. *Streptococcus pyogenes* was found in the knee fluid and abscess in each of these cases. Of three cases of infection in the knee joint which required amputation, two contained pyogenes. Four cases of infected hemothorax ended fatally; three of these were due to *Streptococcus pyogenes*. This organism was recovered from the three cases of infected open wounds of the soft tissues, which were complicated by an infected hematoma or abscess. There was only one serious case of infection in the knee joint that was not caused by *Streptococcus pyogenes*. There was only one mild case of an infected knee joint in which pyogenes was the causative agent, and this case had the advantage of very early surgical treatment. So far as streptococci are concerned in the surgical complications of wounds of war, the type which is most common, and leads to the most serious results, is the same as is met with in civil surgery.

Canadian Medical Association Journal, Toronto

March, 1918, 8, No. 3

- 61 Danger of External Use of Wood Alcohol. R. E. McKechnie, Vancouver.—p. 193.
- 62 Static Labyrinth and Ear Tests for Aviators. R. H. Craig.—p. 199.
- 63 Tuberculosis: One Hundred and Thirty-One Cases Treated by Artificial Pneumothorax. W. B. Kendall and C. C. Alexander, Gravenhurst, Ont.—p. 210.
- 64 *After-History of War Nephritis. War Nephritis Invalids to England. A. R. Robertson and others.—p. 218.
- 65 Duct Papilloma and Duct Carcinoma of Breast. O. R. Mabee, Toronto.—p. 225.
- 66 Rupture of Intestines by Blows on Abdomen. J. S. Wright, Edmonton.—p. 228.
- 67 Traumatic Rupture of Jejunum. L. B. Robertson.—p. 235.

64. After-History of War Nephritis.—Fifty patients were examined by the authors. Almost all cases show after a period of three months a trace of albumin, a few granular and hyaline casts, red blood cells, and pus. The chlorids and urea are about normal. Nocturnal micturition is present in nearly 40 per cent. of the cases, and there is probably a slightly greater amount passed during the night, between 8 p. m. and 8 a. m., than during the day. Many still complain of dyspnea, slight headache, pains across the lower part of

the back, and a few develop slight transient return of edema. They are usually very well nourished, and not anemic; in fact there was usually a striking absence of the pale countenance so common in the ordinary nephritis of civil life. The blood pressure is usually normal, and there is no enlargement of the heart. Structural retinal changes are rare, having been seen in only one of the authors' series. A striking feature has been the fact that in over half the cases there has been at the onset acute catarrh of some part of the respiratory passage, most frequently a bronchitis, which was usually regarded as simply a "cold."

Colorado Medicine, Denver

March, 1918, 15, No. 3

- 68 Causes of Iritis and Allied Inflammations. E. Jackson, Denver.—p. 63.
- 69 Carrel-Dakin Solution and Its Application. R. W. Corwin, Pueblo.—p. 69.
- 70 State-Wide Program in Venereal Disease. C. G. Hickey, Denver.—p. 72.
- 71 Making Surgery Safe for Democracy. C. S. Elder, Denver.—p. 74.
- 72 Lymphocytes and Their Relation to Resistance in Tuberculosis. E. D. Downing and J. L. Allison, Woodman.—p. 77.

Indiana State Medical Association Journal, Fort Wayne

March, 1918, 11, No. 3

- 73 Appendicitis. G. Link, Indianapolis.—p. 93.
- 74 Tuberculosis of Cecum. J. W. Sluss, Indianapolis.—p. 99.
- 75 Surgical Treatment of Uterine Displacements. B. F. Kuhn, Elkhart.—p. 103.
- 76 Infections of Urinary Tract in Infants and Younger Children Due to Bacillus Coli Communis. C. A. Sellers, Hartford City.—p. 108.
- 77 Ocular Tuberculosis. L. D. Brose, Evansville.—p. 113.

Journal of Laboratory and Clinical Medicine, St. Louis

March, 1918, 3, No. 6

- 78 Sugar Metabolism and Diabetes. H. McGuigan, Chicago.—p. 319.
- 79 *War Deafness and Its Prevention; Report of Further Tests on Preventives. S. R. Guild, Ann Arbor, Mich.—p. 338.
- 80 Physiology and Pharmacology of Chelonian Lungs. D. E. Jackson and M. D. Pelz, St. Louis.—p. 344.
- 81 *Bacteriologic Findings in Ozena. H. C. Ward and D. C. Beaver, Detroit.—p. 348.
- 82 Case of Symmetrical Peripheral Gangrene. C. E. Kiely, Cincinnati.—p. 352.
- 83 Studies on Diphtheria Toxin. L. Davis, Detroit.—p. 358.
- 84 Colloid Chemistry of Fehling's Sugar Test. M. H. Fischer and M. O. Hooker, Cincinnati.—p. 368.
- 85 Colloid Chemical Mimicry of Certain Enzymatic Reactions. M. H. Fischer and M. O. Hooker, Cincinnati.—p. 373.
- 86 Mastic Test for Diagnosis of Cerebrospinal Syphilis. F. Langdon, Cincinnati.—p. 376.
- 87 Improved Method for Anesthetizing Animals. J. A. Higgins, St. Louis.—p. 378.

79. War Deafness and Its Prevention.—The tests reported by Guild were made by means of the tambour method. The first thing noticed in studying the results is the division of the preventives into two distinct groups on the basis of the efficiency in stopping the force of the detonation waves. The ones that permitted the detonations to cause large movements of the tambour are the same ones that permitted the greatest injuries to the middle ears of animals. To these latter is added here the Elliott "Swimmer," which was not tested on animals. It is better than the Elliott protector, but would certainly permit positive damage to the ears under conditions similar to those used with the animals. On the other hand, the Scientific Ear Drum Protector "Tommy," which the middle ear conditions indicated as the best of the devices tested, has continued to be the device of choice. The Mallock-Armstrong Ear Defender is not quite so effective with these tests, but continues to be in the same group. The glycerin and petrolatum soaked cotton plugs have given better results here than in the animal tests; they are the only preventives that have not remained in the same relative positions in the order of efficiency as tested by the two methods. The Wilson-Michelson device is relatively and absolutely more effective with the heavier waves.

81. Bacteriology of Ozena.—A summary of the authors' study of 100 cases shows that the group of organisms known as the *B. mucosus-capsulatus* (Friedländer's bacillus, Abel's bacillus) is preponderant and may be pathognomonic in cases

of chronic rhinitis. This group is also independent of the action of putrefactive bacteria. In cases in which the symptom of malodor exists, a different class of bacilli known as the Perez group is most abundant and all cases show either one or both of the Perez and proteus groups present as causative factors of this condition. Cases of chronic catarrh may harbor pathogenic organisms of other species such as the diphtheria bacilli and contribute to the distribution of similar infections.

Laryngoscope, St. Louis

March, 1918, **28**, No. 3

- 88 Treatment of Malignant Disease of Larynx and Upper Respiratory Tract. J. C. Beck, Chicago.—p. 131.
- 89 Stuttering and Stammering (Lisping). M. K. Scripture, New York.—p. 156.
- 90 Two Cases of Syphilis of Epiglottis and One of Tuberculous Granuloma, Illustrating Difficulty of Diagnosis in Throat Lesions. H. Smith, New York.—p. 175.
- 91 Cervical Gangrene Complicating Ludwig's Angina. I. W. Voorhes, New York.—p. 177.
- 92 Two Cases of Nasopharyngeal Polypus Originating in Maxillary Sinus. H. L. Baum, Denver.—p. 180.
- 93 Nasal and Aural Polypi. Their Permanent Cure. C. Gluck, New York.—p. 186.
- 94 Primary Epithelioma of Pharynx and Left Tonsil. C. H. Weintz, Cincinnati.—p. 190.
- 95 Cause of Nonsuccess in Septal Operations. L. C. Vattier, Philadelphia.—p. 193.

Maine Medical Association Journal, Portland

March, 1918, **8**, No. 8

- 96 Case of Dr. Coolidge, of Waterville, Maine, 1847-1849. J. A. Spalding, Portland.—p. 217.

Medical Record, New York

March 23, 1918, **93**, No. 12

- 97 Prevention of Dysentery in Army Camps. C. C. McCulloch, Wash-ton, D. C.—p. 487.
- 98 Case of Patent Urachus, with Abscess, Complicating Hypertrophied Prostate. W. T. Gibb, New York.—p. 491.
- 99 Training Myocardium. H. Schoonmaker, Clifton Springs.—p. 492.
- 100 Study of Genital and Progenital Papillomata and Excrescences. N. E. Aronstam, Detroit.—p. 495.
- 101 Some Important Points in Treatment of Gonorrhea and Some of Its Complications. M. Zigler, New York.—p. 498.
- 102 Mesenteric Thrombosis with Eighty-Eight Inches of Intestine Resected. E. Bonnot, St. Louis.—p. 502.
- 103 Psychopathic Hospital Ideal. L. G. Lowrey, Boston.—p. 503.

New Jersey Medical Society Journal, Orange

March, 1918, **15**, No. 3

- 104 Recent Advances in Neurologic Surgery; Especially in Diagnosis and Treatment in Brain Injuries. W. Sharpe, New York.—p. 73.
- 105 Nephritis in Infancy. T. W. Harvey, Jr., Orange.—p. 81.
- 106 Civil Surgeon and National Army. W. P. Eagleton, Camp Dix.—p. 85.

New York Medical Journal

March 23, 1918, **107**, No. 12

- 107 Nauheim Method. N. P. Norman, Watkins.—p. 529.
- 108 Sympathy, Affection, Love and Patients. I. Bram, Philadelphia.—p. 535.
- 109 Static Labyrinth. G. W. Stimson, Pittsburgh.—p. 539.
- 110 Thermotherapy in Gonorrhea. B. P. Thom, New York.—p. 543.
- 111 Treatment for Inebriety with Quartz Ultraviolet Light. D. McCaskey, New York.—p. 545.
- 112 Case of Lymphosarcoma; Report of Case. J. A. Miller, New York.—p. 547.
- 113 Dead Teeth. J. Novitzky, San Francisco.—p. 548.
- 114 Treatment of War Wounds of Joints in Advanced Medical Units. H. M. W. Gray, Aberdeen, Scotland.—p. 551.
- 115 Reclaiming Maimed in War. R. T. McKenzie.—p. 555.

Philippine Journal of Science, Manila

January, 1918, **13**, Sec. B, No. 1

- 116 Experiments on Malayan Anopheles with Special Reference to Transmission of Malaria. M. A. Barber, Manila.—p. 1.
- 117 *Does Irritant Action of Emetin Hydrochlorid Extend to Kidney? D. de la Paz and R. Montenegro, Manila.—p. 49.

117. Effect of Emetin Hydrochlorid on Kidney.—Experiments were made on dogs to determine the irritant effect of emetin hydrochlorid on the kidneys and other remote organs. The results show that emetin hydrochlorid gave rise to congestion and slight parenchymatous degeneration of the kidneys. While in one dog the drug produced hemorrhages at

the sites of injection and between the layers of the renal capsule, and at the site of injection in another dog, in no case did its irritant action extend to the parenchyma of the kidneys, although it was administered in a quantity that, when injected daily, eventually caused the death of the animals.

Southern Medical Journal, Birmingham, Ala.

March, 1918, **11**, No. 3

- 118 Role of Carbohydrates in Infant Feeding. O. H. Wilson, Nashville, Tenn.—p. 177.
- 119 Present Attitude Toward Protein and Fat. O. W. Hill, Knoxville, Tenn.—p. 182.
- 120 *Classification and Treatment of Acute Diarrheal Diseases in Infancy. J. L. Morse, Boston.—p. 187.
- 121 Eczema in Infancy. F. P. Gengenbach, Denver.—p. 196.
- 122 Practical Value of Routine Examination of Blood, Spinal Fluid and Urine in Pediatric Practice. W. A. Mulherin, Augusta, Ga.—p. 202.
- 123 *Malaria in Infants. M. Smith, Little Rock, Ark.—p. 213.
- 124 Literature on Acidosis. J. R. Snyder and S. H. Welch, Birmingham.—p. 217.
- 125 Rheumatic Fever in Childhood. J. D. Love, Jacksonville, Fla.—p. 224.
- 126 Diagnosis and Treatment of Contagious Diseases. P. F. Barbour, Louisville, Ky.—p. 228.
- 127 Cerebral Hemorrhage in Hemophiliac—Milk Idiosyncrasy—Pylo-ric Stenosis. W. W. Harper, Selma.—p. 232.
- 128 Recent Outbreak of Poliomyelitis in Virginia. W. A. Brumfield, Richmond, Va.—p. 235.
- 129 Organization of Hospital for Treatment of Fractures. J. B. Walker and C. C. Cody, Jr., Washington, D. C.—p. 242.
- 130 *Improved Technic for Repair of Inguinal Hernia. M. J. Payne, Staunton, Va.—p. 243.
- 131 Piece of Steel in Brain Eighteen Years. S. H. McLean, Jackson, Miss.—p. 245.
- 132 Role of Abnormal Teeth in Production of Symptoms Referable to Ears, Nose and Throat. W. G. Harrison, Birmingham.—p. 246.
- 133 Treatment of Pneumococcus Ulcer of Cornea with Thermophore (Method of Dr. W. E. Shahan). J. Green, Jr., St. Louis.—p. 251.

120 and 123. Abstracted in THE JOURNAL, Dec. 29, 1917, p. 2208.

130. Technic for Repair of Inguinal Hernia.—In the modification of the Bassini operation proposed by Payne the cord is laid on top of the line of sutures in the deep layer of Poupart's ligament, and the inferior aponeurotic flap is then united to the muscular flap of the internal, oblique and transversalis muscles, to the external margin of the rectus and conjoined tendon (preferably by interrupted sutures), observing special care in placing the suture to make some tension on the inferior aponeurotic flap, in order that a relaxation of the tension on the deep suture line may be obtained. The superior aponeurotic flap is now united to the anterior surface of the inferior aponeurotic flap, giving a wide area of approximation. The fascia, fat and skin are united. It is believed that the improved technic in principle and effect accomplishes: A relaxation of tension on the line of sutures, apposing the muscular structures to Poupart's ligament; it allows a wider and easier approximation of tissue, implants an additional layer of tissue in front of the deep ring; furnishes a more convenient source of obtaining fascial support than flaps taken from the rectus sheath. The relaxation of tension on the structures is more easily and more certainly accomplished. It lessens pressure on the spermatic cord, a frequent cause of discomfort after operations for hernia. The relaxation of the tension on the deep suture line allows the regeneration of tissue to be more certain and, therefore, the union between the parts is more capable of resisting the effects of immediate and remote strain. The special feature of the modification suggested is a reinforcement of the wound, by uniting the lower aponeurotic flap to the deep or muscular structures. In addition to this special feature, the various structures brought into apposition are more readily overlapped, at the same time relaxation of tension on the most important suture line is easily accomplished.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

March, 1918, **26**, No. 3

- 134 Case of Gas Bacillus Infection with Recovery without Loss of Limb. H. Reed, Oklahoma City.—p. 49.
- 135 Bone Graft Surgery. C. Geiger, St. Joseph, Mo.—p. 56.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1918, 22, No. 9

- 1 Extraction of Foreign Body from Brain. H. H. Rayner and A. E. Barclay.—p. 265.
- 2 Interrelation between Roentgenography and Surgery of Gunshot Wounds of Head. H. E. Gamlen and S. Smith.—p. 270.
- 3 Some Modern Developments in Roentgenology. L. E. Ellis.—p. 281. To be continued.

British Medical Journal, London

March 2, 1918, 1, No. 2983

- 4 *Nature and Symptoms of Cardiac Infection in Childhood. F. J. Poynton.—p. 249.
- 5 Use of Divided Mattress and Pelvic Elevator. W. Macewen.—p. 252.
- 6 Hemagglutinin Reaction. C. J. Bond.—p. 253.
- 7 General Analgesia by Oral Administration. J. T. Gwathmey and H. T. Karsner.—p. 254.
- 8 *Effect of Deep Held Inspiration on Murmur of Slight Aortic Regurgitation in Young Subjects. W. Gordon.—p. 257.
- 9 Conservative Surgery of Hand as Illustrated by Case of Tendon Grafting. A. W. M. Robson.—p. 257.
- 10 Acute Intestinal Obstruction Due to Jackson's Membrane. F. C. Pybus.—p. 258.
- 11 Reduction en Masse of Strangulated Direct Inguinal Hernia. H. H. Rayner.—p. 258.

4. **Cardiac Infection in Childhood.**—Poynton says that in England there is no more serious affection of the heart than mitral stenosis. It is frequent in occurrence, incurable and a common cause of death under 45 years. He emphasizes the value of studying not only the cardiac signs but all the events that may coincide with a first attack of rheumatism in childhood. In order to prevent cardiac infection every detail concerning the lesions in other organs becomes important. Severe valvular disease may result from repeated attacks of rheumatism, but the deadly menace to the heart lies in the grave toxemic forms which from the first irreparably damage the neuromuscular tissues. In such cases the element of virulence is of more importance than the physical signs of cardiac disease for arriving at the immediate prognosis. An acute tonsillitis in a child should always call for careful examination of the heart. Recurrent sore throats in childhood are not only in themselves painful and disabling, but are a menace to the heart. Arthritis in childhood is very frequent in rheumatism, and on this account a very valuable danger signal. Although arthritis at this age is not usually severe, the value of it as a symptom is very great, particularly if it is realized that the pain may be considerable owing to implication of surrounding tendon sheaths, with no detectable changes in the joint affected. The rule has been long established that obscure pain in the joints and muscles in childhood should call for a careful examination of the heart. Chorea and the allied nervous symptoms deserve the closest attention. The various rashes and cutaneous manifestations of rheumatism are of particular interest in that they give a hint as to the nature of the rheumatic poisons of which we have no accurate knowledge. Epistaxis is also frequent in the rheumatic child.

The occurrence of abdominal symptoms in the rheumatic is an obscure subject, but of considerable interest in heart disease. Occasionally extreme pain and distention may be complained of in the line of the colon, producing great distress and embarrassing the damaged heart, and troublesome colitis may occur. Apart, however, from these, one repeatedly meets in rheumatic children what are called "bilious attacks." The appetite fails, the sclerotics become icteric, and the tongue coated; the motions are pale and there may be vomiting, fever and severe headache. Such attacks may usher in an exacerbation of rheumatism. Poynton draws attention particularly to the occurrence of this triad of symptoms in the rheumatic: Instability of the nervous system, abdominal disturbances, and faulty action of the heart. General wasting also is a symptom needing close attention. This symptom in a child with severe organic heart disease is of great significance, for it may mark the beginning of the last stage of the illness,

and indicates failure of the circulation to maintain nutrition even when the child is carefully guarded. The converse to this is also of value; it is a sign of good augury when a child with rheumatic heart disease begins to gain in weight although the physical signs in the heart may convey no such favorable impression. Anemia in rheumatism affords valuable evidence of the virulence of an attack.

8. **Effect of Deep Inspiration on Murmur of Aortic Regurgitation.**—Gordon draws attention to what he believes to be an undescribed clinical phenomenon, namely, the marked diminution or complete disappearance of the diastolic murmur of aortic regurgitation (in young subjects with only slight regurgitation) when a deep breath is taken and held.

Lancet, London

March 9, 1918, 1, No. 4932

- 12 Serum Sickness. E. W. Goodall.—p. 361.
- 13 Some Mechanisms at Work in Evolution of Hysteria. D. E. Core.—p. 365.
- 14 *Effects of Flavine in Wound Treatment. W. Pearson.—p. 370.
- 15 Disordered Action of Heart. R. H. Trotter.—p. 371.
- 16 Case of Partial Gunshot Division of Musculospiral Nerve with Secondary Suture. C. A. Morton.—p. 373.
- 17 Emotive Response to Ordinary Stimulation, Real and Imaginary. A. D. Waller.—p. 380.

14. **Effects of Flavine in Wound Treatment.**—A 1:1,000 solution of acriflavine in sterilized normal saline was used in all cases by Pearson. It was employed as a lotion for irrigating the wounds at each change of dressings, and also in gauze packs placed in the wounds and in the outer gauze dressings. The cases selected for treatment with flavine were: (1) those in which infection and sepsis were active and not under control when treatment was instituted; (2) those in which infection and sepsis had been controlled and repair had already begun before flavine was employed. In cases in which infection and sepsis were active and uncontrolled the use of flavine following suitable operative measures had no beneficial effect on the subsequent progress of the case in so far as control of sepsis is concerned. Any slight differences observed were unfavorable. In cases in which sepsis had already been controlled and repair had begun flavine acted injuriously, chiefly by producing an unhealthy granulating surface. While these conclusions do not prove that flavine may not possess powerful germicidal properties in certain experimental conditions, Pearson believes they show that its clinical use is not attended with good results. Since completing his observations he had entirely abandoned the use of flavine in his work.

Bulletin de l'Académie de Médecine, Paris

Feb. 12, 1918, 79, No. 6

- 18 *Foreign Bodies in the Eye from War Wounds. F. de Lapersonne.—p. 134.
- 19 *Nature of Rabies Virus. P. Remlinger.—p. 137.
- 20 Simplified Technic for Transfusion of Blood. P. Ameuille.—p. 140.
- 21 *Tunneling the Prostate. (Le forage de la prostate.) G. Luys.—p. 141.

18. **Foreign Bodies in the Eye.**—Summarized in Paris Letter, p. 944.

19. **Nature of Rabies Virus.**—Remlinger calls attention to the diffusibility of rabies virus as a special property which distinguishes it from protozoa and bacteria, and brings it closer to chemicals. For instance, if tissues containing the bacilli of anthrax, tuberculosis or glanders are immersed in glycerin, they do not diffuse through the glycerin, and the latter can be injected into susceptible animals without inducing infection. But if any tissue from an animal with rabies is placed in glycerin, the glycerin and even scraps of normal tissue that have been immersed in it, likewise, promptly induce rabies in animals inoculated with the glycerin or the scraps of tissue in it. This extreme diffusibility is like that of chemical substances.

The rabies virus differs however from chemical substances in that it passes through the more porous filters but not the others. With a less porous filter, the virus may induce rabies

in the animal inoculated, but it is impossible to reproduce the disease from this animal in others. With a still finer filter, the virus induces merely cachexia without actual rabies. Chemical substances in solution, on the other hand, pass through the filters regardless of the porosity. The rabies virus therefore, in regard to the filters, behaves differently from both bacteria and chemicals.

The rabies virus behaves paradoxically also in centrifugation. This has no effect on a chemical solution, but it does have a very slight effect on rabies virus; the virus very slowly leaves the upper layers of the fluid. In short, the rabies virus, filterable and diffusible, seems to offer a connecting link between the visible microbes, which represent the lower limit of the vegetable kingdom, and the diastases, that is, the colloidal substances which may be regarded as at the highest limit of the inorganic bodies. It is thus a transitional form between the visible microbes and the colloids.

21. Drilling the Prostate.—Luys describes the simple technic with which, under direct visual inspection, he destroys in the interior of the hypertrophied prostate the obstacles which prevent the free course of the urine. There may be a kind of dike between the bladder and the urethra, or the two enlarged lobes may be stuck together. It is better to bore a passage in several sittings, instead of trying to accomplish it all at once. From three to six sittings are usually sufficient, at intervals of a week. If the actual cautery starts bleeding, electrocoagulation will arrest it at once.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 21, 1917, 41, No. 36

- 22 *Spirochetosis without Jaundice. Favre and R. Mathieu.—p. 1273.
- 23 Simple Splenomegaly Early in Malaria. R. Porak.—p. 1276.
- 24 Hypersusceptibility to Tuberculin in Nodular Erythema. A. Netter.—p. 1280.
- 25 Hemianesthesia from War Wounds in Parietal Region of the Brain. G. Guillaumin.—p. 1281.
- 26 *Respiratory Disturbances in Pneumogastric Paralysis. M. Vernet.—p. 1285.
- 27 *Deranged Functioning of the Sympathetic Nervous System. F. Ramond, P. A. Carrié and A. Petit.—p. 1290.
- 28 *The Bacterial Flora of War Wounds. Plisson, L. Ramond and C. Vergelot.—p. 1295; (id.) 1302.

22. Spirochetosis Without Jaundice.—Favre and Mathieu relate that in seven men recently in their ambulance spirochetes were found constantly in their urine, up to six weeks in one and for three months in two. All looked thin and pale and complained of vague pains, and were incapable of work; over the cheek bones the skin was red but elsewhere was brownish. One man had a hydrarthrosis resistant to the salicylates; another succumbed to severe nephritis. The congestion of the skin was so marked in one case that scarlet fever was diagnosed at first. The spirocheturia was constant at first but became intermittent later.

26. Paralysis of the Pneumogastric Nerve.—Vernet describes how certain war wounds have entailed paralysis of the pneumogastric system, manifested by disturbances in sensibility, in salivation, and in the breathing. A pseudo-asthma follows the paralysis of the sensory fibers of the pneumogastric in the lungs, while dyspnea on exertion results from irritation of these fibers. Other manifestations are described which throw new light on the part played by the pneumogastric in the pathology of the lungs in general.

27. The Sympathetic Syndrome.—Ramond has had a certain number of men in his service presenting a set of symptoms which classed them in a group as suffering from the results of derangement in the functioning of the sympathetic nervous system. The symptoms are essentially vasomotor, cardiac and secretory, with sometimes respiratory, dyspeptic and mental disturbance and tremor. They occur in attacks and these may be restricted to one or more of the symptoms and to some special region. Some of the symptoms can be explained by exaggerated irritability of the nerve, others by a state of inhibition, one part of the nerve functioning to excess and another part inadequately functioning. The men thus affected had been classed as having some heart disease, on account of their tachycardia, or as alcoholics, on account of their tremor, their emotional instability, their puffy faces.

Others as dyspeptics, because their disturbances manifested themselves after eating. But they are most likely to be classed as having exophthalmic goiter. An inherited taint is evident in many cases. An infection or alcohol is liable to bring on especially severe attacks. It is possible that some defective internal secretion may be the primal cause of this sympathetic syndrome.

28. The Flora of War Wounds.—Plisson, Ramond and Vergelot report the bacteriologic findings in 428 personal examinations of the wounds of 186 soldiers, and compare with their findings those of Carrel, Tissier, Wright and other workers in this new close collaboration between the surgeon and the bacteriologist. All agree that the cultures do not become positive until after the fourth or fifth hour, often not until after the tenth or even later. Positive smears were obtained only in 14 of 75 wounded examined, before any intervention, between the fourth and forty-eighth hours; anaerobic cultures were positive in 13 and aerobic in 32. All war wounds contain germs from the first, but they are few and lie close to the foreign bodies at first. The perfringens was the only anaerobe they succeeded in cultivating from the wounds with the simple technic used. It was alone in 8 per cent. of the cases. Association of aerobes and anaerobes was evident in 60 per cent. of the cases. They describe the various features observed in wounds with anaerobes and aerobes and with and without the streptococcus. The presence of anaerobes does not necessarily entail putrid transformation; there were only 6 cases of gangrene among the 75 men. The perfringens persisted apparently harmless until after the tenth day in 22 cases, and in 3 beyond the fifteenth, but such cases show the possibility of tardy gangrene. The primary suture proved a success, notwithstanding the presence of the streptococcus, in 24 cases, associated with anaerobes in 13; the presence of the colon bacillus in 9; the enterococcus in 8; diplococci in 5, and the proteus in 3.

28. Practical Application of Bacteriologic Findings in Wounds.—The bacteria found in wounds are not inevitably pathogenic, but the streptococcus almost invariably confers a special and malignant course on the wound. Associated with anaerobes, rapid gas gangrene is liable. Hence the task of the bacteriologist is mainly to determine whether the streptococcus is present or not. Smears are usually unreliable and the ordinary culture technics often fail to reveal the streptococcus. The writers' experience indicates that with ordinary bouillon, containing some albumin, the streptococcus can be shown up in six hours. They used four parts bouillon to one part *albumine à la soude de Sacquépée*. But even with this, the findings came too late to be of any assistance to the surgeon in determining whether it is safe to suture at once a recent wound. The surgeon is the sole judge of what is best to be done, and this is determined by the more or less complete clearing out of all devitalized tissue. But the bacteriologist demands the opening up of every suture when he finds that the streptococcus is present. With other germs the surgeon is free to maintain or open up the suture as the clinical course suggests.

The bacteriologic findings should also be the criterion for the proper moment when no longer recent wounds, under progressive sterilization, are ready to be sutured. Carrel's rule is to suture when two consecutive examinations, at one or two days' interval, show only one microbe to four or five microscopic fields. For deep wounds, he demands several examinations in the course of four or five days. The streptococcus, however, even in small numbers, formally contraindicates suturing. Relying on these rules they applied primary suture in 90 war wounds, in less than twenty-four hours, with complete success in 60 of the cases. In 22 cases the wound was reopened for clinical or bacteriologic reasons. In all but 10 in this group the streptococcus was present, associated with the perfringens in 7; in one case the staphylococcus was associated with anaerobes, and in 6 the perfringens accompanied various germs. In 5 of the cases a primary total suture and in 3 a partial suture separated when the threads were withdrawn the tenth day; the streptococcus was present in 3 in this group. The others had anaerobes

except in one case in which the staphylococcus alone seemed responsible. The laboratory findings conferred a confidence, even amounting to audacity, which was justified by the 66 per cent. of completely successful primary sutures.

Paris Médical

Feb. 9, 1918, 8, No. 6

- 29 *Roentgenoscopic Outlining of Ventricles. H. Vaquez and E. Bordet.—p. 113.
- 30 High Blood Pressure with Nonvalvular Heart Disturbance. P. Merklen.—p. 116.
- 31 *Protracted Parameningococcus Septicemia. H. Aimé and H. Chéné.—p. 118.
- 32 Psoriasiform Dermatitis. H. Gougerot.—p. 121.
- 33 Extraction of Shell Scrap in Lumen of Axillary Artery. M. Patel.—p. 125.

29. **Detection of Hypertrophy of the Ventricle.**—Vaquez and Bordet recall that the left ventricle does not form much of the front aspect of the heart, its position being mostly deep in the mediastinum. In order to detect slight, incipient hypertrophy we must ascertain the depth to which it reaches backward, and they have worked out a roentgen technic which permits this. The depth is calculated by superposed triangles, like the formulas for locating a foreign body in the depths of the tissues. The tube is centered at the apex and the edge of its profile is marked on the glass. A footrule is then placed on the screen and the tube is moved toward the observer's left until the normal rays pass through a point 10 cm. distant from the first mark, and the new edge of the profile is marked on the screen. The number of millimeters between the two marks represents the depth to which the ventricle has developed backward. They have the subject stand, resting his chin on the screen. This immobilizes him enough. The whole procedure is simple and brief, while experience is confirming its reliability in the early diagnosis of hypertrophy of the ventricle. The index in normal conditions ranges from 7 to 4 mm. With various forms of heart disease they found the index 18, 20, 25 or 40 mm.

31. **Tardy Meningitis.**—Aimé and Chéné urge the importance of early lumbar puncture in dubious cases without waiting for actual meningitis to develop. This gave the clue and permitted effectual treatment in a case described which otherwise would not have been cleared up in time. The main symptoms were those of a septicemia dragging along for a month with intermittent attacks simulating those of malaria. Finally symptoms suggesting meningitis developed, and a few diplococci were found. Diplococcus septicemia is rare; only twelve cases have been published to date, they say, including Marie's three. Under serotherapy the man was discharged cured nearly four months after the first symptoms had attracted attention: fever, pains in the legs, headache and a transient papulous eruption. The attacks with chill, high fever, eruption and pains in the joint returned irregularly. Nine intraspinal injections of antiserum were made in the course of three weeks, and the antiserum was injected subcutaneously a few times.

Presse Médicale, Paris

Feb. 4, 1918, 26, No. 7

- 4 *Transfusion of Citrated Blood. E. Hédon.—p. 57; E. Jeanbrau.—p. 58.
- 5 *Treatment of Ischemic Contracture. J. Luzoir.—p. 62.

34. **Transfusion of Citrated Blood.**—Hédon gives the history of this method of transfusion, awarding the priority to Gote of Buenos Aires, as Hustin's technic, published the year before, differs from simple citrating of the blood. Hustin injected blood diluted with a solution of sugar and citrate. Jeanbrau gives numerous illustrations of his simplified technic for the purpose, which he is applying as a routine measure in severe posthemorrhagic anemia with or without shock, carbon monoxid poisoning, uncontrollable hemorrhage, leukophilia, pernicious anemia and certain cases of shock. His research has confirmed that the usual dose of citrate dissolved in blood has no hemolytic action. In Hédon's tests the citrated blood kept on ice for ninety-two hours up to eight days seemed to be fully as effectual in resuscitating exsanguinated animals. Jeanbrau adds that the citrate is

not an aphysiologic or antiphysiologic substance; the mammalian organism produces a physiologically citrated fluid: milk. Experience has shown further that transfusion of citrated blood does not expose to secondary hemorrhages. In short, he concludes, the transfusion of citrated venous blood is as effectual as the direct vein-artery technic while the facility, rapidity and security of the method are peculiarly valuable for the otherwise moribund exsanguinated wounded.

35. **Treatment of Ischemic Contracture.**—Luzoir presents arguments and recently acquired data which sustain the view that mechanical and orthopedic rather than surgical measures are the best treatment for Volkmann's disease.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 2, 1918, 48, No. 5

- 36 *Hill Climbing as Therapeutic Measure. (Ueber Terrainkuren.) A. Jaquet.—p. 129.

36. **Therapeutic Hill Climbing.**—Jaquet is enthusiastic over the results to be obtained with Oertel's system of graduated hill climbing exercises in treatment of disease of the cardiovascular system. When done with the necessary caution and under the constant supervision of an experienced physician, there is no need to fear injury of the heart, as the course can be stopped at the first sign of trouble. The success obtained with it in many cases was the most gratifying he has ever had in the treatment of disease of the circulatory apparatus. He explains how the bending of the legs in climbing has a special aspirating action on the blood in the veins of the legs, far beyond that with walking on a level, or with gymnastic exercises as the latter are done only for a few minutes at a time. The aspirating action is enhanced by the deeper breaths taken in climbing. Any tendency to dilatation of the ventricle must be scrupulously avoided. He begins by having the patient walk 100 meters on level ground, taking forty-five or fifty steps a minute, with deep inspiration or expiration at each step. If the pulse runs up considerably with this and does not quiet down completely within a few minutes, he gives up the attempt at mechanical treatment for the time at least, and devotes his energies to relieve and rest the heart. But if there is no abnormal reaction, no dyspnea, he continues with the exercises, gradually increasing the distance and the slope, but always under constant medical supervision until certain that the exercise is borne without harm, and that the patient can be trusted to follow directions alone. Constant control of the urine is important—a progressive decline in the total output and increase in the specific gravity should warn to greater caution. In conclusion he emphasizes the necessity for exact knowledge as to the grade of the slope, not trusting to the eye, and he gives a road map of his region showing by different colors the roads with 0.5 per cent. grade, 5 to 10 per cent., 10 to 20 per cent. and over.

Annali d'Igiene, Rome

January, 1918, 28, No. 1

- 37 *Action of Cold on Microorganisms. A. Q. Ruata.—p. 1.
- 38 Biology of Lice. A. Ilvento.—p. 10.

37. **Action of Cold on Micro-Organisms.**—It is generally accepted that cold inhibits the proliferation of germs but does not destroy them. Ruata's experiences, however, have demonstrated that a long enough exposure to cold will destroy the cultures beyond possibility of recuperation. The temperature was dry cold and kept constantly between — 3 C. and — 12 C. Thirty cultures of colon bacilli and other germs were placed in the refrigerator and some were withdrawn on successive days and incubated. By the fourth day only from three to forty-nine colonies developed, instead of the thousands of the second day, and no colonies at all developed after the fourth day. Similar results were obtained even with four strains of bacilli and one streptococcus isolated from putrid meat. The conflicting results that have been obtained by others were probably due to the fact that the contact with the cold was not long enough to have its action penetrate through the entire mass. Even one germ still living in the center of the mass would start a culture. But systematic permeation of the entire mass by cold of these degrees will certainly progressively sterilize it in time.

Chirurgia degli Organi di Movimento, Bologna

December, 1917, 1, No. 4-5-6

- 39 G. A. Borelli, 1608-1679. V. Putti.—p. 409.
 40 *Vitalization of Artificial Limbs: Kineplasty. (Cinematizzazioni. Plastiche e protesi cinematiche.) V. Putti.—p. 419.
 41 *Treatment of War Fractures. A. Serra.—p. 493.
 42 Treatment of Grave War Wounds of Bones and Joints. F. Pancrazio, G. Querni and F. Miti.—p. 569.
 43 *Partial Amputations of the Hand. F. Delitala.—p. 595.

40. **Vitalization of Artificial Limbs.**—Putti expatiates on the promising field opened up by Vanghetti with his idea of utilizing the muscles in the stump in such a way as to permit volitional control of the prosthesis. His latest article on this kineplasty was reviewed in *THE JOURNAL*, July 28, 1917, p. 321. Putti has been studying from this point of view 1,000 stumps and noticed that the functional value of a stump was by no means always proportional to the length of the stump. The vitality of the muscles, however, is strictly dependent on the state of the terminal segment of the stump. He was also impressed with the great power of recuperation of the muscles after long inactivity when the proper physical and surgical measures were applied. The power of volitional dissociated movements of different muscles persists long after amputation, and can be increased by training and exercise and especially by utilizing it for kinematization, that is, for vitalizing the artificial hand or foot. Thirteen cases are described with minute detail and seventy-nine illustrations, and the various types of artificial hands and legs constructed for kinematization are reproduced. He also describes the exercises devised to train the muscles to dissociated, effectual motor functioning. In one typical case the knee had been disarticulated and a month later the quadriceps had been tunneled, thus forming a flexor-extensor loop containing the patella. In twenty days the exercises were begun; by the thirtieth day a weight of 10 kg. could be suspended and moved for 3 cm. The tunnel is lined with a pedunculated flap of skin, sutured to make a tube. Plenty of sound skin is indispensable for lining the tunnel. The skin over the extensor region is usually stouter than elsewhere, and it and the muscles can be mobilized and stretched with strips of flannel, etc., stuck to the skin to which elastic traction can be applied.

It is quite a task to revivify the muscles of a stump and train the motor centers to a peripheral action and kinetic play which is fundamentally different from the normal, but experience has demonstrated that the resources of a muscle are infinite, both biologically and mechanically, and its motor centers are adaptable, while the innumerable resources of physiotherapy revivify and intensify the motor force of the stump. A number of tables are given of the findings in regard to the motor capacity of 200 amputation stumps compared to the length of the stump. They show that with the longer stumps the sacrifice of a few more centimeters of the bone does not modify the motor power. The man must be able to rotate the limb. No attempt is made at reunion of the stumps of the tendons. The men soon learn to do separately the movements for bending and stretching the muscles. One man rapidly learned to bend the motor loop sideways (radial), the impulse, he said, being the same as for abduction of the thumb.

41. **War Fracture of Long Bones.**—Serra gives an illustrated report of forty-one cases given treatment at the Rizzoli Institute at Bologna, and the various immobilizing devices used.

43. **Partial Amputation of the Hand.**—Delitala comments on the necessity for constructing the prosthesis for each individual case, utilizing every scrap of possible motor functioning. He gives illustrations of numbers of such devices from those for a single finger to the whole hand, a total of fifty-two illustrations. The fifty crippled men included four with bilateral amputation. He emphasizes in particular the surprising leverage force left in the carpus, especially for vitalization of artificial fingers. It is possible to obtain with it functional results identical with those realized by Putti with the kineplastic loops described in abstract 40 above. Delitala and Putti both utilize a recording drum and kymograph to

determine the amplitude and force of the movements, the rhythm of contraction, and the influence of exercise, training, etc.

Pediatria, Naples

February, 1918, 26, No. 2

- 44 *Amino-Acids in Urine from Debilitated Infants. S. Cannata.—p. 65.
 45 *The Functioning of the Mammary Gland. A. Borrino.—p. 71.
 46 *Palpable Intercoastal Lymphatics in Infants. S. De Stefano.—p. 88.

44. **Amino-Acids in Infants' Urine.**—Cannata tested the urine of four cachectic infants for amino-acids. They were constantly present in large amounts, showing the disturbance in the intermediate metabolism in cachexia from syphilis, tuberculosis or other cause. The liver may or may not be damaged.

45. **Functioning of the Mammary Gland.**—Borrino insists that breast nursing can be resumed even after a long lapse. She has accomplished this in three cases after an interval of twenty-five, twenty-seven and forty-five days. She also insists that the child can be fed amply from one breast if the other is damaged beyond recuperation, or at least the child may require only a little supplementary feeding. Five case reports confirm her assertions. Gallstone trouble does not contraindicate breast feeding; she has had one patient nurse two children successfully although gallstone attacks returned at each of the two pregnancies. There had been no symptoms from the cholelithiasis in the interim. By letting the child suckle the breast every hour, but not for more than ten minutes, the glands resumed the secretion of milk, after twenty-five and twenty-seven days interim, in from three to six days up to eight days. The infants were about a month old at the time. In the third case the infant had never nursed well and there had been abscesses in the areolae. The child was trained anew to suck after forty-five days' suspension. It was given the breast of a wetnurse for two feedings after sucking the mother's breast for ten minutes. As the mother's milk increased in amount, the wetnurse feeding was changed for diluted cow's milk, but this was always given with the spoon, reserving the sucking efforts for the mother's breasts. The three children had been running down from severe digestive disturbances but all promptly recuperated when given their natural food.

46. **Palpable Lymphatics in Infants.**—De Stefano calls the discovery of enlarged peripheral glands in infants, Hochsinger's sign of tuberculosis. He tabulates the findings, with other clinical details, in fifty-six infants. In 55 per cent. of the total these palpable glands accompanied tuberculosis of the bronchial glands. In the other 45 per cent., palpable glands in the axilla were associated with diseases other than tuberculosis, inherited syphilis, rachitis or grave malnutrition.

Policlinico, Rome

Feb. 10, 1918, 25, No. 6

- 47 *Surgical Treatment of Causalgia. O. Tenani.—p. 125.
 48 *Epidemic Dropsy. F. Leporini.—p. 133.
 49 Ludwig's Angina. G. Blasi.—p. 134.

February, 1918, 25, Medical Section No. 2

- 50 *Traumatic Pseudotabes. A. Mendicini.—p. 33.
 51 *Traumatic-Emotional Dystrophy. G. Pighini.—p. 42.
 52 *Tumors of the Temporal Lobe. P. Ciuffini.—p. 49. Commenced in No. 1, p. 1.

47. **Causalgia.**—Tenani argues that the prompt cure of causalgia by resecting sympathetic fibers testifies to the fact that the sympathetic nerve is incriminated in the pathogenesis. There may be some lesion or lesions in or involving the nerve trunk or the fibers encircling the trunk vessel or in the vessel itself. Resection of the sheath around the vessel generally removes the cause, and the causalgia disappears. He does not restrict his intervention to resection of the sheath of the artery but resects the sheath of the vein as well. This simplifies and facilitates the resection while it renders the benefit more certain and regular. The experience to date all speaks in favor of this method of treatment but the cases are still too few and too recent for a final judgment. They have already established beyond a doubt the

share of the sympathetic in the causation of the causalgia. The appearance of causalgic phenomena in certain cases where there is only partial interruption of a nerve, and the subsidence of the causalgic phenomena after removal of the cicatricial tissue and coaptation of the stump show that the sympathetic nerve is not the only factor involved. On the other hand, the absence of any improvement after the operation in certain cases of this kind renders the choice difficult between neurolysis and sympathectomy. Another fact that adds to the uncertainty is that many sympathetic fibers accompany the nerve trunks, independently of the blood vessels, and we are dubious whether to act on the nerve or on the sheath of the artery.

48. Epidemic Dropsy.—Leporini reports some cases in northern Africa of a low febrile state with vomiting and diarrhea, and then suddenly there develop anasarca, a peculiar eruption, and acute anemia and intestinal disturbances. It is the first time, he thinks, that this epidemic dropsy has been known in northern Africa. The necropsy findings in the liver and kidneys resemble those of amyloid degeneration. He is convinced of the infectious origin but accepts also a predisposition from some alimentary deficiency. This assumption suggests that epidemic dropsy might properly be called "infectious beriberi."

50. Traumatic Pseudotabes.—Mendicini describes a case of injury of the cauda equina from a scrap of shell in which the symptoms were those of pronounced tabes, extinction of the reflexes, ataxia when walking but not when seated or reclining, lancinating pains, and deranged sphincter functioning. The traumatism was in the lower lumbar vertebrae. It had induced, at first, total paraplegia. In connection with this case he reports one of pseudotabes caused by an extrameningeal traumatic polyradiculitis. In this the paraplegic phenomena were fleeting, and the functioning of the sphincters was intact. The cough and sneezing sign was pronounced in the first case but not in this one. In a third case described the diagnosis of lumbosacral hematomyelia seemed evident. The course of such cases clears up the diagnosis, as all agree that traumatic lesions of the cauda equina tend to improve, even in the cases which at first seem very grave. Improvement is especially likely when the symptoms take the form of pseudotabes, the expression of an incomplete lesion of the roots.

51. Traumatic Emotional Dystrophy.—Pighini's conclusions from study of the men with dystrophies of different kinds after minor war wounds have convinced him that when peace is once declared these affections will disappear. It is the war environment, the focusing of the attention on the wound which the man does not want to have healed, as this would mean his return to the firing line. All his thoughts and efforts are focused on perpetuating the wound and its results. If the nervous constitution is below par, to begin with, there may become installed a reflex dystrophy in time. In all such cases tested he found an intense reaction to atropin, with scarcely any reaction to pilocarpin, epinephrin or ingestion of glucose. There is ground for assuming that the thyroid secretion presides over the functioning and the tonification of both sections of the vegetative nervous system. The vagus, with its ramifications in the throat, stimulates the formation of the thyroid colloid on the one hand, while on the other the thyroid secretion stimulates and tonifies the vagus nervous system. Thyroid treatment supplies the stimulating hormon for both systems, but the sympathetic usually feels its action predominantly. When there is a tendency to autonomous miopragia and abnormal functioning on the part of the sympathetic, then thyroid treatment has a different action. It slows the heart impulse and the pulse, raises the blood pressure, and the oculocardiac reflex tends to become normal. In these cases of trophic changes in skin, muscle and bone, with traumatic psychoneuroses, he noted among the other somatic changes that the coagulation time of the blood was abnormally long. It is possible that further research may disclose a deficit in lime in the blood, or pathologic parathyroids. If these trophic changes were merely reflex phe-

nomena, instead of requiring a predisposition and special psychic circumstances, they would be of common instead of exceptional occurrence. He regards as the most convincing of his arguments in favor of this view, that these dystrophies have never been encountered among prisoners of war in the Italian camps. The war wounds in them heal as in peace, as the men know their days of fighting are over. In the soldiers, dreading a return to active duty as soon as the wound is healed, the pulse is unstable, hypotension and tachycardia are frequent, as also dermographism, intensification of the muscle response to mechanical stimulation, and trophic manifestations, such as edema of the hand after a slight wound of one finger, patches of leukoderma, or symptoms suggestive of excessive or deficient thyroid functioning. In one man one leg developed myxedematous changes, which improved under thyroid treatment.

52. Tumors in Temporal Lobe.—Two operative cases are described in detail. They show that the temporal lobe can be divided into four zones, each of which has its own special symptoms. Jacksonian epilepsy originating on the parietic side of the body was noticed in one case. In one of the cases the spontaneous pressure pain was always localized mainly in the frontal lobe. The hearing was reduced early, as also the sense of smell. Word amnesia was pronounced in one case, also a tendency to sensory disturbances and aphasia. The changes in character were early and pronounced. One patient was a boy of 14 and great improvement followed the operation last June. The tumor is said to have been a spindle-cell sarcoma as large as a lemon. There had never been any signs of jacksonian spasms during the six months since the first symptoms had been observed.

Riforma Medica, Naples

Feb. 2, 1918, 34, No. 5

53 *The Typhoid Mortality. P. Guizzetti.—p. 82.

54 Banti's Disease as a Morbid Entity. A. Ferrannini.—p. 89.

53. Typhoid Mortality.—Guizzetti analyzes the typhoid data from 1860 to date at the Institute for Pathologic Anatomy at Parma. He made the necropsy himself in 160 of the total 378 cases. In only three cases were the intestines found intact. In one child of 6, an ascaris seemed to be responsible for the fatal perforation. The cases with perforation seemed to be more numerous in certain epidemics than in others. Lesions in the lungs were manifest in over 34 per cent., mostly hypostatic pneumonia, but pleuritis was observed in only five cases. In each the typhoid bacilli were responsible for the infarcts in the pleura. Two of the cadavers showed a general hemorrhagic diathesis but in the entire 378 cases no indications were found of typhoid lesions in bones or the male genital organs, and none have been observed among the 892 soldiers with typhoid in his field hospital service. Diphtheria, erysipelas and bacillary dysentery sometimes complicated the typhoid, but in all his experience he has never met with a complicating eruptive disease, measles, scarlet fever or variola.

Brazil-Medico, Rio de Janeiro

Dec. 22, 1917, 31, No. 51

55 *Vagotomy with Gastric Ulcer. O. Ayres.—p. 433. Commenced in No. 50, p. 425.

55. Delirium of the Vegetative Nervous System.—Ayres says that nothing less than the term "delirium" will fit the case described. The young woman never at any time presented any of the usual manifestations or stigmata of hysteria. The family was healthy, but the young woman suffered from dysmenorrhea and for the last two years had presented symptoms suggesting gastric ulcer. Then came sudden choleric-form diarrhea and later intense pains from the gastric ulcer but localized in the abdomen. The pains were so intense that they threatened heart failure and the patient had to be kept under the influence of opium or chloral during the twenty-four hours they lasted. Then came convulsive spasms of the stomach, esophagus, throat and diaphragm. These spasms persisted even under the influence of 4 gm. of chloral and during syncope. Application of galvanic electricity intensified the spasm, and no treatment seemed to have any

influence. The convulsions were not merely choreiform movements—the pulse disappeared completely, and the entire thorax was brutally shaken, leaving the young woman bathed in sweat and fainting. Even under 4 gm. of chloral the convulsions returned every five or ten minutes at longest. They kept up for nearly two days; a fatal termination seemed inevitable, but the patient's strength was maintained with nutrient enemas and saline as the local convulsions alternated repeatedly with lipothymias. All this sequence of symptoms occurred during a menstrual period. As this came to a close the convulsions grew less frequent, and finally all this vagotonic and sympatheticotonic delirium subsided. The last drug given before the sudden turn for the better was 3 gm. of potassium bromid by the rectum. Ayres regards the whole syndrome as a "tempest in the vegetative nervous system brought on by the gastric ulcer."

Cronica Medico-Quirurgica, Havana

February, 1918, 44, No. 2

- 56 Public Health in Cuba. F. M. Capote.—p. 61; A. Agramonte.—p. 66.
- 57 The Medical Press and Medical Education. J. Santos Fernandez.—p. 83; G. Aldereguia.—p. 94.
- 58 Hereditary Transmission of Syphilis. B. Saenz.—p. 87.

Medicina Ibera, Madrid

Jan. 10, 1918, 2, No. 10

- 59 *Scleroderma with Nodules. M. F. Criado.—p. 29.
- 60 *Membranes and False Membranes in the Peritoneum. V. Escribano.—p. 33.
- 61 Malarial Eruptions. Sicilia.—p. 36.
- 62 *Vitamins in the Diet. G. Pittaluga.—p. 37. Conclusion.
- 63 Puberty. Blanc y Fortacin.—p. 45.
- 64 Diverticulum in the Bladder. P. Cifuentes.—p. 58.

59. **Scleroderma with Nodules.**—The young woman was of a healthy family and seemed healthy herself except for the scleroderma and lumps in all her fingers except the thumbs. These disturbances had developed in the last four years. No possible cause could be discovered but improvement followed tentative suprarenal treatment. In two of the fingers the nails have grown—for the first time since the nodules developed. These two fingers alone had been anesthetized for resection of a nodule, and epinephrin had been used with the local anesthetic. This suggests that local application of epinephrin should supplement the general suprarenal treatment.

60. **False Membranes in the Peritoneum.**—Escribano describes a few cases from his own experience in which false membranes had formed on a segment of the bowel. In one man of 28 this mesenteriform membrane had developed on the upper segment of the jejunum and ileum. It was entirely free of the greater omentum, colon, and abdominal walls but was continuous with the mesentery by the intermediation of the serous sheath of the intestine. He cut away the entire false membrane which had been immobilizing the intestine, working between two ligatures, and covering raw surfaces with peritoneum. Complete subsidence of all the previous disturbances gradually followed. The membrane had covered three meters of the bowel. The resulting kinking and other obstructions amply explain the tendency to gastric or duodenal ulcer in such cases, and confirm the possibility of a permanent cure when the bowel is released from the grasp of the false membrane. This "medical surgery" seems to be all that is necessary. The features of these false membranes suggest a congenital rather than an inflammatory origin. In two of the groups described there were comparatively recent membraniform adhesions, evidently result of old and cured pericholecystitis. Years of suffering were cured at one stroke by breaking up the adhesions. In another case there was no trace of a mesentery for the transverse and descending colon while the gastrocolic omentum was so large that part sagged an inch or two below the iliac crests, and the stomach sagged low down.

62. **Vitamins and Hygiene.**—Pittaluga's presentation of the present status of our knowledge in regard to vitamins is based largely on editorials and abstracts in THE JOURNAL.

He concludes with the statement that it might be well to appoint an official like the ancient Roman praefectus annonae to equalize the markets at different points and ensure the proper distribution of foodstuffs on the basis of their vitamin content. Hygiene, he adds, is the art of applying scientific data to the conservation and perfecting of human life. When art has man for its object, individually or collectively, it is rightfully called political economy. The enlightened must work to save the people in spite of themselves.

Prensa Medica Argentina, Buenos Aires

Jan. 10, 1918, 4, No. 22

- 65 *Syphilitic Meningitis. M. R. Castex and R. Pradere.—p. 291.
- 66 *Dwarf Tapeworm in Argentina. S. E. Parodi.—p. 294.
- 67 Normal Beef Serum in Treatment of Anthrax. III. J. Penna, J. B. Cuenca and R. Kraus.—p. 297. Continuation.

65. **Syphilitic Meningitis.**—A man of 64 was brought to the hospital unconscious, and the clinical diagnosis was syphilitic meningitis plus a gummatous affection of the right lung. This presumptive diagnosis was confirmed by the recovery under specific treatment. Syphilitic meningitis may develop in an acute form with stormy onset, or it may resemble tuberculous meningitis in its gradual development. The main difference between acute meningitis of syphilitic origin and others is the promptness and the intensity of the psychic disturbances. The cases of tuberculous meningitis in children and adults which have been published as cured by mercury and iodid treatment probably in reality had been syphilitic meningitis, with the syphilis unrecognized. Two cases are described in which the symptoms came on gradually. Headaches and forgetfulness so that the man was unable to find his way home from his work lasted for two or three weeks, and then vomiting followed, with stupor. The Wassermann test was negative but the entire absence of fever and the high pressure in the spinal fluid, the intense Kernig sign and cerebellar ataxia confirmed the diagnosis of syphilitic meningitis and complete recovery followed in less than ten days of mercurial treatment. In the other case the meningitis came on with high fever, delirium, and symptoms of nephritis. Under mercury and iodid both the meningitis and the nephritis subsided completely. Although there was no history of abortions, the ten children all presented stigmata of syphilis.

66. **Tapeworm in Argentina.**—Parodi found ova of the *Hymenolepis nana* in 8 per cent. of the children's stools examined at Buenos Aires and in 0.66 per cent. of adults' stools. He describes here twelve cases of this helminthiasis in children. As these dwarf tapeworms infest the lower intestine they cause comparatively little disturbance. In a few of the children there were gastro-intestinal symptoms and two presented nervous phenomena resembling epilepsy. One girl of 14 had these epileptiform attacks every week or two for four years. Twitching of the head or left arm was the first symptom, and then came loss of consciousness for a few minutes. Once the convulsion lasted for half an hour, the tongue was bitten and the child was unconscious for several hours. Tonics and sedatives had been ordered by various clinicians, but one noticed finally that the child's nose seemed to itch a great deal, and examination of the stools then revealed the ova and under thorough and repeated male fern or thymol treatment hundreds of helminths were passed and there have been no nervous symptoms since. In another case a boy of 13 apparently healthy otherwise, had fallen unconscious for three or four minutes, the eyeballs rolling up. These attacks were repeated four or five times a day and there were frequent headaches. After six months of this the stools were examined and the dwarf tapeworm ova and endameba cysts were found in large numbers.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 21, 1918, 118, No. 1491

- 68 *Aphorisms of a Urologist. S. V. de Castro.—p. 65.

68. **Aphorisms of a Urologist.**—Among de Castro's aphorisms, which fill five pages, is one reiterating the importance of the ear-bladder reflex, especially with a tendency to prostate obstruction: The sound of water being poured from one vessel into another increases and may even start expulsive

contraction of the muscular fibers in the bladder. He says that deep forcible inspirations aid the *prostaticos* to void urine, as this aspirates the blood into the chest, which relieves engorged veins below and tends to reduce congestion in the prostate region. The action of the balsamics given for gonorrhea is chiefly displayed as they are eliminated through the diseased mucosa. It is important therefore to keep the diseased mucosa clean so that elimination can proceed unimpeded. This is particularly necessary with gonorrheal vaginitis. He declares that intra-urethral injections wash the germs into previously uninfected regions, so that they have done more harm to the human species than the gonococcus itself. Copaiha and the other balsamics induce diuresis by their action on the kidney, and they are liable to bring on lumbar pain, vesical tenesmus and albuminuria, which must not be misinterpreted. Persons with sluggish metabolism and elimination seem to be particularly predisposed to the chronic form of gonorrhea. Well treated gonorrhea never leaves urethral stenosis. The asepsis of the catheter may be complete but it takes up germs as soon as it touches the meatus. His final aphorism is to the effect that singing with all one's lungs promotes diuresis.

Revista Medica del Uruguay, Montevideo

January, 1918, 21, No. 1

- 69 *Intra-ocular Sarcoma. J. De Salterain.—p. 1.
- 70 *Congenital Segmentary Edema. J. A. Bauza.—p. 6.
- 71 *Dissecting Perimastitis. F. Cortabarría.—p. 9.
- 72 Infantile Scorbutus. R. M. del Campo.—p. 15.
- 73 *Typhoid Superposed on Paroxysmal Hemoglobinuria. A. Ugon.—p. 20.

69. **Intra-Ocular Sarcoma in Children.**—De Salterain cites among others a report on thirty cases of sarcoma of the choroid compiled by Argañaraz of Buenos Aires in 1915, but none were in children. He has been unable to find records of more than thirteen or fourteen cases in children, but he has himself encountered two cases in infants. In both cases prompt enucleation was done, and the children have shown no sign of recurrence during the intervals of four and eight years since. One was a girl of 6 months, the other a boy of 22 months. The children seemed to be healthy otherwise. In the first case there was no inflammatory reaction, but the child cried and became restless when the sound eye was covered, confirming that vision was lost in the other.

70. **Segmentary Edema.**—Bauza noticed the day after the birth of a girl infant that both of the infant's feet showed extreme edema, but there was no trace of edema elsewhere. Under massage and application of heat it gradually subsided somewhat but was still pronounced, and harder, by the fifth month. Milroy has reported a family in which there were twenty-two cases in the course of six generations, but in Bauza's case no familial or hereditary factor was manifest.

71. **Dissecting Perimastitis.**—Cortabarría's two patients were parturients, apparently entirely healthy except for lymphangitis of the mamma. The breast was treated with nodule of iodine. Ulceration followed and a Bier vacuum glass was applied in each case with application of ice in the case and further iodine treatment in the other. The aspiration into the vacuum glass had evidently been too severe, and this traumatism in connection with the extravasation of serous fluid induced by it had favored the spread of the existing lymphangitis. It invaded the region around the mamma, causing chills, high fever and dissecting perimastitis. The woman was left with diffuse infiltration of the mamma after recovery. The other developed phlebitis in the left leg and an embolus in the left lung, with symptoms suggesting thrombosis in the external iliac vein. Streptococci were cultivated from the blood just before death. He regards the intensive application of the vacuum glass as the principal factor in these complications.

73. **Typhoid with Hemoglobinuria.**—The boy of 7 had been subject to essential paroxysmal hemoglobinuria for four months when he developed typhoid. There were no signs of inherited syphilis, but the tuberculin reaction was positive. Fever, depression and bronchopulmonary symptoms were the

only signs of typhoid until agglutination became positive by the end of the fourth week. The case further teaches, it is emphasized, the necessity for vaccination against typhoid for the personnel of hospitals and for all the inmates when there are cases of typhoid in the building. This child evidently contracted the typhoid from a typhoid case in the hospital.

Semana Medica, Buenos Aires

Dec. 27, 1917, 24, No. 52

- 74 *Hookworm in Argentina. C. P. Mayer and R. A. Borzone.—p. 725.
- 75 Improved Ureometer. A. M. del Pont.—p. 732.
- 76 *Syphilis in Argentina. J. A. Raíces.—p. 735.
- 77 Smallpox in Northern Argentina. J. B. Valdes.—p. 739.
- 78 The Stretcher-Bearer Service. J. A. Lopez.—p. 742.
- 79 The Increasing Infantile Mortality. E. R. Coni.—p. 747.

74. **Hookworm in Argentina.**—Mayer and Borzone report the first case of autochthonous ankylostomiasis in a man who had been living constantly in Argentina for many years. The *Necator americanus* was found numerous in the stools.

76. **Syphilis in Argentina.**—Raíces comments on the alarming spread of syphilis in Argentina. The number applying for treatment of syphilis at the clinic for skin diseases and syphilis has almost doubled in the last five years. All ages, both sexes and all classes of society show this constant increase, while the public authorities, he reiterates, are doing nothing to check its spread which grows more and more difficult every day that passes. During the last four years the source of the infection has been investigated in every case of syphilis in the clinic, and in 95 per cent. it was traced to the licensed brothels under municipal supervision with weekly medical inspections.

Siglo Medico, Madrid

Jan. 5, 1918, 65, No. 3343

- 80 Endemic Goiter in Spain. J. Goyanes.—p. 2. To be continued.
- 81 Relation between Arteriosclerosis and Chronic Arthritis. G. Hurtado.—p. 4.
- 82 Vital Statistics. L. Lasbennes.—p. 6.
- 83 Traumatism in Infancy. H. Ibañez.—p. 8.
- 84 Practical Dietetics. S. Baglioni.—p. 9. Continuation.

Grèce Médicale, Athens

August-September, 1917, 19, No. 15-18

- 85 *The Position on All Fours to Relieve Heart Distress. Cecikas.—p. 29.
- 86 *Oxaluria and the Diazo Reaction. A. Phocas.—p. 32.
- 87 Oxaluria Preceding Diabetes. A. Phocas.—p. 33.
- 88 Indicanuria with Deficient Diet. A. Phocas.—p. 33.

85. **Crawling on Hands and Feet to Relieve Heart Disease.**—Cecikas reports eight cases in which persons with distressing paroxysmal tachycardia or other heart symptoms obtained great relief by getting down on all fours. One man of 32, emaciated from bacillary dysentery, found this the only means of relieving paroxysmal tachycardia. After the dysentery had been cured by serotherapy, there were no further paroxysms. Other patients were corpulent and suffered from a tendency to angina pectoris or to edema of the lung. Getting down on all fours, and standing still or crawling to and fro like an animal in a cage, brought relief each time. One of the patients was very thin and nervous, with attacks of palpitation and distress, insomnia, etc. By getting up in bed and crawling around on all fours she obtained relief and slept afterward. A change to the country and hydrotherapy cured her. The change to the quadruped position changes the statics and the distribution of fluids in the body, and thus cannot fail to modify the heart action. The pressure in the chest is reduced which facilitates the reflex of blood, while the viscera change their relations to each other to some degree, and the heart changes its position notably, both perpendicularly, horizontally and twisting on its axis, and its relation to the abdominal viscera is altered. The influence of indigestion and tympanism on the functioning of the diseased heart is well known. He has seen arrhythmia subside completely in children kept fasting for a day, and he has witnessed prompt recuperation of the heart in typhoid that seemed on the point of complete heart failure, when a tube

was introduced high up in the bowel to permit evacuation of gases. He adds that it is possible that toxins generated in the bowel may slide down, in the all fours position, to some point where they may get modified or neutralized. This position may also modify the glands with an internal secretion. In conclusion he cites Hirtz' statement that a change to the quadruped position brings such relief in pericarditis with much effusion that this relief may be regarded as a pathognomonic sign of this disease.

86. **Oxaluria and the Diazo Reaction.**—Phocas relates that in twenty-one clinical patients there was oxaluria plus urobilinogenuria in all but three.

Acta Scholae Medicinalis Univ. Imp. Kioto

Jan. 31, 1918, 2, No. 2, German Edition

89 *The Bacterial Demolition of d-Tyrosin and Stereochemical Behavior of the Products. M. Tsudji.—p. 115.

90 *Direct Implanting of Nerve in Muscle. T. Doi.—p. 125.

91 Actions of Cholin, especially on the Circulation. Y. Ozaki.—p. 143.

92 *Pathogenesis of Communicating Hydrocele. H. Tsuji.—p. 207.

89. **Action of Bacteria on Tyrosin.**—Tsudji subjected tyrosin to the action of proteus bacilli, and other specimens to the action of the subtilis. The products with the proteus were always of the dextro type; with the subtilis they were always of the levo type. He says that he knows of nothing analogous to this in pure chemistry or in biologic chemistry. The d-oxyacid product was always obtained with the proteus, the l-oxyacid, with the subtilis, regardless of the optic components of the tyrosin. He experimented both with d-tyrosin, l-tyrosin and dl-tyrosin.

90. **Implanting Nerve in Paralyzed Muscle.**—Doi's experiments on young rabbits gave encouraging results. He exposed the nerves at the back of the knee through a 3 cm. incision, resected as long a stretch of the tibial nerve as possible, and severed the external popliteal nerve in the peripheral portion. Then he implanted the central stump of this popliteal nerve in the neurectomized gastrocnemius muscle, and fastened it to the muscle with a few stitches. Seven such experiments and the ultimate microscopic findings are described in detail, as also five experiments in which the nerve was thus implanted in a long paralyzed muscle. In other experiments he studied the changes undergone by the neurectomized muscle. The results obtained encourage the hope that a long paralyzed muscle can be restored to functioning by implanting another motor nerve, provided the muscle is only in simple atrophy and does not show too extreme a degree of degeneration. No evidences of hyperneurotization were observed up to eighty-five days when another motor nerve was implanted in sound muscle. In the further growth of the regenerating nerve fibers, the presence of the old degenerated nerve tract seems to play a great rôle, as is illustrated in a colored plate.

92. **Communicating Hydrocele.**—Tsuji applies this term to hydrocele communicating with the peritoneal cavity, and describes thirteen cases in which he corrected conditions by a laparotomy. The fluid was derived mainly from the peritoneal cavity and signs of simple chronic peritonitis were found in nearly every case although it had been quite latent in several. The peritonitis had evidently been brought on by constipation, chronic indigestion and ascaridiasis. The patients were mostly boys from 5 to 18, but there were three men of 22, 37 and 42. In two of the cases the hydrocele had subsided for five months or seven years but then returned, but the cure was complete in every case when the internal opening of the vaginal process was permanently closed with a purse-string suture. No signs of tuberculous peritonitis were found in any case and only two of the patients gave a faint Pirquet tuberculin reaction.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Jan. 26, 1918, 1, No. 4

93 *Acute Pregnancy Edema of Uterine Cervix. J. S. A. M. Knoop and J. A. van Dongen.—p. 207.

94 *The Pituitary Body. M. W. Woerdeman.—p. 215.

95 *Intratracheal Treatment of Asthma. D. J. De Levie.—p. 221.

96 Invertase in the Blood Serum. C. H. Boissevan.—p. 226.

97 Electric Accidents; Two Cases. F. J. H. Alberti.—p. 232.

93. **Acute Edema of Anterior Lip of Uterine Cervix.**—The edematous swelling protruded from the labia in the case described, but gradually subsided and delivery followed three days later. Knoop and van Dongen review the literature on the subject and discuss the probable factors involved. In 1912 Meyer compiled twenty-two cases of the kind.

94. **Anatomy of the Pituitary Body.**—Woerdeman analyzes the lobus bifurcatus of the pituitary body and its origin as studied on various vertebrates. It is very small in man, as he shows in his illustrations, but it is very important on account of its proximity to the chiasm and the floor of the third ventricle. Its location in the subarachnoidal space suggests that it has some special function. It cannot be removed with the rest of the gland without resecting the diaphragm of the sella turcica, and even then cannot be removed without danger of injury of nerve tissue as it extends toward the base of the brain. Another significant feature of this bifurcated lobe is that it may explain the cysts that develop back of the stem of the pituitary body.

95. **Intratracheal Treatment of Asthma.**—De Levie incriminates spasm of the bronchial muscles as the cause of asthma, and ascribes this to overexcitability of the innervation. The logical treatment is to reduce this overexcitability, especially as it has been found that anesthetizing the region for bronchoscopy seems to arrest and cure attacks of asthma. Ephraim, Pieniazek and Novotny have each reported the cure of asthma by systematic application of novocain plus epinephrin. No untoward by-effects were ever observed. De Levie has applied this method of treatment in fifteen cases and seven may be regarded as cured, no attacks having returned during about a year to date. Six were much improved but still have an occasional attack and return for further treatment. The attacks are rare, however, and much milder. No benefit was observed in one young woman with hysteric paralysis of the vocal cords, and in another case in which the asthma was of twelve years' standing and the expectoration from chronic bronchitis so profuse that probably the medication was mostly expelled without getting absorbed. The technic is simple; a flexible tube carries the spray directly into each bronchus in turn, thereby acting on the nerve terminals and thus arresting the cause of the spasm of the bronchial muscles. In his later series he used an atomizer with a tube bent twice at a right angle. The distal, downward bent portion is 10 cm. long. After cocaineizing the larynx, the tube is introduced under the guidance of the mirror. It reaches down below the cleft of the vocal cords. Then the fluid can be sprayed in gently, taking as much time for it as you wish. In order to get as much spray into the air passages as possible, the atomizer bulb is squeezed synchronous with each inspiration. He used various sprays; besides the novocain-epinephrin mixture, he tried tannin, menthol or Ems salts. The application was made twice a week at first and then once a week or with longer intervals. In some cases the course lasted for two or three months. All were old inveterate cases, mostly with chronic bronchitis, in some with emphysema, so that 50 per cent. cured and all improved but two, seems a satisfactory result.

Ugeskrift for Læger, Copenhagen

Jan. 17, 1918, 80, No. 3

98 Nature of Hysteria, Neuroses and Perverted Reactions. O. Gulstad.—p. 85.

99 *The Minimum Ration of Fat. S. Bang.—p. 105.

99. **Minimum Ration of Fat.**—Bang protests against generalizing the results of Hindhede's experiments on two healthy men who lived for eighteen months on a practically fat-free diet without physical harm. Assuming that the robust trained men actually subsisted without any fat for this length of time, it by no means follows that the general populace, the children, the tuberculous, could stand deprivation of fat without harm.

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A BLOOD SUGAR TOLERANCE TEST*

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There is need both of a better general understanding of sugar tolerance and of a reliable sugar tolerance test. The customary clinical method has been to give the patient by mouth 100 gm. of glucose dissolved in more or less water and to determine the presence and amount of a possibly resulting glycosuria. This rough procedure is very uncertain. It has been justly criticized by Allen,¹ and also by Hulton and Taylor² on the basis of experimental evidence. These investigators called attention to the fact that there is no actual upper limit to sugar tolerance so far as normal individuals are concerned, as they are able to tolerate as much glucose as they can retain. Therefore it is argued that increased tolerance must be nonexistent. This objection has cast doubt on the whole conception of increased sugar tolerance. On the contrary, a *decreased* power of assimilation of glucose does certainly occur as, for example, in diabetes. There is, of course, no question as to the value of sugar tolerance in these conditions. A second objection to the usual clinical test may be raised, namely, that oral administration of glucose is uncertain, as variations in the alimental absorption cause discrepancies in the results. This is an obvious possibility, as rate and concentration at which the sugar enters the circulation are controlling factors. Still other objections may be raised. One hundred gm. of glucose have been arbitrarily administered to persons weighing 100 or 200 pounds. The amount of water given with the glucose has never been properly standardized. These factors very probably influence the results of the tolerance tests.

Again, it must be remembered that faulty inference as to the sugar tolerance is liable to be made when the urine alone is tested, for glycosuria may occur without elevation of the blood sugar. Moreover, no glycosuria may ensue on marked elevation of the blood sugar. Thus both incipient diabetes mellitus and renal diabetes are characterized by glycosuria in the tolerance test. In renal diabetes there is, however, an inconsequential rise in the blood sugar, while in true diabetes the opposite is the case. Hyperglycemia without glycosuria, such as occurs in chronic interstitial nephritis cases tested for their blood sugar

tolerance, may lead to the wrong conclusion, that the tolerance is increased when the actual condition is sugar retention.

The subcutaneous and intravenous methods have been used in an attempt to avoid these disturbing influences—the former, however, with no success.

Wilder and Sansum³ and Sansum and Woodyatt⁴ have, however, worked out what is undoubtedly the most accurate method as yet devised for testing the urinary glucose tolerance. By using intravenous injections and carefully controlling the rate of glucose supply to the blood with special apparatus, they obtained results that checked well, and concluded that the intravenous injection of 0.8 gm. of glucose per kilogram of body weight per hour represented the upper limit of tolerance of normal persons. When more sugar is injected, glucose appears in the urine. Sansum and Woodyatt, in a careful critique, very properly call attention to the inaccuracies of the usual clinical methods of tolerance testing. But serious practical objections may be made against their own method. Expensive apparatus and a venous puncture are required. This will always stand in the way of its general adoption for clinical purposes.

It remained desirable, therefore, to devise a tolerance test that would be more convenient and sufficiently accurate. We have consequently returned to the study of oral administration of sugar. The possibility of delayed or defective absorption from the alimentary canal had first to be controlled. This factor has been supposed by various authors greatly to influence the results of tolerance tests. Several years ago, during a previous investigation of sugar formation from protein in diabetes, it became necessary to make some experiments concerning this point. Much less variation was found in the absorption rate, even of solids, than had been supposed to exist. When various mechanical factors were controlled, absorption took place at such a regular pace that curves representing the nitrogen and, indeed, the sugar excretion following protein ingestion showed a remarkable similarity in several experiments. Reference may be made to the original articles⁵ for details. Mendel and his collaborators⁶ have come to the same conclusion in elaborate studies which cannot be discussed here. Water soluble substances are absorbed at a still more uniform rate. From the results of these physiologic experiments, it appeared very likely that pure glucose

3. Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, Arch. Int. Med., February, 1917, p. 311.

4. Sansum, W. D., and Woodyatt, R. T.: Jour. Biol. Chem., 1916, **24**, 343.

5. Janney, N. W., and Csonka, F. A.: Jour. Biol. Chem., 1915, **22**, 203. Janney, N. W.: Jour. Biol. Chem., 1915, **20**, 321. Janney, N. W., and Blatherwick, N. R.: Jour. Biol. Chem., 1915, **23**, 77.

6. Mendel, L. B., and Fine, M. S.: Jour. Biol. Chem., 1911-1912, **10**, 303, 339, 345; 1912, **11**, 1, 5. Mendel, L. B., and Lewis, R. C.: Jour. Biol. Chem., 1913-1914, **16**, 19, 37, 55.

* From the Montefiore Home and Hospital.

* Read before the Society for Experimental Biology and Medicine, New York, Nov. 21, 1917.

1. Allen, F. M.: Glycosuria and Diabetes, Cambridge, 1913.

2. Hulton, F., and Taylor, A. E.: Jour. Biol. Chem., 1916, **25**, 175.

solutions of constant concentration given per kilogram of body weight would be absorbed even by different persons at a fairly uniform rate. It is obviously necessary to study the rate of alimentary absorption of sugar. Blood sugar estimations enable us to do this. It is known that the blood sugar is elevated when carbohydrates are ingested. When the factors mentioned below were observed, it was found that following glucose ingestion normal individuals uniformly reacted with a definite degree of hyperglycemia. Thus, by observing the blood sugar at short intervals, it was possible to map out a normal blood sugar curve. This has been found to be so constant, both by ourselves and by others,⁷ that a very long series of controls was not indicated.

The necessary factors requiring observance are:

1. To avoid the influence of food, the subject must be fasting at the time of the test. This hunger period is fifteen hours in our technic.

2. The blood sugar level must be known before the glucose is fed, since hyperglycemic and hypoglycemic states markedly affect the blood sugar tolerance. (See experiments in this article.)

3. The blood sugar assimilation curve must express the velocity of the hyperglycemic response to sugar feeding. This is obtained by the ingestion of a definite weight of sugar per kilogram of body weight of the subject. The sugar solution must have a definite concentration. The necessary time factor is supplied by estimating the degree of the resulting hyperglycemia at fixed intervals.

4. The glucose used must be pure, as we have found in former experiments that glycosuria may be caused or increased as a result of toxic substances ingested with the sugar.

5. Exercise should be limited during the time of the test, as it has been demonstrated both clinically and experimentally that bodily movement usually increases glucose combustion. This was accomplished in our series of experiments by confining dogs to cages and obliging patients to sit quietly during the test periods.

6. The rate of alimental absorption must be controlled. This has already been discussed. With observance of these factors, the blood sugar tolerance test as performed by us is as follows:

TECHNIC OF THE BLOOD SUGAR TOLERANCE TEST

The patient fasts from 7 p. m. one day until the test is completed the following morning. Meantime the patient's weight is ascertained and the glucose drink prepared by dissolving in water a weighed amount of glucose equivalent to 1.75 gm. of the sugar for every kilogram ($2\frac{1}{5}$ pounds) of this weight. For each gram of glucose, 2.5 c.c. of water are used, that is, 10 c.c. of water for 4 gm. of glucose. The juice of one lemon may be added for flavoring. At an early morning hour the blood sugar is determined. As soon as convenient thereafter, the patient drinks the previously prepared cooled glucose solution. The mouth may, if desired, be washed out with a swallow of water reserved from the measured quantity for this purpose. Exactly one hour after the sugar drink has been taken, the blood is withdrawn for a second sugar

determination, and a third time one hour later, that is, two hours after the sugar drink has been taken. If the tolerance is normal, the difference between this third estimation and the fasting value seldom exceeds 0.01 per cent. (Table 1).

The determination made at the end of the first hour is not strictly necessary, but is helpful in determining the height of the sugar curve. If the tolerance is decreased, the determination made at the end of two hours will detect persistent hyperglycemia, the extent of which may, if desired, be ascertained by further hourly determinations. The presence of hypoglycemia or hyperglycemia is, of course, indicated by the determination of the fasting sugar level, which consequently enhances the value of the test. Up to the present it has been our custom to collect a twenty-four hour specimen of urine, beginning at the time of ingestion of glucose and determining the presence and amount of glycosuria. This yields additional information, and is corroborative when the subject's tolerance is diminished. It should be noted that not one of the entire list of normal persons whose curves

TABLE 1.—BLOOD SUGAR TOLERANCE TESTS ON NORMAL INDIVIDUALS*

Control	Before Glucose Ingestion	After Glucose Ingestion				Urinary Glucose
		$\frac{1}{2}$ Hr.	1 Hr.	$1\frac{1}{2}$ Hr.	2 Hr.	
	Mg.	Mg.	Mg.	Mg.	Mg.	Gm.
1	90	...	100	92	...	0
2	88	...	108	...	85	0
3	90	...	145	...	89	0
4	91	...	92	94	...	0
5	88	...	118	...	104	0
6	102	...	125	109	...	0
7	99	116	105	...	...	0
8	102	161	97	...	...	0
9	87	127	104	110	...	0
10	117	140	135	118	...	0
11	96	123	124	124	106	0
12†	120	132	103	100	...	0
13	112	143	114	...	...	0
14	101	162	...	115	110	0
15	97	126	117	114	...	0
16	105	125	120	106	...	0
17†	120	144	137	126	...	0
18	100	...	130	...	100	0
19	95	...	120	...	96	0

* We are indebted to Dr. Fergus Butler of the Metabolism Clinic, New York Post-Graduate Medical School and Hospital, for several blood sugar tests.

† High blood sugar but a normal curve.

appear in the protocols showed any glycosuria on the standard amount of sugar fed. The blood test is much more delicate and gives more information than the urinary.

The blood sugar tolerance test requires at least two or more blood samples taken at short intervals. We have found it inadvisable, therefore, to use any method requiring venous puncture, which demands considerable technical skill for frequent observations in the same patient, and have accordingly adopted Epstein's micromodification of the Lewis-Benedict method, as shown above. The technic is simple and has the advantage of requiring only a few drops of blood, taken, as in a blood count, from the finger tip. In an extensive experience we have been unable to obtain the extreme accuracy claimed for this technic. However, the results are still quite satisfactory clinically, as the error in our hands has not exceeded 7 per cent. and, indeed, rarely .4 per cent. Duplicate determinations were made in every case in the work reported in this article. They agree excellently. Even a 7 per cent. error does not detract from the clinical value of a blood sugar estimation; for whether a given result is, for example, 0.090 or 0.096 per cent., has no very

7. Bang, I.: *Biochem. Ztschr.*, 1913, **56**, 300. Jacobsen, A. T. B.: *Biochem. Ztschr.*, 1913, **56**, 471. Johnson-Blohm, G.: *Läkaref.*, Förh., Upsala, 1914-1915, N. Y. Förl., **20**, 331. Hopkins, A. H.: *Am. Jour. Med. Sc.*, 1915, **149**, 254. Cummings, R., and Piness, G.: *Arch. Int. Med.*, 1917, **19**, 777.

serious significance. The technic is easily acquired even by one unaccustomed to delicate chemical procedures. We have found it advisable to prepare pure 0.10 and 0.20 per cent. glucose solutions at intervals, and to run blank determinations on these in order to detect imperfections in the reagents used, as well as to determine whether the standard color tubes are correct.

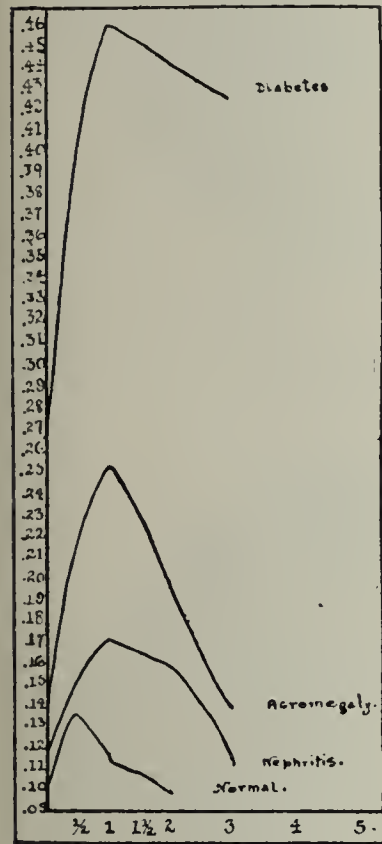
The hyperglycemic response to the tolerance test gives from 0.12 to 0.14 per cent. glucose in most normal cases, the normal fasting level of 0.10 per cent. being reattained in an hour and a half, or two hours at most. This has been observed in isolated cases by others.⁸ In morbid conditions three, four or even five hours may be required.⁹

INDICATIONS

Obviously, all the usual indications for blood sugar estimations are here included. Such are diabetes, nephritis and disturbances of the various ductless glands. It is the belief of many that a sugar

tolerance test is frequently indicated in diabetes. In most cases, however, we have found this test, and indeed the use of any tolerance test necessitating the use of glucose, to be usually of more scientific interest in diabetes than of practical value. The blood sugar curve is greatly prolonged in this disease, but this information is superfluous on account of the presence of other symptoms. Vastly more important is it, however, to ascertain how the diabetic reacts to a diet containing varying proportions of carbohydrate, fat and protein than it is to determine his tolerance to sugar, a substance he usually cannot be permitted to include in his food. When, however, it comes to the very mild cases which only occasionally show glycosuria on a full diet, the tolerance test is most useful, for one of the first symptoms is a

prolongation of the blood sugar curve with hyperglycemia. It is probable that the test will become of value in differentiating renal diabetes from diabetes mellitus. A case of renal diabetes showed a normal blood sugar value and a typical tolerance curve, the highest point reached being 0.12 per cent., yet very definite glycosuria was present. Thus increased renal permeability without hyperglycemia may coexist.



Blood sugar tolerance in diabetes, acromegaly and nephritis, as compared with the normal. The horizontal line represents the hours, the vertical line indicates the percentage of blood sugar. Curves in cretinism and exophthalmic goiter are in course of publication.

Aside from the tolerance test, a study of the blood sugar in diabetes is yielding results of increasing interest and value. In glycosuric individuals the degree of hyperglycemia is to a certain extent a measure of the severity of the case in question. In sugar-free cases a high blood sugar approaching 0.17 per cent., the level at which glycosuria usually begins, indicates the necessity of fasting or further reduction in the diet. On the other hand, a fall of the blood sugar to the normal level in a diabetic formerly showing hyperglycemia indicates that the tolerance has increased. A trial addition of carbohydrate food may now be made. There is, however, a group of diabetic cases which show hyperglycemia above 0.17 per cent. even when the urine is sugar-free and renal involvement can be excluded.¹⁰

In chronic interstitial nephritis there is a tendency for the blood sugar to remain at the upper level of the normal, or higher. This is usually a retention phenomenon. In general, blood sugar values higher

TABLE 2.—BLOOD SUGAR TOLERANCE ESTIMATIONS IN VARIOUS CLINICAL CONDITIONS

Case	Treatment	Before Glucose Ingestion	After Glucose Ingestion					Urinary Glucose
			1 Hr.	2 Hr.	3 Hr.	4 Hr.	5 Hr.	
Y. K.—Cretin.....	Before	Mg. 65	Mg. 109	Mg. 85	Mg. 85	Mg. 75	Mg. 65	Gm.
	After	104	164	116	106			
M. S.—Myxedema.....	.....	96	...	115	88			
A. S.—Hypothyroidism .....	.....	103	...	130	125	...	...	Ft. tr.
B. G.—Dysthyroidism..	.....	110	180	150	120			
E. T.—Exophthalmic goiter.....	Before	100	184	...	105	92	...	0.75
	After	70	107	72	...	...	...	0
J. W.—Exophthalmic goiter.....	Before	99	192	151	120	112	...	6.13
	After	122	224	164	130	...	...	4.0
J. H.—Exophthalmic goiter.....	Before	70	122	117	91	87	...	4.34
	After	98	138	114	91	...	...	0
M. F.—Exophthalmic goiter.....	.....	70	115	107	91	87	74	0
M. S.—Exophthalmic goiter.....	.....	88	110	108	86	...	...	Ft. tr.
J. D.—Exophthalmic goiter.....	.....	108	181	130	110			
R. S.—Acromegaly.....	.....	134	254	197	140	...	...	0
I. R.—Acromegaly; muscular dystrophy.	.....	68	127	95	90	63	...	0
J. B.—Chronic interstitial nephritis.....	.....	116	172	160	112	...	...	0
R. F.—Chronic diffuse nephritis.....	.....	112	186	139	90	...	...	0
M. R.—Diabetes.....	.....	269	463	445	428	...	...	8.00
K. B.—Incipient diabetes.....	.....	110	...	150	...	...	...	0

than the normal, accompanied by a prolonged or delayed blood sugar curve with the absence of glycosuria, are indicative of nephritis.¹¹

The relation of the blood sugar to the endocrine conditions has been studied by us for some time past. It was first found that thyroidectomy is followed by hypoglycemia,¹² which is therefore to be ascribed to a hypofunctional condition of the endocrine glands. Hypoglycemia has been detected in cretinism, myxedema, Addison's disease¹³ and hypophysial dystrophy.¹⁴ We have found it constantly present in muscular dystrophy.¹⁵ But few studies have been made of the blood sugar tolerance in these conditions. We

8. Graham, G.: Jour. Physiol., 1915, 50, 285. Frank, E.: Ztschr. f. physiol. Chem., 1910, 70, 291.

9. The directions given above have been followed in obtaining the results recorded in this article. The technic recently described by Hamman and Hirschmann (see end of article) has the advantage of using less glucose than in our experiments but can be criticized as the water and glucose are not standardized to the unit weight of the individual. The following modification is therefore suggested for future work: to use 1.5 gm. glucose per kilogram of patient's body weight. For each gram of glucose to use 3 c.c. of water. The other directions to remain as described in the text.

10. Personal observations of Janney. See also Mosenthal, H. O., and Lewis, D. S.: Johns Hopkins Med. Bull., 1917, 28, 187.

11. Similar observations have been made by Hopkins.

12. Janney, N. W., and Isaacson, V. I.: Proc. Soc. Exper. Biol. and Med., 1917, 14, 99.

13. Porges, O.: Ztschr. f. klin. Med., 1909-1910, 69, 341. Sakoguchi, K.; Tatsuya, K., and Kinyosai, O.: Mitt. a. d. med. Fak. d. k. Univ. zu Tokyo, 1915, 14, 111. Janney: Unreported case.

14. Falta, W.: Ductless Glandular Diseases, Philadelphia, 1916, p. 291.

15. Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, Arch. Int. Med., February, 1918, p. 188.

have detected a delayed blood sugar curve in cretinism, myxedema, acromegaly and muscular dystrophy. It has also been recorded by others for acromegaly.¹⁶ It is to be expected, therefore, where other hypoglandular conditions exist. This is a very interesting observation, for it would naturally be expected that the lower the blood sugar level the more quickly the ingested sugar would be removed from the blood. This tendency to a delayed tolerance curve may be taken as an indication that carbohydrate metabolism is disturbed in hypofunctional activity of the endocrine organs. A hyperglycemic response and a delayed blood sugar curve have been observed by us in all cases of hyperthyroidism and exophthalmic goiter tested. This evidence of imperfect carbohydrate assimilation suggests that dysfunction rather than hyperfunction of the thyroid is the underlying condition in exophthalmic goiter. The delayed curve is much more valuable than hyperglycemia in this condition, for certain cases of hyperthyroidism exhibit the former in the tolerance test, yet the fasting blood sugar is normal or subnormal.

The test here suggested unfortunately is of no aid in the differential diagnosis of endocrine diseases in the absence of specific clinical symptoms, for the disturbances of carbohydrate metabolism detected by it are caused by various dysfunctionating ductless glands.

In the first part of the article it was mentioned, in regard to an upper limit of glucose tolerance, that such a condition has been doubted to exist, since normal persons could take increasing amounts of glucose without the appearance of glycosuria. A few grams of sugar, however, usually do appear in the urine of such individuals when very large quantities of glucose are ingested. Increased sugar tolerance with absence of glycosuria has been frequently reported in hypofunctional endocrine disturbances, such as hypophysial dystrophy, in which condition even 500 gm. of glucose have failed to cause glycosuria. The blood sugar tolerance test affords interesting insight into the nature of the increased tolerance thus observed, for it is here that we detected hypoglycemia, which in all probability is the cause of the increased tolerance thus observed. Sugar tolerance tests¹⁷ performed by us on thyroidec-tomized dogs never showed as great a rise in the blood sugar following ingestion of glucose as did normal animals similarly examined. It is evident from this that more glucose can be assimilated in the case of the athyroid animals without causing glycosuria, and that this is probably due to the fasting low blood sugar level in these animals. As already mentioned, there is a tendency to a delayed sugar curve in these conditions; but this tendency is never sufficient to produce hyperglycemia and glycosuria, the hypoglycemia being the controlling factor.

CONTRAINDICATIONS TO THE BLOOD SUGAR TOLERANCE TEST

Contraindications are irritable stomach in neurotic conditions and grave gastro-enteric diseases when delayed absorption might interfere with the results. Gastrectasia, atrophy of the mucosa, extensive ulcerations, or adhesions preventing normal peristalsis can conceivably affect the absorption rate and invalidate the test.

16. Goetsch, E.: Cushing, H., and Jacobson, C.: Bull. Johns Hopkins Hosp., 1911, 22, 165.

17. Janney and Isaacson (Footnote 12). Janney, N. W., and Isaacson, V. I.: The Blood Sugar in Thyroid and Other Endocrine Diseases, in course of publication.

ADDITIONAL NOTE

The blood sugar tolerance test has been in use at the Montefiore Home and Hospital for the past two years. It was first discussed in a paper¹² read before the Society for Experimental Biology and Medicine, Feb. 21, 1917. Dr. Hamman has kindly called our attention to a preliminary report¹⁸ of his work with Hirschmann on the same subject, read May 10, 1916, before the Association of American Physicians, appearing in March, 1917. We regret that these important data came to our notice after this paper had been written and cannot be conveniently incorporated in the text. Our detailed technic was described in this paper¹⁹ read before the Society for Experimental Biology and Medicine, Nov. 21, 1917.

Nov. 17, 1917, a splendid article by Hamman and Hirschmann²⁰ appeared, reporting practically the same results as obtained by us.

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THE TRANSPLANTATION OF BONE

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During recent years the science of bone transplantation has been occupying the attention of orthopedic surgeons to a steadily increasing degree. While the earlier operations were pure experiments attended by success or failure, depending on whether the surgeon chanced to employ the principles that are essential to success, the mass of evidence now at hand as the result of experimentation on animals has clearly out-



Fig. 1.—Low power photomicrograph taken at the medullary edge of an autogenous bone graft, three weeks after operation. It shows the union of the graft to the cancellous medullary bone; the invasion of the graft by the proliferating osteoblasts, large cavities being formed in its substance; the laying down of new bone on the walls of these cavities; the disappearance of the cells from the lacunae, and the reestablishment of the circulation as seen in the large haversian canal at the upper edge.

lined these principles and placed the clinical employment of the procedure on a sound scientific basis.

18. Hamman, Louis, and Hirschmann, I. I.: Proc. Assn. Am. Phys., 1916, 21.

19. Janney, N. W., and Isaacson, V. I.: Proc. Soc. Exper. Biol. and Med., 1917, 15, 15.

20. Hamman, Louis, and Hirschmann, I. I.: Studies on Blood Sugar, Arch. Int. Med., November, 1917, p. 761.

This is most fortunate at the present moment when thousands of soldiers are returning to our hospitals with injuries to the bones that urgently call for radical operative treatment before the men can be fitted to return to useful civilian life.

CHANGES IN TRANSPLANTED BONE

The experiments on which we have based the principles that have guided our operative work have been

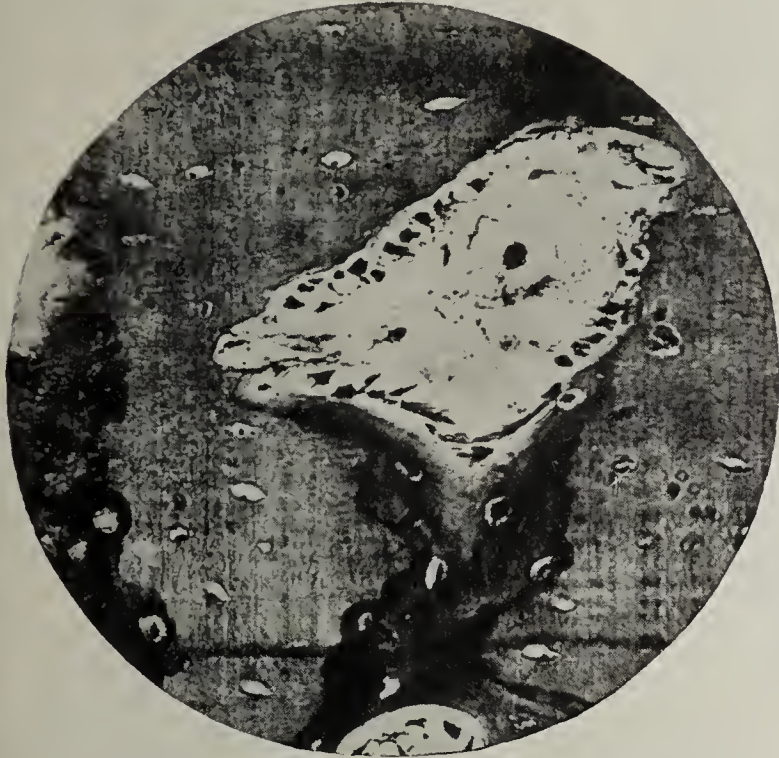


Fig. 2.—High power photomicrograph of one of the cavities shown in Figure 1. It shows the remains of dead cells in the lacunae, the active absorption of the dead bone by the osteoblasts, and the production of new bone in the older portions of the cavity.

spread over a period of the past four years, but with the exception of two short preliminary reports, the results have not yet been published. The conclusions deduced from these experiments may be thus outlined:

When a piece of living bone has been separated from its circulation and implanted elsewhere in the body of the same patient, the immediate result, as indicated in specimens recovered within a few days of the operation, is the coagulation of all cells and vessels to which the surrounding lymph is unable to percolate. This means the death of all the cells in the lacunae and most of those in the haversian canals. This is indicated by the immediate change in the staining property of the protoplasm and nucleus, and is later proved by the complete absorption of these structures after the lapse of from three to four weeks. On the surfaces of the graft and in the open mouths of the haversian canals, however, are many osteoblasts which are in a position to absorb nutriment from the bathing lymph, and these cells are capable of living and proliferating and of producing those changes that make the autogenous graft so valuable in reparative surgery. At the end of the first ten days after the implantation of the graft, the proliferation of these osteoblasts is well established on the periosteal and endosteal surfaces, and within a few days new bone formation can be plainly seen on these surfaces. In addition to forming new bone about the transplant, these proliferating osteoblasts proceed to attack the dead bone of the grafts and rapidly produce excavations about the edges which are at first filled with proliferating cells and later by new bone laid down by these cells on the walls of the excavation (Fig. 1).

While these changes are occurring on the surface, a reestablishment of the circulation has been taking

place as the result of the ingrowth of new blood vessels into the mouths of the haversian canals. This proceeds with extraordinary rapidity, and in small, porous transplants is complete in approximately two weeks. Along with these blood vessels the osteoblasts spread inward from the surface, and at the end of three weeks the same changes that have been described on the surface are occurring within the substance of the bone. At first, cavities are excavated along the course of the haversian canals, not far below the surface of the bone. Later this cavity formation, which appears to be a solution of the bone by a secretion from the proliferating osteoblasts, spreads deeply into the transplant until ultimately the whole graft is permeated by blood vessels and osteoblasts that are occupied in the absorption of the dead bone. A few days after the formation of a cavity by these proliferating osteoblasts, the older cells return to their adult function of bone production, and soon the older part of the cavity becomes lined with a layer of new bone. This layer increases in thickness, and trabeculae develop from wall to wall until the whole cavity is filled with living cancellous tissue except in those areas in which the proliferating cells are continuing the work of excavation (Fig. 2).

The rapidity with which these changes occur depends on three factors: the size of the graft, its density, and the abundance of the supply of osteoblasts that survive on the surface. Thus in very thick grafts the absorption and replacement of the dead bone in the depths of the graft is necessarily slow, owing to the distance the new blood vessels and osteoblasts have to travel; and in such cases months must elapse before replacement can occur. The density of



Fig. 3.—Low power photomicrograph of two grafts placed end to end in the bed from which they had been cut. The right hand graft was boiled for ten minutes before being placed. Section made three weeks after operation. It shows that the changes following the implantation of autogenous and boiled grafts are in many respects identical. Thus, it shows the reestablishment of circulation in each, the union of each to the underlying cancellous bone, and the absorption and replacement of each by the activity of the invading osteoblasts.

the graft is important also, replacement being necessarily slow in hard, dense bone, such as the crest of the tibia, whereas it is very rapid in open, cancellous bone, such as a rib. This is largely due to the mechanical difference in the permeability of the two types of bone and to the difference in the amount of work to be performed to complete the replacement. Of the

greatest importance, however, is the abundance of the supply of living osteoblasts on the surface. Thus, if the transplant is cut in such a way that the endosteal and periosteal surfaces are undisturbed and exposed to a good supply of lymph, the changes described above occur with certainty and rapidity. If, on the other hand, the graft is cut in such a way that the periosteal and endosteal surfaces are removed, as occurs in making pegs and dowels, very little osteogenesis takes place from the graft itself, owing to the scarcity of the osteoblasts.

The foregoing facts have been established from a series of experiments in which bone of all types was transplanted into the muscles, without contact with living bone, thus eliminating the difficulty of deciding what changes can be ascribed to the living elements of the graft itself. When the experiment is changed so that the grafts are placed in good contact with living bone, the changes described occur much more rapidly, evidently because of the additional supply of osteoblasts arising from the bone in which the graft is embedded. The recognition of this fact suggested the possibility of using bone as a transplant in which all the elements were known to be dead. A series of experiments was performed, exactly similar to the preceding, except that the graft was boiled for twenty minutes before implantation. In the case of the implantations into the muscles, no

united to the living bone by new cancellous tissue laid down on its surface by the surrounding living osteoblasts; cavities appear on the surface as the result of the absorptive activity of these cells; and there is the same process of reestablishment of circulation with cavity formation within the graft and the laying down of new bone on the walls of these cavities as occurs in the autogenous grafts. The only difference that can

be established by microscopic study of sections is that in the case of boiled bone all the changes are slowed, as one would naturally expect, from the absence of living elements on the surface of the graft. The rapidity of the changes in the boiled transplants depends on the same factors as in the case of autogenous bone. Thus large and dense grafts are replaced slowly, whereas porous bone, such as is found in the rib, is very rapidly absorbed and replaced by living bone. Again, if the boiled graft is placed in contact with very hard, dense, living bone, such as the chiseled surface of the crest of the tibia, the union of the graft is comparatively slow, and the replacement with living tissue occupies a long period, owing to the absence of an abundant supply of osteoblasts.

From these experiments can be deduced certain principles that are of the utmost importance in clinical surgery. The value of the bone graft is established beyond the shadow of a doubt, but the variations in

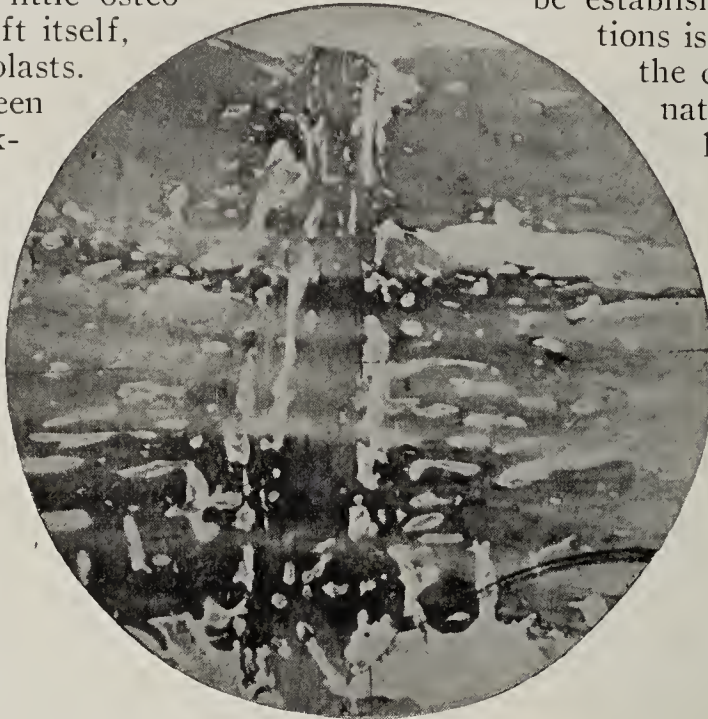


Fig. 4.—Very low power photomicrograph showing the plate (at the upper part of the section) the drill-hole in the plate, the pin, and a portion of the dog's radius. The solid union of the plate and pin to the radius, and of the plate to the pin, in the drill-hole, can be plainly seen.



Fig. 5.—Roentgenogram of fracture immediately after operation, taken through plaster of Paris. Boiled bone plate and bone screws employed.



Fig. 6.—Roentgenogram of same case after lapse of two months. Note commencing absorption of plate and screws.



Fig. 7.—Roentgenogram of same patient after lapse of one year.

change occurs for many months except the slow reestablishment of the circulation and an exceedingly slow absorption from the surfaces. Such grafts will persist for years in the muscles. When placed in good contact with living bone, however, changes very similar to those already described in so-called living autogenous grafts occur. Thus the graft very quickly becomes

the results that have attended its use must be attributed to variations in the employment of the principles that are essential to success. Whenever it has been decided that a bone graft is advisable, in cases in which it is necessary that living elements be transplanted with the graft, the autogenous graft is essential. Boiled bone will not suffice, as here the

replacement of the graft must depend on osteoblasts from elsewhere. Neither will heterogenous bone fill the requirements, as we have established experimentally that all the cellular elements of bone transplanted from one species into another disappear and leave the graft in a condition similar to that of one that has been boiled. Thus, when gaps in the long bones are to be filled, only the autogenous graft should be employed, as here we have a condition in which contact for the graft can be secured only at the extremities, and consequently the replacement of the central portions of the transplant must depend on living osteoblasts on the surface of the graft itself. If a large gap were bridged by heterogeneous or boiled bone, union would occur at the two ends, in all probability; but the central portion, having no living elements, would slowly absorb and disappear under the action of the body fluids and giant cells. Again, in the treatment of non-union in fractures, the autogenous graft is essential, because here we are dealing with fragments of bone in which osteoblastic activity is at a minimum.

It is necessary, therefore, to supply living osteoblasts in the largest possible quantity if we are to feel assured of success from operation. Bearing in mind that in these cases we are trying to supply the largest



Fig. 8.—Roentgenogram of fracture of patella treated with long boiled bone screw, taken through plaster. The fixation is excellent.

number of living osteoblasts, we should remember that it is only on the surfaces that living osteoblasts survive. It is wise, therefore, to cut the grafts in such a manner that the largest possible osteoblast-bearing surface is exposed. The grafts are cut, accordingly, when the tibia is used, from the face of the bone, not from the crest, the width of the graft being made greater than its thickness. The graft always includes the whole thickness of the bone in order that the endosteal surface, which bears the greatest number of free osteoblasts, may be retained. The old idea that it is better to cut a graft from the solid crest of the tibia rather than from its more porous internal surface is completely refuted by these experiments. In fact, it is much better to avoid the tibia altogether, if strength of the graft is not an essential, and to use a rib that has been slotted so as to expose the endosteal surface to a supply of lymph. The amount of bone regeneration that occurs from the surface of a transplanted rib is much greater than that which occurs from one of the long bones. Further, it is wiser to split the graft longitudinally into a number of pieces rather than to insert it in a single piece, as by this means more surface is exposed and more osteoblasts will survive. In operating for an ununited fracture in a long bone, it is our custom, therefore, to insert a single graft that will be strong enough to fix the frag-

ments and then to fill in around it with a number of smaller strips of bone. The result is a great mass of callus which will aid materially in the union of the fracture.

Here the vexed question of the periosteum presents itself. Some years ago we presented a paper on the subject before the Canadian Medical Association in



Fig. 9.—Roentgenogram of fracture of patella after lapse of six months. Note union of fracture and absorption of screw. Function normal.

London, consisting of a report of a series of experiments based on the work of Macewen. The results of these experiments agreed completely with those of Macewen, indicating that the periosteum as viewed by the surgeon is only a limiting membrane composed of fibrous tissue, and that the great majority of the subperiosteal osteoblasts cling to the bone when the periosteum is removed. This view has been further substantiated by a series of experiments in which bone was transplanted with and without periosteum into the muscles of the back, and the amount of osteogenetic activity on the periosteal surface compared. These experiments showed that the value of the graft from the standpoint of osteogenesis was the same in the two cases. We are therefore in the habit of trans-

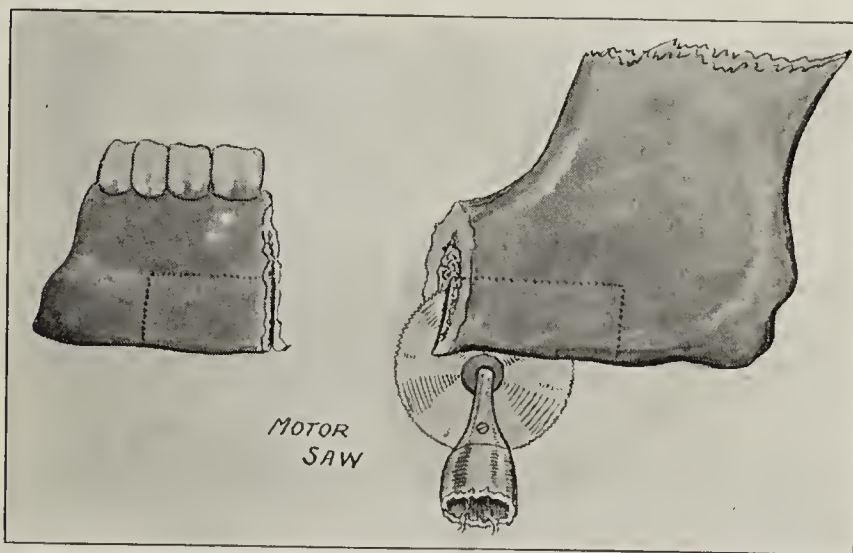


Fig. 10.—Application of motor saw in operation for closing gap in mandible produced by gunshot wound.

planting the bone without its periosteum, using the reflected periosteum to cover up the space left by the removal of the graft.

While the types of cases described above demand the use of the autogenous graft, there are others in which the element of fixation is the principal object of the operation and in which the boiled graft has several decided advantages. In previous papers we

have described the use of boiled plates and screws used to replace the metallic splints described by Lane. The first experiments were performed on dogs, and consisted of the production of fractures and the fixation of the fragments with plates and pegs of boiled bone. The specimens recovered at intervals after the operation showed the rapid union of the fracture and union of the plate and pin to the underlying bone. At the end of two months the union of the dead to the living bone was perfectly solid, and microscopic examination showed the changes described above, namely, the establishment of a circulation, the laying down of new bone on the surface of the plate, and the process of replacement of the dead bone by the living bone of the animal. At the end of six or eight months, all signs of the plate had disappeared, the only indication of it being a slight fusiform swelling of the shaft, which also disappeared in time (Fig. 4).

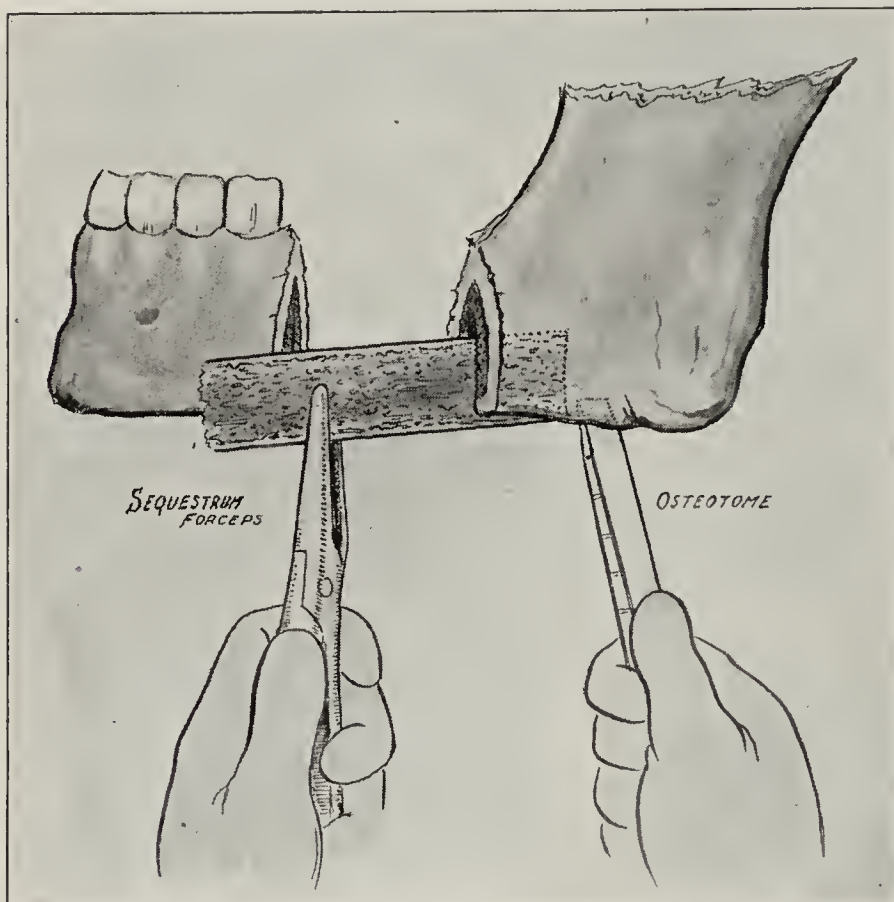


Fig. 11.—Insertion of half of split rib with smooth side toward the mouth cavity.

RESULTS OF BONE TRANSPLANTATION

These experimental findings were immediately applied in clinical cases, and a series of recent fractures of the femur were treated by open operation, the fixation being secured by the use of plates and screws made from boiled bone (Figs. 5, 6 and 7). The results in these cases have proved highly satisfactory, and the method is being applied by ourselves and our colleagues in all cases in which it is deemed advisable to do an open operation on a fracture. The advantage of this method over the Lane technic is obvious, as no foreign material that is apt to get loose or produce late irritation is introduced. The union of the plate to the living bone and its ultimate absorption are decided advantages, as the bone plate thus combines the valuable points of the metal plate and the heterogenous graft. The advantage of the boiled plate over the autogenous graft rests in the fact that the plates can be made in any suitable shape before the operation, and no second incision or mutilation of the fragments is necessary to secure a graft. Recently

the use of the boiled screws has been extended to the operative treatment of oblique fractures of the long bones and to fractures of the patella and olecranon, long screws being used without the application of any plate. The results have been very satisfactory (Figs.

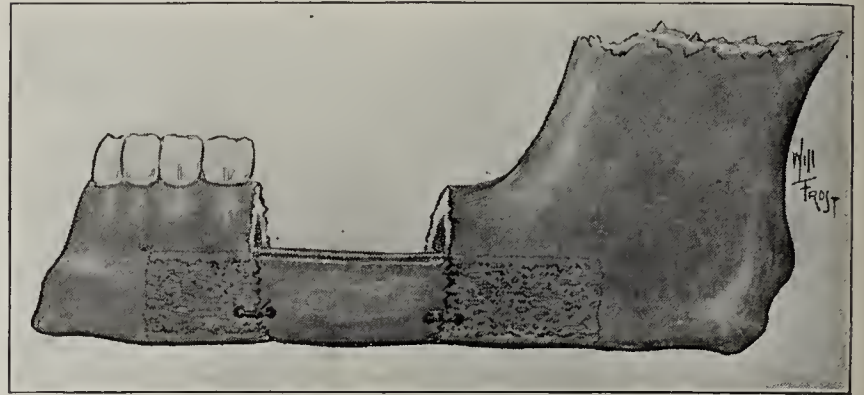


Fig. 12.—Completion of operation by the placing of the other half of the rib in contact with the first half, between the ends of the fragments, and by the fastening of all in place with kangaroo tendon.

8 and 9). As pointed out in previous papers, this employment of boiled bone is not new, as many writers have referred to its more or less successful use; but the experiments referred to above place the principle on a scientific basis and limit its use to those cases in which it is certain to be of value.

At a recent meeting of the American Orthopedic Association, one of us reported the employment of boiled bone in four cases of Pott's disease of the spine. The operation was first performed on a dog, and as it appeared satisfactory, the experiment was extended to four children. The grafts were prepared beforehand, of the correct size and shape, from beef and dog bone, and boiled with the instruments. These boiled grafts were then solidly implanted into the split spines or about the spines from which the periosteum had been removed. Primary union occurred in all the cases, and clinically each case has progressed much as after the autogenous graft. The operations were performed more than two years ago, so that sufficient time has elapsed to allow of the expression of an opinion on the success of such a procedure. The roentgenograms taken at intervals show the solid union of the graft to the spines and the gradual rounding off of the edges and lessening of its density until it appears to exist simply as a fusion of the tips of the spines, much as the ordinary autogenous graft appears after the lapse of a year or more. Fortunately, it was possible to obtain a small piece of one of these grafts two years after it was inserted, and microscopic section of it shows complete disappearance of the dead bone and its replacement by strong trabeculae of living tissue. Over its surface is a perfectly normal periosteum.



Fig. 13.—Soldier on whose jaw operation was performed; range of motion of jaw normal.

If experience upholds the apparent success of these four cases, the value of the technic is obvious. The autogenous spinal graft operation calls for a second

incision over the tibia and an extensive removal of bone for the making of the graft, whereas the use of boiled bone eliminates the necessity for the second operation.

Our clinical experience has now extended over a long series of cases of bone transplantations. It includes a series of sixty cases of Pott's disease in which the spinal graft operation was performed, sixty cases of nonunion and malunion in fractures in which the autogenous transplant was used, and sixty or more cases of open operations on recent fractures in which boiled bone plates and screws or screws alone were employed. In addition, a number of odd operations were performed which will be described later.

The spinal graft operation is of undoubted value. Necropsy specimens, of which we have two, obtained a year or more after the operation, show the solid union of the spines. Clinically, these patients are improved by the fixation given to the spine, and as a result they can be allowed on their feet earlier. Increase in the deformity is more successfully prevented by this means than by any other. We employ it in all suitable cases. Just how far the technic as described by Albee will be replaced by the boiled bone method cannot be estimated until further clinical evidence is obtained.

In the open operations for nonunion we favor the Albee graft as described by Albee, although occasionally we have employed the medullary plug. The former appeals to us as the better method, as it opens up the medullary canal well back from the diseased area and allows the outflow of healthy osteoblasts from the fragments themselves. The failures following the medullary plug method are probably due to the plugging of the canal and the prevention of the outflow of osteoblasts. We make it a practice to drill holes and make saw cuts in the ends of the fragments to stimulate the inflammatory reaction necessary to osteogenesis. In addition, all fragments of cancellous or endosteal bone that can be picked up are strewn around the graft in order that the supply of living osteoblasts may be at a maximum. The graft should be extended well beyond the sclerosed bone of the ends of the fragments, and is usually 4 or 5 inches in length.

In certain cases of nonunion in which it is difficult to obtain perfect fixation of the fragments by the Albee method, we have used another technic which has proved satisfactory. Thus, in fractures of the tibia and of the humerus, the fragments sometimes have a strong tendency to slip sideways, and one does not feel that the kangaroo tendons that hold the inlay in position are strong enough to be trusted. In such cases, after the proper preparation of the ends of the fragments, a section of rib, 3 or 4 inches in length, is removed subperiosteally, and by means of an osteotome is split longitudinally on the flat into two plates, each of which has an endosteal surface. One of these plates is cut into strips, and these are used as medullary grafts, care being taken that the medullary cavity is not tightly plugged. The surface of the fragments is then freshened and flattened with an osteotome, and the other half of the rib applied as a bone plate, two or four bone screws being used to hold it in place. The medullary surface of the rib being applied to the freshened surface of the fragments, the union of the bone to the fragments is rapid and the advantage of the autogenous graft secured. The fixation afforded is excellent. This technic is also valuable in ununited

fracture of the patella, the split rib being sunk into the anterior surface of the bone across the line of the fracture, after the ends have been freshened, and fastened with bone screws.

Amid all the enthusiasm at present surrounding the employment of the bone graft in the treatment of nonunion in fractures, it must be recorded that failures are frequent. In the past few months we have seen in our military orthopedic clinic half a dozen cases which have been complete failures, owing to disregard for the principles which must be employed to insure success. The chief error in military surgery has been that the bone graft operation has been performed too soon after the healing of septic gunshot wounds which produced the fracture. The result has been the immediate setting up of suppurative inflammation with the extrusion of the graft and the production of renewed osteomyelitis. In these cases, operation must not be performed until six months or more have elapsed after the complete disappearance of all inflammatory phenomena. The next most frequent error has been the attempt to bridge gaps in the bone by the use of short, strong grafts cut from the crest of the tibia. As pointed out above, such grafts show the minimum of osteogenic activity, and in reality are little better than boiled bone, which, of course, would be useless. The grafts must be long and well set into the fragments, and placed in contact with healthy bone; otherwise union of the graft to the fragments will not occur. Further, the graft must be as porous as the requirements of strength will allow, and as many small pieces of osteoblast-bearing bone as can be found must be introduced. For very bad sclerosed fractures we use a tibial graft to provide strength and strips of rib to supply the osteoblasts. In addition, we doubt very much the wisdom of attempting to bridge gaps at all in many cases, recognizing as we do the great difficulty of securing union under any circumstances. It is better to accept a certain amount of shortening, and get the freshened ends of the fragments in good contact before inserting the graft, than to take the additional chances of a failure to get union.

On the other hand, if one performs the operation with due regard to the principles enunciated, success may be anticipated in the majority of cases. We have been able to get good bony union in cases of fracture of the tibia in which nonunion had been present for as long as twelve years.

OPERATION ON THE JAW

In the fracture of the mandible in which it is essential that gaps shall be bridged in order that deformity of the jaws may be avoided, the technic used in our clinic is as follows (Figs. 10, 11 and 12):

The fragments are exposed by a long incision along the lower border of the jaw. The motor saw is then applied to the fragments, and a saw cut made along the inferior border extending an inch to an inch and a half back from the end of the fragment and about half an inch deep. Great care must be taken to avoid opening into the cavity of the mouth or into the sockets of the teeth. An osteotome is then driven into the saw cut, and a greenstick fracture produced, widening the wedge-shaped gap for the reception of the graft. An interdental splint which has previously been cemented to the teeth of both jaws is now locked, with the teeth of the two jaws in exactly the correct relation to one another. The graft is made by resecting 3 inches of a rib. This piece of rib is then split on the flat, in order that the endosteal surface may be bathed in lymph. Half of the graft is then driven into

the slots in the fragments, the smooth side of the rib facing toward the mouth cavity. This leaves the rough, cancellous surface of the graft facing outward and sunk somewhat below the outer surface of the jaw. This depressed area is then filled out by laying a piece of the other half of the rib in the gap, with the smooth side out. The fragments and grafts are now fastened solidly in place with kangaroo tendon passed through drill-holes. This adds additional security although it is really unnecessary, as the principal graft is self-retaining, being wedged solidly into the saw cuts in the fragments.

The operations on the jaws have been most satisfactory. Several soldiers have been operated on in our clinic who have been able to eat ordinary food five months after the implantation of a graft which has bridged gaps of from 1 to 2 inches (Fig. 13).

BONE TRANSPLANTATION IN WOUNDS OF THE FACE

Occasionally the transplantation of bone is of value in cases of wounds of the face in which permanent openings into the sinuses of the nasal cavity have been produced.

During the past year a patient was operated on by Dr. Edmund Boyd and one of us, in whom there had been a complete destruction of the bridge of the nose, leaving a permanent opening about the size of a 25-cent piece leading into the ethmoid cells. This opening was surrounded by a very unhealthy scar. The operation was performed in three stages. In the first stage the septum of the nose was straightened up and the fragments of the nasal bones, which had been driven inward, were removed. At the same time a section of rib was removed and split as described above and placed under the skin of the dorsum of the forearm, superficial to the deep fascia. At the end of three weeks the edges of the wound in the face were dissected free of scar and the nasal process of the frontal bone freshened with a chisel. A pedunculated flap was then raised from the forearm, including the buried bone graft and the deep fascia, and the edge of this flap sewed to the edges of the gap in the forehead. The end of the graft was exposed and placed in contact with the frontal bone, in fact, driven into it. The head and arm were then encased in plaster of Paris and the wound left undisturbed for three weeks. The flap was then freed from the forearm and accurately sewed to the remainder of the opening in the face. Healing occurred kindly, and the whole flap retained its vitality. A small sinus closed after discharging six weeks. This patient now has a complete closure of the unsightly hole in his face, and the anterior wall of his ethmoidal sinuses is protected by a solid plate of bone.

CONCLUSIONS

We wish to draw attention once more to the principles that should govern the science of bone grafting. It must be remembered that a so-called living autogenous bone graft is alive only in virtue of the osteoblasts that are free on its surfaces, and in the mouths of the haversian canals. All the rest of the graft dies and is absorbed. It owes its value in bridging gaps and in encouraging union of ununited fractures to the fact that during the process of its absorption the osteoblasts which invade it from its own surfaces and from the neighboring bones build up new bone to take the place of that which is absorbed, so that ultimately the break in the continuity of the injured bone is bridged by new and healthy bone. This established fact indicates at once the necessity for perfect contact of the graft to fresh, healthy bone in the fragments, and shows the reason for extending the graft well beyond the sclerosed extremities. It also shows the importance of using, as a graft, bone from which the periosteal and endosteal surfaces have not been

removed, as it is on these surfaces that the greatest number of osteoblasts is to be found.

For the same reason the graft should be made from bone which is as porous as the requirements of the case, in relation to strength, will allow. Hence the value of the rib as a graft, particularly if it has been opened up so that the osteoblasts of the interior can obtain the necessary supply of lymph.

After the principal graft has been inserted, as many small pieces as possible should be packed around it, the fragmentation increasing the surface area exposed and hence increasing the number of surviving osteoblasts.

In those cases in which the introduction of living osteoblasts is not an essential feature of the operation, the value of boiled bone must not be overlooked, as it possesses many of the virtues of the autogenous graft without some of its disadvantages.

143 College Street.

AN OCCASIONAL TYPE OF LOUD SYSTOLIC MURMUR IN CARDIOSCLEROSIS

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By cardiosclerosis, I refer to marked pathologic changes involving the cardiac muscle, the valves, the aorta, and involving the coronaries and their branches. The damage is rarely equally distributed among these structures. Frequently the aorta and coronary system are the most affected.

Although the auscultatory phenomena to be described are more often present in the senile, the middle-aged are also occasionally affected by a cardio-sclerotic process which produces physical signs exactly as in the aged.

The senile cases of this type possessed all the usual characteristics of marked generalized arteriosclerosis: thickened, palpable and tortuous arteries, usually a slight increase in the systolic blood pressure, and a trace of albumin and a few casts in the urine. Cardiac failure was sometimes, though by no means invariably, present. As demonstrated by the physical examination and corroborated by roentgenograms, the cardiac area was enlarged. Pulsation of the aortic arch was usually well marked; this could be demonstrated by insinuating the finger, or the bell of the stethoscope, in the interclavicular notch behind the manubrium sterni.

Of extreme interest were the auscultatory phenomena. Over the entire anterior aspect of the chest a loud, rough systolic murmur was heard, its area of greatest intensity being at the right base and at the lower precordium. The murmur was sometimes transmitted along the carotids and to the lower left inter-spaces in the axillary line. In addition, it was occasionally transmitted as a muffled or faint systolic bruit posteriorly in the interscapular region, somewhat louder on the right than on the left side.

The complex is well exemplified by the following cases:

REPORT OF CASES

CASE 1 (History 3530).—C. L., a man, aged 68, suffered from moderate dyspnea at the time of hospital admission. The systolic blood pressure was 130; the diastolic, 100. The

urine contained a trace of albumin. The cardiac rhythm was normal, the rate between 76 and 80 per minute. Over the entire middle anterior aspect of the chest, there was heard a loud, rough systolic murmur transmitted slightly to the left axilla and along the carotids. The roentgenogram revealed an aortic arch almost twice the normal width, and a somewhat enlarged left ventricle. The patient was put on digitalis medication; he left the hospital one week later; the dyspnea was considerably improved.

CASE 2 (History 3074).—M. C., a woman, aged 64, complained of cough and dyspnea. Six months prior to hospital admission, she suffered from some precordial distress, the exact nature of which could not be determined. The temperature was 102; there was moderate dyspnea, and there were signs of general bronchitis. The fever and bronchitis lasted two weeks. The cardiac area was somewhat enlarged on percussion; a loud, rasping, systolic murmur was heard over the entire precordium; it was especially intense over the right base. The murmur was transmitted along the carotids and laterally to the left axilla. It was also heard as a muffled systolic bruit posteriorly in the upper interscapular region. The systolic blood pressure was 220; the diastolic, 40. The urine contained a moderate amount of albumin and some hyaline casts. The roentgenogram revealed not only slight dilatation of the aortic arch but also aneurysmal dilatation of the entire descending thoracic aorta. The latter was a prominent shadow in the left side of the chest from the second to the fourth left interspace; at that point it became lost behind the shadow of the left ventricle. The characteristics and physical signs of aneurysmal dilatation of the thoracic aorta I have already reported.¹

CASE 3 (History 3463).—J. M., a man, aged 66, complained of epigastric pain, dizziness, headache and some dyspnea. There were old syphilitic (?) scars on the forearm. The lungs appeared normal. Over the entire precordium there was a loud, rough systolic murmur. The cardiac area was somewhat enlarged to percussion. A roentgenogram revealed moderate enlargement of the aortic arch. The cardiac rhythm was normal. The systolic blood pressure was 135; the diastolic, 95. The urine contained a slight trace of albumin.

The middle aged individuals with cardiosclerosis and loud precordial systolic murmurs often present an unusually robust appearance. Indeed, until examined, one would scarcely suspect such striking contrast between evident extreme pathologic changes in the heart and the apparently healthy looking patient. This group is typified by the following examples:

CASE 4.—C. H., a woman, aged 50, buxom in appearance, as had three children, and no miscarriages. For years she suffered from severe rheumatic (?) neuralgic headaches. For one year, she had had precordial oppression and attacks of severe precordial pain radiating to the jaw, the back, and the left arm. A rest cure lasting several weeks brought no relief. The blood Wassermann was negative. The systolic blood pressure was usually about 170; the diastolic, 110. The nonprotein nitrogen and other constituents of the blood were normal in amount. There was no dyspnea when at rest. On palpation, slight overaction of the carotids and of the aortic arch was noticeable. Over the right base, there was a loud, rough systolic murmur transmitted along the carotids; it was also heard posteriorly in the middorsal region to the right of the spine; below, it became less intense and merged with an extremely loud systolic murmur which was most prominent and distinct over the mitral area. The orthodiascopic tracing revealed an enlarged aortic arch and somewhat globular and enlarged left ventricle. The patient died a few months later in an attack of edema of the lungs.

CASE 5.—A. B., a physician, aged 54, of vigorous appearance, contracted nephritis following a grip infection about twenty years previously. Cardiac complaints began about ten years before I saw him. They at first consisted of occasional hemoptysis and of slight dyspnea. Of late months the dyspnea had increased, and was accompanied by a sense

of weight on the chest. The Wassermann blood reaction was negative. The apex beat was diffuse. Over the entire anterior aspect of the chest, there was heard a loud, musical systolic murmur, most intense over the right base and the lower precordium; it was least intense over the midsternum. It was transmitted along the carotids, and was also heard posteriorly at the third dorsal vertebra. The orthodiascopic tracing revealed an enlarged aorta and a hypertrophied left ventricle. The patient died a few months later of edema of the lungs.

The most striking characteristic of these cases—both in the senile and in the middle-aged—is the loud rough systolic murmur heard over a large portion of the anterior surface of the chest. At a casual examination, one might ascribe the murmur to the presence of a large sacculated aneurysm or to aneurysmal dilatation of various parts of the aorta. Both types of aortic enlargement, however, are usually accompanied by diastolic, as well as systolic murmurs, the area of greatest intensity being over the right base of the heart. In aneurysmal dilatation of the descending thoracic aorta,¹ I have found the double murmur loudest in the third left interspace near the sternum; from this location, it tailed away toward the apex and base. In cardiosclerosis, when the loud systolic murmur was heard with or without aortic enlargement, a diastolic murmur was absent. In addition, careful auscultation revealed a marked difference in the intensity of the murmur over the precordium. It was very loud over the right base, losing in intensity over the midsternum, again becoming louder at the cardiac apex and to the left. It thus seemed as if the murmur were made of two components—an aortic and a mitral. The former was probably caused by such arteriosclerotic changes as deformities and thickening of the aortic cusps, and calcareous deposits and thickening of the wall of the aorta. The mitral component of the murmur may be ascribed to the characteristic degenerative changes affecting the mitral valve and the mural endocardium of the mitral ring, with the consequent production of a typical mitral regurgitant murmur. The aortic and mitral components are both systolic in time; hence, when the pathologic changes are of the gross nature above outlined, a loud systolic murmur results which may be of fairly equal intensity over the entire front half of the chest, or there may be an area of less distinctness and intensity over the midsternum.

1275 Madison Avenue.

Patent Medicines.—Death has lately claimed two Americans whose works or whose name and physical presentment were intimately familiar to unnumbered millions of their countrymen. About a fortnight ago there passed away at Columbus one S. B. Hartman. He gave Peruna to civilization. On Sunday there died at Palm Beach one James M. Munyon, whose uplifted index finger had for its only rival in popularity the somewhat similar gesture of the Statute of Liberty in New York Harbor. It is not recorded that either of these men died of a broken heart, or that an autopsy would have revealed, inscribed on that organ, the words "Pure Food Law." Yet there is a certain tragic coincidence in the fact that the disappearance of these two men should have come at a time when prohibition is swarming over the top for the final charge. It is the climax of a campaign which began with the capture of the first-line trenches several years ago, when Peruna and its allies, the various bitters, malt whiskies, wines of life and reinforced sarsaparillas were thrown definitely on the defensive or altogether swept out of existence. Another year or two and most of these giants of the advertising columns will be forgotten. Their fame was writ in equal parts of water and alcohol.—*New York Evening Post.*

1. Neuhoof, Selian: *Am. Jour. Med. Sc.*, 1916, 151, 715.

VACCINATION AGAINST EXPERIMENTAL
POLIOMYELITIS

PRELIMINARY NOTE *

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Efforts leading to the development of a practicable method for protection against acute poliomyelitis have thus far been very poorly rewarded.

Flexner and Lewis,¹ in 1910, showed that monkeys could be immunized against poliomyelitis by repeated subcutaneous injections of increasing amounts of crude unmodified virus over a period of two and one-half months. These animals, after a further ten days, were injected intracerebrally with 2 c.c. of a filtrate of a highly potent virus, of which from 0.05 to 0.1 c.c. would prove fatal. The immunized animal therefore resisted from twenty to forty fatal doses. In a later report, they state that artificial active immunity either by the injection of a single large dose or by a series of increasing small doses of crude virus over a period of time is not uniformly successful. In the former method, some of the animals developed poliomyelitis as a result of the subcutaneous injection, and in both, some of the animals so injected did not resist the test intracerebral inoculations of the rather large dose of a highly potent virus.

Levaditi and Landsteiner² dried cords from monkey poliomyelitis after the method of Pasteur for rabies, but they found that some of the animals developed poliomyelitis as the result of the preventive inoculations.

In this communication I shall report the results of efforts toward the practicable utilization of facts established by the authors mentioned.

To be of practicable value, a method of artificial active immunization should have the following requisites:

1. The method should protect against any reasonable exposure to the disease for which the individual is inoculated.
2. The inoculations in themselves should be harmless.
3. The method should not be too cumbersome or prolonged, so as to render production of immunity too slow to be of practical value.

We have attempted to comply with these conditions. The material used is crude monkey virus of the highly virulent Rockefeller strain. The virulence of this strain in 1910 was such that from 0.05 to 0.1 c.c. of a filtrate of a 5 per cent. emulsion was lethal for the *Macacus rhesus*. This strain had been passed through many additional monkey generations when we obtained it, about eighteen months ago, and in our hands has been passed through ten additional generations. The method employed in this work consists of the daily subcutaneous injection of this virus, either brain and cord or cord alone, in 10 per cent. saline emulsion on five successive days. The material used on the first four days is modified by heat. The final injection is made up from either the fresh or glycerolated material unheated. The material of the first two injections is subjected to 55 C. for one-half hour; of the third

injection, to 45 C. for one-half hour; of the fourth, to 37 C. for one-half hour; the fifth is unmodified by heat. Twenty days after the last injection, the animals are bled from the heart for the purpose of determining the presence or absence of neutralizing substances. On the following day, the "immunized" animals and normal controls received from three to six intracerebral lethal doses of the highly potent monkey virus. Other animals were inoculated with a mixture of serum obtained by heart puncture from immunized monkeys, and the same virus was used in the test inoculations. This mixture consisted of one part of virus and one of serum, and was exposed to 37 C. for two hours, and to ice box temperature for twenty-two hours. The animals used in these experiments were all of the *Macacus rhesus* variety.

Of eight animals so treated, five have withstood the intracerebral inoculation of from three to six lethal doses. The serums obtained from six of these animals all contained neutralizing principles, but in varying degrees. Two of the serums completely neutralized the virus. The animals receiving these mixtures are alive and well. The remaining four serums prolonged the incubation period to twenty-five, twenty-one, twelve and eleven days, respectively. Four normal control animals showed symptoms in four and five days. A mixture of ten parts of serum and one of virus has been considered a sufficient test to determine the presence or absence of neutralizing substances. It can, therefore, be stated with considerable assurance that serums which can prolong an incubation period of five days from eleven to twenty-five days when used in the proportions of these experiments possess neutralizing substances. Lack of animals has compelled us to apply an unusually severe test. Otherwise we would have made additional tests of the serums in the proportions of ten parts of serum to one part of virus, and five parts of serum to one part of virus, and so have obtained a more definite estimate of the content of neutralizing substances.

The animals treated by this method were subjected to more than a reasonable exposure, as attested to by the effects of similar intracerebral inoculations on the normal controls. These showed symptoms of the fatal disease in four and five days. To indicate further the severity of the test to which the animals were subjected, two monkeys that presented residual paralyses, one of both lowers and the other of the right lower as a result of experimental infections with the virus of the 1916 epidemic, succumbed just as readily as the controls when injected intracerebrally with 1 c.c. and 0.5 c.c., respectively, of the same emulsion used on the treated animals.

According to experienced workers in this field, animals that have recovered from the experimental disease are considered to be highly resistant to reinfection. Yet these animals were reinfected by one-half and one-fourth the dose, respectively, that Flexner and Lewis used in their experiments. Even one minimum lethal intracerebral dose is an unusually severe test from a practical point of view, since by this method of infection the combative forces in the blood of the general circulation are circumvented. In the natural method of infection, the virus would encounter, in persons immunized by such a method as this, a surplus of immune substances in the mucous membranes, and so be neutralized before it could gain access to the central nervous system.

* From the Bureau of Laboratories, Department of Health, City of New York.

1. Flexner, Simon, and Lewis, P. A.: Experimental Poliomyelitis in Monkeys, Seventh Note: Active Immunization and Passive Serum Protection, THE JOURNAL A. M. A., May 28, 1910, p. 1780; Eighth Note: Further Contributions to the Subjects of Immunization and Serum Therapy, Aug. 20, 1910, p. 662.

2. Levaditi and Landsteiner: Compt. rend. Soc. de biol., 1910, 68, 311.

Thus far the method has produced no untoward effects. Eleven animals have been so treated and none have shown any ill results from the injections per se. The attenuated material of the first three injections has apparently produced sufficient immunity to render the animal resistant to the subsequent injections of virus of high virulence.

That this is so was proved by results in four other animals, two of which were injected subcutaneously with crude virus thought to be attenuated by exposure to a weak formaldehyd solution, and two that were injected subcutaneously with virus heated to 50 C. for one-half hour. All of these animals developed poliomyelitis as a result of the subcutaneous injections.

The possibility of harmful effects from the method if applied to human beings is, of necessity, less than when applied to monkeys, since this virus has been adapted to monkeys for the past eight years, and by constant passage through these animals has become highly virulent for the monkey.

The period required for this series of injections is a short one, only five days, which, of course, would render it highly practicable in time of epidemic, when a rapid method is to be desired. Furthermore, it is a simple method. Ordinary laboratory facilities are sufficient for the production of this vaccine. Glycerolated brains and cords of this highly virulent virus can be kept on hand over long periods of time, and the vaccine made up from time to time from this stock as occasion demands.

Further work along these lines is in progress, particularly with reference to the duration of the period of immunity conferred by this method.

THE VALUE OF ROENTGEN RAYS* AND BENZENE IN THE TREATMENT OF POLYCYTHEMIA VERA*

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AND

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The treatment of that form of polycythemia associated with splenomegaly and chronic cyanosis has not, up to the present time, been entirely successful. In the absence of any exact knowledge concerning the pathology of polycythemia vera, therapists have been unable to attack the disease at its source. The treatment has, for the most part, been symptomatic, and the available therapeutic measures have been directed chiefly to the reduction in the number of circulating red blood corpuscles. Such efforts have been well directed, because it seems not unlikely that many of the symptoms of the disease—the headache, vertigo, cyanosis and dyspnea—are in great part attributable to the mechanical stasis in the circulation due to the polyglobulism. And whereas, the therapeutic agents employed have not resulted in permanent cures, they have been effective in reducing the number of circulating erythrocytes, and on this account they merit the attention that has been accorded them.

With this end in view, a number of methods have been tried, such as splenectomy, venesection, the

administration of drugs, and the application of various rays either to the spleen or to the long bones.

The removal of the spleen in this disease has usually been fatal within a few days, and the treatment is therefore contraindicated.

Venesection has been employed on the ground that it gives at least temporary relief. But all who have resorted to this measure are now agreed that even if repeated at fairly regular intervals, venesection fails to produce any permanent good effects.

The drug therapy of this affection has been especially inclusive, as nitrites, iodids, bromids, mercury, and a host of other medicinal agents have all been tried. With the exception of benzene (benzol, C_6H_6), however, these drugs have brought about only a doubtful improvement in the clinical symptoms of which these patients complain.

The results reported from the use of the roentgen rays alone are contradictory. Judging from the observations recorded in the literature, the application of roentgen rays has been of marked benefit in some cases, whereas their employment has been unsuccessful in others.

It is our purpose in this report to record the beneficial therapeutic results that have followed the combined use of benzene and roentgen rays in a patient presenting the classical signs and symptoms of polycythemia vera. Although more than a year has elapsed since any form of treatment has been given, the patient's blood still shows a normal number of red blood corpuscles and a normal hemoglobin percentage. Her health continues excellent. The headache and dizziness, symptoms which first brought her under medical observation, have entirely disappeared. There has been an almost complete disappearance of the cyanosis of the facial prominences and extremities, although the lips and mucous membranes still have a reddish cyanotic hue. The improvement in her psychic condition has been marked since she has ceased to be a subject of general interest and curiosity.

REPORT OF CASE

M. D., aged 38, a milliner by occupation, first came under medical observation in April, 1915, complaining of nervousness and dizziness. There had been little illness in her family, and she herself had always been in excellent health. Aside from measles and diphtheria in childhood, she could recall no periods of ill health.

About three or four years before she was first seen, she had had a sudden attack of dizziness lasting only a few minutes, followed by occasional headaches, and in April, 1915, she had been suddenly seized with an attack of blindness, lasting fifteen or twenty minutes.

It was after this last attack that she was examined by Dr. E. H. Julien, who had noted considerable cyanosis of the face, gums, arms and hands. May 18, 1915, a blood count was made which showed a hemoglobin percentage of 105, 12,400,000 red blood corpuscles, and 9,000 white blood corpuscles. A diagnosis of polycythemia vera was made and the patient entered a hospital for treatment. This consisted of a milk diet, frequent intramuscular injections of an arsenical preparation, and venesection. For a period of more than a year, from June, 1915, to August, 1916, venesection was the principal mode of treatment, and she remained comparatively free from subjective symptoms during this period.

In July, 1916, the patient first came under our care.¹ She was found to be well developed and very well nourished, with a dark red face, cyanotic cheeks, and with lips and gums

* From the Medical Clinic, University of California Hospital.

* Presented before the meeting of the San Francisco County Medical Society, Feb. 12, 1918.

1. For the opportunity of following the patient subsequently and for the privilege of carrying out the form of treatment outlined in this report, we are indebted to Dr. E. H. Julien, who kindly referred this patient to us.

also of a somewhat brick red, cyanotic hue. The pupils were dilated, showed a regular outline, and reacted to light and direction. The fundi showed no abnormalities. The teeth were in good condition and the tongue was dark red. The thyroid was not increased in size, and there was no general glandular enlargement. Both heart and lungs were normal. The abdomen was full, rounded and symmetrical. The spleen could be palpated about a hand's breadth below the costal border; the edge was rounded, smooth and slightly tender. The edge of the liver could not be felt, nor were the kidneys palpable. Both upper and lower extremities showed a marked grade of cyanosis. All the reflexes were normal. The Wassermann reaction of the blood serum was negative. The urine was of a dark amber, its specific gravity was 1.020, and neither albumin nor sugar was present. No casts were found. An occasional red blood corpuscle and a few white blood cells were present.

A venesection was done, July 20, and 500 c.c. of blood were removed. The patient was given iodids for a week. August 2, roentgen-ray treatment was begun.²

Oct. 9, 1916, she was admitted to the medical service of the University of California Hospital, where she remained for two weeks. The general findings on physical examination were for the most part the same. The skin was still of a high color, with a cyanotic tinge over the cheeks, malar eminences, nose and ears. The spleen was felt 5 cm. below the costal border, and the splenic dullness extended 15 cm. upward. The edge was firm, but not tender.

An electrocardiogram of the heart showed normal rhythm. The total nonprotein nitrogen of the blood was 43.9 mg. per

2. We are indebted to Dr. Howard E. Ruggles for the supervision over the roentgen-ray treatments.

hundred c.c., and the urea nitrogen was found to be 14 mg. +, both being normal. The percentage volume of carbon dioxid in the blood (Van Slyke) was 52.5, normal.

During her stay in the hospital, the patient took 33 gm. of benzene in one week. This was administered in capsules with equal parts of olive oil. A little less than 5 gm. per day was given. The patient complained of no untoward gastric symptoms from the drug.

After her discharge from the hospital, she took 8.5 gm. of benzene from November 10 to 18, when administration of the drug had to be discontinued on account of a burning sensation in the stomach, with regurgitation and belching. A further attempt to continue the drug was made from November 23 to 28, when the patient ingested 3 additional grams of benzene. The drug now had to be stopped permanently on account of nausea, gastric discomfort and headaches.

The only other form of treatment from September to November consisted of two roentgen-ray exposures over the spleen, one of 25 milliampere minutes, and the second of 30 milliampere minutes. These were continued in December and January, five additional exposures of the spleen having been made during this interval. The results of the treatment are set forth in the accompanying table.

The patient was observed at frequent intervals until May, 1917. By the end of January, 1917, the blood picture showed a complete return to normal, the red count being 5,200,000 and the white blood corpuscles 9,200, with a hemoglobin percentage of 98. The patient's subjective symptoms had entirely disappeared, and the objective signs of the disease were decidedly less pronounced. The skin and mucous membranes were still somewhat suffused, but they were definitely less bluish, whereas the cyanosis and lividness of the extremities

EFFECT OF ROENTGEN RAYS AND BENZENE ON THE BLOOD IN POLYCYTHEMIA

Date	Hemoglobin Per Cent.	Red Blood Cells	White Blood Cells	Treatment Roentgen Ray	Benzene	Remarks
May 18-15...	105	12,400,000	9,000	Venesection	.....	P. M. N., 84%; L. M., 3%; S. M., 11%; P. M. E., 1%; P. M. B., 1% Urine showed faint trace of albumin
May 27-16...	.....	8,500,000	10,500	.....	.....
June 5-15...	100	7,344,000	11,400			
July 20-16...	120 (Sahli)	10,580,000	9,600	Venesection, Potassium iodid, 1 grain daily for 1 week	.....	P. M. N., 75%; S. M., 17.5%; L. M., 7%; P. M. E., 0; P. M. B., 0.5%
July 26-16...	110 (Sahli)	7,760,000	9,200			
Aug. 2-16...	120 (Sahli)	9,100,000	10,200	Roentgen ray Aug. 2-16, 25 milliampere minutes over spleen		
Sept. 2-16...	115 (Dare)	9,240,000	10,200	Roentgen ray Sept. 2-16, 25 milliampere minutes over spleen		
Oct. 12-16...	120 (Dare)	9,920,000	9,000	Roentgen ray Nov. 17-16, 30 milliampere minutes over spleen	.....	P. M. N., 61%; S. M., 25%; L. M., 12%; P. M. B., 7%; P. M. E., 0; myelocytes, 1%; hemoglobin (Fleischel-Miescher), 17.62 gm.; normal, 13.77
Oct. 16-16...	120 (Dare)	10,560,000	10,000	Roentgen ray Dec. 1-16, 20 milliampere minutes over spleen	.....	Viscosity, 7.7 (normal 4.5); platelets, 352,000
Oct. 17-16...	.....	8,808,000	10,000	Roentgen ray Dec. 14-16, 32 milliampere minutes over spleen	.....	Prothrombin quotient normal
Oct. 18-16...	103 (Dare)	9,280,000	12,600	Roentgen ray Dec. 28-16, 20 milliampere minutes over spleen	.....	Resistance of corpuscles: max., 0.48; min., 0.30 (normal, 0.30)
Oct. 20-16...	.....	9,000,000	9,000	Roentgen ray Jan. 16-17, 25 milliampere minutes over spleen	.....	Platelets, 488,000
Oct. 22-16...	.....	9,086,000	9,600	Roentgen ray Jan. 30-17, 20 milliampere minutes over spleen	Oct. 22	
Oct. 26-16...	134	8,720,000	8,200	.....	Oct. 31, 33 gm.	Platelets 264,000 Hg (Fleischel-Miescher), 18.48 gm.
Oct. 31-16...	.....	9,568,000	8,200	.....	.....	Platelets, 168,000
Nov. 4-16...	.....	8,688,000	8,000	.....	.....	Platelets, 272,000
Nov. 10-16...	120 (Dare)	8,520,000	11,200	.....	Nov. 10-18, 8.5 gm.	Platelets, 320,000
Nov. 14-16...	118 (Dare)	8,270,000	10,600	.....	.....	P. M. N., 75%; S. M., 20%; L. M., 4.5%; P. M. E., 0.5%
Nov. 23-16...	120 (Dare)	8,720,000	9,200	.....	.....	Platelets, 380,000
Nov. 28-16...	110 (Dare)	7,200,000	11,000	.....	Nov. 23-28, 3 gm.	
Dec. 9-16...	115 (Dare)	7,500,000	8,600	.....	.....	P. M. N., 76%; S. M., 15.5%; L. M., 7.5% P. M. E., 0.5%; P. M. B., 0.5%
Dec. 21-16...	115 (Dare)	6,890,000	6,800	.....	.....	Platelets, 220,000; viscosity, 7.2
Jan. 5-17...	110 (Dare)	6,200,000	8,000	.....	.....
Jan. 19-17...	98 (Dare)	5,200,000	7,200	.....	.....	Viscosity, 6.3
Jan. 24-17...	.....	.....	.....	.....	.....	Platelets, 124,000; bleeding time, normal hg. (Fleischel-Miescher), 13.23 gm.
Feb. 3-17...	96 (Dare)	4,808,000	5,000	.....	.....
Mch. 19-17...	95 (Dare)	3,976,000		.....	.....	Viscosity, 4.2
May 25-17...	100 (Dare)	4,624,000	7,800	.....	.....
Feb. 2-18...	85 (Dare)	4,832,000	7,400	.....	.....

had entirely disappeared. At this time, the spleen had completely receded above the costal margin and could no longer be palpated.

When last seen in February, 1918, about sixteen months after the beginning of the benzene and roentgen-ray treatment, the patient still continued well, in spite of the fact that no form of treatment had been given during this period, and the number of red blood corpuscles and the percentage of hemoglobin remained within normal limits.

COMMENT

Experimental and clinical observations concerning the effect of drugs and various radioactive substances on the blood and blood-forming organs have brought forth some interesting facts regarding the relative resistance to these agents offered by the white blood cells and the red blood corpuscles. In the first instance it has been shown that the various drugs and rays employed exert a selective action on the several tissues giving origin to the formed elements of the blood; and secondly, that the leukopoietic tissues are much less resistant to their destructive action than are the tissues concerned with the formation of erythrocytes. The latter elements, it would appear, show only moderate changes in number and structure at a time when the circulating leukocytes may have almost completely disappeared from the circulation.

The observations of Heinecke and of Selling have established these facts, so far as the action of the roentgen rays or of benzene is concerned. This work shows that the roentgen rays exert a selective action on the lymphocytes, and that even prolonged irradiation will not bring about any noteworthy changes either in the number of red blood corpuscles or in the percentage of hemoglobin. Benzene, on the contrary, has a somewhat different action. This drug has been shown by Selling to act destructively first on the white cells and more especially on the nongranular elements, and later to cause a diminution in the number of erythrocytes. The experimental studies have shown, however, that in order to effect any striking anemia, the drug must be administered in large doses and over a long period of time.

It is because of this essential lymphotoxic action that the roentgen rays alone have not been found of great value in the treatment of polycythemia. Whereas benzene, on the other hand, has yielded some brilliant results in the treatment of this disease, it must be kept in mind that these good effects have usually followed the prolonged ingestion of large doses of the drug—a procedure not entirely without danger. The danger lies, first, in the severe gastro-intestinal disturbance which may follow the administration of very large doses, and secondly, in the marked destructive action which these large amounts may have on the circulating leukocytes.

It was with the hope of testing the value of smaller amounts of benzene, when combined with the roentgen rays, that the mode of treatment outlined in this paper was carried out. The patient, as will be noted from the clinical record and the table, received only 44 gm. of the drug within a period of a month, after which the benzene was stopped. The roentgen-ray treatments, however, were continued about two months longer. Although considerable reduction in the red count followed the use of benzene alone, the erythrocytes began to approach the normal level only after the seventh roentgen-ray treatment.

The good effects of the combined treatment may be attributed either to the joint action of both measures,

or to the delayed and cumulative action of the benzene itself. It does not appear likely that the latter measure can be the cause, since previous observers did not succeed in reducing the red count appreciably with the amount of benzene administered to our patient. We are, therefore, inclined to attribute this successful therapeutic result to the combined action of both agents. But the manner in which the roentgen rays may have served as an adjuvant to benzene therapy in this instance is not quite clear. We would venture the suggestion, however, that the roentgen rays may act in a more destructive manner on erythropoietic tissues, which have been rendered less resistant beforehand by the toxic action of benzene.

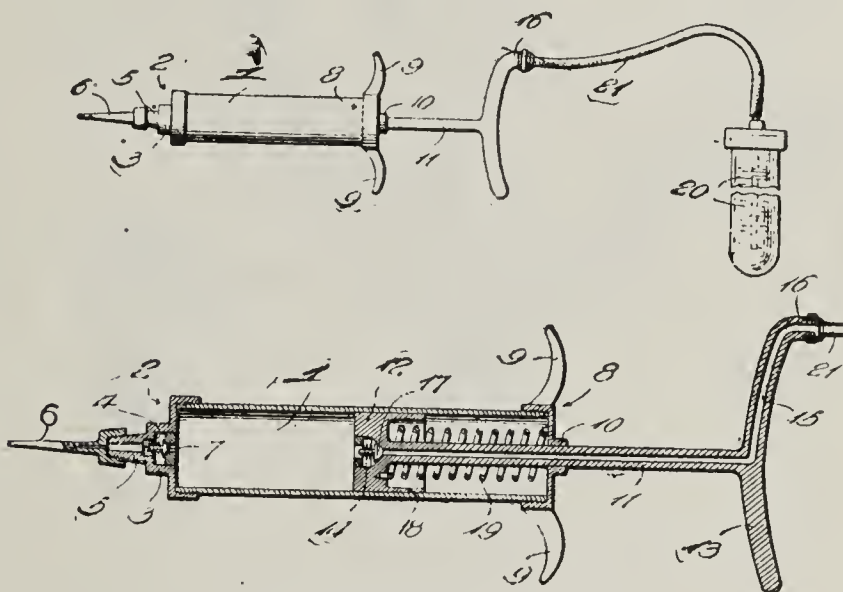
Second and Parnassus Avenues.

Clinical Notes, Suggestions, and New Instruments

A SELF-FILLING HYPODERMIC SYRINGE

A. N. BESSESEN, M.D., MINNEAPOLIS

Local anesthesia is growing in popularity with the medical profession. Generally we have to rely on the ordinary hypodermic syringe for the application of the anesthesia, unless one is fortunate enough to own a Farr apparatus. In the use of the ordinary syringe much time is consumed in refilling, or even in the exchange of syringes. It was with the thought of avoiding this delay that I devised the syringe illustrated.



Self-filling hypodermic syringe.

The syringe refills itself from a container attached to the syringe and suspended conveniently from the wrist of the surgeon. In this way a small or large amount of the anesthetic may be injected accurately with the least effort. In the illustration, 7 and 17 indicate the outlet and inlet valves, 11, 15 and 16 the intake channel, and 20 the container for the supply fluid.

RUPTURE OF DEEP EPIGASTRIC ARTERY BY MUSCULAR STRAIN: REPORT OF A CASE

MARK LEWIS EMERSON, M.D., OAKLAND, CALIF.

History.—A housewife, white, aged 42, with four living children, had had seven miscarriages, five of which had occurred between the third and fifth month, and two during the seventh month. She was admitted to the Merritt Hospital at 9:30 p. m., Sept. 8, 1917, and discharged as cured, November 10. The patient stated that about 5:30 p. m. on the day of admission, four hours before reaching the hospital, while trying to place a curtain rod over a window bracket,

she had jumped up a few inches from the floor, extending her body on her right leg. She had suddenly been seized with a severe pain in the lower left abdomen, had fallen to the floor, and had then fainted. She had awakened to find that she had been placed on her bed. She had felt cold, with clammy sweats, and had been thirsty and very restless. Her family physician, Dr. E. M. Keyes, had soon arrived and administered a hypodermic stimulant, which he had repeated before she left the house in an ambulance for the hospital. She stated that she had been in the habit of wearing a long, unusually tight corset to disguise the effect of her rapidly increasing weight on her appearance.

Examination.—Patient was somewhat pale but was not suffering from shock. She was very restless, however, and was nauseated, having recently vomited. A sensitive and painful condition of the lower abdomen would not permit a satisfactory examination. She complained of a burning sensation in the left lower quadrant. A diffuse dulness was also apparent in this region. The pelvic examination was negative, and because of the extremely restless condition of

about two cupfuls of clotted blood. Evidently the hematoma had developed at the expense of the peritoneum, which was blood stained from the severed ends of the deep epigastric artery and vein which lay on the surface about three-fourths inch apart. The artery was easily demonstrated lying on the peritoneum. It had been severed about midway between Poupart's ligament and its entrance into the lower portion of the rectus sheath.

Although active bleeding had long since ceased, I tied both ends of the severed artery and vein, and left a few strands of twisted silkworm gut in the wound for a few days. Convalescence was uneventful, the patient leaving the hospital in three weeks. In view of her repeated miscarriages, I ordered a Wassermann test made, which was negative. November 1, I sent for the patient for further examination and verification of her history. Her blood pressure was 180 systolic. She attributes all her trouble to her long, tight-fitting corsets, which she says held her abdomen so tight that when she extended her leg, the action snapped the blood vessel.

1307 Broadway.

Military Medicine and Surgery

PNEUMONIA AT A BASE HOSPITAL

RUFUS COLE, M.D.

NEW YORK

AND

W. G. MacCALLUM, M.D.

Contract Surgeons, U. S. Army

BALTIMORE



Rupture of deep epigastric artery.

the patient, the physical examination was very unsatisfactory. The temperature was 99.6; the pulse, 100; white blood count, 15,400; polymorphonuclears, 86 per cent. The urine was normal. An enema was given, with no resulting relief from pain. One and one-half ounces of castor oil gave a free bowel movement within three hours. The following morning, the abdomen was still very sensitive. An appreciable dulness and induration were found on the left side of the lower abdomen. The patient, however, felt and looked better. The temperature was 100.6, and the pulse 90. She seemed to improve daily, with regular bowel movements and normal urine. This condition continued for eight days. The painful, indurated condition of the lower left abdomen had now become an easily palpable tumor of the abdominal wall, verified by bimanual examination.

Operation.—On the ninth day I operated for what I thought might be a direct hernia of the abdomen, with the omentum protruding through the peritoneum, but below the deep fascia. I made an incision 4 inches long over the tumor in the left lower abdomen, on the outer side of the rectus muscle, extending within 2 inches of Poupart's ligament. Through the deep fascia was revealed a large blood clot, containing

Early in February, a commission was sent by Surgeon-General Gorgas to Texas to study the pneumonia existing there. This commission was composed of Rufus Cole, W. G. MacCallum and Oswald T. Avery, Contract Surgeons, U. S. Army, Captains A. R. Dochez and R. A. Kinsella, and Lieutenants F. G. Blake, T. M. Rivers, H. John, F. A. Stevens and Wm. C. Von Glahn, Medical Reserve Corps. This special study was undertaken at the base hospital, Fort Sam Houston, San Antonio, Texas. This hospital was chosen for this work merely because pneumonia was prevailing there to a large extent at the time, and also because of its proximity to the laboratory of the Southern Department, where facilities were available for carrying out the bacteriologic and pathologic examinations. It was thought that any facts disclosed by the study there might be applicable to other camps and base hospitals. Any general application of our observations, however, must be made with reservations, for it is possible that the conditions in other hospitals may be different from those found here, and therefore that the pneumonia existing in other hospitals may differ in essential details from that present in this one.

Our preliminary survey of the cases in the hospital made it evident that not all the cases were of the same variety and that our present knowledge did not permit a ready differentiation of the cases of the different kinds. An extensive statistical study was therefore out of the question, and we decided to make a very careful clinical, bacteriologic and pathologic study of a limited number of cases.

The study was commenced, Feb. 1, 1918, and continued about six weeks. This paper is composed of extracts from the preliminary reports made by us to the Surgeon-General.

PART I. ETIOLOGY AND CLINICAL FEATURES
OF THE PNEUMONIA OCCURRING
IN THE HOSPITALTOGETHER WITH NOTES CONCERNING THE PLACE AND
MODE OF INFECTION IN THE CASE OF
POSTMEASLES BRONCHOPNEUMONIA¹

BY RUFUS COLE, M.D.

VARIETIES OF PNEUMONIA

The account of the results of our observations will be rendered more intelligible if we state briefly that we have found two distinct varieties of pneumonia in the wards of this hospital. First, there are present cases of acute lobar pneumonia, which are essentially identical with cases of this disease occurring in civil life. With all these cases pneumococci have been associated; second, there are present a large number of cases of bronchopneumonia, which differ essentially from the cases of the former disease in clinical features, pathology and etiology. The majority of these cases occur as complications or sequelae of measles, though they may undoubtedly follow other infectious diseases. The pathology of these cases is carefully described by Dr. MacCallum in his report. The etiologic agent in all the cases studied here has appeared to be a streptococcus producing lysis of red blood corpuscles when grown on a medium containing blood. Similar observations have also been made in other Army hospitals, and it seems probable that these streptococci are responsible for most of the bronchopneumonia occurring in the present epidemic of measles. Previous observations, however, suggest that other bacteria may also be responsible for cases with similar clinical and pathologic features. In the further discussion, we shall refer to these two varieties of pneumonia as "acute lobar pneumonia" and "bronchopneumonia." Finally, there occurs, in no inconsiderable number of patients, a combination of these two types of disease, or infection with both pneumococci and streptococci. In these cases, one or the other of the two varieties of disease is probably primary, secondary infection later occurring with the subsequent development of the other variety.

Since the regular hospital data were not considered sufficient for our purposes, complete histories were obtained from a series of cases of both varieties, and our own physical examinations were made and the results carefully recorded. Thirty cases of bronchopneumonia, thirty-two cases of acute lobar pneumonia, and nine cases in which the two varieties of infection were present have been studied.

It was impossible to study all of the cases of pneumonia in the hospital in this way. Consequently, in a considerable number of cases coming to necropsy, the clinical data are slight. On the other hand, many of the cases studied by us ended in recovery, and consequently the pathologic lesions present can only be inferred from the knowledge obtained in the other cases in which necropsy was performed. In twelve cases of bronchopneumonia, however, the clinical observations could be correlated with the pathologic findings.

BRONCHOPNEUMONIA

Bacteriology.—The evidence that *Streptococcus haemolyticus* is the etiologic agent in these cases is given by the study of cultures made from the blood

during life and from the organs and tissues of the body after death, and by the study of the sputum coughed directly from the lung.

Cultures from the blood during life were made in fifteen cases. In only two cases was a growth obtained. In these cases a pure growth of *S. haemolyticus* occurred. The cultures were made only within twenty-four hours of death, however. Studies of the bacteria present in specimens of sputum expectorated from the lung were made in all the cases. The method employed was practically that described previously for the study of the sputum in lobar pneumonia.

Specimens of sputum directly coughed from the lung were obtained in sterile containers. After the washing of portions of this sputum, cultures were made on the surface of blood agar plates, and a small portion of sputum was injected into a mouse. After the death of the mouse, the peritoneal exudate was examined microscopically, and cultures were made from this exudate and from the heart's blood.

In all the cases that we have classified as bronchopneumonia, the cultures from the sputum on blood agar plates showed the presence of *S. haemolyticus* in large numbers. In most of the cases in which the mouse test was carried out, examination of the heart's blood showed the presence of this organism (in sixteen out of seventeen cases). In thirteen of the specimens of sputum, *Bacillus influenzae* as well as *S. haemolyticus* was found on the plates. In five instances, the patients died and came to necropsy, and in these instances *B. influenzae* was also present in the affected lung. In eight instances, *B. influenzae* was also present in the heart's blood of the mouse. Whether this organism plays any part in this disease is not known. Its very frequent presence is of much interest.

Cultures were made from the infected areas in the lungs, the heart's blood, the pleura, the pericardium, and frequently from other organs of the patients coming to necropsy. In making cultures from the lungs, the pleura over the infected area was seared with a hot knife, and a cone-shaped piece of the lung was removed with sterile instruments. Cultures and smears were then made from the tip of the portion removed. In all of the cases diagnosed as bronchopneumonia during life and all of those cases coming to necropsy which showed the presence of the lesions described by Dr. MacCallum as interstitial bronchopneumonia, *S. haemolyticus* was found to be present in the affected portion of the lung, usually in pure culture. In most of the cases in which empyema occurred, these organisms were present in the fluid in pure cultures.

It was also the rule to find these organisms in the heart's blood after death. In a few cases influenza bacilli were also present in the blood and tissues, along with *S. haemolyticus*. These cases, however, did not differ from those in which the streptococcus was present alone.

Clinical Course.—The picture of the clinical course of the disease which can be constructed from our data is necessarily incomplete and possibly incorrect in certain details. It is hoped, however, that it may be amplified and corrected by more complete studies in other camps. The study of these cases has not made it possible to differentiate, clinically, between the cases showing the lesions described by Dr. MacCallum as interstitial bronchopneumonia, and those showing the lesions described by him as lobular pneumonia. Consequently, in our discussion all these cases are termed "bronchopneumonia."

1. This part of the work was carried out with the assistance of Oswald T. Avery, A. R. Dochez, R. A. Kinsella, F. G. Blake, T. M. Rivers, H. Jolin, and F. A. Stevens.

Onset.—All the cases of this group have followed measles. In seven of our thirty cases, a history was obtained of a chronic cough, coryza or sore throat previous to the appearance of the symptoms of measles. Whether pneumonia is more likely to occur in those men who have had previous infections of the respiratory tract is not certain, but it is possible that this factor is of some, but not paramount, importance.

A considerable number of cases of measles show laryngeal infection, as shown by the occurrence of hoarseness and huskiness of the voice. That this is a true inflammatory lesion is shown by the fact that minute ulcerations may be present on the vocal cords.

The first definite symptoms of the disease are usually cough, fever, slight respiratory distress, and the expectoration of a mucopurulent sputum. All of these symptoms, as is known, usually occur in some degree during the febrile stage of measles. In certain cases of measles, the temperature does not fall with, or shortly after, the appearance of the rash, as is usually the case, but the fever continues and becomes higher and the symptoms mentioned increase in severity. In other cases the temperature falls to normal, and then after a period of from a few days to three weeks the temperature again becomes elevated and the symptoms mentioned become severe and characteristic of the disease. In none of the cases we have seen, however, nor in any of those of which we have histories, has there been a complete disappearance of all the symptoms referable to the respiratory tract during the interval between recovery from measles and onset of bronchopneumonia. Even in the cases in which the onset has occurred following the discharge of the patient from the hospital, it is quite certain that cough or respiratory difficulty was present at the time of discharge and persisted up to the time of onset of the pneumonia.

In all the cases that we have observed, the onset has been gradual. In no case was there a chill with sudden elevation of temperature. Vomiting during the early period has been rare.

These observations, as well as the pathologic studies, indicate that the infection, as well as the lesion, is probably a descending one, and that no sharp line can be drawn either in time or symptoms, between the occurrence of the pharyngitis, laryngitis, bronchitis, and finally the bronchiolitis and bronchopneumonia.

Symptoms.—When the disease is well developed, the following are the common symptoms:

Fever: Usually the fever is not high, rarely going higher than 104 F., and even in the uncomplicated cases the temperature is frequently irregular. Wide diurnal sweeps of the temperature curve, however, have usually been associated with the presence of empyema.

Pulse: The pulse has not been extremely rapid, even in the cases near death. Special attention has not been given to the occurrence of irregularities.

Respiratory Distress: This is the most marked and characteristic symptom of the disease, and is usually present even in the early stages. This is quite distinct from the respiratory difficulty seen in acute lobar pneumonia, with the expiratory grunt. In bronchopneumonia the great difficulty is with inspiration, the accessory muscle then being strongly brought into action. Frequently the expansion of the chest wall is slight, but the diaphragmatic pull is powerful, the costal margin being drawn on, and the intracostal spaces being markedly retracted with each inspiration. The patients seem consciously to have difficulty in getting sufficient air into the chest, but the inspiratory phase is not prolonged. The respiratory rate is usually not extremely rapid; frequently, even in very ill patients, the rate is not over thirty per minute.

Cyanosis: This is practically always present, even in the early stages, and in the more severe cases becomes extreme.

Cough: The cough is troublesome; frequently it is markedly increased by change in posture.

Sputum: Usually the expectoration is fairly free and moderate in amount. Its character varies markedly in the different cases and in the different stages of the disease. Early in our studies it was thought that the sputum had a specific appearance, being light-greenish, mucopurulent, sometimes somewhat blood streaked, and of a homogeneous character, spreading like molasses over the bottom of a cup. Later, however, typical cases have been observed in which this kind of sputum was never seen. In some cases the sputum has been nummular, quite mucoid, the masses being tenacious and somewhat sticky. In other cases the nummular masses have been greenish and very purulent. In none of the uncomplicated cases has the sputum been sticky and of a rusty color like that seen in acute lobar pneumonia, nor has it contained large amounts of bright-red blood, as is sometimes seen in the early stages of lobar pneumonia. Whatever its character, it practically always contains large numbers of pus cells.

Restlessness: This is a striking feature of the condition. The patients are fairly alert, rarely delirious, but always anxious and frequently frightened. Sleeplessness, probably due largely to the cough and respiratory difficulty, is very frequently present.

Pain: This is frequently one of the symptoms, and is due to the pleurisy which is almost invariably present. Abdominal pain, in the uncomplicated cases, has not been frequent in this series.

In the typical cases, the symptoms we have mentioned are quite striking and more or less characteristic. It must be remembered, however, that similar symptoms, though of milder grade, are also present in cases of bronchitis without involvement of the smaller bronchioles. The symptoms are characteristic enough in the severe cases, however, to differentiate them from cases of acute lobar pneumonia.

Signs.—We have already spoken of the obvious signs of respiratory distress and the cyanosis which is so striking. Physical examination of the chest may or may not reveal signs indicating consolidation. This, of course, depends on the intensity and focal distribution of the lesions. Where the process is very diffuse, the chest may be resonant throughout, on percussion, though in certain regions, especially at the bases, the percussion note is frequently impaired. On auscultation, râles are usually heard throughout the chest. There are frequently musical and squeaking, in addition to moist, crackling, râles. In typical cases, the râles are more numerous during inspiration, and the inspiratory murmur is harsh. In such cases, the expiratory murmur may be scarcely audible; even though the expiratory murmur is inaudible, however, a succession of medium, moist râles may be heard during the expiratory phase. Over the areas of impaired resonance the breath sounds may be very faint or absent until after the patient coughs, when harsh, mucous râles are heard, and the breath sounds become audible.

In some cases characteristic signs of consolidation, impaired resonance, tubular breathing and intensified spoken and whispered voice sounds are present over small areas. Frequently these signs persist for a few days, and then entirely disappear. In our early cases, these signs were most confusing and difficult to interpret. As we became better acquainted with the pathologic lesions, however, the meaning became obvious. I shall not attempt to bring the signs into relation with the lesions, since this relation becomes quite clear on the reading of Dr. MacCallum's report.

In no uncomplicated cases have we seen wide areas of dulness with characteristic tubular breathing and other signs of consolidation. When these signs have been present, there was always a complicating lobar pneumonia. In a few cases, however, later in the disease, there has been impairment of the percussion note over a wide area, with quite distant tubular breathing over this area, but with voice sounds fairly well transmitted. The repeated insertion of a needle in these cases has failed to reveal fluid, and the needle has felt as though it were in a more or less solid lung. We have interpreted these signs as due to a quite widespread involvement of the lung, with a marked degree of proliferation and plugging of the bronchi, as described by Dr. MacCallum. These are probably the cases which go on to necrosis and abscess formation, such as was seen in three of the necropsy cases. It must be remembered, however, that in the only cases of this type that we have seen at necropsy there was a marked accumulation of fluid in the pleura.

Complications.—Focal infections, such as tonsillitis and otitis media, may be present. They have not occurred frequently in this series, however. The most important complication is empyema.

Empyema.—This condition occurs with great frequency, being present in sixteen of the thirty cases, and in all but one of the necropsy cases. In ten of the cases, the condition was diagnosed by aspiration of fluid from the chest during life. In four additional cases, fluid was obtained from the chest on aspiration, but in these cases, the fluid was only slightly turbid, and contained no bacteria demonstrable by culture.

The diagnosis of the presence of fluid or pus in the pleural cavity in these cases is frequently difficult. In the cases in which large accumulations of fluid have occurred, no great skill is required. It is probably of great importance, however, to detect the presence of small amounts of fluid, and to do this as early after the fluid appears as possible. Small amounts of fluid can be detected only by employing the methods of physical examination of the chest. Roentgen examination is of assistance in certain cases. We have already stated that occasionally, over the more intensely affected areas, there is dulness on percussion, and the breath sounds may be distant. To determine whether these signs are due to an intrapulmonary lesion or to the accumulation of fluid in the pleural cavity is frequently very difficult. The greater intensity of the dulness on percussion, when fluid is present, and the distant faint tubular breathing heard at the margin of the area, are the signs of greater importance. Fortunately, the decision can be obtained by insertion of a needle, and in doubtful cases, this may be done not only once, but many times, if necessary.

Character of the Fluid: In most of our cases, the fluid obtained has been thin, but turbid, owing to the presence of bacteria and numerous fibrinous, purulent floccules. In only three or four cases has a thick, greenish-yellow pus been encountered. The infrequency of an exudate of this character should lead one to suspect, when such fluid is found, that the condition is a complication of lobar pneumonia and not of bronchopneumonia.

Mortality.—Of the thirty patients studied by us, fourteen died and sixteen recovered, a mortality of 47 per cent. Several of the patients are still very ill, however, and will probably die. Since the cases were not taken in succession, it is impossible to say whether or not this is a fair estimate of the mortality rate.

Probably the percentage of cases ending fatally in this hospital has been considerably higher than this. A most striking fact is that all the necropsy cases in our series were complicated by empyema. In many cases it has seemed that death was related directly to this complication.

Treatment.—No observations were made on the effect of any special form of treatment. Since the occurrence of empyema is an important factor in the outcome of the treatment of this complication, it deserves a few words of discussion.

Seven of the empyema patients were operated on, a rib resection with drainage being performed in each case. Of these patients, four have died. All of the others are very sick, and a fatal outcome is probable in one or more. On the other hand, of four patients in whom fluid containing streptococci was aspirated from the chest and operation was not performed, all have died. There were three cases in which fluid containing a moderate number of pus cells but no bacteria was aspirated from the chest. One of these patients was operated on; the other two were not. All three of these patients have lived, and from present indications will probably recover, though the patient operated on is still very ill. Our observations are not sufficient to enable us to draw any conclusions as to operation in this condition. They suggest, however, that in the cases in which fluid containing streptococci is aspirated from the lung, the chest should be opened and drained. But the question of operation in these cases is a difficult one, and we cannot be guided entirely by our experience with empyema complicating lobar pneumonia. The problem deserves special study.

LOBAR PNEUMONIA

During the course of our study of cases of bronchopneumonia, a considerable number of cases of typical lobar pneumonia were encountered. Some of these were chosen for study deliberately in order to have a control for the other work; in some the differential diagnosis was made only after careful investigation. One purpose of this study was to demonstrate to the hospital and laboratory personnel the fact that, under the conditions existing here, rapid and accurate diagnosis of the type of pneumococcus causing the infection in lobar pneumonia could be made. A small number of the patients were treated with serum by us or under our direction. This was also done for the purpose of demonstration.

Thirty-two cases of lobar pneumonia were studied. Only two of these patients had recently had measles: one one month, and the other six weeks previous to onset. There seemed no definite relation between the measles and pneumonia in these cases. In one other case, not included in this series, an apparent pulmonary infection with pneumococcus Type IV occurred during convalescence from measles. There was a pleural exudation of clear, sterile fluid; but the signs of lobar pneumonia were never definite.

Of these cases, seventeen were associated with Type I pneumococcus in the sputum; three with Type II; four with atypical Type II; one with Type III; six with Type IV, and one with *Streptococcus mucosus*.

The etiologic diagnosis was made within twenty-four hours in all these cases except two. In these cases, the delay was due to the fact that the sputum was very scanty and unsatisfactory, and the tests had to be repeated. The examination in both of these cases was

made late in the disease. (Some of the patients were studied on admission, others only after they had been in the wards for some days.) In seventeen cases, the diagnosis was made within eight hours, the Avery medium being employed. Considering the conditions under which we worked, this result seems quite satisfactory and demonstrates the possibility of type determinations in a military hospital.

In eleven cases, the presence of fluid in the chest was determined by aspiration. In five cases the fluid was clear, or very slightly turbid. In four of these cases the fluid was sterile; in the remaining case the fluid was contaminated after renewal from the chest and cultures could not be made. In these five cases, the fluid was removed by aspiration, and all the patients recovered without operation. In five other cases, the fluid was very turbid, and cultures revealed the presence of pneumococcus Type I. All of these patients were drained. Three of them are now well or are satisfactorily convalescing. Two of them are still very ill and have irregular fever. In the remaining case the fluid was thick and green, and cultures showed the presence of pneumococcus Type II. This patient was operated on and is also convalescing.

In eight of the Type I cases, the patients were treated with serum. Two of the treated patients were found to be sensitive to horse serum, and it was necessary to desensitize them before the administration of large amounts of serum. All but one recovered promptly; this one developed empyema. This patient has done well since operation and is now convalescent. The results of this small series of cases, therefore, were satisfactory.

Of the thirty-two patients, two died; two of the empyema patients are still ill, and the result is in doubt. The others have recovered.

This experience with lobar pneumonia in this hospital leads us to believe that it does not differ essentially from that seen in civil hospitals, except, perhaps, in its relative mildness. This, however, is to be expected in a population composed of healthy young adults.

CASES OF MIXED INFECTION OR DOUBTFUL CASES

In addition to the cases which were clinically identified as bronchopneumonia and which at necropsy were found to show the lesions described as interstitial bronchopneumonia or lobular pneumonia, and the cases which were typically lobar pneumonia, both clinically and at necropsy, there occurred a series of cases which were more or less complex in their clinical, etiologic and pathologic features.

There were seven cases in which evidence was obtained of a mixed infection with pneumococcus and *S. haemolyticus*, the infections being present simultaneously or in succession. Four of these cases were in patients who had recently had measles:

The first patient had signs of bronchopneumonia beginning a few days after measles. Four days later there was an acute exacerbation of symptoms with signs resembling pneumonia. This patient developed empyema on the side of the lobar involvement; and from this fluid during life pneumococcus Type IV was obtained. Death came six days after the onset of the severe symptom. The necropsy showed the presence of lobar pneumonia of the left lower lobe and an area of typical bronchopneumonia in other portions of the lung. From the blood and the right lung, *S. haemolyticus* was isolated. From the pleural exudate both *S. haemolyticus* and pneumococcus Type IV were cultivated. That a combined infection in this case was present is certain. The chronologic course

of events is more difficult to decide. It is impossible to say definitely whether the patient had a bronchopneumonia, with secondary pneumococcus infection, which led to septicemia and death, or whether the streptococcus infection occurred later, or finally whether the two infections occurred simultaneously.

The second patient had otitis media and also pulmonary symptoms lasting almost a month following measles. There then occurred an exacerbation of signs and symptoms, and the ward surgeon made a diagnosis of pneumonia. We saw him two days later and found an empyema on the left side, in addition to some signs of consolidation of the left lower lobe. The fluid from the chest contained *S. haemolyticus*, but the blood culture showed the presence of pneumococcus Type IV. The patient died two days later, and at necropsy a true lobar pneumonia was present, but no evidences of bronchopneumonia. In the cultures at necropsy, only *S. haemolyticus* was obtained from both lungs, and *S. haemolyticus* and *B. influenzae* from the blood. This case is difficult to interpret. The patient had a lobar pneumonia, and this was probably due to pneumococcus Type IV, although for some unexplained reason these organisms were not found at necropsy. Whether the streptococcus infection occurred early in the illness or only shortly before death cannot be determined. Unfortunately, the early clinical notes are incomplete, and we have no knowledge of the severity of the early lung involvement.

The third patient developed fever and respiratory symptoms ten days after an attack of measles. In the interval, however, he had had slight, irregular fever. We saw him four days later. He had then only signs of diffuse lung involvement, with indications of empyema on the left side. The sputum contained *S. haemolyticus*, as did also the purulent fluid aspirated from the chest. No pneumococci were isolated. Four days later he was operated on, and the pleural cavity was drained. He lived almost two weeks, and then died. At necropsy an undrained pocket of pus was found between the left lung and the pericardium, and in addition there was almost complete uniform consolidation of the entire left lung. The other lung showed no evidences of bronchopneumonia. At necropsy, *S. haemolyticus* was found in all the cultures, as well as a gram-negative bacillus producing a putrefactive odor. In this case lobar pneumonia existed without the presence of pneumococci being demonstrated at any time. This may have been due, however, to the overgrowth of the culture with a putrefactive organism, which was undoubtedly a terminal invader. When the lobar pneumonia began, or whether bronchopneumonia was ever present, cannot, of course, be decided.

The fourth patient developed typical lobar pneumonia during convalescence from measles. The blood culture showed the presence of pneumococcus Type I. He developed fluid in the left chest which was purulent, and contained pneumococcus Type I and *S. haemolyticus*. He died three days after the tapping, and at necropsy no pneumonia was found, but several small abscesses in the left lung and a very large amount of purulent exudate in the left pleura. The necropsy culture showed only the presence of streptococci. No pneumococci grew.

There were three patients suffering from acute lobar pneumonia in the pneumonia wards who gave no history of measles but in whom evidence of additional infection with *S. haemolyticus* was obtained. In two of these cases the pneumococcus causing the lobar pneumonia was Type II; in one, Type I.

One of these patients, during convalescence from pneumonia due to pneumococcus Type II, developed empyema, and the pleural exudate contained *S. haemolyticus* and *B. influenzae*. He had had some cough and sore throat for three weeks before the onset of pneumonia, and it is possible that the streptococcus infection antedated the pneumonia. There is no definite evidence for this, however.

The second patient had quite a typical attack of acute lobar pneumonia, also due to pneumococcus Type II. He gave no

history of any pulmonary symptoms previous to the onset of pneumonia. During convalescence, he developed an irregular fever and signs of scattered lesions in the chest. There occurred an effusion of fluid in the pleura, cultures from which were sterile. The examination of the sputum at this time, however, revealed the presence of *S. Haemolyticus*, which had previously been absent. In spite of the fact that the chest fluid was sterile, the chest was opened and drained. The signs of diffuse involvement of the lungs, however, continued, and the patient, one week after operation, is still seriously ill. The study of this case is incomplete, and the evidence of secondary streptococcus infection is not satisfactory, but is suggestive.

The third patient suffered from acute lobar pneumonia, due to pneumococcus Type I, involving the right lower lobe. Convalescence was normal for a week. Signs of pulmonary involvement persisted, however. At the end of the week, the temperature again became elevated, and the presence of fluid in the chest was suspected. Repeated insertion of a needle, however, failed to reveal fluid. The sputum, however, changed in character, and examination now showed the presence of *S. haemolyticus* and *B. influenzae*. Finally, about two weeks after the second onset of fever, a small amount of dark, foul-smelling fluid was obtained by puncture, apparently from the lung. This showed the presence of *S. haemolyticus* and the staphylococcus. About a week later the chest was opened and a lung abscess was drained. Whether the occurrence of abscess was due to secondary infection with streptococci or whether this infection was secondary to the abscess formation is, of course, not certain.

There were two additional patients seen by us in the pneumonia ward who developed empyema, with *S. haemolyticus* in the fluid. One patient had never had measles and the other had had measles two weeks previously. In the case without measles, the occurrence of pneumonia was doubtful.

This patient had been slightly ill for two weeks previous to admission, but had been performing his duties. The pleural effusion was present on admission, so infection occurred outside the hospital. The sputum contained *S. haemolyticus* and *B. influenzae*, and the pleural fluid contained *S. haemolyticus*. The patient was operated on and recovered.

In the second case, which followed measles, there were signs of lobar pneumonia with empyema. The sputum contained only *S. haemolyticus* and *B. influenzae*. The pleural exudate contained *S. haemolyticus*. The patient was operated on, and his present condition is fairly favorable. It is possible that this patient had bronchopneumonia, and not lobar pneumonia.

These cases indicate the frequency of complicated pulmonary infections in the present epidemic, and they also show the difficulty of interpreting the course of events in certain cases. It is true that in most of these cases no careful observations were made during the early stages of the illness. It seems quite certain that lobar pneumonia may sometimes occur in patients already infected with streptococci and with bronchopneumonia already present in the lungs. That bronchopneumonia occurs secondarily to lobar pneumonia is not so well shown by our cases; but they do show that in cases of lobar pneumonia, secondary infection with streptococci not infrequently occurs. This is obviously of much practical importance, suggesting that, so far as possible, patients with lobar pneumonia should be protected from infection with this streptococcus.

PLACE AND MODE OF INFECTION IN POST-MEASLES BRONCHOPNEUMONIA.

From the data previously presented, there appears little doubt that a hemolytic streptococcus is the chief, if not the only, cause of the bronchopneumonia follow-

ing measles which occurs among the soldiers at this post.

We have previously indicated that the infection in these cases is probably descending, occurring first in the throat, and successively involving the lower respiratory passages, and finally the lung. It therefore became of much interest and practical importance to learn whether hemolytic streptococci are present in the upper respiratory tract of all measles patients, and, if so, at what stage of the disease they are first present, or, on the other hand, whether these bacteria are present only in the throats of these patients who later develop pulmonary lesions.

We therefore first attempted to determine the prevalence of hemolytic streptococci in the throats of all the patients in the measles wards of this hospital. To do this, cultures were made from the pharynx and tonsils of these patients on blood-agar plates. The plates were incubated twenty-four hours and then studied for the presence of hemolyzing streptococci. These organisms were identified by isolation in pure culture from a single colony and by testing staining reaction, morphology, cultural characteristics, bile solubility, hemolytic activity and fermentation reactions. Hemolysis was determined by testing the power of a twenty-four hour broth culture to hemolyze an equal amount of a 5 per cent. suspension of the red blood cells of rabbits. The degree of hemolysis was recorded at the end of two hours at 37 C. Table 1 gives the results of the study.

TABLE 1.—INCIDENCE OF STREPTOCOCCUS HAEMOLYTICUS IN THROATS OF PATIENTS IN MEASLES WARDS

Total Number of Cases Examined	Number of Positive Cases	Number of Negative Cases	Per Cent. of Positive Cases
69	39	30	56.5

At the time of the examination, these patients had been in the measles wards for periods of time varying from one to fifty-five days. Of the sixty-nine patients examined, thirty-nine, or 56.5 per cent., showed the presence of *S. haemolyticus* in the throat.

These observations indicate that a large proportion of the patients confined to the measles wards harbor these organisms in the throat.

It next appeared of importance to learn whether or not this high incidence of carriers of hemolytic streptococci is peculiar to the measles wards or whether a similar state of affairs exists among the patients in other wards of the hospital. The incidence of streptococci of this variety in the throats of normal individuals under ordinary circumstances has not been determined accurately. In the presence of an epidemic of streptococcus infection, such as streptococcic sore throat, it has been found that a considerable number of healthy persons may carry this organism in the throat. On the other hand, the observers who have made fairly extensive studies on the flora of the normal throat, in the absence of epidemics of this kind, report that the occurrence of actively hemolytic streptococci in the throats is very rare. At the time of our arrival at San Antonio, it was evident that an epidemic of coryza, laryngitis and mild bronchitis existed among both the civil and military population. In some limited observations which we made, it was found that in the throats of persons suffering from this affection, hemolytic streptococci, and also influenza bacilli were occasionally present, singly or combined. It was possible, therefore, that the study of persons other than those suffering from measles might show a high incidence

of hemolytic streptococci in the throats. Consequently cultures were made from the throats of patients in a ward in which the patients were suspected of having tuberculosis but who had no other disease. Table 2 presents the results of this study.

TABLE 2.—OCCURRENCE OF STREPTOCOCCUS HAEMOLYTICUS IN THE THROATS OF TUBERCULOSIS SUSPECTS (WARD 27)

Total Number of Cases Examined	Number of Positive Cases	Number of Negative Cases	Per Cent. of Positive Cases
28	6	22	21.4

The occurrence of *S. haemolyticus* in the throats of these patients is considerably less than the incidence among the measles patients. It should be mentioned that the patients in the tuberculosis ward are not rigidly isolated from patients in other parts of the hospital, transfers from this ward to another, and vice versa, not infrequently being made. Several cases of tonsillitis and pharyngitis were discovered during the process of making cultures. Moreover, these patients live in very close association, being confined in the ward and only a few of them being confined to bed.

There were two methods available to discover whether the measles patients acquired the hemolytic streptococci before admission, or whether transfer from one patient to another probably occurred in the ward. One method was to make cultures on a large number of men in the barracks from which the patients with measles came, with the object of learning whether the incidence of streptococci in the throats of these healthy men was less than that among the men in the wards; the other was to make cultures from the patients with measles on admission to the hospital and then to repeat the examinations from time to time, in order to learn whether or not any of the patients with negative cultures later acquired the organisms. The latter method was chosen as consuming less time and more likely to give definite information. The results of the study are presented in Table 3.

TABLE 3.—OCCURRENCE OF STREPTOCOCCUS HAEMOLYTICUS IN THE THROATS OF MEASLES PATIENTS ON ADMISSION, AND THE SUBSEQUENT ACQUISITION OF THE ORGANISM IN THE CASES PREVIOUSLY NEGATIVE

		Per Cent.
Total number of cases examined	44	
Number of cases positive on admission	5	11.4
Number of cases positive 3 to 5 days after admission	17	38.6
Number of cases on final examination—8 to 16 days after admission	25	56.8

An analysis of this table indicates that a relatively small percentage of patients on admission to the measles wards harbor *S. haemolyticus* in their throats. However, as the time of residence in the ward increases, the number of carriers of *S. haemolyticus* increases, until finally the percentage of incidence becomes as high as that found in the measles wards in general. Because of these observations, there seems to be very little reason to doubt that a large percentage of measles patients acquire *S. haemolyticus* in their throats for the first time during their stay in the hospital wards.

While this study is not extensive enough to be absolutely conclusive, it indicates strongly that the high incidence of bronchopneumonia during convalescence from measles is directly related to the transfer of the infectious agent from one patient to another in the wards of the hospital.

These observations led us to suspect that the frequent occurrence of streptococcus complications, espe-

cially empyema, might also be related to the possible wide distribution of hemolytic streptococci among the patients in the pneumonia wards. Although an effort has been made to admit to the wards assigned to the care of patients suffering from acute lobar pneumonia only patients suffering from this disease, it is quite certain that owing to the difficulties of diagnosis, a considerable number of patients with bronchopneumonia have been treated in these wards. We have already referred to certain of these cases.

To investigate this question, cultures were made from the throats of all the patients in two wards which contained only patients thought to have acute lobar pneumonia. Cultures were made from forty-five patients. The technic employed was exactly that used in the tests previously mentioned. It was found that twenty-six, or 57.7 per cent., of all these patients harbored hemolytic streptococci. In view of the high incidence of streptococcus infections among the lobar pneumonia patients, these results are most interesting and suggestive. There is no reason to believe that the percentage of patients carrying hemolytic streptococci on admission is larger than the percentage of measles patients who do so when admitted. This question, however, has not been investigated.

COMMENT AND CONCLUSIONS

The studies indicate that the cases of pneumonia at the base hospital, Fort Sam Houston, are chiefly of two varieties: first, acute lobar pneumonia, which does not differ essentially from that which occurs elsewhere; and second, bronchopneumonia, which in most cases, at present at least, follows measles.

The pulmonary lesions in most cases of this type of bronchopneumonia are characteristic and specific and have been studied and described by Dr. MacCallum. The etiologic agent in all the cases studied by us has been *S. haemolyticus*. There is no evidence presented by this work that indicates that pneumococcus causes the lesions and symptoms of this condition. Pneumonia following measles may be due to pneumococci, but the pulmonary lesion is then of the lobar variety. This complication of measles, however, is comparatively rare. Cases may occur in which both types of infection and both types of lesions are present. The sequence of events in such cases is difficult to determine and is probably not always the same.

Streptococcus infections following lobar pneumonia occur with considerable frequency in this hospital. Bronchopneumonia similar to that following measles may also probably occur as a sequel of acute lobar pneumonia, though the evidence for this is not conclusive. Whether in the cases of streptococcus empyema, complicating lobar pneumonia, pulmonary lesions due to the streptococci are always present or not, has not been determined.

The mortality in the cases of bronchopneumonia is very high; that of uncomplicated lobar pneumonia is low. Practically all the fatal cases of bronchopneumonia are complicated by empyema. The incidence of empyema among the uncomplicated cases of lobar pneumonia does not seem to be extremely high.

Our observations indicate that the number of measles patients harboring hemolytic streptococci on admission to the hospital is not large. The majority of the patients with measles acquire this organism during their stay in the hospital. The chance of developing postmeasles streptococcus infections is therefore increased by residence in this hospital.

A very large number of the patients suffering from acute lobar pneumonia have hemolytic streptococci in their throats. We have no direct evidence that they acquire these bacteria in the hospital, but the presumptive evidence indicates that many of them do so.

The work indicates that the high incidence of pneumonia in this hospital, and the resulting high mortality, has been due, to some extent at least, to infection occurring within the hospital itself. The conditions are not unlike those surrounding puerperal fever and surgical wound infections. While in measles, raw surfaces do not exist on which infection can occur, this disease renders the respiratory mucous membrane especially vulnerable to infection with streptococci. Possibly in other diseases, as scarlet fever and even lobar pneumonia, similar conditions exist. When infection is once started in a ward in which the patients are closely associated, the streptococci become widely distributed; they probably gain in virulence with repeated transfer through the human subject, and serious and widespread infection results.

Probably the conditions in this hospital are not unique. It is possible that the widespread incidence of fatal pneumonia in the other army hospitals may have a similar explanation.

PART II. PATHOLOGY²

By W. G. MacCALLUM, M.D.

The material for the following study was derived from thirty-seven necropsies performed on the bodies of patients who died in the base hospital of Fort Sam Houston, Texas. They were selected as cases of pneumonia, but in three of them it proved that death had resulted from other causes. Nevertheless, the lungs in these patients, as well as those from several other miscellaneous cases in which the necropsies were performed by the resident staff, were studied.

The results are by no means easy to analyze, since there are many complications, many combinations of different infections, and many variations arising from differences in the stages of the disease at which the patient died. Briefly stated, however, it appears that two main types of bacterial infection are concerned. On the one hand, there are cases due to infection with one or another form of the pneumococcus; on the other hand, many cases have occurred in which a hemolytic streptococcus is the etiologic agent. Other bacteria have been found, notably the influenza bacillus, a gram-negative bacillus of undetermined nature, and occasionally one or another of the staphylococci; but all of these appear to be rather accidental invaders, and it seems scarcely probable that they are in any way responsible for the main anatomic changes.

Analysis of the cases appears to show fairly conclusively that the pneumococcus is responsible for those in which lobar pneumonia was found. The *Streptococcus haemolyticus*, in most instances, seems to cause a peculiar form of bronchopneumonia, which on account of its anatomic characters I have designated "interstitial bronchopneumonia." There are, however, some cases in which this organism, growing in overwhelming numbers or with especial virulence, produces a patchy pneumonia of a type more closely resembling the familiar lobular or bronchopneumonia found so often as a terminal event in persons dying of some chronic disease, or in those in whom aspira-

tion of infected material has occurred. This may be referred to as "lobular pneumonia."

One of these infections may be superimposed on the other, and there may even be found lesions corresponding to each in the same lung.

Fibrinopurulent pleurisy with abundant exudate has occurred with extreme frequency in these cases.

Since it is recognized that pneumonia frequently follows measles, this relation was especially studied. There were fifteen definite cases of measles in the series, and in eleven of these the interstitial bronchopneumonia was found. Two showed, at necropsy, lobar pneumonia alone, two lobular pneumonia alone, while two presented a combination of lobar and interstitial bronchopneumonia. In all there were seventeen cases of interstitial bronchopneumonia, and in the six cases of this condition not definitely following measles, no history of measles was obtained in five, although it was conceded that in the course of the great local epidemic these men might have passed through mild attacks of measles which were not mentioned when the clinical history was taken. The sixth case was at first regarded as measles, but later as scarlet fever. From all the cases of interstitial bronchopneumonia the hemolytic streptococcus was isolated, and it seems clear that this is the true causative factor, whether it gains entrance on the basis of a predisposing measles or otherwise. Details concerning all these relations will be given in full in a later report, but in this preliminary report it is necessary to describe the following conditions as they occurred in this series: (1) interstitial bronchopneumonia; (2) lobular pneumonia; (3) lobar pneumonia; (4) empyema; (5) combined infections; (6) other complications.

1. INTERSTITIAL BRONCHOPNEUMONIA

This is the condition already fairly well known through the work of Bartels, Delafield, Steinhaus, Hecht and others as occurring in children as a sequel of measles, whooping cough, etc. Their descriptions correspond closely with what we have found in adults, except in the general lack of complicating empyema in children, and in certain minor histologic details, notably the presence in the lungs of children of extraordinary giant cells derived from the epithelium. None of these writers determined the nature of the bacteria concerned. On the other hand, although it has been recognized by various workers in this country that the hemolytic streptococcus is to be found in the bronchopneumonia following measles, none of them seems to have determined the exact nature of this peculiar bronchopneumonia. The association of the hemolytic streptococcus with the interstitial bronchopneumonia must, therefore, be especially emphasized.

The term "interstitial bronchopneumonia" was chosen as expressing briefly the salient features of the lesion. It may not be the most satisfactory term possible, because it fails to describe accurately the earliest stages, and leaves out of account the process of organization of the exudate which is very common; but any term that could describe the whole course of a progressive process would be unwieldy.

The interstitial bronchopneumonia has been studied in various stages in different cases and found to produce extraordinarily different appearances as it progresses.

In the earliest stage, the pleural surface of the lung is smooth and glistening. The lung is, in general, air containing, although atelectatic patches may be making

2. This part of the work was carried out with the assistance of Lieut. W. C. Von Glahn, M. R. C., U. S. Army.

their appearance. On section, small hemorrhagic foci are found scattered through the lung, each showing, as a rule, a gray rather opaque center. These foci measure from 2 to 3 mm. in diameter, sometimes more, and are so small that several may occur in one of the secondary lobules of the lung, that is, in one of the lobules marked off by the interlobular septa (W. S. Miller). Microscopically, it is found that these foci represent the ends of the bronchioles together with the adjacent alveoli. The bronchiole and the ductulus alveolaris are filled with leukocytes, among which streptococci are found in pairs or in short chains. There is some infiltration of the bronchial wall with leukocytes, and the adjacent alveoli contain a few leukocytes, occasional streptococci, coagulable fluid, and great numbers of red blood corpuscles. Not only the alveoli which form a continuation of the bronchiole, but also those which lie near its wall, seem to be affected.

In a somewhat later stage the lung can still be distended with air, although the patches of collapse are more extensive. On section it is found to be studded throughout large areas with small, gray nodules which project above the cut surface like miliary tubercles, and are often surrounded by a red or grayish halo. At this time there may be visible a minute cavity or depression in the center of each which marks the lumen of the bronchiole. This may be represented, however, by the opaque contents of the bronchiole. These nodules have been mistaken by more than one for miliary tubercles, and it seems conceivable that the peculiar appearance of this and later stages may be in part, at least, responsible for the almost universal statement that measles is commonly followed by tuberculosis. Microscopically, such nodules are found to consist of a bronchiole filled with exudate of leukocytes, sometimes, but not often, associated with fibrin. The epithelial cell layer lining the bronchus is partly disintegrated or detached. The bronchial wall is hyperemic and thickened largely by the infiltration into its crevices of numbers of mononuclear wandering cells which have replaced the leukocytes. The alveoli about the bronchiole appear to contain less blood at this stage; only those immediately continuous with the ductulus alveolaris contain polymorphonuclear leukocytes; the others about the bronchiole usually contain a network of fibrin with mononuclear cells. The alveolar walls in the immediate neighborhood of the bronchiole are thickened by an infiltration of mononuclear cells (lymphocytes, plasma cells and larger wandering cells). Surprisingly few streptococci are found, and those chiefly in the bronchial exudate. Fibrinopurulent pleurisy, often with excessive effusion of greenish, turbid fluid, accompanies the process from this stage on.

In a still later stage the lung is usually much collapsed, dark blue, flabby, and airless except in the anterior portions. This is produced chiefly by the pressure of the pleural exudate, but partly by the occlusion of the bronchioles. At this stage, shotlike nodules 3 or 4 mm. in diameter may be felt all through the lung. On section, the pasty, airless lung sinks into a concave surface, leaving the gray peribronchial nodules projecting conspicuously. The interlobular septa have by this time become greatly thickened and infiltrated with cells and fibrin so that they stand out most conspicuously as whitish-yellow lines, marking out the whole lobulation of the lung in polygonal fields. In each of these fields there may be three or four pro-

jecting nodules which now usually show distinctly a central bronchial lumen. The surrounding tissue may be fairly dense, so that the peribronchial thickening is marked out chiefly by its opaque whiteness. Hemorrhage may in some cases stain the outlying regions about the nodules. If the bronchi be opened with the scissors, they are found to be slightly dilated toward the periphery of the lung, where they become thick walled as they run into the terminal portion which forms the center of the nodule. The contents are thick and glutinous. Microscopically, such a lung shows a very great infiltration of the bronchial wall with masses of mononuclear cells. The epithelium usually still persists in places, although much of it is desquamated. The lumen is filled with exudate of leukocytes with rather few chains of streptococci. Sometimes all the lining of the bronchus has disappeared so that in cross section it appears like an abscess. The walls of the adjacent alveoli are greatly widened and stuffed with mononuclear cells, desquamated epithelium, fluid and rather dense plugs of fibrin. Further out the alveolar walls are still thickened and infiltrated, and the alveoli contain chiefly fluid and desquamated epithelium. At this stage, organization of the exudate in the bronchi and the alveoli is usual. Indeed, this organization occurs with surprising rapidity, so that it may be quite advanced in patients who have apparently been ill only about ten days or two weeks. In the bronchi the new connective tissue and blood vessels arising from several points in the wall pervade the exudate and form richly vascular columns of fibrous tissue which extend into the alveoli and branch into each one. The lymphatics in the walls of the bronchi and blood vessels and in the interlobular septa are distended with mononuclear cells and fibrin, and contain numerous bacteria. The bacteria apparently reach the pleural network in this way, and this seems to be the most plausible explanation of the infection of the pleura. The interlobular septa and perivascular tissues are densely infiltrated with wandering cells and become very conspicuous. The pleural surface is covered with a thick, shaggy layer of fibrin, and the pleura itself is greatly thickened by being converted into a vascular granulation tissue which is gradually replacing the fibrin.

Streptococci are present in great numbers on the surface of the fibrinous exudate, as well as in the purulent fluid in the cavity of the pleura. It is to be noted that they, unlike the pneumococcus, are not to be found scattered everywhere in the meshes of the fibrin. It seems possible that they may digest and destroy the fibrin, but at any rate they are found only on its free surface. They are not engulfed by phagocytes as freely as are the pneumococci, and they are found less frequently in the tissues themselves. Even when in an inflamed tissue, such as the lobulated, fat masses which project into the pleura from the outside of the pericardial sac, streptococci are found in a matted layer over the free surface, they can be traced down into the crevices between the lobes of fat only so far as these are freely open. If the surfaces adhere no bacteria are found in the obliterated depth of the crevice.

In still later stages, more extensive infiltration of the peribronchial tissue occurs, and solid yellowish patches from 1 to 2 cm. in diameter appear. The induration about these, with edema and hemorrhage, becomes confluent, so that quite large areas may

appear consolidated. As to the nature of the healing process and recovery from this change, we have had no opportunity to learn anything.

In one case in which in some parts of the lung the lesions just described occurred in a moderate stage of advancement, other areas showed a great increase in the number of streptococci, with a wide dissemination into the tissue and a correspondingly intense inflammatory reaction. In other cases, much later, after a long course in which empyema of long standing has been drained by operation, the lung has been found to contain extensive abscesses, sometimes confluent into large, purulent areas. In such cases, and in these alone, one may expect to find secondary lesions in distant organs. It is rather remarkable that this particular hemolytic streptococcus seems to be an organism of rather slight virulence, with no tendency to spread through the body. Septicemia occurs only in the hours just before death, if at all, and in only one protracted case was there found an infarct-like lesion in the spleen. In all the others, the abdominal organs were normal.

2. LOBULAR PNEUMONIA

In these cases there was evidently an overwhelming infection with a virulent organism, or what amounts to the same thing; the patient offered no resistance to the invasion. The lungs present irregular, patchy, hemorrhagic areas of consolidation which are not especially peribronchial or limited in size. In them the streptococci are found in amazing numbers, often in long, tangled chains, scattered through the alveolar contents as well as in the exudate in the bronchi. In this respect the condition contrasts with that found in the interstitial bronchopneumonia. The exudate itself is chiefly composed of polymorphonuclear leukocytes, with some blood. There is nothing especially characteristic about this process, but it does occur after measles and is sometimes associated with the formation of areas of necrosis of the whole tissue which subsequently assume the appearance of abscesses. These are really not typical abscesses, but rather necrotic areas of consolidated lung tissue loaded with great numbers of bacteria. There were four of these cases.

3. LOBAR PNEUMONIA

Thirteen cases of lobar pneumonia occurred in this series and presented the well known anatomic picture which need not be described. In ten of them the pneumococcus was found, but in the remaining three it was missed, apparently because it was overgrown by the hemolytic streptococcus or by other organisms, since all of these were protracted cases with empyema, in which death occurred some days after operation and drainage of the open pleural cavity.

In four cases, pneumococcus Type IV was isolated. Two showed the presence of Type I and two Type II. In two the type remained undetermined.

It seems very probable that in all the cases the lobar form of pneumonia was caused by the pneumococcus. In those in which the pneumococcus was not obtained in culture, organisms morphologically like them and having the characteristic distribution of the pneumococcus are seen in the sections of the affected lung.

Secondary infection with the hemolytic streptococcus seems to have occurred in some cases, although it remains difficult to tell whether the streptococcus may not have preceded the pneumococcus. In two cases in which the pneumococcus seemed to predom-

inate at necropsy, it was thought probable that the streptococcus infection had been followed by that with the pneumococcus. On the other hand, four or five cases showed the streptococcus in great numbers at necropsy, while the pneumococcus was found only in such lesions as a vegetation on the heart valve or an abscess in the rectus muscle. In one case the pneumococcus was found only in the pleural fluid. In another it had been present in the blood before death. In such cases it seemed probable that the pneumococcus had been outgrown and replaced by the streptococcus.

Of the thirteen cases, five showed the pneumococcus alone. In none of these was there any empyema or excessive outpouring of fluid pleural exudate. But of the remaining eight cases in which there was also a streptococcus infection, there was empyema in all except one, in which both pleural cavities were obliterated by old adhesions.

Certain histologic features with regard to the distribution of pneumococci may be mentioned. While in the case of the interstitial bronchopneumonia the streptococci are in most cases present in relatively small numbers and then confined chiefly to the exudate in the lumen of the bronchus and the immediately adjacent alveoli, to the contents of the lymphatic and the surface of the pleural exudate, the pneumococci in lobar pneumonia are present in great numbers and are scattered diffusely through the whole lung and everywhere through the pleural exudate. It is true that there are some cases of intense infection in which the streptococci grow in immense numbers throughout the affected portions of the lung; but ordinarily they are not to be found, or only rarely seen in the fibrinous exudate of the outlying alveoli. In the lobar pneumonia the pneumococci are rather more abundant in the bronchioles and ductuli alveolares than in the more peripheral alveoli; but many are to be found intimately mingled with the network of fibrin in all the alveoli and in the pleural exudate. The activity of phagocytes appears to be far greater in the case of the pneumococcus, so that great numbers of them are found enclosed in the leukocytes, while most of the streptococci appear to lie free in the exudate.

The transportation of the organisms by way of the lymphatic channels, in the walls of the blood vessels, and interlobular septa and pleura is striking in the case of the pneumococci, as well as of the streptococci. It seems probable, although not proved, that it is in this way that the pleura becomes infected. Injections of the lymphatics from the pleural network gave beautiful preparations showing the connections of this network with the enormous, deep lymphatics which run toward the hilum of the lung, in the walls of the bronchi and blood vessels, and in the septa. These aided in the recognition of the relation of the bacteria to the lymph channels.

4. EMPYEMA

Empyema occurred in twenty-six of the thirty-seven cases of the series. In every case in which there was empyema, *S. haemolyticus* was demonstrated, and although empyema occurs in pure pneumococcus infections, only those cases in this series in which there was also a streptococcus infection developed actual empyema. The exudate appears quite early in the cases of interstitial bronchopneumonia, and is usually a thin, turbid, greenish fluid with floating shreds of fibrin and a relatively thin, fibrinous covering over the lung. Usually this fibrinous exudate cannot be

readily peeled off, but is intimately adherent to the lung and partly organized. Very large amounts of fluid may accumulate—in one instance several liters. The effect is, of course, largely mechanical, causing the collapse of the lung, with corresponding cessation of its function; but it seems that the presence of such a huge culture of streptococci, which appear to grow in enormous numbers in a position in which they are removed from actual contact with the tissues, must be a serious menace to the patient. Further studies should be made with regard to the toxic properties of this fluid and to the presence of bactericidal substances there.

After operation, the pleural cavity tends to become infected with various organisms which confer an extremely foul odor on the exudate. Encapsulated pockets of purulent fluid are often found between the lobes, even though the main cavity may have been fairly well emptied.

5. COMBINED INFECTIONS

Mention has already been made of the fact that both the pneumococcus and the streptococcus may occur in the same individual, and clinical study may show definitely which of these infections appeared first and which was superimposed. It is difficult to arrive at any conclusion as to this from the anatomic conditions, for the ordinary criteria of the duration of an inflammatory process—organization of exudate, production of mononuclear infiltration and indurative new growth of tissue in the framework of the lung—appear so rapidly in the interstitial bronchopneumonia and are so delayed in lobar pneumonia that they help but little.

In three cases there has been found in the lungs a definite intermixture of the anatomic lesions of lobar pneumonia with those of interstitial bronchopneumonia. These conditions seem to tend to exclude each other to some degree, even when they occur side by side in the same lung; but in some places the characteristic lesions of interstitial bronchopneumonia are found embedded in the uniform consolidation of a lobar pneumonia, emerging clearly into view as one leaves the area of lobar consolidation and passes over into the rest of the lung. In two cases the pneumococcus was recovered from the area of lobar consolidation, the streptococcus from the uncomplicated foci of interstitial bronchopneumonia in the same lung. These organisms are, however, too much alike, morphologically, to allow one to recognize them with certainty, in stained sections, in association with their specific lesions, when they occur together.

6. OTHER COMPLICATIONS

Complications with regard to other organs are rare in the cases of infection with this hemolytic streptococcus. Pericarditis occurred a few times, but most of the cases of pericarditis were associated with pneumococcus infection. Otitis media is recorded in several cases. There were two cases of acute nephritis, probably not dependent on this infection, since the kidneys in all other cases were normal. On the whole, there seems to be a very striking absence of involvement of any organs other than the lungs.

The range of complications in the case of pneumococcus infection has been rather greater. There were four cases of pericarditis, one of peritonitis, one of symmetrical bilateral abscess of the rectus abdominis muscles, and one in which death occurred suddenly in

convalescence, from embolic occlusion of the pulmonary arteries.

SUMMARY

In the Army camps represented in this hospital, measles has been prevalent. Pneumonia occurred frequently, but not always as a sequel to measles. The nature of measles is unknown, and we have had no opportunity to learn what anatomic changes measles alone can produce. But it does produce coryza, conjunctivitis and laryngitis, and these conditions appear to predispose to infection of the respiratory tract with bacteria. This predisposition is made evident by the great proportion of the cases of the series in which streptococcus infection followed measles; but it is evident that streptococcus infection may occur in a person who has not had measles, and it is quite probable that other diseases, such as scarlet fever, predispose to its entrance in the same way as measles. When *S. haemolyticus* gained a foothold, it usually caused in this series of cases the anatomic complex called here interstitial bronchopneumonia. This is the same whether it is preceded by measles or scarlet fever, or by no other disease, and its characters are due to the specific effects of the streptococcus. When lobar pneumonia followed measles, the pneumococcus was in this series accompanied by the streptococcus, and in some cases the lobar pneumonia was complicated, anatomically, by the corresponding bronchopneumonia.

Infection with the hemolytic streptococcus does not always cause an interstitial bronchopneumonia, but may produce a patchy lobular pneumonia.

One of the most interesting features of our study of the cases in this hospital is the recognition of the invariable connection of *S. haemolyticus* with that characteristic anatomic lesion which was well known, but to which we have for convenience given the name "interstitial bronchopneumonia." This lesion is easily recognized in all its stages by its gross appearance, since the prominent, gray, solid peribronchial nodules with surrounding edema, hemorrhage, organization and induration bear no resemblance to areas of pneumonic consolidation, which are homogeneous, solid patches, on the cut surface of which a plug of exudate projects from each alveolus. The microscopic appearance, as described above, is equally specific and characteristic, and there is no possibility of confusion with lobar or lobular pneumonia.

Empyema is a practically constant accompaniment of this condition, and is of extremely serious import.

The organism does not seem to be very virulent, and there is little tendency for it to enter the blood stream or to produce complicating lesions in distant organs.

Lobar pneumonia due to the pneumococcus has been found in many cases, not especially related to the occurrence of measles, but often complicated by secondary or coincident infection with *S. haemolyticus*. Its characters are exactly as seen elsewhere.

A Backward Community.—"We have no hospital, no visiting nurse, no dispensary and our supervisors make no provision for tuberculous persons. In things of this kind our county is like the dog's tail—always behind. It seems nothing will get them out of this rut. We have a board of health here and the chairman does not report his own cases, or quarantine, and the restrictions are very poor. Officially we know of but one case of tuberculosis and that was found by the examiners of the exemption board."—Report in *Illinois Health News*, August, 1917.

A METHOD OF FACILITATING THE SERUM
DIAGNOSIS OF SYPHILIS UNDER
WAR CONDITIONS *

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NEW YORK

The necessity for fresh guinea-pig serum and fresh sheep corpuscles in the original Wassermann technic renders that test impracticable unless these two factors are obtainable in the laboratory. I have already introduced a procedure in which the test is made possible without the use of fresh sheep corpuscles, and this antihuman hemolytic method has found wide adoption, notably in the laboratories of the United States Army and Navy. This test, however, still requires the use of fresh guinea-pig serum as complement. Considerable apprehension is being felt at present with regard to the availability of guinea-pigs and sheep to supply the necessary material for carrying out the serodiagnostic test for syphilis according to the methods hitherto in use, and a method which renders the test independent of these resources should be welcome at this time, when economy of labor, expense and time is particularly urgent. That such a method is possible, without sacrifice of the reliability of the test, is to be shown in this paper.

THE VARIOUS ELEMENTS REQUIRED TO COMPLETE
THE TEST BY THE NEW METHOD

As is well known, five different elements are concerned in any complement fixation test, to which class the Wassermann reaction belongs: complement, amboceptor and corpuscles, constituting the hemolytic system; antigen and antibody. The hemolytic system merely serves to indicate, by the occurrence or non-occurrence of hemolysis, the presence of a specific reaction in the mixture of patient's serum and antigen. In other words, when an antibody is mixed with the specific antigen, it produces a compound which fixes or deviates complement and prevents the latter from taking part in hemolysis; consequently hemolysis cannot occur in such a mixture.

In the ordinary Wassermann test the antishoop system is used, fresh guinea-pig serum being employed as complement, together with antishoop amboceptor (rabbit) and sheep corpuscles. The patient's serum is used as the source of syphilitic antibody, but only after removal of the native human complement, present in every fresh serum, by heating the serum to 55 C. for thirty minutes (inactivation). The serum contains varying amounts of both the complement and natural antishoop amboceptor, which, if left unmodified, will constitute uncertain factors in the test. The native complement is therefore replaced by guinea-pig complement, which can be accurately titrated and added in uniform quantities. Fresh human serum also contains very often enough natural hemolysin for sheep corpuscles to cause serious disturbance in the result. While inactivation removes the complement it leaves the natural antishoop amboceptor intact, and when the latter exists in excess the degree of hemolysis produced is accelerated in spite of the use of a definite amount of guinea-pig complement and immune antishoop amboceptor. On account of the disturbing influence of this unknown and often excessive amount of

natural antishoop amboceptor, in certain laboratories the serum is being treated with sheep corpuscles in order to remove them by absorption, a very tedious and time-consuming procedure if necessary in the case of 100 or more specimens of serum. Absorption involves the mixing of the inactivated patient's serum with washed sheep corpuscles, subsequent incubation at 37 C. for one hour, and finally separation of the serum from the corpuscles by centrifugation, and with all these preliminary preparations of the patient's serum the final results are no more reliable than those obtained by the antihuman hemolytic system in which there is no disturbing complement or amboceptor from natural sources, and the amounts of complement and amboceptor are always definite and controllable, antihuman amboceptor (immune rabbit) being used in combination with guinea-pig complement against human corpuscles.

In the present method the native complement present in fresh human serums is used as complement in a hemolytic system which comprises, besides the human complement in this form, antihuman amboceptor and human corpuscles. The patient's serum serves as the source of syphilitic antibody as in any other method. The only difference between my antihuman heterohemolytic system and the new hemohemolytic system is that the latter uses human complement instead of guinea-pig complement.

As already stated, the complement content of fresh human serum is variable to some extent, but the majority of specimens contain a quantity which may be taken as a standard for test. Out of 429 fresh specimens (not more than 72 hours old), twenty-two were found to contain an amount of complement less than the average, a few of these containing no complement at all. If the deficiency is slight, it may be remedied by the use of an additional amount of amboceptor; if greater, these serums must be tested with the addition of fresh negative serum as complement. As the complement gradually disappears from the serum on standing, it should be examined in as fresh a state as practicable. Even if kept in a refrigerator after withdrawal from the patient, it should not be older than 48 hours when tested. The method is equally applicable, however, to those serums which have become inactive on standing or have been artificially inactivated by heating to 55 C. for thirty minutes, or to cerebrospinal fluids; in these instances it is only necessary to add an adequate quantity of fresh human serum known to contain sufficient complement and to be free from syphilitic fixing principle.

TECHNIC

Following is a brief description of the technic of the new test, for more extensive details of which the reader is referred to the article appearing in the *Journal of Experimental Medicine*:

The patient's serum, not older than 48 hours (at refrigerator temperature), is used in a dose of 0.1 c.c. for each of two tubes. One tube then receives 0.1 c.c. of antigen and 0.9 per cent. saline solution; the other (control) receives saline solution only. The total volume for each tube is made 1.3 c.c.

The antigen consists of a 1:10 saline emulsion of the acetone insoluble fraction of tissue lipoids dissolved in pure methyl alcohol in a ratio of 3 per cent. (for standardization, etc., the reader is referred to my work in connection with the antihuman system').

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Noguchi, Hideyo: Serum Diagnosis of Syphilis, Ed. 3, Philadelphia, J. B. Lippincott Company, 1912, p. 79.

After an incubation of half an hour in the water bath at 37 C., the tubes are removed from the incubator and to each are added 0.1 c.c. of a 10 per cent. suspension of washed human corpuscles, and 0.1 c.c. of a dilution of the antihuman amboceptor representing one hemolytic unit. The contents of the tubes are well mixed and the tubes returned to the incubator for a second incubation of the same duration, during which two or three shakings are necessary in order to insure a uniform reaction of the reagents. After completion of the second incubation, the tubes are left at room temperature for about half an hour before the results are read. In case hemolysis is incomplete in the control tubes at the end of the thirty minute incubation period, the addition of another unit of the amboceptor to both tubes and another period of incubation are indicated. If hemolysis is still incomplete, the specimen should be tested anew with the addition of 0.1 c.c. of fresh active negative human serum (as complement).

When inactivated serum is tested, the amount used for each tube is 0.2 c.c. In the case of old serum not artificially inactivated, the amount is 0.1 c.c. In the case of cerebrospinal fluid, 0.5 c.c. of these specimens are devoid of complement and require the addition of 0.1 c.c. of human complement (negative serum). The subsequent procedure is the same as that described for the examination of fresh serums.

Controls, consisting of a known positive and a known negative serum, should of course be provided for each test, as in any other method.

PRACTICAL RESULTS

The test has been applied to several hundred specimens of human serums and a number of cerebrospinal fluids, with altogether satisfactory and consistent results, entirely in accord with those obtained with my antihuman heterohemolytic system (guinea-pig complement, antihuman hemolytic amboceptor, and human blood corpuscles), as well as with those obtained by Wassermann's antishoop hemolytic system.

Too much emphasis cannot be placed on the importance of using an antihuman hemolytic amboceptor which is highly potent, and human serum which is as fresh as possible. A suitable antihuman hemolytic serum should be able to produce hemolysis of 1 c.c. of 1 per cent. human corpuscle suspension in a dose of 0.01 c.c. or less in the presence of 0.1 c.c. of fresh human serum (complement) within from twenty to thirty minutes at 37 C. in a water bath. An amboceptor serum weaker than this gives a less satisfactory result. It is estimated that ten immunized rabbits will yield material (antihuman amboceptor) sufficient to test about 20,000 specimens within a period of one month.

A detailed and extended report of this method, which seems to be especially adapted to use among armies in time of war, will be found in a forthcoming issue of the *Journal of Experimental Medicine*.

Chestnuts and Acorns as Sources of Carbohydrate.—According to the *Lancet*, following some one's suggestion horse chestnuts have been collected and utilized as a source of carbohydrate in the manufacture of munitions in England, and later, on the suggestion of the *Lancet*, acorns have been subjected to analysis with the same idea in view and have been found to contain a greater proportion of carbohydrate than horse chestnuts. In an article read by Julian Baker and R. F. E. Hilton before the Society of Public Analysts and Analytical Chemists they set forth the results of analyses of these two seeds. In the chestnut it was found that the total amount of starch varied from 21.9 to 47.8 per cent., and the total sugars from 11.7 to 19.1 per cent.; in the acorn the starch was said to vary from 55.7 to 57.1 and the total sugars from 6.8 to 8.98. Acorns or chestnuts with their full moisture content yielded, after hydrolysis with acid, 11.5 to 12.7 per cent. of alcohol, or 32 to 36 gallons of alcohol per ton of nuts.

Therapeutics

BOILS AND CARBUNCLES

These frequent and unwelcome visitors are always due to an infection. The greatest preventive is constant cleanliness of the back of the neck, the axillae, and the gluteal, perineal and genital regions, which are the parts most frequently affected with boils. The back of the neck is the most frequent place, in men, for boils and carbuncles to occur. Infection readily occurs in the hair of the lower part of the occiput and upper neck region. Pustulations and boils in this region are due to too infrequent hair cutting and shampooing.

A boil having occurred, contiguous hair follicles may become infected, or more distant parts of the body may develop one or more boils. Doubtless such isolated boils are frequently caused by direct transmission by scratching with contaminated fingers. Frequently boils occur from infection transmitted by way of the blood or lymphatics from some focus of suppuration; or a boil may infect the blood and cause crops of boils and repeated attacks after periods of remission. Repeated crops of boils may occur from foci of infection in the nose, nasal sinuses, tonsils, teeth and gums; they are not as likely to occur from a suppurating ear, from a fistula, or walled-off sinus, but it cannot be too frequently reiterated that foci of infection in the nose and mouth are a menace. Diabetes particularly predisposes to boils.

ETIOLOGY

A furuncle, or boil, is an inflammation of the deeper layers of the skin and adjacent subcutaneous tissue, generally circumscribed about a hair follicle or sebaceous gland. The *Staphylococcus pyogenes-aureus* seems to be the most frequent germ of infection. The intruder, of course, rapidly propagates his species, irritation takes place, the blood vessels of the region become dilated, leukocytes hasten to the defense of the patient, and tumefaction, heat, and pain develop. The afflicted area becomes distinctly circumscribed, and, if not maltreated, may keep the infection within the bounds of the circumscription, with—if many lymphatics are in the region—a rather rapid congestion of the adjacent glands. These also become secondary defenses against infection of the body. The pressure of the part increases, circulation in its center is interfered with, and the central part or core of the inflamed region becomes necrosed, soon softens, and breaks through the skin, and more or less thin pus, with blood, escapes. This generally occurs in about a week. Soon after this the central dead tissue becomes loosened from the healthy surrounding tissue and is easily removed or evacuated. The cavity then granulates and rapidly heals.

TREATMENT

If a boil is first seen when it is only a slight nodule with a punctate white speck on the skin, it has long been considered that abortive treatment is advisable, and that most recommended has been to puncture through this white or red point on the skin into the hard tissue with a toothpick or wooden applicator, which has been dipped in liquid phenol (carbolic acid). Or, with a hypodermic needle, a drop or two of phenol has been injected directly into the center of the hard-

ened part. However, although many times successful, the majority of boils cannot be so aborted, possibly because they are rarely seen at this early stage.

When a boil is first seen well on its way, incision before liquefaction and suppuration should be considered, although sometimes it does not hasten the process and may increase the pain.

The surrounding tissue of a boil should always be kept carefully cleansed with some mild antiseptic wash, as one of the liquid soaps, or even cleansed with a little ether. Then a wet dressing may be applied, best with some alkaline wash. Gauze saturated with such a solution and placed over the part, and a piece of oil silk over it, should be gently strapped or bandaged on. The gauze should be kept constantly moist with warm water. If the skin tends to become red and irritated about the boil, it should be soothed with petrolatum or with a dilute glycerin. No strong antiseptics should be used, any more than momentarily, on the skin. Mercuric bichlorid dressings, so long used and so much overused, are bad treatment for the skin in these cases.

If the part around the boil is hairy, it should be gently and carefully shaved or closely clipped, and when the skin is perfectly dry, iodine may be painted once around the part; then proper simple cleanliness will prevent later infection of the hair follicles.

As soon as the boil is opened, or it has come so near the skin that it is best to incise the outer layer of skin to evacuate the pus, it should be dressed frequently. Besides the cleansing of the skin about the part with alkaline washes, an ointment, as sterile petrolatum, may be spread around on the healthy skin to prevent the more or less irritant excretions from the boil causing irritation to healthy parts. The wet alkaline poultices should be continued as long as there is a hard, inflammatory area. As soon as this induration has greatly diminished, the poultice part of the wet dressing should be stopped, that is, the oil silk, rubber tissue, or waxed paper should be omitted from the dressing, and simply the moist gauze placed over the boil. This wet dressing should be frequently changed, so that no pus is dammed back into the boil and free exit is constantly possible. This means that the dressing should be done at least twice in twenty-four hours, and better, three times.

At each dressing, little pieces of dried pus or tissue should be gently removed with forceps, and just enough pressure brought to bear to bring the particles of dead tissue within reach of the forceps; no squeezing should be allowed.

CARBUNCLES

It is practically impossible to determine in most instances that a patient has a carbuncle. An apparent boil is likely to develop into several boils, with several openings, and becomes a carbuncle. Carbuncles are more likely to occur in men, and in older men than in young men, and more frequently on the back of the neck than on any other part of the body. However, wherever a carbuncle is located, on account of the large amount of tissue involved, there is always more or less danger from a phlebitis with thrombosis and possible direct infection of some large blood vessel.

It is necessary that such a multiple infection as a carbuncle should have free opening for evacuation as soon as suppuration occurs. It may be even advisable for a surgical decision as to whether or not radical excision is advisable to prevent the constant danger of

infection in one of the large veins of the head. Carbuncles on the upper lip or near the nose are very dangerous.

It should be remembered that it is always possible for a boil or carbuncle to produce septicemia, and even a serious septic process of deeper structures of the body or of bones. In other words, while the individual boil is being treated, every possible focus of infection must be sought, and if one is found, means taken to eradicate it. A history of repeated boils and pustulations indicates a focus somewhere, and if it is not in direct evidence, all crowned and bridged teeth are under suspicion until the roentgen ray has proved them innocent.

GENERAL TREATMENT

As to general treatment, anything that makes for appetite, good digestion, proper movement of the bowels, and nutrition works for a successful fight against furunculosis. One of the recommended treatments is yeast. The ordinary compressed yeast cake is easily obtained and administered. The proper dose is about one third of a yeast cake, dissolved in a glass of water, twice a day. This makes a sour drink, and is not disagreeable to most persons. If it causes the bowels to become loose, the amount should be diminished. Yeast may have a beneficial action in gastrointestinal sluggishness, and apparently has power to change the flora of the intestine.

Sulphuric acid and nitrohydrochloric acid have been recommended in furunculosis, and sulphur is also an old-fashioned treatment. If the patient is anemic, iron in some form should be given.

When there are multiple small spots of infection on the body, the underclothing should be frequently changed, and warm baths should be taken to prevent reinfection.

Stock vaccines, and more frequently autogenous vaccines, have occasionally been found valuable. On the other hand, sometimes vaccines fail utterly to prevent the recurrence of boils.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

NORMAL HORSE SERUM (See N. N. R., 1918, p. 312).

The Gilliland Laboratories, Ambler, Pa.

Normal Horse Serum.—Marketed in syringes each containing 10 Cc.; also in ampules containing from 10 to 100 Cc. as ordered.

DIPHTHERIA ANTITOXIN, CONCENTRATED (See N. N. R., 1918, p. 314).

The Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Diphtheria Antitoxin.—Prepared according to Banzhaf's method and preserved with 0.4 per cent. trikresol, contains less than 20 per cent. of solids. Marketed in syringes containing each 1,000, 3,000, 5,000, 7,500, 10,000, 15,000 and 20,000 units.

TETANUS ANTITOXIN, CONCENTRATED (See N. N. R., 1918, p. 315).

The Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Tetanus Antitoxin.—Marketed in syringes containing each 1,500, 3,000 and 5,000 units.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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on the second advertising page following the reading matter*

SATURDAY, APRIL 20, 1918

THE REGULAR MEDICAL CORPS—AN OPPORTUNITY

This is a call to the young medical men of America, to the men not yet established and who are seeking a career. The United States Army Medical Corps has eleven hundred vacancies; officers for six hundred and fifty of these are urgently needed now. It is not a sacrifice—the men who can answer this call are in any event practically within the draft age. It is a call to them to choose the Army medical service, not as a temporary vocation, but as a career. Today probably every young physician gives some thought to this choice. Few, however, consider the opportunity with a full knowledge of its advantages.

The medical officer is not only a physician, but a soldier. He has a double function and a double responsibility. The history of our Army medical department is full of examples of men who have fulfilled their responsibilities gloriously. The organization to which the young men are called is one of magnificent traditions, of scientific accomplishment, of transcendent present importance. It offers a position of regular employment, of fixed equable income, of steadily increasing ability, importance and emolument, of opportunity for individual study and recognition. The requirements for admission and the training of the men in the corps, the rank as an officer, insure a most desirable social atmosphere. There is association with well educated, scientific, progressive men and an absence of the petty social jealousies of civil life. The man who is personally fit can go far and achieve much.

The essential requirements are: (1) citizenship, (2) age between 22 and 32 years, (3) graduation from a well-recognized medical school, (4) one year's hospital internship, and (5) good moral character and habits. Applicants must pass an examination not difficult for men who can meet the other requirements. If successful they receive a three months' training course with full pay and allowances.

This is a call first, to men who are not now in the Medical Reserve Corps, and second, to the younger Medical Reserve Corps officers. The first class have not done their duty by themselves or by their country. The second class have shown their patriotism and are no doubt already in the service or completing internships and awaiting call. They have been permitted to "sample the goods before purchasing." To them especially the service should appeal as a career. They too may make application for examination and transfer to the Regular Medical Corps. The Army and the nation need these men now. It does not ask of them the tremendous sacrifices made by the older men who have given up their homes, families, incomes, and perhaps their careers; it offers an established income and an enviable position.¹

YOUNG MEN, THIS IS YOUR OPPORTUNITY; SEIZE IT!

GASES IN MODERN WARFARE

Despite the fact that the daily newspapers frequently report the use of poisonous gases in the conduct of the war on the European continent, few physicians understand much more about the methods employed, the substances used, the protections devised and the untoward effects encountered than does the layman who carefully follows the reports from the centers of conflict. After all, this is not strange. Gas warfare is an innovation in the struggle between armies. It seemed so unlikely in 1914 that any enemy would introduce this atrocious form of attack that when the first reports of the preparation to employ it reached the allied forces they were scarcely credited, and no serious notice was taken of the information. With the initiation of the first gas attacks by the Germans in 1915, modern modes of conducting war were radically modified.

The story of the varied types of this hellish performance, of how the unexpected was met and mastered, of the frequently altered forms and phases of gas warfare conducted with the aid of skilled engineers, technologists and chemists has scarcely traveled beyond the trenches. It has been full of surprises; replete with difficulties such as confront the student of new diseases; and, if we may forget the awful horror of the consequences, the use of gases has formulated questions of broad scientific import. However terrifying the prospects may be, we must realize that a new and deadly weapon has been used, and its entrance into the arena must be reckoned with by the application of skill and knowledge.

What is the deadly gas, and how is it used? To this the answer may be made that there already are literally a score of harmful gases used in more than

1. Circular of information and application will be sent by THE JOURNAL on request.

one way that have attained some notoriety.¹ First used and best recognized in medical circles was chlorine gas. This is sent out as a cloud from cylinders concealed beneath the parapets. The wind must be of suitable velocity and direction to make the attack effective. Protection is afforded by a respirator which causes the gas-laden air breathed to pass through an absorbent soaked in solutions of alkali carbonate or thiosulphate. The next surprise came in the form of carbonyl chlorid, or phosgen (COCl_2), an insidious gas difficult to protect against. Fortunately, a partial protection was soon found in helmets saturated with sodium phenate. It became apparent, to quote a military expert, that three things really matter in gas warfare, and these were all emphasized at this early period. They are (1) increased concentration of the gases used, so that the protective devices no longer suffice; (2) surprise attacks, whereby the troops are gassed before there can be made adequate provision for protection, and (3) the use of unexpected new materials.

Accordingly, when carbonyl chlorid began to be used by the Germans in increased concentration, further provision to meet this became necessary. Here chemical ingenuity suggested the use of hexamethylenamin in conjunction with sodium phenate. On the horror of gas clouds the frightfulness of gas shells presently was superimposed. They are asserted to be the most important of all methods of using gas, and are still in the course of development. The widely proclaimed "tear" gases were delivered in this fashion. Originally xylol bromid or benzyl bromid, obtained by bromination of the higher fractions of coal-tar distillates, formed the contents of the "tear" shells. A concentration of some of these lacrimators in the proportion of one part in a million makes the eyes water severely. The enormous extent to which such chemical products have been employed is indicated by the fact that the Germans have put down heavy barrages of "tear" gas shells. In 1916, such highly poisonous substances as trichloromethyl-chloroformate were included, the attempt often being made to increase the concentration by the mode of shelling so that some of the gas would pass through the protective helmets, as it actually did at times. Hence we can understand Auld's contention regarding the significance of suitable protective devices. "Respirators," he says,¹ "have to fulfil two requirements which are quite opposed to one another. In the first place they should be sufficiently large and elaborate to give full protection against any concentration of any gas, whereas military exigency requires that they be light and comfortable. It is necessary to strike a balance between these two. Upon a proper balance depends the usefulness of the respirator. Oxygen apparatus will not do on account of its weight and its limited life. Two hours' life is excessive for

that type. The side that can first force the other to use oxygen respirators for protection has probably won the war."

Last summer witnessed the beginning of the use of a still more harassing gas. An added lacrimator in the form of phenyl carbylamin chlorid has been tried; then came the celebrated "sneezing" gas, diphenyl-chloroarsin, intended to make a soldier sneeze so badly that he will be unable to keep his mask on. But the surprise that scored heavily in 1917 was the "mustard gas," dichloro-diethylsulphid. As many as 50,000 shells containing this "superlacrimator" have been reported as fired in a single night's bombardment. The effect is most insidious. The gas has a distinctive smell, rather like garlic than mustard. It has no immediate effect on the eyes, beyond a slight irritation. After several hours the eyes begin to swell and inflame and practically blister, causing intense pain, the nose discharges freely, and severe coughing and even vomiting ensue. Direct contact with the spray causes severe blistering of the skin, and the concentrated vapor penetrates the clothing. The respirators, of course, do not protect against this blistering.

In passing, we may recall the German hand grenades filled with bromin, chloracetone, chlorosulphonic acid, sulphur trioxid or dimethyl sulphate—surely a ghastly array! If the "colorless, odorless, invisible and highly poisonous" gas has not yet come to the front, its near relatives have nevertheless been in evidence. MEANWHILE, THE CHEMICAL LABORATORIES OF THE ALLIES HAVE NOT BEEN IDLE.

THE HOUSE FLY AND BACTERIA

With the approach of the summer season the annual problem of the fly and its possible menace to health and comfort is presented for serious consideration. Despite the enthusiasm with which the antify campaigns have been launched in various localities within the past few years, there are many persons who question seriously whether the effort and expense inevitably involved are worth while when considered primarily from the standpoint of the public health. There can be little question that the fly is a nuisance and deserves to be eliminated from the neighborhood of human habitations on grounds of comfort and cleanliness, if not on the basis of danger to health. With respect to the latter aspect of the subject there is no overabundance of evidence as clearcut as now exists with reference to the noxious mosquito. Decisive facts are therefore always to be welcomed.

The common house fly, *Musca domestica*, can transport bacteria in a variety of ways. The micro-organisms may adhere mechanically to the surface of the body, legs, wings and proboscides of the insects; or the insects may carry them in the intestinal tract and deposit them on foods either in the fecal discharges or in the regurgitated food of the so-called "vomit

1. The basis for this statement and others pertaining to the subject is taken from the report of an interesting lecture by Major S. J. M. Auld of the British Military Mission, as published in the Journal of the Washington Academy of Science, 1918, 3, No. 3.

spots." Among the facts that appear to be reasonably well established is a seasonal variation in the number of bacteria carried. The greatest bacterial flora is apparently coincident with the summer months. That locality may play a part in the numbers of micro-organisms is indicated by the investigations of Cox, Lewis and Glynn,¹ and more recent studies in the District of Columbia.² Flies caught in the insanitary or congested areas of Liverpool carried greater numbers of bacteria than flies obtained in the more sanitary, less congested districts. Similarly, flies captured in the residential section of Washington were reported to carry fewer bacteria than the insects obtained from cheap restaurants in the business districts of the city. Still less bacterial contamination was observed in flies caught in the open country near the capitol city.

The possibility of the transmission of harmful micro-organisms has also been established. The cholera bacillus was detected on flies as early as 1886; the bacillus of tuberculosis was found in 1888; that of bubonic plague in 1894; of typhoid fever in 1903. Indeed, during an epidemic of typhoid in Chicago, Hamilton³ detected typhoid bacilli in five out of eighteen flies that were caught. The list of such findings might be considerably extended. Scott,² the microscopist of the Army Medical Museum in Washington, who has made numerous bacteriologic examinations of flies in that locality, reports that the isolation of members of the colon-typhoid-dysentery group of bacilli from numbers of flies indicates that the house fly has the power of carrying the closely allied pathogens, typhoid and dysentery. However, despite the evidence for the contamination of the house fly by the fecal discharges of man and animals, the results of Scott's experiments indicate that typhoid fever in the District of Columbia, under normal conditions, is not referable to the agency of this insect.

The finding of pyogenic cocci on flies by Scott, as well as by a few others before him, furnishes a suggestion of potency for harm. It indicates that the insect may be an agent in the dissemination of suppurative organisms from man to man. Herein, too, says Scott, may lie one explanation of the spread of gangrene in field hospitals under war conditions. A specifically noteworthy accomplishment in the study of the bacteriology of the house fly was Scott's⁴ recovery of *Bacillus cuniculicida*, the causative organism of a septicemia in rabbits and guinea-pigs. This helps to explain the sudden outbreaks and spread of certain epidemics among laboratory animals. It emphasizes

the necessity for proper screening of windows and doors where experimental animals are kept, and particularly calls for protection from the house fly in cases in which they are inoculated with pathogenic organisms. It is such facts, furthermore, that argue not only for protection of food and persons against flies, but even more for the abolition of the breeding places of these insect pests.

Current Comment

OUR COUNTRY'S CALL

When our country entered the war the AMERICAN MEDICAL ASSOCIATION placed its services at the disposal of the Government: its entire machinery, its publication and its total resources—the state and county societies with their 81,000 members—for the purpose of organizing the medical profession for the war. To previous calls the profession has responded splendidly. We are confident that the same ready response will be made to this new call for 5,000 additional medical officers. The matter is considered in greater detail in the report of the action of the War Committee of the Association elsewhere in this issue.¹ No one can prophesy what the duration of the war will be; it may be three years, it may be five years; it may demand three million or five million fighting men. But whatever may be the needs to secure victory, they will be supplied. And the medical profession will do its part. In Great Britain and in France the demands required drafting of all able-bodied men—even those past middle life; and this included the medical profession. While a similar draft on the manhood of this country may have to be made, we do not believe that it will be necessary to include the medical profession, for physicians will do voluntarily whatever they are called on to do. However, the time has come for deeds, not words; for action, not promises; for accomplishment, not prophecy. The time has come for every medical man under 55 years of age, who is physically qualified, to consider seriously for himself the question of his duty to his Government. In doing this, each one must realize that practically all who have thus far volunteered have done so at a sacrifice: in some instances the sacrifice has been small; in others, great. Patriotism and one's sense of duty to one's country have been the motives that have prompted the action of those who have joined the Medical Reserve Corps. This has been especially true when action meant sacrifice. That same spirit must and will prevail now.²

1. Cox, G. L.; Lewis, F. C., and Glynn, E. E.: Jour. Hyg., 1912, 12, 290.

2. Scott, J. R.: Studies upon the Common House Fly (*Musca Domestica*, Linn.), I, A General Study of the Bacteriology of the House Fly in the District of Columbia, Jour. Med. Research, 1917, 37, 101.

3. Hamilton, Alice: The Fly as a Carrier of Typhoid, THE JOURNAL A. M. A., Feb. 28, 1903, p. 576.

4. Scott, J. R.: Studies upon the Common House Fly (*Musca Domestica*, Linn.), II, The Isolation of *B. Cuniculicida*, a Hitherto Unreported Isolation, Jour. Med. Research, 1917, 37, 121.

1. See page 1165.

2. THE JOURNAL will be glad to send application blanks and list of examining boards on request.

PROTECTIVE INOCULATION AGAINST
LOBAR PNEUMONIA

While recent investigations have added much to our knowledge of the pneumococcus, a successful method of antipneumococcus inoculation, naturally sought for because of the frequency and the high death rate of pneumonia, has remained unattained. Certain early efforts failed mainly, it would seem, because the essential importance of the different immunologic groups of the pneumococcus was not taken into consideration. More recent work by Lister in the diamond mines at Kimberley, South Africa, promises better results. Lister, who independently worked out the differentiation of pneumococci into several distinct groups by means of immune reactions,¹ his grouping being not quite the same as that of Dochez and Gillespie, finds that the pneumonia prevalent among the workers in the diamond mines is due mainly to three groups of pneumococci,² and that three subcutaneous inoculations with a triple vaccine of the three groups prevents the occurrence of pneumonia as caused by members of these groups, but not the pneumonia due to other groups of pneumococci. From seven to ten millions of pneumococci were given at each injection, the cocci being first killed by a germicide and not by heat. The fact that Lister apparently has succeeded in preventing pneumonia caused by the pneumococcus groups of which his triple vaccine was made is certainly worthy of serious consideration. The suggestion lies near at hand that prophylactic inoculation with the prevailing groups of pneumococci should be given a thorough trial where large numbers of susceptible persons are aggregated under conditions that usually favor the outbreak of pneumonia.

THE PURIFICATION OF SWIMMING POOLS

The secretary of the American Association for Promoting Hygiene and Public Baths, Dr. Manheimer,³ has thus summarized his objections to the various methods of disinfection for pools employed heretofore: Ultraviolet light in actual practice has proved ineffective; copper sulphate in low dilutions is unreliable, and in high concentration is not only costly, but also produces a water disagreeable to swim in; chlorin compounds, while effective as disinfectants, require a technical control usually not available in swimming pools, and when used in excess produce objectionable taste and odors in the water. As the result of Manheimer's investigations at the Research Laboratory of the Department of Health, New York City, he has reached the conclusion that ozone properly applied to the water of a swimming pool effectively purifies the water. When one part of ozone per million parts of water is used, the result is sterile water. When one half part of ozone per million parts of water is used, a bacterial reduction of 99.8 per cent. results, except when too great an excess of air is introduced with the ozone. The application of the ozone for such purposes is said to be automatic in control, reliable in

action, and not unduly expensive, so that the New York report recommends the consideration of this substance for use in a standard sanitary purification of swimming pools. Wherever recirculation of water is resorted to, as usually is the case for purposes of economy, refiltration must, however, be combined with the disinfection procedure. Manheimer points out, what is not generally understood, that clear water is essential, not mainly because of esthetic reasons, but for the reduction of the hazard of drowning. No method in actual practice, he adds, measures up to refiltration. It is an open question whether Manheimer's rejection of disinfectants other than ozone is based on adequate data. Both ultraviolet light and chlorin compounds are giving satisfactory bacterial and esthetic results with certain swimming pool waters. While certain advantages of ozone are manifest, it does not seem wise to recommend ozone treatment to the exclusion of other methods. Manheimer's own published observations seem too limited to warrant extreme generalizations. The nature of the water dealt with and other local conditions are obviously factors to be taken into consideration.

"TRUTH IN ADVERTISING"

What is there about the "patent medicine" business that seems to make both those who are engaged in it and the newspapers that profit by it, throw truthfulness to the winds? Here, for instance, are some excerpts from advertisements that appeared a few days ago in a high-class newspaper, the *Chicago Evening Post*:

"Famous Beauties Never Get Fat.—Womankind wonders why famous beauties grow old, but do not grow fat. They live at silken ease, amid the porcelain flesh pots. The wine, that puffs out obscure mortals, flows not illiberally down their alabaster throats. Yet their lifelong loaf does not thicken their limbs nor double their chins. What is the secret of the long-lived gracefulness of the *haut-ton*?"

The "secret" is "Marmola," which, we learn, has been "long familiar to the fashionable pharmacists of the world and their clientele, but which has only recently penetrated to the knowledge of the *hoi polloi* of womankind." "Marmola," as many of our readers know, according to analyses that have been made, has for its active and essential drug, thyroid extract.

"With this tablet any woman can reduce, be losing a pound a day, in a few weeks; take off fat (where it shows most) on chin, abdomen, hips, etc., without need for exercising, table restraint, fear of wrinkles, or the slightest physical harm or uneasiness."

Feminine readers of the *Post*, then, are assured that they may indulge in a "life-long loaf," may drink alcoholics "not illiberally," may abandon "table restraint"—all without fear of becoming obese, provided they, "the *hoi polloi* of womankind" follow the methods "of the *haut-ton*" and rely on Marmola! The fat woman is told that she can reduce her weight "a pound a day" and can "take off the fat where it shows most"—if she will take Marmola! As a specimen of condensed mendacity and misinformation this Marmola advertisement is a gem. The publishers of the *Post*, of course, do not know the dangers of

1. Publication 2, South African Institute of Medical Research, 1913.

2. Publication 10, South African Institute of Medical Research, 1917.

3. Manheimer, W. A.: The Application of Ozone to the Purification of Swimming Pools, Pub. Health Rep., 1918, 33, 267.

thyroid extract self-administered in ignorance of its presence; but surely the absurdity, if not the falsity, of the claims made in the advertisement must be patent to any but the most credulous. One is led to speculate on the effect such advertisements as this have on the readers of the *Evening Post*—for the *Post* is a paper whose clientele is above the average in intelligence. One wonders, too, to what extent the public's confidence in the really meritorious products, advertised in the same paper, is undermined.

BACTERIA AND VITAMINS

That the food accessory factors now familiarly spoken of as vitamins may have some part to play in relation to the immunity of the body from disease, or its susceptibility to invasion by micro-organisms, is suggested by a variety of known facts. One striking illustration is found in the tendency for the development of xerophthalmia when the fat-soluble vitamin, such as occurs in milk fat or butter, egg yolk and cod liver oil, is missing from the diet. From recent investigations it seems probable that not only animals, but even the higher plants, may derive advantage for their growth and development from substances comparable with the vitamins that facilitate animal well-being and exert their potency even when extremely small amounts of the as yet unidentified compounds are added to the culture medium. Loeb and Northrop,¹ who have succeeded in cultivating flies in the absence of bacteria, have shown that these lower forms also apparently require some accessory substance to facilitate their development. Now we are told that even bacteria cannot thrive without the presence of factors which act in very small amounts and are not, by themselves, able to support growth. Lloyd,² in England, has called attention to the alleged rôle of vitamins in the growth of the meningococcus, concluding from her investigations that the primary cultivation of this micro-organism in vitro is possible only in the presence of certain accessory growth factors present in blood, serum, milk and other animal fluids, and probably also in vegetable tissues. She regards the essential substances as moderately stable toward heat. In this country, Davis³ has offered further evidence that something comparable with vitamin phenomena may appear in bacterial nutrition. His attention has been directed to the growth of hemophilic bacteria which require hemoglobin for their development. For optimal growth, however, something more seems to be essential, and the added factor, not found in synthetic mediums, is found in foreign bacteria, and in fresh animal and plant tissues. How the substances thus furnished act is quite as obscure as is the answer to the question of their chemical nature. Davis suggests that they may function, in the case of hemophilic bacilli, to render iron more available; and he ventures the further suggestion that the action of vitamins in animals and higher plants may concern or somehow

control the metabolism of certain elements like iron, phosphorus, calcium or iodine, as well as possibly the protein metabolism. It is perhaps too early in the period of collecting facts in this field of study and critically evaluating them to indulge in elaborate hypotheses; but the fascinating mystery of the vitamins is penetrating into many avenues of biologic inquiry. Science must guard against undue enthusiasm when so much uncertainty and contradiction still exist.

IMPROVEMENTS IN FOUR YEARS AT YALE UNIVERSITY SCHOOL OF MEDICINE

About five years ago, Yale University School of Medicine had acquired by gifts and bequests a total of less than \$400,000 for endowments; it lacked suitable quarters for the clinical departments, and had only limited teaching facilities in the New Haven Hospital. A committee made a careful investigation, and a campaign for improvement was begun. A close affiliation between the medical school and the New Haven Hospital was secured through a generous gift from the Brady family, who gave \$125,000 for the Anthony N. Brady Memorial Laboratory to be erected on the grounds of the New Haven Hospital. The Brady family also gave \$500,000 for its endowment, subject to the raising of an additional \$2,000,000 for the medical school. The General Education Board promised to add \$500,000 to this sum, providing the main clinical departments were put on the full time basis, and numerous other gifts, ranging from small amounts up to \$400,000, were made, so that recently President Hadley announced that gifts of over two and a half million dollars had been received. Of this sum, \$125,000 was for the new laboratory building; the balance of the funds was to provide for instruction and research. Not only has the medical school greatly increased its endowment, therefore, but it has also provided a new laboratory building for pathology, bacteriology and pathologic chemistry, obstetrics and gynecology, and clinical medicine and, at the same time, has secured a teaching hospital by the closer relationship with the New Haven Hospital. Under the new arrangements the members of the attending staff of the hospital are appointed on the nomination of Yale Corporation. Incidentally, Yale University School of Medicine is doing its part in solving problems connected with the war. Its departments of physiology, pathologic chemistry and pathology, particularly, have been aiding the government in providing gas masks for the American troops and in conducting experiments leading to the reduction of fatalities from gas warfare. This country still has an abundance of medical schools, but there is always room for those which, like this, are amply endowed and equipped.

ANOTHER TESTIMONIAL SMASHED

This from the *Congressional Record* of April 6, Hon. William E. Mason of Illinois speaking:

" . . . I have one rule of life, and that is never to get up mad in the morning. It is what keeps me well and a little stout. . . ."

And we thought it was "Nuxated Iron"!

1. Loeb, J., and Northrop, J. H.: Nutrition and Evolution, Second Note, Jour. Biol. Chem., 1916, **27**, 309.

2. Lloyd, Dorothy: Jour. Path. and Bacteriol., 1916, **21**, 113.

3. Davis, D. J.: Food Accessory Factors (Vitamins) in Bacterial Culture, with Especial Reference to Hemophilic Bacilli, I, Jour. Infect. Dis., 1917, **21**, 392.

The Surgeon-General's Appeal For 5,000 Additional Medical Reserve Corps Officers

The War Committee of the AMERICAN MEDICAL ASSOCIATION met at the Association building, Chicago, April 16, to consider and act on the proposition contained in the letter of the Surgeon-General of the Army addressed to the AMERICAN MEDICAL ASSOCIATION, and printed in THE JOURNAL last week, page 1100.

The committee, acting under the authority of the Board of Trustees, confirmed by the House of Delegates of the AMERICAN MEDICAL ASSOCIATION, in behalf of the medical profession of the United States, accepted the obligation. In undertaking to secure the additional 5,000 physicians, the Association confidently anticipates the hearty, active, patriotic cooperation of the officers of every state association, the councilors of every district and of the officers and members of every county society, as well as of every loyal physician, whether a member of the organization or not.

As stated in his communication, it is the desire of the Surgeon-General that the securing of these additional 5,000 medical officers shall be accomplished without serious hardship "upon any community, manufacturing concern, or other civil activity by taking from such community, manufacturing concern or other civil activity physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns." It is necessary, therefore, as a preliminary, that the actual conditions existing in all parts of the country shall be known: the number of physicians who have already accepted commissions and the number still available in every community. This requires a complete survey of the situation. Such a survey is in course of preparation and will be published within a short time as a supplement to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. It will include the names of those who have accepted commissions in the Army and in the Navy. These names will be listed alphabetically by states, counties and towns. The survey will also indicate the size of the county, the population, the number of physicians, the number under 55 years of age, and other important data. The information will be tabulated for each state by counties so that it can be seen at a glance what counties or communities have or have not furnished their quota. A similar tabulation of the data by states for the whole

country will be included. This survey will provide a basis for active, intelligent, cooperative effort.

That there may be a full agreement as to procedure and complete harmony in all that is done in the various states, the committee desires the counsel and advice of the state associations. It has authorized, therefore, the calling of a meeting of the secretaries of state associations to be held at the Association headquarters in Chicago, April 30. This meeting will provide an opportunity for discussing the conditions existing in each state and of learning what, if any, modification of the proposed general plan of procedure will be necessary to secure practical results in every state.

Considering the whole problem of supplying not only the immediate but also the future needs, the committee deliberated on the advisability, or necessity, of calling for a voluntary draft of all physicians under 55 years of age. The proposition, briefly outlined, means that every physician in active practice shall volunteer as a member of the Medical Reserve Corps, and be subject to call for military or civilian activities as he may be qualified and as conditions and necessities may require. The committee deems this extreme measure unnecessary for the present at least.

In conclusion, it will be recalled that when our country entered the war, the AMERICAN MEDICAL ASSOCIATION formally and officially offered to the Government its services and facilities for such assistance as may be in its power to render. The Association now gladly and promptly undertakes this new task, acting for the national, state and county organizations including over 81,000 members, using THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, in short, its entire machinery, to assist in organizing the medical profession of the United States for the war.

In the meantime, while the proposed survey is being completed, and arrangements are perfected for a general, systematic appeal addressed especially to those communities whose physicians have not yet made application for commissions in the Medical Reserve Corps in accordance with the average quota, every physician, individually, should consider carefully his personal responsibility. If it is possible for him to do so he should make application at once for a commission.

NOTE.—An application blank and a list of the examining boards will be sent by The Journal on request.

Medical Mobilization and the War

Honor for Surgeon-General Goodwin

It is announced that the King has appointed Major-Gen. (temporary lieutenant-general) Thomas H. J. C. Goodwin, C. M. G., D. S. O., director-general of the army medical service to be an additional member of the military division of the third class, or Companions, of the Most Honorable Order of the Bath.

Medical Officers Wounded in Action

The following medical officers are reported as recently wounded in action: Lieuts. Daniel H. Lawler of Baltimore, Samuel Miller of Manchester, N. H., and William Michel of Frostburg, Md., on the British front during the recent drive of the Germans.

"Fit to Fight"

A film entitled "Fit to Fight" has been prepared through cooperation between the Army Medical Department, the War Department, the American Social Hygiene Association, the Commission on Training Camp Activities, and the Metro Picture Corporation. The photographic and laboratory work has been done by the Army Medical Museum. The film is a part of the campaign to combat venereal diseases. It is now being shown in the cantonments. Requests for the use of the film are being received by the Medical Department from educational institutions, and will be responded to as promptly as possible.

The Incidence of Venereal Diseases

The Surgeon-General has issued a statement relative to the number of cases of venereal disease in various parts of the Army. The annual rate for the forces in France is 44.2 per thousand. If the number of cases of venereal disease during the week ending Sept. 28, 1917, were continued for the whole year, the number per thousand men for the three armies would be: Regular Army 80.5, National Guard 149.2, and National Army 387.6. The best rate made by our regular Army prior to the war was the actual rate of 1916, of 91.23 per thousand. The best week in our present Army was that ending Dec. 14, 1917, when the annual venereal disease rate per thousand for our regular Army was 69.7, National Guard 44.6, and National Army 74.3. The worst week was that of Jan. 11, 1918, when the rates were: Regular Army 97.8, National Guard 89.9, and National Army 54.4.

Personnel of the Medical Department

For the week ending April 12, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS, 796, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 198 majors, 2 captains and 427 lieutenants.

MEDICAL RESERVE CORPS: 18,583, including 1,156 majors, 4,368 captains and 13,059 lieutenants. On active duty: 15,759, including 1,054 majors, 3,878 captains and 10,827 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,211, including 16 lieutenant-colonels, 250 majors, 151 captains and 794 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 106, including 3 brigadier-generals, 11 colonels, 84 lieutenant-colonels and 9 majors.

DENTAL CORPS, 209, DENTAL RESERVE CORPS, 5,197, of whom 1,363 are on active duty; DENTAL CORPS, N. G., 259; VETERINARY CORPS, 18; VETERINARY RESERVE CORPS, 1,429, of whom 820 are on active duty; VETERINARY CORPS, N. G., 53; VETERINARY CORPS, N. A., 373; SANITARY CORPS, 1,026, and AMBULANCE SERVICE, 153, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of service to date are:

Causes	Number			
	M.R.C.	M.C.N.G.	D.C.N.G.	San. C
Physical disability	522	41	7	5
Inaptitude	206	15	0	1
Other branches of the service	429	61	7	59
Domestic troubles	51	1	0	1
Resignations	147	45	5	8
Needed by the community	37	1	0	0
Deaths	45	3	0	0
Dismissals	3	2	0	0
	1,440	169	19	74

NEWS OF THE CANTONMENTS

Eighty-First Division, Camp Jackson, Columbia, S. C.

APRIL 9, 1918.

If there was ever a transformation in a place, it is in the site occupied by Camp Jackson. Everything that is conducive to health—climate, soil, drainage, water—is found here; everywhere activity is increasing and more efficient. The health of the division is good. System and uniformity of action are increasing. The base hospital is expanding to 2,600 beds. There are Red Cross buildings, the Y. M. C. A., and the Hostess House. Officers' quarters are enlarged. Many new officers are arriving every day.

ROENTGEN-RAY SERVICE

Capt. Harrison A. Greaves of Philadelphia is chief of the roentgen-ray department. A powerful 10 kilowatt inter-rupterless machine, vertical and horizontal fluoroscopes, plate changers and gas and Coolidge tubes, and a localizer for foreign bodies in the eye are included in the excellent equipment. Hundreds of men have been examined for tuberculosis and heart lesions. Stereoscopic plates are made whereby the most delicate lesions of early tuberculosis may be detected. Nearly a thousand examinations of the teeth have been made for focal infection, filling defects before and after, abscesses, and impacted molars.

All the men referred by the various specialists, tuberculosis, medical, surgical, eye, ear, nose and throat, have been successfully examined.

PERSONAL

Major C. L. Roberts, commanding officer, has been promoted to lieutenant-colonel.—Major F. P. Quain of Bismarck, N. D., who organized No. 1 Base Hospital, Surgical Unit, is chief of the surgical service.—Lieutenant Van Korb, assistant in the roentgen-ray department, has been promoted to captain.—Capt. John W. McConnell, in charge of the ear, nose and throat section, has received his promotion as major.—Captain Meredith was promoted to major.—Capt. Reik, surgeon, of Baltimore, has been assigned to temporary duty as assistant in the ear, nose and throat section.—Major Walter Bense has been promoted to lieutenant-colonel.—Major Thomas J. Burrage of Maine is assistant to Major Herrick in the medical service.—Capt. Carl Mitchell of Benton Harbor, Mich., is an assistant in the surgical service.—Lieutenant Scovell, chief dental surgeon, has been promoted to lieutenant-colonel.—H. Judson Lipes, major, M. R. C., Albany, N. Y., formerly a professor at Albany Medical College, is now on the surgical service at the base hospital, Camp Jackson.—Dr. Blanche F. Greaves, wife of Capt. Harrison A. Greaves, chief of the roentgen-ray section, who has been visiting Columbia at Dr. A. E. Shaw's beautiful and historic mansion, has returned to Philadelphia.

If one may speak of the moral and religious tone of an army in the making, Camp Jackson has it. Respect for authority, willingness to do the right thing, and avoidance of the wrong are seen throughout the whole cantonment. Everything from one end of the cantonment to the other is "Tention!" Discipline, instant and willing obedience, and will to win the war for the freedom of the world are everywhere in evidence. Let every one in America from 16 to 60 save, serve and sacrifice. There is one way in which every one in America can help—buy Liberty Bonds! This is the way to save your home and your family from destruction and slavery.

Camp Zachary Taylor, Eighty-Fourth Division,
Louisville, Ky.

APRIL 15, 1918.

MAJOR BOARD EXONERATED

Exoneration of Major Milton Board, Medical Reserve Corps, a Louisville physician, who was charged with negligence as result of the death of Private Otha Murray, is announced in court martial orders made public yesterday at Camp Zachary Taylor. The court acquitted Major Board on all specifications of the charge against him and the acquittal is approved by Major-Gen. Harry C. Hale and the legal reviewing authorities. The specific charge against Major Board was that he "negligently and without due regard for the health and safety of Private Otha Murray, Three Hundred and Thirty-Sixth Infantry, recommended and obtained his discharge and sent him home to die." The court makes no comment on the case but simply finds that Major Board was not guilty of negligence in any particular.

SANITARY INSPECTOR NAMED

Upon recommendation of Lieut.-Col. William Smart, division surgeon, Capt. Charles E. Libby, Medical Reserve Corps, was appointed sanitary inspector at the field artillery range at West Point, Ky.

The medical attachment of the First Provisional Regiment (colored) is being organized.

DISEASED MEN REMAIN

Notice has been given by the Adjutant-General of the Army that venereal diseases are included in the list of communicable diseases which prohibit soldiers being sent from one station to another, whether it be to another camp or cantonment or a port of embarkation for transportation overseas. Medical officers are to examine all men before they are transferred or sent away from camps. No man having or suspected of having a communicable disease will be sent away from his station.

CUBICLE SYSTEM

On recommendation of this board appointed by Major-Gen. Harry C. Hale, the cubicle system has been adopted in the One Hundred and Fifty-Ninth Depot Brigade and 20,000 yards of muslin have been ordered to put the method into effect.

Experience has shown that most of the sickness starts in the depot brigade, where the incoming quotas are quartered. Every precaution has been taken to detect symptoms as soon as they develop and to prevent spread of the diseases, but it was deemed advisable to resort to even more stringent measures.

Three-foot screens will separate the cots of the men in barracks. At the mess tables screens will divide the center of the table so that if a man coughs his breath will not be inhaled by the comrade sitting opposite him. Men will be assigned to regular seats at tables and space will be left between each.

It is expected that this system will, to a large degree, check respiratory diseases. The recruits will be placed in groups of fifty and except when they are drilling in the open where fresh air will reduce to a minimum the hazard, the members of one group will not be permitted to associate with those of another group.

Should communicable diseases develop in a group the medical officers can quickly locate the source of trouble and remedy it. They will know exactly who has been exposed. These contacts will be moved to quarantined barracks. Capt. David M. Roberg is supervising the installation of the new system.

Another new method was inaugurated to handle contacts in the case of communicable disease. Immediately after the discovery of a case of measles, diphtheria, scarlet fever, pneumonia, or spinal meningitis in an organization its commander will segregate the men who have slept on bunks contiguous to the sick man, those who have always sat next to him at mess and the men with whom he associated and send them with their bedding and kits to report at the headquarters of the first group, One Hundred and Fifty-Ninth Depot Brigade, where they will be assigned to quarters in these buildings, and there will be rigidly quarantined.

The cubicle system was introduced at the base hospital recently with good results.

In addition to this, every one in the observation ward at the base hospital, officers, attendants and patients, is required to wear a face mask, and the Red Cross has been working vigorously to supply the many masks needed to carry out this ruling.

The plan of having the men examined daily by medical officers of their outfits has reduced sickness to some extent, but the greatest benefit is that the ailments are diagnosed when the first symptoms appear and before the patients' condition has reached a serious state.

Medical officers are leaving nothing undone in their endeavor to safeguard the health of the soldiers. It has been found that many of the diseases are brought in by selects who come from various sections of Kentucky, Indiana and Illinois, and from all walks of life. Although the country boy is considered healthier and stronger than the city chap, he is more susceptible to many communicable diseases, because he is virgin material. Most persons reared in thickly settled places have mumps, chickenpox, measles and other "children's diseases" when young and are immune, while the selects from the country who escaped them in childhood easily contract these ailments.

STREPTOCOCCUS VIRULENCE

The results in the recent streptococcus hemolyticus pneumonias at the hospital remain very serious. In a series of ten cases nine died. Unfortunately the War Department has recently issued an order limiting necropsies to cases in which "military necessity" makes it essential it should be done, and then only on order of the commanding general. As a result of this order it has been impossible for these recent virulent cases to be studied as they should be studied. The probable explanation is the increased virulence of the organism after it has grown through successive generations, with the soldier as the medium.

The chiefs of the medical service of a number of base hospitals have recommended the annulment of this rule as to necropsies, so that these cases can be properly studied.

PERSONAL

Lieut.-Col. John H. Allen, after being exonerated by a court martial at Camp Zachary Taylor, is serving in the same capacity at the local camp as he did before the trial. Lieutenant-Colonel Allen is division surgeon and considered one of the ablest officers at the local camp. The result of the trial was received with satisfaction by his friends and he has received many congratulations on his complete exoneration. Testimony at the trial showed that Lieutenant-Colonel Allen is not only a proficient surgeon but a man of high character as well.—Lieut. Arad Shaper, Medical Reserve Corps, who has been stationed with the Six Hundred and First Engineers at Camp Laurel, Md., has been ordered to Louisville to report to the commanding general at Camp Zachary Taylor for duty in the base hospital, the War Department announced today.—Lieut. John K. Norton reported from Camp Greenleaf, Chickamauga, in compliance with a War Department order and was assigned as chief psychologic examiner at the base hospital.—The following medical officers are transferred to Base Hospital Unit No. 25 at Camp Sherman for duty: Capt. Charles H. Paul, First Lieuts. Charles E. Kiely, Merrick F. McCarthy and George I. Thatcher.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

APRIL 8, 1918.

EXAMINATION OF NEW DRAFT

The following change has been made in the routine of examination of the newly drafted arrivals in camp: the regimental medical officers examine the men as usual, being immediately followed by members of the tuberculosis examining board under Major Wheaton, who examine the men in the same room. They reject all frank cases at once and refer suspicious cases to the special board. These examiners are followed by the cardiovascular examiners, under Captain Pardee, and by the neuropsychiatrists under Major Fell, with similar methods of procedure. The men who are to be examined further because of suspected defects are sent with Form 1010 to the base hospital for closer examination by the special examiners, who are the chiefs of the various services in the hospital. These officers make their report in the form of a second indorsement on Form 1010 and these forms then come to the division surgeon for final judgment, before going to the chief mustering officer.

Eighty-Ninth Division, Camp Funston, Fort Riley, Kan.

APRIL 6, 1918.

REMEDIAL DEFECTS

The various military organizations of the camp have been seriously handicapped in their work at times by men within their ranks who were physically unable to stand the pace of the average man, but yet were not enough disabled to be discharged from the Army. To remedy this condition there has been instituted at this camp, a remedial defects battalion. Any man, whom the medical officer may decide, after careful examination, to be unfit for full duty, but whose defects are remedial, is now placed in this battalion. After being placed in the battalion, a man is carefully gone over by the medical officers of the organization, and a routine schedule of work and exercise is prescribed for him. Also any shoe corrections, or things of similar character that are indicated, are furnished. As the man improves, it is hoped to change him from a group of one grade to a more advanced grade, the idea being to ultimately fit as many men as possible for full duty. When this is impossible, after a man has been thoroughly tried out, he will be recommended for

whatever special duty the officers of the battalion may think him to be fitted for. Care will be taken to avoid over-fatigue. The results of this move will be watched by both Line and Medical Officers with a great deal of interest.

DISEASE CONDITIONS AMONG TROOPS
IN THE UNITED STATES

- From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 5, 1918
- 1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):
 - All Troops 1,685.1
 - National Guard Camps 1,478.3
 - National Army Camps 1,943.7
 - Regular Army 1,518.5
 - 2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:
 - All Troops 47.8
 - National Guard Camps 41.4
 - National Army Camps 54.3
 - Regular Army 43.5
 - 3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):
 - All Troops 11.6
 - National Guard Camps 5.9
 - National Army Camps 14.1
 - Regular Army 13.6

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING APRIL 5, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Dis-ease Only)	Noneffective per 1,000
Wadsworth.....	5	..	..	14	5	..	2	4	1,313.9	28.9
Hancock.....	7	..	1	8	3	1	1	4	472.1	26.4
McClellan.....	4	..	2	15	1	..	..	1	904.2	30.3
Sevier.....	7	..	..	23	5	1	..	3	1,639.3	37.7
Wheeler.....	6	..	7	32	..	..	..	2	1,159.2	38.7
Logan.....	9	..	2	40	6	..	..	2	1,674.3	44.1
Cody.....	14	..	..	4	1	..	..	10	1,208.3	32.3
Doniphan.....	17	..	..	12	..	..	..	6	2,007.6	43.1
Bowie.....	32	..	..	70	..	..	..	5	4,174.6	78.2
Sheridan.....	3	..	..	57	8	..	1	1	811.9	28.4
Shelby.....	5	..	2	12	..	..	..	1	1,132.3	50.8
Beauregard.....	2	..	16	28	1	1	..	3	1,361.6	53.1
Kearny.....	..	..	1	1	..	..	7	0	1,186.5	45.9
Devens.....	28	..	..	65	6	1	2	6	1,628.5	43.0
Upton.....	16	..	..	74	8	..	15	9	919.5	27.7
Dix.....	6	..	..	50	10	..	7	0	1,264.8	38.3
Meade.....	4	..	..	7	13	..	4	2	547.7	30.2
Lee.....	12	..	..	495	9	1	..	1	1,911.6	54.8
Jackson.....	20	..	4	357	32	4	..	8	1,714.4	52.0
Gordon.....	8	..	1	142	14	1	1	2	1,630.3	41.6
Sherman.....	10	..	..	81	5	..	21	7	1,632.7	53.5
Taylor.....	30	..	..	43	87	..	..	13	2,062.7	69.7
Custer.....	11	..	..	116	5	..	14	16	2,295.1	39.0
Grant.....	4	..	..	11	11	6	..	5	802.4	26.0
Pike.....	29	..	..	79	14	1	8	17	2,851.8	74.4
Dodge.....	33	..	..	99	24	1	15	26	3,093.7	106.5
Funston.....	19	..	1	109	16	2	6	10	1,702.5	76.2
Travis.....	35	1	5	41	44	1	1	6	3,772.9	72.7
Lewis.....	15	..	..	167	19	..	23	1	4,100.6	87.0
Northeastern Dept. .	2	..	..	24	..	..	1	3	2,200.0	44.4
Eastern Dept.	9	..	2	20	14	..	1	2	1,108.2	33.0
Southeastern Dept. .	3	..	1	21	27	..	2	6	1,561.7	45.8
Central Dept.	29	1	..	39	17	..	15	13	1,907.4	47.7
Southern Dept.	28	..	1	80	13	3	7	8	1,988.6	50.3
Western Dept.	5	..	..	25	14	..	4	4	1,414.6	30.4
Aviation, S. C.	45	1	5	104	70	8	42	27	1,608.4	41.3
Camp Greene.....	9	1	3	39	22	1	2	3	745.3	26.1
Camp Fremont.....	2	..	2	32	18	..	..	2	1,361.8	57.4
El Paso.....	1	..	..	11	5	..	..	0	989.2	7.2
Columbus Barracks.	7	..	..	7	1	..	1	4	1,856.3	63.3
Jefferson Barracks..	14	..	..	35	10	..	8	8	2,394.7	110.3
Fort Logan.....	9	..	..	2	..	..	7	7	1,937.4	78.2
Fort McDowell.....	..	..	..	2	7	..	..	2	1,709.4	50.9
Fort Sloeum.....	5	..	..	11	2	..	..	0	1,113.6	41.6
D. B. Aleatraz.....	..	..	..	..	..	..	..	0	.....	....
D. B. Fort Leavenworth.....	..	..	..	1	..	..	..	4	1,440.0	40.3
A. A. Humphreys....	1	..	..	2	..	..	..	0	577.8	7.4
J. E. Johnston.....	4	..	..	49	8	1	..	2	1,440.4	41.4
Camp Merritt.....	20	1	4	90	4	..	5	10	1,636.4	56.0
Camp Stuart.....	31	..	..	68	12	2	1	11	1,411.8	55.5
West Point, N. Y. ...	..	..	..	2	1	..	..	0	1,000.6	14.2
Edgewood-Aberdeen.	1	..	..	..	8	..	4	0	1,481.3	34.9
Provision Depot for Corps and Army Troops.....	7	..	..	7	49	..	1	2	2,235.3	46.5
Camp Holabird.....	..	..	..	1	..	..	..	0	.....	....
Camp Raritan.....	..	..	..	..	2	..	..	0	1,054.7	21.2
Fort Thomas.....	4	..	..	4	2	..	..	1	3,234.6	79.5
Natl. Guard Depts. .	3	..	..	15	11	..	..	1	.....	....
Natl. Army Depts. .	13	..	2	160	50	1	40	5	.....	....
Total (all troops).	643	5	62	3,113	714	37	269	296	1,685.1	47.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 5, 1918	Regulars in U. S., Week Ending April 5, 1918	National Guard, All Camps, Week Ending April 5, 1918	National Army, All Camps, Week Ending April 5, 1918	Expeditionary Forces, Week Ending Mar. 28, 1918
Pneumonia.....	26.6	29.1	18.4	31.1	40.4
Dysentery.....	0.3	0.5	0.0	0.1	0.5
Malaria.....	2.7	2.2	5.1	1.2	0.0
Venereal.....	128.9	83.3	54.0	215.0	48.7
Paratyphoid.....	0.0	0.0	0.0	0.0	0.0
Typhoid.....	0.04	0.0	0.0	0.0	0.0
Measles.....	29.5	37.7	5.0	35.2	9.2
Meningitis.....	1.5	1.8	0.5	2.0	1.7
Searlet fever.....	11.1	10.0	1.8	13.0	15.2

CORRECTION

Under "Orders to Officers of the Medical Reserve Corps," issue of February 2: To San Antonio, Tex., Aviation Section, Signal Corps, Kelly Field, for duty, Lieut. ROBERT W. BELL, Carriso, instead of ROBERT W. DELL.

PROMOTIONS

Major JOHN J. O'REILLY has been recommended as Lieutenant-Colonel in the Medical Corps, National Guard.

Captains of the Medical Reserve Corps Recommended for Promotion as Majors Since March 1, 1918

THEODORE JACOB ABBOTT, New York City; SCOTT DUDLEY BRECKINRIDGE, Washington, D. C.; RUSSELL LAFAYETTE CECIL, New York City; JOHN CHRISTIAN DALLENBACH, Champaign, Ill.; DAN HOLTON EATON, Kalamazoo, Mich.; JAMES JOSEPH GOODWIN, Clinton, Mass.; EDWARD J. GORDON, Wyncotte, Pa.; CHARLES HERBERT HOLT, Pawtucket, R. I.; FREDERICK CHARLES HUFF, Sturgeon Bay, Wis.; H. M. MALEJAN, Ann Arbor, Mich.; FORDYCE H. McCABE, Wellman, Iowa; EDWARD CLAY MITCHELL, Memphis, Tenn.; WALTER ASBURY NEWMAN, Manassas, Va.; CHARLES ELVIN SISSON, Norwalk, Cal.; LESLEY HINCKLEY SPOONER, Boston, Mass.; CARL C. VOGEL, Elroy, Wis.; GEORGE WATERS, Memphis, Mich.; and PAUL GERHARDT WOOLLEY, Cincinnati, Ohio.

First Lieutenants of the Medical Reserve Corps Recommended for Promotion as Captains Since March 1, 1918

CHARLES SHEWELL ABBOTT, Philadelphia, Pa.; J. F. ABEL, Waynesville, N. C.; NOAH BUNYON ADAMS, Murphy, N. C.; ALBERT AUGUST AXLEY, Butternut, Wis.; RAYMOND ARTHUR BABCOCK, Willits, Calif.; JOSEPH S. BALDWIN, Brooklyn, N. Y.; JOHN JACOB BEARD, Cobleskill, N. Y.; LOUIS BERLIN, Brooklyn, N. Y.; LAWRENCE F. BOLAND, Stone, Ky.; KARL MURDOCK BOWMAN, White Plains, N. Y.; DELANE STOW CALHOUN, Ruston, La.; WILLIAM L. CARMAN, Paint Lick, Ky.; MICHAEL LESTER CASEY, Rochester, N. Y.; JONATHAN SEBASTIAN COKER, Gardner, Fla.; JAMES ELMORE COOKE, Mart, Tex.; JOHN L. EDWARDS, Randall, N. Y.; ANDREW ENGBERG, McPherson, Kan.; DOWELL GANN, Jr., Little Rock, Ark.; ANDREW JACKSON GOODWIN, Rochester, Minn.; LOUIS JEAN GOUGUET, San Francisco, Calif.; CLARENCE F. GRAHAM, Albany, N. Y.; JAMES FRANCIS GRATTAN, New York City; HORACE WILLIAM GRAVES, Elm Springs, Ark.; WILLIM HENRY GREENE, Camden, W. Va.; GEORGE AUGUST GRIOT, St. Louis, Mo.; FLEETWOOD GRUVER, Nashville, Tenn.; OLIVER CROMWELL HARGREAVES, Chicago; FRANK WARD HICKIN, Cleveland, Ohio; WILLIAM GORDON HUNTER, Augusta, Ga.; CHARLES WILBUR HYDE, Washington, D. C.; CYRUS JACOBOSKY, Wilkes-Barre, Pa.; JOSEPH JAMES KOCYAN, Plains, Pa.; WALTER ESTELL LEE, Philadelphia, Pa.; JAMES DAVIS LEWIS, Scranton, Pa.; GEORGE VICTOR LITCHFIELD, Abingdon, Va.; THOMAS LITTLEWOOD, Pittsfield, Mass.; FREDERICK ANTHONY LOBB, Hawley, Pa.; CLIFFORD W. MACK, Livermore, Calif.; JAMES E. McMEEL, Chicago; RICHARD L. McNEER, Philadelphia, Pa.; FREDERICK WM. McSORLEY, Salem, N. Y.; LON B. MOREMEN, Irvington, Ky.; WALTER NEWTON MUNDALL, Hutchinson, Kan.; FRANK MARION PRIFER, Chicago; MARTIN HAYWARD POST, Jr., St. Louis, Mo.; HARRY M. PRICE, Washington, D. C.; ARTHUR GARDNER QUINN, New York City; VELPEAU HILL RAGSDALE, Bessemer, Ala.; FRED RANKIN, Baltimore, Md.; ABRAM KARL REEVES, East Orange, N. J.; CECIL H. ROSS, Mobile, Ala.; TRUMAN G. SCHNADEL, Philadelphia, Pa.; JOHN WILLIAM SHEETZ, Columbus, Ohio.; DANIEL GLEN SMITH, Baltimore, Md.; RALPH E. STEVENS, Sanford, Fla.; WALTER DAVIS STEVENSON, Quincy, Ill.; WALTER M. STOUT, Indianapolis, Ind.; EDWARD AUGUSTUS SWEET, Helena, Mont.; LEWIS HENRY TAFT, New York City; ADOLPH MAURICE TEIXLER, Chicago; WILBORN A. UPCHURCH, Atlanta, Ga.; HOWARD LOCKE VAIL, Dalton, Pa.; and CLIFFORD C. WEHN, Penfield, Ill.

COMMISSIONS ACCEPTED

Physicians Having Accepted Commissions as Majors in the Medical Reserve Corps Since March 1, 1918

DUDLEY FULTON, Los Angeles, Calif., and THOMAS BRAY SPENCE, Brooklyn, N. Y.

Physicians Having Accepted Commissions as Captains in the Medical Reserve Corps Since March 1, 1918

GAIL DARWIN ALLEE, Lamar, Mo.; McRAE C. BANKS, Raleigh, W. Va.; ROBERT W. CLANCY, Medford, Ore.; GARRETT M. CLOWE, Schenectady, N. Y.; JOHN H. EVANS, Virgil, N. Y.; FRANK DOIG FRANCIS, Chicago; CLEMENT JACOB HAILPERIN, Newark, N. J.; JOHN GREENWOOD JENNINGS, Boston, Mass.; CHARLES RICHARD LOCKWOOD, Kankakee, Ill.; DAVID B. LUPPER, Boston, Mass.; JOHN SILLIMAN MACNIE, Minneapolis, Minn.; JAMES BOYD MASON, London, Ky.; SAMUEL M. MAUNEY, Earl, Ark.; WILLIAM WALTER McMILLAN, Marietta, O.; RAOUL GASTON PROVOST, New Bedford, Mass.; HARRY LAVINGTON PURDY, New York City; HARRY CAMPBELL REYNOLDS, Passaic, N. J.; JOSEPH HARRISON SHELTON, Kingsville, Tex.; JOHN FLETCHER TAYLOR, Buda, Ill.; FRANCIS BERGER TRUDEAU, Saranac Lake, N. Y.; HERBERT GAMES VAUGHAN, Oak Park, Ill.; M. C. WINTERNITZ, New Haven, Conn.; and FREDERICK ISAAH YATES, Covington, Ky.

Physicians Having Accepted Commissions as First Lieutenants in the Medical Reserve Corps Since March 1, 1918

THEODORE CARL HENRY ABELMANN, Watertown, Wis.; DALAS EDWARD ABRAHAM, Louisville, Ky.; LLOYD KENNETH BABCOCK, Buffalo, N. Y.; IRWIN WOODWARD BACH, Pontiac, Ill.; JOHN M. T. BASKETTE, Indianapolis, Ind.; JOHN WILLIAM CALLAHAN, Norwich, Conn.; CHARLES SOLOMON CANTOUGH, Reading, Pa.; MARSHALL BURR CATLETTE, Fort Wayne, Ind.; SAMUEL EDWARD CHALFEN, Cambridge, Mass.; FREDERICK ALBERT COCHRAN, Jr., Oklahoma, Okla.; LLOYD BENJAMIN CROW, San Francisco, Calif.; THEODORE HUBERT DEDOLPH, Braham, Minn.; MATTHEW S. ERSNER, Philadelphia, Pa.; RALPH FALK, Boise, Idaho; LEE ROY FARMER, Lees Summit, Mo.; PAUL WILLIAMS FETZER, New York City; RICHARD MICHAEL FIELD, Brooklyn, N. Y.; NIEL A. FOGG, Freepport, Me.; THERON EARLE FULLER, Texarkana, Ark.; HUGH VINCENT GILLSON, Paterson, N. J.; ADOLPH ABRAHAM GURIN, Atlantic City, N. J.; JAMES K. GUTHRIE, Rockwell, Ia.; OLIVER LESLIE HAMBRICK, Nashville, Tenn.; HENRY HARRIS, Montclair, N. J.; JAMES HARVILL HITE, Nashville, Tenn.; JOHN FRANKLIN HOLTZ, Plymouth, Ohio; WILLIAM FRANCIS HOLZER, Philadelphia, Pa.; JAMES MORRISON HUTCHESON, Richmond, Va.; FREDERICK P. LEE, Rosebank, N. Y.; WILLIAM LEISER, 3d, Reading, Pa.; JOHN ALBERT MALLEY, Monroe City, Mo.; JOHN RADNEY MANLEY, Prolona, Ga.; JACOB KEENE MARKS, Philadelphia, Pa.; JAMES S. McAVIN, Omaha, Neb.; JOSEPH LOVERING McCABE, Philadelphia, Pa.; BROOKS W. McCUEN, Cohoes, N. Y.; JAMES RUSSELL MOORE, Cleveland, Ohio; WILLIAM C. MUNLY, Portland, Ore.; EDWIN A. NOLL, St. Louis, Mo.; MORRIS LOUIS POLLACK, Brooklyn, N. Y.; HENRY BENJAMIN RAMAN, Farmingdale, Ill.; REUBEN LESTER RICHARDSON, Nashville, Tenn.; RODNEY W. ROWELL, Stamford, Conn.; HERBERT R. E. SHOEMAKER, San Francisco, Calif.; HARRY EVERETT SHOOT, Portland, Ore.; LESTER ALVIN SMITH, Chicago; HORACE KENNEDY SOWLES, Boston, Mass.; ALBERT LEE SPAULDING, Louisville, Ky.; ROLAND TONEY TRAVIS, Dallas, Tex.; WAVERLY STAFFORD TUCKER, Hardware, Pa.; EDWARD A. TWIST, Lackawanna, N. Y.; THOMAS HARRISON VAN CAMP, Boston, Mass.; ADOLPH TUKUSTUS WALKING, Philadelphia, Pa.; FREDERICK WASHNITZER, Brooklyn, N. Y.; ALLEN B. WHEELIS, Marion, La.; LEE R. WILHITE, Oklahoma, Okla.; FRANK ARTHUR WILL, Des Moines, Iowa; WALTER B. WILEY, Jr., Boston, Mass.; ERNEST L. WILSON, Bolton Landing, N. Y.; JOHN MICHAEL WILSON, Stoutsville, Mo.; JOHN CARLYLE WITHERINGTON, Munford, Tenn.; ALFRED WOODHOUSE, Newark, N. J.; WILLIAM M. WRITT, Farrell, Pa.; HOMER CLYTUS WYSONG, Beech Grove, Tenn.; WILLIAM WALTER YOUNG, Atlanta, Ga., and EDWARD L. ZIMMERMAN, Eugene, Ore.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Army Medical School for examination to determine his physical fitness for active service, and on completion to his home, Major WILLIAM F. CARTER.

To Camp Beauregard, Alexandria, La., *Camp Logan*, Houston, Texas, *Camp Travis*, Fort Sam Houston, Tex., for consultation, and on completion to his proper station, from Camp Shelby, Lieut.-Col. JAMES E. BAYLIS.

To Camp Crane, Allentown, Pa., base hospital from Camp Hancock, Lieut.-Col. ROY C. HEFLEBOWER.

To Camp Custer, Battle Creek, Mich., *Camp Sherman*, Chillicothe, Ohio, *Camp Zachary Taylor*, Louisville, Ky., for consultation and on completion to his proper station, from Camp Grant, Lieut.-Col. HENRY C. MICHIE. *To Camp Custer*, base hospital, from Camp Crane, Major WILLIAM W. VAUGHAN.

To Camp Dix, Wrightstown, N. J., *Camp Upton*, Long Island, N. Y., *Camp Devens*, Ayer, Mass., for consultation, and on completion to his proper station, from Camp Meade, Lieut.-Col. LLOYD A. KEFAUVER.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Dodge, Lieut. FRANK S. MATLACK.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Camp Doniphan, Major WILLIAM S. LAWRENCE.

To Camp Enstis, Lee Ball, Va., for inspection, and on completion to his proper station, Lieut. EDGAR E. HUME.

To Camp Kearny, Linda Vista, Calif., base hospital, from Camp Beauregard, Lieut.-Col. GEORGE F. LULL.

To Camp Lee, Petersburg, Va., *Camp McClellan*, Anniston, Ala., *Camp Sheridan*, Montgomery, Ala., *Camp Sevier*, Greenville, S. C., *Camp Greene*, Charlotte, N. C., and *Camp Wadsworth*, Spartanburg, S. C., for inspection, and on completion to his proper station, Col. ALBERT R. TRUBY.

To Camp Logan, Ellington Field, Houston, *Love Field*, and *Concentration Camp*, Dallas, *Tahiaferro Field*, Fort Worth, *Call Field*, Wichita Falls, *Camp MacArthur*, and *Rich Field*, Waco, Texas, for inspection, and on completion to his proper station; from Fort Sam Houston, Col. WILLIAM F. LEWIS.

To Camp Pike, Little Rock, Ark., for duty, from Camp Logan, Lieut. PAUL H. STREIT.

To Camp Upton, Long Island, N. Y., *Camp Dix*, Wrightstown, N. J., *Camp Meade*, Annapolis Junction, Md., for consultation, and on completion to his proper station, from Camp Devens, Lieut.-Col. CHANNING FROTHINGHAM, Jr. *To Camp Upton*, for duty, Major FRANCIS FRONCZAK.

To Camp Wheeler, Macon, Ga., for temporary duty, from Camp Gordon, Lieut.-Col. CONDON C. McCORNACK. Base hospital, from Camp Wheeler, Lieut. THOMAS H. STEWART.

To Charleston, S. C., as camp surgeon, from Camp Grant, Major GARFIELD L. McKINNEY.

To Chicago, Ill., for duty, and on completion to his proper station, Major HARRY M. KERNS.

To Fort Oglethorpe as instructor, from West Point, Major HOWARD H. BAILY.

To Hoboken, N. J., for temporary duty, from Camp Crane, Lieut.-Col. FRANK C. BAKER.

To Hot Springs, Ark., for temporary duty, and on completion to San Francisco, Calif., for duty, from Walter Reed General Hospital, Lieut.-Col. WILLIAM P. BANTA.

To Jefferson Barracks, Mo., *Scott Field*, Belleville, Ill., *Fort Leavenworth*, *Fort Riley*, *Camp Funston*, Fort Riley, Kansas, *The Balloon School*, Fort Omaha, Nebr., *Camp Dodge*, Des Moines, Ia., *Rock Island Arsenal*, Ill., *Wilbur Wright Field*, Dayton, Ohio, *Camp Sherman*, Chillicothe, Ohio, for inspection, and on completion to his proper station, Col. PERCY M. ASHBURN.

To New Haven, Conn., Yale University, for conference, and on completion to his proper station, Col. EDWARD L. MANSON.

To Newport News, Va., for duty, from Fort Sam Houston, Lieut. FRANK C. GRIFFIS.

To New York City for duty, and on completion to his proper station, Lieut. PAUL E. McBABBE.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. EDWARD R. EASTON.

To Pittsburgh, Pa., Carnegie Institute of Technology, and on completion to his proper station, Lieut. KARA R. BRIDGE.

To Rockefeller Institute for instruction in laboratory work, from Lakewood, Major FELIX R. HILL.

To Walter Reed General Hospital, Takoma Park, D. C., from the Surgeon-General's Office, Major HENRY J. NICHOLS.

To Washington, D. C., Surgeon-General's Office, for duty, from Washington, Lieut.-Col. WILLIAM H. WELCH.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WALTON HOVEY.

Resignation of Lieut. GEORGE U. LIPSHULCH accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS**Alabama**

To Atlanta, Ga., as attending surgeon, from Camp Gordon, Lieut. WILLIAM C. DABNEY, Birmingham.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN T. CALLAWAY, Birmingham.

To Camp Dix, Wrightstown, N. J., *Camp Upton*, Long Island, N. Y., *Camp Devens*, Ayer, Mass., for inspection, and on completion to his proper station, Major SEALE HARRIS, Birmingham.

To Camp Logan, Houston, Tex., base hospital, from St. Louis, Lieut. JOHN H. HAYS, Bessemer.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. ALVIN E. BELDEN, Birmingham.

To Fort Oglethorpe, base hospital, Capt. WILLIAM W. HARPER, Selma; from Fort Oglethorpe, Capt. HUGH BOYD, Scottsboro. For instruction; Lieuts. FOSTER G. FINLEY, Bountysville; ROBERT J. GILLESPIE, Gainestown.

Arkansas

To Camp Bowie, Fort Worth, Tex., base hospital, Lieut. JOHN R. BROWN, Mansfield.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. ARLEY D. CATHEY, Wilton.

To Camp Kelly, San Antonio, Tex., for duty, Lieuts. GUY HODGES, Garfield; OSSIAN H. KING, Hot Springs.

To Camp Pike, Little Rock, Ark., with the board examining troops for cardiovascular diseases, from Fort Riley, Lieut. ALVIN W. STRAUSS, Little Rock.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Dodge, Lieut. JAMES W. SLAUGHTER, Wesson.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. RAPHAEL W. STEELE, Gentry.

To Fort Oglethorpe, base hospital, Lieut. SAMUEL T. TAPSCOTT, Jr., Searcy.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Major MAHLON D. OGDEN, Little Rock.

To Pittsburgh, Pa., Carnegie Institute of Technology for instruction, and on completion to his proper station, from Camp Lee, Lieut. JOHN B. WELLS, Scott.

California

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. EDWIN J. RICHE, Watts.

To Camp Kelly, San Antonio, Tex., for duty, Capt. FREDERICK A. BONTHIUS, Los Angeles.

To Chicago, Ill., for instruction, Lieut. TRUSTEN H. HART, Los Angeles; for instruction in orthopedic surgery, Lieut. OSCAR P. STOWE, Mill Valley.

To Camp Fremont, Palo Alto, Calif., base hospital, from Vancouver Barracks, Lieut. CHANNING HALL, Alameda.

To Camp Kearny, Linda Vista, Calif., as a member of the board examining the command for tuberculosis, Lieut. FRED J. BARNET, Los Angeles.

To Fort Logan, H. Roots, Ark., base hospital, from Fort Riley, Lieut. JAMES L. MILLER, Jr., Los Angeles.

To Fort Oglethorpe, base hospital from Camp Lewis, Capt. WILFORD F. BEERMAN, San Francisco.

To Fort Riley for instruction, Lieut. GEORGE C. SNYDER, San Francisco.

To Mineola, Long Island, N. Y., for duty, from San Francisco, Lieut. FREDERICK C. LEWITT, San Francisco.

To San Francisco, Calif., Letterman Hospital, for temporary duty, from Los Angeles, Capt. EARL H. GREENWOOD, San Francisco.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. FRANCIS S. COOK, Brentwood.

Colorado

To Camp Bowie, Fort Worth, Tex., base hospital, from San Antonio, Major FRANCIS H. McNAUGHT, Denver.

To Fort Oglethorpe for instruction, Lieut. CHARLES H. TILLOTSON, Denver.

To Fort Sam Houston, Texas, for duty, Lieut. JAMES E. JEFFERY, Ordway.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. JOSEPH B. SALBERG, Boulder.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. BERNARD C. DORSET, Denver.

Connecticut

To Army Medical School for duty, Lieut. FRED MORSE SMITH, Willimantic.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. THOMAS P. MURDOCK, Meriden.

To Camp Meade, Annapolis Junction, Md., base hospital, from Lakewood, Major JOHN A. MURPHY, New Haven; from Camp Sheridan, Capt. DANIEL C. PATTERSON, Bridgeport.

To Camp Meigs, Washington, D. C., for duty, from Camp Greene, Lieut. JOHN F. SAGARINO, Hartford.

To Army Medical School for duty, from New York City, Lieut. LOUIS F. WHEATLEY, Meriden.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. RODNEY W. ROWELL, Stanford; from New York City, Capt. EDWARD E. ROWELL, Stanford.

To Camp Greene, Charlotte, N. C., for duty from Fort Crook, Capt. FREDERICK G. GOODRIDGE, Pomfret Center.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. WALTER L. BARBER, Jr., Waterbury.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. JOHN W. CALLAHAN, Norwich.

To Fort Oglethorpe for instruction, Major HARRY M. LEE, New London; Lieuts. HOMER F. MOORE, Bethel; ELMER T. SHARPE, Derby; FREDERICK B. BRADSEN, Essex; JULIAN L. BIRDSONG, Hartford; HAROLD E. HOYT, Horston Heights; EDWARD F. PERRY, Putnam; from Philadelphia, Capt. ROBERT M. YERGASON, Hartford.

Honorably discharged, Lieut. CHARLES J. GREENSTEIN, Meriden.

Delaware

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN H. MULLIN, Wilmington.

District of Columbia

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Capt. JOHN D. THOMAS, Washington.

To Fort Oglethorpe for instruction, Lieut. DANIEL W. PRENTISS, Washington.

To Raleigh, N. C., for duty, Major JOSEPH J. KINYOUN, Washington.

Honorably discharged as he has completed his duty as medical advisor to the commissioners of the District of Columbia, Lieut. JOHN W. BOVEE, Washington.

Florida

To Fort Oglethorpe for instruction, Major GEORGE R. PLUMMER, Key West; Lieut. FREDERICK W. SCHULTZ, Sarasota.

To Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment, from Baltimore, Lieut. CHADBOURNE A. ANDREWS, Tampa.

Georgia

To Camp Kelly, San Antonio, Texas, for duty, Lieut. WILLIAM M. COBER, Jr., Marietta.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. AUGUSTUS H. FRYE, Griffin.

To Fort McPherson, Ga., for temporary duty, Lieut. JOHN R. MANLEY, Franklin.

To Fort Oglethorpe for instruction, Capt. GEORGE S. MACPHERSON, Lieut. IVERSON C. CASE, Atlanta; from Lakewood, N. J., Lieut. ORLANDO S. WOOD, Washington.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Lieut. DAVID H. PARLIAMINT, Covington.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. GEORGE C. BROOKE, Alpheretta.

To Camp Lee, Petersburg, Va., base hospital, from Army Medical School, Lieut. CLEO D. WILDER, Atlanta.

To Camp Meade, Annapolis Junction, Md., for duty, from New York City, Capt. WALPOLE C. BREWER, Atlanta. Base hospital, from Camp Bowie, Lieut. LEMUEL J. JOHNS, Tallapoosa.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Devens, Capt. JOHN M. SIGMAN, Macon.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieuts. JAMES G. HALL, Atlanta; WILLIAM K. HADAWAY, La Grange.

To Camp Upton, Long Island, N. Y., base hospital, from Army Medical School, Lieut. THOMAS B. KING, Sandersville.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Capt. JOHN W. DANIEL, Savannah.

To Camp Wheeler, Macon, Ga., base hospital, from New York City, Capt. CHARLES J. WOODS, Darien.

To Fort Oglethorpe, base hospital, from Fort McPherson, Major RICHARD R. DALY, Atlanta. For instruction, Capt. FREDERICK G. HODGSON, Atlanta.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. THOMAS C. DAVISON, Atlanta; E. T. NEWSOM, Camilla.

To the inactive list, from Atlanta, Ga., Lieut. DUMBAR ROY, Atlanta.

Resignation of Lieut. WILLIAM G. RENTZ, Nashville, accepted.

Idaho

To Camp Dix, Wrightstown, N. J., base hospital, from Army Medical School, Lieut. GEORGE B. RANDALL, Buhl.

To Vancouver Barracks, Wash., for duty, from Camp Lewis, Lieut. ONES F. PAGE, Standpoint.

Illinois

To Ann Arbor, Mich., psychopathic hospital, for intensive training, Lieut. DAVID V. ROTMAN, Dunning.

To Atlanta, Ga., for duty from Fort Oglethorpe, Lieut. LLOYD B. CLINTON, Chicago.

To Baltimore, Md., for inspection, and on completion to his proper station, Major JOHN A. HORNSBY, Chicago.

To Camp Beauregard, Alexandria, La., base hospital, Lieut. ELZEAR LAMOTHE, Chicago.

To Camp Bowie, Fort Worth, Tex., base hospital, from Camp Bowie, Lieut. PAUL R. ALLYN, Waverly.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. NORMAN COPELAND, Chicago.

To Camp Crane, Allentown, Pa., base hospital, from Camp Upton, Lieut. GEORGE E. O'GRADY, Chicago.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. ROY E. CHRISTIE, Chicago. To examine the command for mental and nervous diseases, from Ann Arbor, Lieut. RALPH R. MCCARTHY, Chicago.

To Camp Devens, Ayer, Mass., base hospital, Lieut. MILTON J. LATIMER, Chicago.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Capt. HENRY W. LANG, Chicago; from Camp Meade, Lieut. FRANK R. MAURER, Chicago.

To Camp Fremont, Palo Alto, Calif., as division tuberculosis specialist, from Fort Riley, Lieut. CHARLES E. PITTE, Chicago.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Riley, Lieuts. FRED McK. MILLER, PAUL S. TRAXLER, Chicago.

To Army Medical School for instruction, Lieut. EVERETT E. HOWARD, Rossville.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. WALTER L. SACHTLEBEN, Chicago; from Army Medical School, Lieut. BENJAMIN H. HUGGINS, Evanston; from Camp Crane, Major ELBERT CLARK, Chicago.

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Capt. ALBERT L. ALDERSON, Pana; from Camp Dodge, Lieuts. RAYMOND EVANS, Eaton; FREDERICK H. PHILLIPS, Mulkeytown.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and nervous diseases, from Fort McPherson, Lieut. WILSON K. DYER, Kankakee.

To Camp Jackson, Columbia, S. C., as orthopedic surgeon, from Fort Oglethorpe, Lieut. VINCENT W. KOCH, Chicago.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Dodge, Capt. HENRY C. WOLTMAN, Jacksonville; from Army Medical School, Lieut. PATRICK J. GRIFFIN, Chicago.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. K. FRANCIS H. GBURCZY, Joliet.

To Camp Upton, Long Island, N. Y., for duty, Lieuts. IRWIN W. BACH, Pontiac; ARCHIE B. CALVIN, South Chicago.

To Chicago, Ill., for instruction, from Fort Riley, Lieuts. ELVEN J. BERKHEISER, Aurora; MIECUALAUS J. KOSTREWSKI, Chicago; CHARLES LAF. KERRICK, Chrisman; WARREN C. BLIM, Crcte; HERMAN C. KOCH, Harvard; LEON URBANOWSKI, Peru.

To Fort Oglethorpe for instruction, Capt. SOL. ROSENBLATT, Chicago; from Camp Beauregard, Lieut. CLARENCE MAK. CHEADLE, Rockford. For duty, and on completion to his proper station, from Camp Zachary Taylor, Lieut. RALPH W. CARPENTER, Chicago.

To Fort Riley, base hospital, Major JULIUS H. HESS, Chicago. For instruction, Capt. REUBEN J. ATWOOD, LOUIS A. GREENSFELDER, Chicago.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Lieut. EVERETT P. COLEMAN, Canton. For duty, Lieuts. HARRY D. BRICKLEY, JACOB PASKIND, Chicago; VERN E. CANNON, Decatur.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Camp Wadsworth, Capt. NATHAN S. DAVIS, Chicago.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. FRANK J. JIRKA, Chicago.

To Raleigh and Charleston, N. C., to investigate property, and on completion to his proper station, Major JOHN A. HORNSBY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. EUGENE A. MOULTON, Chicago; Lieut. HENRY F. HOESLEY, Woodstock.

Resignation of Lieut. DAVID V. OWENS, Chicago, Ill., accepted.

Indiana

To Atlanta, Ga., for duty, from Fort Oglethorpe, Capt. MERTON A. FARLOW, Melroy.

To Camp Beauregard, Alexandria, La., base hospital, from Camp Shelby, Capt. JAMES A. WORK, Jr., Elkhart. For duty, from Fort Oglethorpe, Lieut. ARCHIE V. HINES, Auburn.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. JAMES F. HATFIELD, Walton.

To Camp Gordon, Atlanta, Ga., as commanding officer of base hospital, from Camp Gordon, Major SIMON J. YOUNG, Valparaiso.

To Camp Hancock, Augusta, Ga., for duty, from Camp Sevier, Lieut. SEWELL B. COULSON, Maldron.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Camp Zachary Taylor, Capt. GEORGE D. MARSHALL, Kokomo.

To Camp Custer, Battle Creek, Mich., as member of the tuberculosis examining board from Fort Riley, Lieut. LAWRENCE L. CRAVEN, East Peru.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Lieut. LYMAN A. BURNSIDE, Terre Haute.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. GROVER C. PRICE, Judson.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieuts. HERMAN H. GICK, Indianapolis; OLIVER B. GRIEST, LaFayette.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort Riley, Lieut. ROBERT W. REID, Union City.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort Oglethorpe, Lieut. ADAM F. PANEK, South Bend.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. WALTER D. MARTIN, Kramer.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Laurel, Lieut. ARA D. SHARP, Lafayette.

To Fort Oglethorpe for instruction, Capt. EDGAR F. SOMMER, Indianapolis; JOHN W. BOWERS, Michigan City; Lieuts. RAYMOND J. BERGHOFF, Ft. Wayne; H. PAUL PRESTON, Plymouth; WALTER L. MISENER, Richmond; TELL C. WALTERMIRE, Shelbyville; EVERETT H. PEA, Vincennes; JOHN F. DOWNING, Yorktown.

Base hospital, and on completion to Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. OLIVER C. BENNETT, Culver.

On completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. EMERY F. SMALL, Decker.

To Washington, D. C., for consultation, and on completion to Fort Slocum, N. Y., for duty, from Fort Riley, Capt. NOAH W. CLARK, Rossville.

Honorably discharged, Capt. JOSEPH M. GLENN, Vincennes. On account of physical disability existing prior to entrance into the service, Capt. WILLIAM W. EICHELBERGER, Evansville.

Iowa

To Camp Dix, Wrightstown, N. J., for duty, from Camp Upton, Lieuts. HAROLD L. BRERETON, Emmetsburg; WILLIAM HARRIS, Moravia.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Dodge, Lieuts. LEO C. KUHN, Chariton; LEE W. PRESCOTT, Sloan.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WALTER E. FOLEY, Davenport.

To Camp Meade, Annapolis Junction, Md., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. MEREDITH MALLORY, Des Moines.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. ROSWELL H. PAYNE, Des Moines.

To Camp Travis, Fort Sam Houston, Tex., for duty, Capt. EMIL O. FICKE, Davenport.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. REX V. HENRY, Hedrick.

To Fort Oglethorpe for instruction, Capt. NATHANIEL PALMQUIST, Hornick.

To Fort Riley for instruction, Lieuts. THOMAS N. WALSH, Hawkeye; JOSEPH WM. BEL ISLE FLAGEOLIE, Sioux City.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Riley, Lieut. GEORGE MARESH, Riverside.

Kansas

To Camp Beauregard, Alexandria, La., base hospital, Lieut. GEORGE V. ALLEN, Topeka.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Leavenworth, Lieut. MATTHEW H. KEEFER, Kansas City.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Lieut. AMES M. MOORE, Madison.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Riley, Lieut. JOHN H. HANSEN, Elkhart.

To Camp Kelly, San Antonio, Tex., for duty, Lieut. DONALD R. WILSON, Paola.

To Camp Logan, Houston, Tex., for duty, from Camp Jackson, Major JOHN E. HEWITT, Wakefield.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. FREDERICK E. WRIGHTMAN, Sabetha.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Zachary Taylor, Lieut. GEORGE I. THACHER, Waterville.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. ALBERT L. BROWN, Leavenworth.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. JESSE D. COOK, Topeka.

To Houston, Tex., for duty, from Fort Jay, Major ALBERT R. GOODMAN, Topeka.

Kentucky

To Camp Custer, Battle Creek, Mich., for duty, from Camp Grant, Capt. PORTER C. LAYNE, Ashland.

To Camp Gordon, Atlanta, Ga., as a member of a board to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. JOHN B. FLOYD, Louisville.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. OLDRON A. MITCHELL, Raywick.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Capt. JOHN T. PRICE, Harrodsburg; HUGH E. PRATHER, Hickman; AMPLIAS W. DAVIS, Morton's Cap.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Meade, Lieut. ALBERT L. SOLOMON, Hodgenville.

To Camp Dodge, Des Moines, Ia., base hospital, from Army Medical School, Lieut. ELMORE B. BACKSMAN, Newport.

To Camp Gettysburg, Gettysburg, Pa., field hospital, from Fort Oglethorpe, Capt. HORACE LUTEN, Fulton.

To Camp Kearny, Linda Vista, Calif., as a member of a board to examine the command for tuberculosis, from Camp Kearny, Lieut. JOHN L. HAYDEN, Salem.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Lieut. CLAY CRAWFORD, Fort Thomas.

To Camp Upton, Long Island, N. Y., for duty, from Camp Devens, Lieut. IRA THOMAS, Pembroke.

To Fort Oglethorpe for instruction, Capt. EDWARD C. BARLOW, Georgetown; FRANK P. THOMAS, Hopkinsville; EUGENE E. PALMORE, Strode; Lieuts. LEMUEL J. GODBEY, Vereia; DUPE S. ROBERTSON, Cunningham; DALLAS E. ABRAHAM, Louisville; CHAS. L. GRAHAM, Tollisboro; CORNELIUS H. DUVAL, Warsaw.

To Fort Sam Houston, Texas, for duty, from St. Louis, Capt. JETHRA HANCOCK, Louisville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. EDWIN W. MONTGOMERY, Vine Grove.

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. WALTER A. LACKEY, Paducah.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. FERDINAND H. HAESSLER, Louisville.

Honorably discharged, Capt. JAMES H. HARPER, Gimlet; Lieut. JOHN G. SIDDENS, Lucas. On account of physical disability existing prior to entrance into the service, Capt. GEORGE W. PAYNE, Bardwell.

Resignation of Lieut. JULIUS E. HOWE, Rocky Hill Station, accepted.

Louisiana

To Army Medical School for instruction, Lieuts. LOUIS A. HEBERT, Lake Arthur; JOHN B. FERRAN, Jr., New Orleans.

To Camp Dodge, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. JOSEPH R. D'AUNOY, New Orleans.

To Camp Jackson, Columbia, S. C., base hospital, from Army Medical School, Lieut. EDWARD B. F. FAGET, New Orleans.

To Camp MacArthur, Waco, Texas, base hospital, from Fort Oglethorpe, Lieut. MILTON W. TALBOT, Fullerton.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. ISIDORE B. ROUGON, Shreveport.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. CHARLES E. VERDIER, New Orleans.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. JOHN SIGNORELLI, New Orleans.

To Fort Oglethorpe for instruction, Capt. WILLIAM J. ROBERTS, Colfax; Lieuts. RANKIN R. LOWERY, GEORGE F. ROELING, New Orleans; from Camp Beauregard, Lieut. HENRY C. LOCHTE, New Orleans.

To Fort Sam Houston, Texas, for duty, Lieut. CHRISTOPHER C. SELF, Barnham.

Maine

To Army Medical School for instruction, Lieuts. ISAAC L. GORDON, Lincoln; THOMAS C. WYMAN, Portland.

To Camp Devens, Ayer, Mass., base hospital, from Army Medical School, Lieut. HAROLD E. E. STEVENS, Lewiston.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. JOHN A. HAYWARD, Portland; from Fort Oglethorpe, Capt. HARRY F. MORIN, Bath.

To Fort Oglethorpe for instruction, Lieut. WALTER B. WILLEY, Jr., Bangor.

Honorably discharged, Lieut. WALTER W. HENDEE, Augusta.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. JAMES S. SPEED, Baltimore.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Lee, Lieut. WILLIAM D. CAWLEY, Elkton.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. JACK M. HUNDLEY, Jr., Baltimore.

To Camp Jackson, Columbia, S. C., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. ISRAEL J. FEINGLOS, Baltimore.

To Camp Lee, Petersburg, Va., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. ALGERNON D. ATKINSON, Baltimore.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Capt. WILLIAM HENRY SMITH, Baltimore. To examine the command for mental and nervous diseases, from Camp Meade, Lieut. RAYMOND K. FOXWELL, Cambridge.

To Fort Oglethorpe for instruction, from Army Medical School, Lieut. DUMONT F. ELMENDORF, Baltimore.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Lieut. JOHN L. TRABAND, Jr., Baltimore.

To New York City, Neuro-Surgical School, for inspection, and on completion to his proper station, Major CHARLES BAGLEY, Jr., Baltimore.

Massachusetts

To Cambridge, Mass., Institute of Technology, and on completion to his proper station, from Army Medical School, Capt. RICHARD D. BELL, Somerville.

To Camp Crane, Allentown, Pa., base hospital, Lieut. ALPHA R. SAWYER, Boston; from Camp Devens, Lieut. OSCAR F. COX, Boston; from Camp Doniphan, Major GEORGE A. CRAIGIN, Boston; from Fort Ethan Allen, Vt., Capt. ARTHUR P. JAMES, Boston.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. HORMIDAS CHOQUETTE, New Bedford.

To Camp Devens, Ayer, Mass., base hospital, from Camp Devens, Major JOHN J. DOWLING, Boston. To examine the command for mental and nervous diseases, from New York City, Lieut. HERBERT R. FIEGE, Waverly.

To Camp Dix, Wrightstown, N. J., as orthopedic surgeons from Fort Oglethorpe, Lieuts. JOSEPH J. SKIRBALL, Boston; ARTHUR J. GANLEY, Methuen. For duty, from Fort Oglethorpe, Lieut. HENRY A. ROBINSON, Marlboro. To examine the command for mental and nervous diseases, from Boston, Lieut. GEORGE B. WILBUR, Newton; from New York City, Lieut. DANIEL J. FENNELLY, Fall River.

To Army Medical School for instruction, Lieut. RUFUS W. LONG, Manchester.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction in orthopedic surgery, from Fort Oglethorpe, Lieut. JOSEPH H. SHORTELL, Boston.

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Oglethorpe, Lieut. LUCIEN R. CHAPUT, Haverhill.

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. HENRY A. R. KREUTZMAN, Boston.

To Camp Custer, Battle Creek, Mich., as a member of the tuberculosis examining board, from Fort Riley, Lieut. WILLIAM C. JENSEN, Worcester.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Devens, Major WILLIAM F. WESSELHOEFT, Boston; Lieuts. WILLIAM F. WOOD, Boston; from Camp Dix, Lieuts. JOSEPH J. SKIRBALL, Boston; GEORGE W. TULLY, Southbridge; from Camp Wheeler, Lieut. DAVID L. BELDING, Watertown; from Hoboken, Capt. ORVILLE R. CHADWELL, Boston; from Fort Oglethorpe, Lieuts. RALPH H. HOPKINS, THOMAS W. PHILLIPS, HAROLD W. RIPLEY and JOHN J. STACK, Boston; ROLAND O. PARRIS, Brookline; KIRKE L. ALEXANDER, Orange.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. ROBERT B. HUNT, Arlington.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. DAVID W. HOUSTON, Jr., Boston.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. CORNELIUS J. DACEY, Brockton.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. NATHANIEL M. COHEN, Boston.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. KENNETH L. DOLE, Boston.

To Camp Wheeler, Macon, Ga., base hospital, Capt. LYMAN S. HAPGOOD, Cambridge; LEWIS S. McQUADE, Dorchester Center.

To Chicago, Ill., for instruction, from Camp Sherman, Capt. CLARENCE H. DOBSON, Conway.

To Fort McHenry, Md., base hospital, from Camp Devens, Lieut. FRANK W. MATHEWSON, New Bedford.

To Fort Oglethorpe for instruction, Capt. OSCAR C. SWOPE, Kingston; from Army Medical School, Lieut. ERNEST E. SMITH, Webster. For duty, from Fort Oglethorpe, Lieut. PATRICK H. O'CONNOR, New Bedford.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. ROBERT L. JONES, Lowell. For duty, Lieuts. BENJAMIN W. RUDMAN, Boston; JOSEPH D. MILOT, Fall River.

To Laurel, Md., for duty, from Camp Lee, Major RICHARD J. R. CAINES, Boston.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieuts. FRANK W. HODGDON, Jr., Boston; ARTHUR L. BRUNELLE, New Bedford; HARRY R. COBURN, Tewksbury.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEWIS D. MCCARTHY, Essex.

Michigan

To *Camp Beauregard*, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. ROLAND E. TOMS, Grand Rapids.
 To *Camp Crane*, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. THEODORE H. SMITH, Detroit.
 To *Camp Dodge*, Des Moines, Ia., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. WILLIAM D. MUELLER, Traverse.
 To *Camp Grant*, Rockford, Ill., base hospital, Lieut. EMIL V. MAYER, Detroit.
 To *Camp Hancock*, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WILLIAM A. HYLAND, Grand Rapids.
 To *Camp Jackson*, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. ELMER D. OSMUM, Allegan.
 To *Camp Logan*, Houston, Tex., base hospital, from Camp Logan, Capt. NORMAN J. PIKE, Saginaw.
 To *Army Medical School* for instruction, Lieut. WALTER W. J. BIEN, Union City.
 To *Camp Dodge*, Des Moines, Iowa, for duty, from Camp Dodge, Lieut. ARTHUR R. SMECK, Detroit.
 To *Camp Grant*, Rockford, Ill., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. LYMAN J. PINNEY, Detroit.
 To *Camp Sherman*, Chillicothe, Ohio, base hospital, from Corpus Christi, Capt. BERTRAM H. OLMSTEAD, Calumet.
 To *Fort McPherson*, Ga., for temporary duty, Lieut. EDMUND C. MOHR, Bay City.
 To *Fort Oglethorpe* for instruction, Capt. HARMON E. BOICE, Byron; Lieuts. LOUIS A. KING, Baroda; DELBERT R. BLENDER, Detroit.
 To *Hoboken*, N. J., evacuation hospital, from Camp Crane, Capt. FREDERICK S. BAIRD, Bay City.
 To *Mineola*, Long Island, N. Y., for temporary duty, Lieut. RAYMOND S. GOUX, Detroit.
 Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. WILLIAM H. GALE, St. Johns.

Minnesota

To *Camp Travis*, Fort Sam Houston, Texas, for duty, from Fort Riley, Lieuts. JOSEPH MOSES, JR., Adams; MERRITT W. WHEELER, Glencoe.
 To *Chicago*, Ill., for instruction, from Fort Riley, Lieut. JOHN A. SAARI, Eveleth.
 To *Minneapolis*, Minn., University of Minnesota, to make physical examination and give medical attention to the drafted men to be enrolled at this institution, and on completion to the inactive list, Capt. RALPH ST. J. PERRY, Minneapolis.
 To *Rochester*, Minn., Mayo Clinic, for instruction, and on completion to Little Rock, Ark., base hospital, Lieut. JAMES BENTON B. NEIL, Rochester.
 Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. ARCHIBALD B. BUTTER, Minneapolis; ARTHUR E. MARK, St. Paul.

Mississippi

To *Camp Shelby*, Hattiesburg, Miss., for duty, from Camp Shelby, Capt. AUGUSTUS M. HARRELSON, Newton.
 To *Fort Oglethorpe* for instruction, Capt. INMAN W. COOPER, Meridian. Base hospital, from Camp Bowie, Lieut. ROBERT H. PEGRAM, Potts Camp; from Fort Oglethorpe, Lieut. CASSIUS D. ALEXANDER, Vaiden.
 To *Hoboken*, N. J., for temporary duty, from Camp Shelby, Capt. JOHN H. JOHNSON, Brookhaven.

Missouri

To *Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. WILLIAM D. DAVIS, St. Louis.
 To *Camp Custer*, Battle Creek, Mich., for duty, from Fort Ontario, Capt. WILLIAM LER. KENNEY, St. Joseph.
 To *Camp Dodge*, Des Moines, Ia., base hospital, Major CYRUS E. BURFORD, St. Louis.
 To *Camp Greene*, Charlotte, N. C., for duty, from Fort Oglethorpe, Capt. FREDERICK B. SPENCER, Hannibal.
 To *Camp Kelly*, San Antonio, Tex., for duty, Lieut. JOSEPH W. DEAN, Pond.
 To *Camp Upton*, Long Island, N. Y., for duty, from Fort Oglethorpe, Capt. IRA H. MILLER, Louisiana; from Fort Totten, Lieut. HALBERT R. HILL, Bachelor.
 To *Fort Oglethorpe* for instruction, Lieut. CLYDE P. DYER, St. Louis.
 To *Camp Dix*, Wrightstown, N. J., base hospital, from Army Medical School, Lieut. FRED S. PERRINGS, St. Louis. For duty, from Fort Oglethorpe, Lieuts. CLYDE P. DYER, St. Louis; from Fort Riley, Lieut. GROVER C. MCCORMACK, St. Louis.
 To *Camp Dodge*, Des Moines, Iowa, for duty, from Camp Dodge, Lieut. SAMUEL W. HOLT, Steffenville.
 To *Camp Gettysburg*, Gettysburg, Pa., field hospital, from Camp Wadsworth, Lieut. JOHN R. VAUGHAN, St. Louis.
 To *Camp Lewis*, American Lake, Wash., base hospital, from Camp MacArthur, Capt. OTTO W. KOCH, Ballwin.
 To *Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. JOSEPH L. HUTTON, St. Louis.
 To *Chicago*, Ill., for instruction, from Fort Riley, Capt. LUTHER C. NICKELL, Macon; Lieuts. CHARLES F. DAVIS, Kansas City; HARRY F. PARKER, Warrensburg.
 To *Fort Oglethorpe* for instruction, Capt. FRANK L. BIGSBY, Kirksville.
 To *Fort Riley* for instruction, Lieut. WADE H. MILLER, Kansas City.
 To *Hoboken*, N. J., for duty, Capt. T. WISTAR WHITE, St. Louis; from Fort Oglethorpe, Lieut. ROY W. JOHNSON, St. Louis. Evacuation hospital, from Camp Crane, Lieut. CLYDE O. BROWN, St. Louis.
 To *Kansas City*, Mo., Sweeney Auto School, to make physical examinations and give medical attention to drafted men to be enrolled at this school and to Rahe Auto Tractor School, for the same duty, and on completion to the inactive list, Capt. JOHN G. HAYDEN, Kansas City.
 To *New York City* for duty, and on completion to his proper station, Major FREDERICK W. BAILEY, St. Louis.
 To *Pittsburgh*, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Riley, Lieut. RICHARD S. BATTERSBY, Shelby.
 To *Washington*, D. C., Government Hospital for the Insane, for duty, Lieut. ELBERT LAF. SPENCE, St. Joseph.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ARTHUR L. FUERTH, Cape Girardeau.

Montana

To *Camp Lewis*, Wash., base hospital, for observation, treatment and report, Major LE ROY SOUTHMAYD, Great Falls.
 To *Fort Riley* for instruction, Lieut. LEE K. GIBSON, Bozeman.

Nebraska

To *Chicago*, Ill., for instruction, from Fort Riley, Lieut. LESTER K. STRATE, Sutton.
 To *Lakehurst*, N. J., for duty, from Army Medical School, Lieut. WILLIAM L. HOWELL, Ryannis.
 To *Mineola*, Long Island, N. Y., for duty, from Fort Riley, Lieut. JOHN R. KLEYLA, Omaha.

New Hampshire

To *Fort Oglethorpe* for instruction, Lieuts. ALEXANDER BORLAND, Meredith; WILLIAM P. CLOUGH, Sutton.
 Honorably discharged, Capt. WILLIAM C. E. NOBLES, Littleton.

New Jersey

To *Aberdeen*, Md., Proving Grounds, for duty, from Army Medical School, Lieut. GERALD L. HIGGINS, Jersey City.
 To *Camp Crane*, Allentown, Pa., base hospital, from Camp Devens, Lieut. LESLIE H. EWING, Berlin; from Camp Joseph E. Johnston, Lieut. CHARLES P. LINGLE, Arlington; from Camp Upton, Lieut. ROCCO M. NITTOLI, Newark; from Fort Oglethorpe, Lieut. ADDISON H. BISSELL, Newark.
 To *Camp Dix*, Wrightstown, N. J., base hospital, Lieuts. ROGER T. FOX, Gloucester City; JOSEPH WECHSLER, Jersey City; MORRIS L. SIMON, HYMAN J. UDINSKY, Passaic; HUGH V. GILLSON, MEYER WISHNACK, Paterson.
 To *Army Medical School* for instruction, Lieuts. REVERDY V. W. ESTILL; THOMAS W. CONNOLLY, Jersey City.
 To *Camp Custer*, Battle Creek, Mich., as member of tuberculosis examining board, from Camp MacArthur, Lieut. WILLIAM H. HAINES, Audubon.
 To *Camp MacArthur*, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. CHARLES DANE, S. Orange.
 To *Camp Meade*, Annapolis Junction, Md., to examine the command for mental and nervous diseases, from Columbus Barracks, Capt. AMBROSE F. DOWD, Newark. Base hospital, from Camp Meade, Lieut. JAMES P. SANDS, Trenton.
 To *Camp Pike*, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. WILLIAM E. RINK, Burlington.
 To *Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Lee, Lieut. HOWARD S. SMITH, Newark.
 To *Fort Oglethorpe* for instruction, Capt. WILLIAM N. HARRISON, Upper Montclair; Lieuts. WALTER C. MARTINI, Jersey City; ALFRED WOODHOUSE, Newark; VERNON E. DE GROFFT, Swedesboro; WILLIAM A. NEWELL, SIDNEY SCHEINMAN, CHARLES R. SISTA, Trenton; from Camp Dix, Lieut. LYMAN B. HOLLINGSHEAD, Pemberton.
 To *Hoboken*, N. J., for duty, Lieut. SAMUEL BROCK, Newark.
 To *Rockefeller Institute* for instruction in laboratory work, Lieut. WALTER W. SCHMIDT, Cliffside.
 To *Washington*, D. C., for duty in the Surgeon-General's Office, Major STEWART PATON, Princeton.

New Mexico

To *Camp Logan*, Houston, Tex., base hospital, from Camp Logan, Capt. FRANK E. MERA, Santa Fe.
 To *Camp Upton*, Long Island, N. Y., for duty, from Williamsbridge, Lieut. ARMSTRONG C. PRATT, Gallup.

New York

To *Camp MacArthur*, Waco, Texas, for duty, from Camp MacArthur, Capt. ROB R. McCULLY, Auburn. Base hospital, from Fort Oglethorpe, Lieuts. LLOYD L. HOLLENBECK, CHARLES T. OLCOTT, New York City.
 To *Camp McClellan*, Anniston, Ala., base hospital, Lieut. CHARLES J. HUNT, Clifton Springs.
 To *Camp Meade*, Annapolis Junction, Md., for temporary duty, and on completion to *Camp Upton*, Long Island, N. Y., as division psychiatrist, from Washington, D. C., Capt. C. BRUNS CRAIG, New York City. Base hospital, Capt. WALTER W. MOTT, White Plains; from Chicago, Capt. MARK H. WARD, Suffern; from Fort Oglethorpe, Lieut. HARRY E. WHELOCK, Jamestown.
 To *Camp Pike*, Little Rock, Ark., for duty, from Fort Oglethorpe, Capt. SILVANUS B. NEWTON, New York City. Base hospital, from Fort Oglethorpe, Lieut. WILLIAM E. CARROLL, New York City.
 To *Camp Sevier*, Greenville, S. C., base hospital, Capt. PAUL F. CAVANAGH, Brooklyn; from Pittsburgh, Lieut. WILLIAM ENGEL, New York City.
 To *Camp Upton*, Long Island, N. Y., for duty, Capt. WALDMAR T. BROWN, Brooklyn. Base hospital, Lieuts. SAMUEL K. LEVY, FERDINAND F. SIEGEL, Brooklyn; WALLACE F. MACNAUGHTON, Fort Edward; GEORGE M. OPPERMAN, Kenmore; ABRAHAM L. MARGOLIES, WILLARD T. RIVENBAUGH, SAMUEL STRUMWASSER, New York City; WILLIAM H. LOW, JR., Richmondville.
 To *Camp Wadsworth*, Spartanburg, S. C., base hospital, Lieut. JEREMIAH J. DONOVAN, New York City; from Fort Benjamin Harrison, Capt. WALTER F. MACKLIN, New York City; from Fort Oglethorpe, Lieuts. SAMUEL PERLMAN, Brooklyn; DIXON L. AUSTIN, ROBERT E. CONWAY, KIRBY DWIGHT, ROBERT F. McDONALD, New York City.
 To *Camp Wheeler*, Macon, Ga., as assistant to camp surgeon, from Camp Crane, Major HARVEY R. GAYLORD, Buffalo. For duty, from Camp McClellan, Capt. WALTER W. OSGOOD, Jordon; Lieut. EMILIO L. HERGERT, Brooklyn. Base hospital, from Macon, Lieut. JOHN A. MORRISSEY, Newark.
 To *Fort Ontario*, N. Y.; *Williamsbridge*, N. Y.; *Camp Dix*, Wrightstown, N. J.; *Camp Meade*, Annapolis Junction, Md.; *Fort Myer*, Va.; *Camp Devens*, Ayer, Mass.; *Camp Upton*, Long Island, N. Y., for inspection, orthopedic examinations and instruction, and on completion to his proper station, from New York City, Capt. BRAINERD H. WHITBECK, New York City.
 To *Fort Wayne*, Mich., for duty, from Fort Wayne, Major HENRY L. SCHELLING, Brooklyn.
 To *Governor's Island*, N. Y., for duty, from Walter Reed General Hospital, Lieut. MICHAEL M. SCHULTZ, Astoria, L. I.
 To *Millington*, Tenn., Park Field, to conduct a nutritional survey, and on completion to *Lonohe*, Ark., Ebbert's Field, for the same duty, and on completion to *Dallas*, Texas, Love Field, for the same duty,

and on completion to *Waco, Texas*, Rich Field, for the same duty, from Jefferson Barracks, Lieut. ALLEN G. T. HIPPS, Brooklyn.

To *Army Medical School* for instruction, Lieuts. ADAM EBERLE, Brooklyn; FRANK S. HALE, CHARLES VEJVODA, New York City; DONALD A. MACDUFFIE, Olean; RAYMOND E. ELLIOTT, Rochester. Mobile Laboratory, from Army Medical School, Lieut. LAURENCE D. REDWAY, New York City.

To *Camp Beauregard*, Alexandria, La., base hospital, from Camp McClellan, Capt. RALPH A. KINSELLA, New York City.

To *Camp Custer*, Battle Creek, Mich., as member of tuberculosis examining board from Camp MacArthur, Lieut. FRANK J. HERBIG, Staten Island.

To *Camp Devens*, Ayer, Mass., as member of the board examining the command for tuberculosis, from Fort Hancock, Lieut. EDWIN F. SAMPSON, New York City. Base hospital, from Army Medical School, Lieut. FRANK TANNEBAUM, New York City.

To *Camp Dix*, Wrightstown, N. J., for duty, from Fort Oglethorpe, Capt. MAXWELL K. WILLOUGHBY, Auburn; Lieut. EDWARD A. FLYNN, New York City.

To *Camp Dodge*, Des Moines, Ia., base hospital, from Fort Riley, Capt. KENT E. WILLIAMS, Rome.

To *Camp Gettysburg*, Gettysburg, Pa., field hospital, from Camp Sevier, Capt. THOMAS W. JENKINS, Albany.

To *Camp Greene*, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. WILLIAM L. MUNSON, Granville.

To *Camp Hancock*, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WILLIAM E. DUFENBACH, Nunda.

To *Camp Lee*, Petersburg, Va., base hospital, from Army Medical School, Lieut. FREDERICK D. ZEMAN, New York City.

To *Camp MacArthur*, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN L. SENGSTACK, New York City.

To *Camp Meade*, Annapolis Junction, Md., base hospital, from Camp Sevier, Capt. CHARLES W. WOODALL, Schenectady. And to *Baltimore, Md.*, to make a survey, and on completion to his proper station, Capt. ALEC N. THOMSON, Lieut. WILLIAM G. PHILLIPS, JR., Brooklyn.

To *Camp Pike*, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. ROBERT C. MADDOX, New York City.

To *Camp Sevier*, Greenville, S. C., base hospital, from Fort Worden, Lieut. DAN H. WITT, New York City. Base hospital, from New York City, Lieuts. LEO EDELMAN, New York City; from Philadelphia, KYLE B. STEELE, New York City.

To *Camp Upton*, Long Island, N. Y., base hospital, from New York City, Lieuts. DAVID E. KRONMAN, New York City; JOSEPH L. WOZNIAK, Schenectady. For duty, from Army Medical School, Lieut. THOMAS F. WELDON, Brooklyn.

To *Cape May*, N. J., for temporary duty, from Camp Dix, Major DAVID BOVAIRD, New York City.

To *Fort Oglethorpe* and *Chickamauga Park, Ga.*, for conference, and on completion to his proper station, Major SANGER BROWN, White Plains. To *Fort Oglethorpe* for instruction, Capt. WALLACE J. C. AUBRY, Cohoes; BERGEN F. ILLSTON, Jamestown; OSCAR LEISER, FRANCIS A. RICHARDSON, FRANCIS W. WHITE, New York City; CHARLES F. KIVLIN, Troy; Lieuts. GEORGE FREIMAN, THOMAS D. MACROSSIE, THEODORE L. PULVERMACHER, HERMAN RUBIN, MACWELL SCHER, Brooklyn; JOHN A. PAYNE, East Satanket; JAMES M. O'NEILL, Flushing; GOD-NEW JENKS, Hasting-on-Hudson; JOHN J. SZYMANSKI, Maspeth; JOHN J. MILLER, Monticello; MILTON E. GREGG, Mottville; JOHN OUARO, PACOB COHEN, DUDLEY S. CONLEY, ELIAS GAMRIN, MANUS E. ORNSTEIN, PHILIP J. VETTER, JR., New York City; ROBERT B. WILSON, Oriskany Falls; ROBERT C. SCOTT, Syracuse; HAROLD C. LYMAN, Utica; RAE L. STRONG, White Plains; MOSES KATZ, Yonkers; from Army Medical School, Lieuts. FRANK H. SNYDER, Geneva; MICHAEL A. ROGERS, Greenwich; from Camp Meade, Capt. WALDEMAR T. BROWNE, Brooklyn.

To *Fort Riley* base hospital, from Army Medical School, Lieut. JULIUS PINCUS, New York City.

To *Fort Sam Houston*, Tex., base hospital, from Camp Joseph E. Johnston, Lieut. ROBERT BOGAN, Brooklyn.

To *Hoboken*, N. J., for duty, from Camp Upton, Major GREENE H. HAMMOND, New York City; from Fort Oglethorpe, Capt. HENRY C. DREW, Brooklyn; from Hoboken, Lieut. ROBERT A. CHRISTMAN, New York City. Evacuation hospital, from Camp Crane, Capt. JOHN R. BRADLEY, Rochester; Lieut. JOS. E. RAIA, New York City.

To *Markleton, Pa.*, for duty, from Fort Oglethorpe, Lieut. JOSEPH B. STENBUCK, Brooklyn.

To *Mineola*, Long Island, N. Y., Hazelhurst Field, from Long Island, Lieut. FEDOR L. SENGEL, Brooklyn.

To *New Haven, Conn.*, for duty, from Fort Oglethorpe, Lieut. FRANCIS A. GLASS, New York City.

To *Philadelphia, Pa.*, for instruction in orthopedic surgery, Lieut. RUSSELL PEMBERTON, New York City; from Fort Oglethorpe, Lieut. JULIUS Y. COHEN, Buffalo.

To *Washington, D. C.*, for instructions from New York City, Capt. BERNARD S. OPPENHEIMER, New York City.

To *Williamsbridge, N. Y.*, for duty, from Garden City, Capt. HERBERT R. CHARLTON, Bronxville.

Honorably discharged, Lieuts. ELIAB STAGE, Bliss; HUGH E. ROGERS, Brooklyn; JOHN McALLISTER, New York City.

Resignation of Lieut. WILLIAM R. SEARS, Brooklyn, accepted.

North Carolina

To *Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. HUGH E. CLARK, Rocky Mount.

To *Camp McClellan*, Anniston, Ala., base hospital, from Fort Oglethorpe, Capt. ARTHUR T. PRITCHARD, Asheville; Lieut. AMZI J. ELLINGTON, Raleigh.

To *Camp Sevier*, Greenville, S. C., base hospital, from Camp Greene, Capt. CHARLES A. WOODARD, Durham.

To *Camp Upton*, Long Island, N. Y., base hospital, from New York City, Lieut. JACOB H. ROZELLE, Salisbury.

To *Fort Bliss*, Tex., for temporary duty, from Fort Oglethorpe, Lieut. ERNEST S. BULLUCK, Wilmington.

To *Fort Oglethorpe* for instruction, Lieut. JOHN T. HOGGARD, Atkinson; from Philadelphia, Lieut. JAMES W. DAVIS, Statesville.

To *Hoboken*, N. J., evacuation hospital, from Camp Crane, Capt. ROLAND S. CLINTON, Rocky Mount; WILLIAM W. GREEN, Tarboro.

To *Philadelphia, Pa.*, for instruction, from Fort Oglethorpe, Lieuts. HERBERT F. MUNT, Boardman; WILLIAM MONCURE, JR., Hamlet.

Honorably discharged, Lieut. EDWARD V. HARBECK, Weaverville. On account of physical disability existing prior to entrance into the service, Capt. SAMUEL J. LYLE, Franklin.

North Dakota

To *Camp Gordon*, Atlanta, Ga., base hospital, Capt. HENRY H. HEALY, Grand Forks.

To *Camp Jackson*, Columbia, S. C., base hospital, from Camp Dodge, Lieut. JULIUS O. ARNSON, Bismarck.

To *Fort Oglethorpe*, base hospital, from Fort Riley, Lieut. LESLIE G. EASTMAN, Hazen.

Honorably discharged, Capt. ADOLPHUS W. GUEST, Jamestown.

Ohio

To *Camp Sherman*, Chillicothe, Ohio, base hospital, Major WILLIAM GILLESPIE, Capt. CHARLES T. SOUTHER, Cincinnati; WILLARD S. STONER, Cleveland; Lieuts. JOHN S. HAGEN, LOUIS H. SCHIFFER, REED A. SHANK, Cincinnati.

To *Camp Upton*, Long Island, N. Y., base hospital, Lieut. HAROLD S. COHN, Toledo. For duty, from Camp Sherman, Lieut. HENRY M. METCALF, Elyria; from Fort Oglethorpe, Lieut. JOSEPH E. STEPHAN, Jewell.

To *Camp Wadsworth*, Spartanburg, S. C., base hospital, Lieut. CHAS. C. PINKERTON, Akron; from Washington, D. C., Capt. JAMES D. PILCHER, Cleveland.

To *Dayton, Ohio*, McCook Field, Lieut. LOUIS C. WOTTRING, Cincinnati.

To *Douglas, Ariz.*, for duty, from Fort Riley, Lieut. WILBER H. BEACH, Somerville.

To *Fort McPherson*, Ga., for temporary duty, Lieuts. JOHN H. FRENCH, Jeffersonville; CHARLES F. SHIVELY, Love City.

To *Army Medical School* for instruction, Lieut. LORIN G. SHEETS, Lucas.

To *Camp Custer*, Battle Creek, Mich., base hospital, from Army Medical School, Lieut. FREDERICK A. EULER, Cleveland.

To *Camp Gettysburg*, Gettysburg, Pa., field hospital, from Camp Wheeler, Capt. REEVES W. DECROW, Sciotoville; from Fort Oglethorpe, Capt. WILLIAM S. P. DONEHOO, Wintersville.

To *Camp Logan*, Houston, Tex., *Camp Beauregard*, Alexandria, La., *Camp Shelby*, Hattiesburg, Miss., and *Camp Pike*, Little Rock, Ark., for conference, and on completion to his proper station, from Camp Travis, Major FRANK E. BUNTZ, Cleveland.

To *Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Dodge, Lieut. ROBERT R. SATTLER, Cincinnati; from Camp Grant, Capt. JOSEPH E. PIRRUNG, Cincinnati; from Camp Lee, Capt. RUFUS SOUTHWORTH, Glendale; from Camp MacArthur, Lieut. SELMAR F. HOUSER, Cincinnati; from Camp Sherman, Major HENRY D. WOODWARD, Capt. JOHN A. CALDWELL, Cincinnati; from Camp Zachary Taylor, Capt. CHARLES M. PAUL, Lieuts. CHARLES E. KIELY, MERRICK F. MACCARTHY, Cincinnati; from Fort Oglethorpe, Capt. STARR FORD, Lieut. RALPH W. STALEY, Cincinnati.

To *Camp Upton*, Long Island, N. Y., for duty, Lieut. CHARLES H. HARALSON, Mount Vernon; from Washington, Lieut. FRANK B. SNODGRAS, Kenton.

To *Cincinnati, Ohio*, University of Cincinnati, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion to the inactive list, Capt. ARTHUR E. OSMOND, Cincinnati.

To *Fort Des Moines, Ia.*, base hospital, Lieut. JOHN F. HOLTZ, Plymouth.

To *Fort Oglethorpe* for instruction, Capt. ARCHIBALD M. WILKINS, Delta; ROLLIN A. GOUDY, Newcomerstown; Lieuts. HOWARD L. SMALLMAN, Barbarton; HAROLD D. STRAUSBAUGH, Columbus; CLEMENT D. SMEDLEY, Hamilton; ALBERT D. WILLIAMS, Huntsburg; EDWARD G. WEADOCK, Lima; WALTER J. WEISER, Marion; RODERICK B. WITTICH, Mt. Sterling; JAMES W. CROFT, West Liberty.

To *Hoboken*, N. J., for duty, from Fort Oglethorpe, Lieut. JOHN P. TUCKER, Cleveland.

To *Mineola*, Long Island, N. Y., Hazelhurst Field, from Fort Oglethorpe, Lieut. FRANCIS W. THOMAS, Piqua.

To *New York City*, and *Hartford, Southington, Middletown, Conn.*, for investigation, and on completion to his proper station, Major ROBERT D. MADDOX, Cincinnati.

To *Philadelphia, Pa.*, for instruction, from Fort Oglethorpe, Lieut. RUDOLPH S. REICH, Cleveland.

Honorably discharged, Lieut. SILAS P. THARP, Cincinnati.

Oklahoma

To *Camp Cody*, Deming, N. M., for duty, from Camp Cody, Lieut. ULUS E. NICKELL, Davenport.

To *Camp Travis*, Fort Sam Houston, Tex., for duty, from Camp Travis, Lieut. CLARENCE L. WELLMAN, Coalton.

To *Camp Upton*, Long Island, N. Y., for duty, from Army Medical School, Lieut. CHARLES C. ROSE, Stringtown.

To *Chicago, Ill.*, for instruction, from Fort Riley, Lieuts. WALTER E. KOPPENBRINK, Bartlesville; EARL LERCY YEAKEL, Oklahoma City.

To *Fort Des Moines, Ia.*, base hospital, Capt. LEWIS E. EMANUEL, Chickasha.

To *Fort Riley* for instruction, Lieut. ALBERT NILE EARNEST, Muskogee; from Fort Sill, Lieut. DAVID A. BEARD, Westville.

To *Fort Sam Houston, Tex.*, for duty, Lieuts. ALFRED E. MARTIN, Marietta; HERMAN E. STECHER, Supply; CHARLES A. PETERSON, Tahlequah. For instruction, and on completion to his proper station, from Camp MacArthur, Lieut. JOHN A. WALKER, Shawnee.

To *Fort Snelling*, Minn., for duty, from Fort Oglethorpe, Lieut. ROBERT H. GIBSON, Oklahoma City.

To *Fort Worth, Tex.*, Taliaferro Field, from Fort Riley, Lieut. DANIEL E. LITTLE, Eufaula.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. JESSIE G. MARSHALL, Canton.

Resignation of Lieut. BENJAMIN T. BITTING, Enid, accepted.

Oregon

To *Arm Medical School* for instruction, Lieuts. ALFRED E. KINNEY, Astoria; GLENN E. PRIME, Falls City; HARRY E. SHOOT, Portland; JOSEPH R. BARR, Sheridan.

To *Camp Lewis*, American Lake, Wash., base hospital, from Los Angeles, Capt. RICHARD B. DILLEHUNT, Portland; from Camp Lewis, Capt. WILLIAM S. KNOX, Portland; Lieut. ARTHUR C. MCCOWN, Cove.

To *Fort Des Moines, Ia.*, base hospital, Lieut. RICHARD F. JAMES, Portland.

To *Fort Riley* for instruction, Lieuts. SAM F. LEFEVRE, Bridal Veil; WILLIAM C. JUDD, Salem.

To *Hoboken*, N. J., for temporary duty, from Camp Greene, Lieut. HENRY W. STEELHAMMER, Silverton; from Camp Sheridan, Lieut.

HARRY M. BOUVY, La Grande; from Fort McHenry, Capt. THOMAS M. JOYCE, Portland; from Fort Oglethorpe, Lieut. GARRETT L. HYNSON, Portland; from Fort Riley, Capt. ROBERT L. BENSON, Lieut. ARTHUR S. ROSENFELD, Portland; from New York City, Lieut. DORWIN L. PALMER, Portland; from Philadelphia, Capt. LAWRENCE SELLING, Portland; from Washington, Capt. SPIRO SARGENTICH, Portland.

To Washington, D. C., for temporary duty, in the Surgeon-General's Office, and on completion to Camp Fremont, Palo Alto, Calif., Major GEORGE E. DARROW, Eugene.

Pennsylvania

To Albuquerque, N. M.; Los Angeles, San Diego, Sacramento, Del Monte, San Francisco, Fresno, Calif.; Salt Lake City, Utah; Cheyenne, Wyo.; Denver, Colorado Springs, Pueblo, Colo.; Fort Dodge, Iowa; La Crosse, Wis.; Minneapolis, Minn.; Mitchell, S. D.; Davenport, Iowa, and Madison, Wis., for duty, Major HENRY D. JUMP, Philadelphia.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. RUBEN A. R. PETERSON, Allentown.

To Camp Crane, Allentown, Pa., base hospital, Capt. WALTER A. WOOD, Philadelphia; from Camp Devens, Lieut. JACOB R. BROBST, Bloomsburg; from Camp Dix, Lieut. SAMUEL J. ROSE, Hazletboro; from Camp Lee, Lieut. OSCAR J. KINGSBURY, Nesquehoning; from Camp Upton, Major JOHN A. HAWKINS, Pittsburgh; from Fort Oglethorpe, Lieut. SHAUL GEORGE, Pittsburgh.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. GEORGE W. LANG, Alicia. Base hospital, from Fort Brady, Lieut. CHENEY M. STIMSON, Philadelphia. For duty, from Army Medical School, Lieut. FRANK E. SMITH, New Kensington.

To Camp Dix, Wrightstown, N. J., to examine the command for mental and nervous diseases, from Camp Dix, Capt. PERCY DELONG, Philadelphia. Base hospital, Lieut. EDWARD T. GRUETZNER, Greenock. For duty, from Fort Oglethorpe, Lieut. CHARLES A. GOBLE, Jeanette.

To Camp Gordon, Atlanta, Ga., as a member of a board to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. WILLIAM T. PHILLIPY, Carlisle. Base hospital, from Camp Gordon, Lieut. ALBERT PILKINGTON, Philadelphia; from Pass-a-Grille, Fla., Lieut. CHARLES C. GANS, Chambersburg. To examine the command for mental and nervous diseases, from New York City, Lieut. NATHANIEL W. WINKELMAN, Bridgeville.

To Camp Grant, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. JOHN H. ALEXANDER, Pittsburgh.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieuts. WILLIAM P. PATTERSON, Fairchance; JOHN D. DONNELLY, HENRY G. GODFREY, Philadelphia.

To Camp Hancock, Augusta, Ga., for duty, from Camp Hancock, Lieut. HOWARD L. FAROUHAR, West Brownville.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. ROBERT B. McIVER, Philadelphia. For duty, from Fort Oglethorpe, Lieut. CARL B. ROSENKRANS, East Stroudsburg.

To Army Medical School for duty, from Pittsburgh, Capt. LEROY S. TOWNSEND, Beaver. For instruction, Lieuts. JOHN W. BANCROFT, Johnstown; JOHN L. MESSMORE, Masontown; CHARLES S. CANTOUGH, Reading; FRANK A. CARROLL, Scranton; JAMES J. MONAHAN, Shenandoah; EVERIL V. CHADWICK, Smethport.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction in orthopedic surgery, from Fort Oglethorpe, Lieut. GEORGE M. ASTLEY, Philadelphia.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN M. LIPSCOMB, Pittsburgh.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. AUBREY F. LAWSON, Connellsville.

To Camp Crane, Allentown, Pa., base hospital, from Philadelphia, Major ELIJAH H. SITER, Philadelphia.

To Camp Custer, Battle Creek, Mich., Camp Sherman, Chillicothe, Ohio, Camp Zachary Taylor, Louisville, Ky., Camp Dodge, Des Moines, Ia., base hospitals, and on completion to his proper station, from Camp Grant, Major WALTER A. DEARTH, Pittsburgh. To Camp Custer as member of the tuberculosis examining board, from Fort Riley, Lieut. JAMES W. DOUGHTY, Philadelphia.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. ERNEST J. HOOVER, Altoona.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. HUGH M. BULLARD, Newberry; from Fort Oglethorpe, Lieut. WAYNE L. SNYDER, Brookville.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. PATRICK F. McHUGH, Wilkes-Barre.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAM C. KESSLER, Philadelphia.

To Camp Lewis, American Lake, Wash., base hospital, from Vancouver Barracks, Capt. HENRY B. INGLE, Philadelphia.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. CHARLES I. PRATT, Coatesville.

To Camp McClellan, Annapolis, Md., base hospital, from Fort Oglethorpe, Lieut. PHILIP S. STOUT, Philadelphia.

To Camp Meade, Annapolis Junction, Md., for duty, from New York City, Lieut. DON B. BROOKS, Connellsville.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Capt. HERBERT OLD, Philadelphia.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. ESTES PAINE, Clifton Heights.

To Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. THOMAS McS. BARRETT, Dixmont.

To Camp Wheeler, Macon, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. HENRY J. GILES, Pittsburgh.

To Fort Oglethorpe for instruction, Major MALCOLM C. GROW, Media; Lieuts. ISADORE N. SMIGELSKY, Mt. Carmel; JACOB S. GOLSTEIN, HARRY P. METZGER, Philadelphia; WILLIAM LEISER, 3d, Reading; JOHN M. HIGGINS, Sayre; ROBERT C. JOHNSTON, Springdale; from Camp Beauregard, Capt. WILLIAM RUOFF, Philadelphia; from Camp Gordon, Lieut. STEPHEN S. LANDIS, Duquesne. Base hospital, and on completion to Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. SAMUEL B. ROSS, Dubois.

To Hoboken, N. J., for duty, Lieut. HARRY W. ALLISON, Timblin; from Camp Custer, Major JAMES F. EDWARDS, Pittsburgh.

To Newport News, Va., for temporary duty, from Army Medical School, Lieut. GEORGE C. WEBSTER, Chester.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Dix, Lieut. ABRAHAM E. COLCHER, Philadelphia.

To Philadelphia, Pa., for orthopedic instruction, from Fort Oglethorpe, Lieut. HOWARD S. MYERS, Pittsburgh.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort Riley, Capt. HENRY W. CATTELL, Philadelphia. For consultation, and on completion to Fort Slocum, N. Y., for duty, from Camp Dodge, Lieut. WILLIAM W. WOODS, Mont Alto.

Honorably discharged, Lieuts. VICTOR J. P. JOURDAN, Bristol; RELLA B. FORE, Philadelphia. As his services are needed as instructor at Philadelphia, Major HENRY J. GASKILL, Oak Lane. On account of physical disability existing prior to entrance into the service, Lieut. RUSSELL RICHARDSEN, Newtown.

Rhode Island

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. JONATHAN P. HADFIELD, Providence.

To Fort Oglethorpe for instruction Capt. JOSEPH F. HAWKINS, FENWICK G. TAGGART, Providence.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. EDWARD W. MULLIGAN, Providence.

South Carolina

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. JOHN B. SETZLER, Newberry.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Logan H. Roots, Capt. LAWRENCE R. CRAIG, Dillon.

To Fort Oglethorpe for instruction, Lieut. GEORGE K. NELSON, Columbia.

To Hoboken, N. J., for duty, from Camp Jackson, Capt. EDWARD E. BARRON, Manning.

Honorably discharged, Lieut. WILLIAM S. LYNCH, Scranton.

South Dakota

Honorably discharged, Capt. DAVID J. CARSON, Faulkton.

Tennessee

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Oglethorpe, Lieut. SAMUEL HUNT, Knoxville.

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. WILLIAM W. DAVIS, Memphis.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Lieut. DORSEY T. GOULD, Lawrenceburg; from Fort Oglethorpe, Lieut. HENRY G. WALDROP, Memphis.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and nervous diseases, from Washington, D. C., Lieut. JOSEPH P. SCHELL, Nashville.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. OWEN S. DEATHRIDGE, Nashville.

To Camp Kelly, San Antonio, Texas, for duty, Lieuts. RAYMOND D. HENDERSON, Humboldt; HUGH W. ALLAN, Knoxville.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieuts. BEECHER L. OGLE, Knoxville; ALEXANDER J. BRYANT, Sharon.

To Army Medical School for instruction, Lieuts. MILTON C. WIGGINS, Cottage Grove; HUGH J. BAKER, Kingsport; MARK M. JETTON, and JOSEPH LIGON, Memphis.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. WALTER J. JOHNSON, Frankewing.

To Fort Oglethorpe, base hospital, Capt. JAMES A. VAUGHAN, Memphis; Lieut. SIDNEY S. EVANS, Ripley; from Camp Bowie, Lieut. JAMES B. STANFORD, Memphis; from Camp McClellan, Lieut. CLAUDE A. SYMONS, Memphis; from Camp Meade, Lieut. JOHN J. SHEA, Memphis; from Camp Wadsworth, Lieut. LAWRENCE J. LINDSEY, Covington; from Fort Oglethorpe, Major EDWARD C. MITCHELL, Capt. WILLIAM F. CLARY, DAVID M. HENNING, Lieuts. SHIELDS ABERNATHY, JAMES P. CARTER, BENJAMIN L. SCHOOLFIELD, Memphis; from Fort Riley, Lieut. LYMAN H. CHAPMAN, Memphis; from Memphis, Major FRANK D. SMYTHE, Memphis; from Newport News, Lieut. EMMETT R. HALL, Memphis.

For instruction, Capt. JOHN G. MOSS, Johnson City; ROBERT B. LAYMAN, Knoxville; LELAND H. MILLIGAN, Morristown; CHARLIE F. ANDERSON, Nashville; Lieuts. HENRY P. SPENCER, Burns; CARL R. MARTIN, Coal Creek; JOHN H. HUFF; Cosby; MILTON B. SELIGSTEIN, Memphis.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. JAMES D. McPHEETERS, Chattanooga.

To Philadelphia, Pa., for instruction, from Camp Meade, Lieut. BEECHER L. OGLE, Knoxville.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Camp Lee, Lieut. WILLIAM D. CAGLE, Labelville.

Honorably discharged, Lieut. JOHN G. SEAY, Germantown.

Texas

To Aberdeen, Md., Aberdeen Proving Grounds, for duty, from Fort Oglethorpe, Lieut. EDWARD C. BLACKWELL, Gorman.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Capt. NATHANIEL T. MOORE, El Paso.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Sill, Capt. TARLETON F. MOORE, Gaberton; from Fort Oglethorpe, Lieut. GEORGE T. VAN ZANDT, Cameron.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and nervous diseases, from Fort McPherson, Lieut. CHARLES W. STEVENSON, Loraine.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. ROBERT V. MURRAY, Austin.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieuts. WILMER A. HADLEY, Glazier; CHARLES C. CLEVELAND, Hamilton.

To Camp Joseph E. Johnson, Jacksonville, Fla., as gas defense instructor, from Camp Joseph E. Johnston, Capt. ARTHUR W. C. BERGFELD, Seguin.

To Camp Logan, Houston, Tex., base hospital, from St. Louis, Capt. WALTER C. JOHNSON, Pharr.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Major CHARLES S. VENABLE, San Antonio.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. ROY L. AIGUIER, Dallas; from Corpus Christi, Capt. THOMAS P. POOLE, Eagle Lake.

To Camp Wheeler, Macon, Ga., base hospital, from New York City, Lieut. RALEIGH L. DAVIS, Big Springs.

To Fort Oglethorpe for instruction, from Camp Logan, Lieut. ELI E. BROWN, Dallas.

To Fort Sam Houston, Tex., for duty, Capt. ISAAC MAYHUGH, Barstow; JOHN W. SNYDER, Childress; ARTHUR E. SWEATLAND, Nacogdoches; Lieuts. EZRA E. DICKASON, Brownsville; PERRY G. HAYS, Sipe Springs; JAMES A. MURRAY, Walnut Springs.

To New Haven, Conn., for duty, from Fort Oglethorpe, Lieut. IVY STANSELL, Sanderson.

To New York City, Cornell Medical College, for instruction in military roentgenology, and on completion to Hoboken, N. J., base hospital, from Fort Oglethorpe, Capt. WILLIAM R. FICKESSEN, San Antonio.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. CARL B. YOUNG, Jr., Houston.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Oglethorpe, Lieut. ST. JULIAN R. MURCHISON, Marshall.

Utah

To Camp Kearny, Linda Vista, Calif., for duty, from Camp Kearny, Capt. GEORGE H. CRUIKSHANK, Vernal.

Vermont

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. JOHN W. HARVEY, St. Johnsbury.

To Camp Dodge, Des Moines, Ia., as division tuberculosis specialist, from Fort Riley, Capt. GEORGE L. BATES, Morrisville.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. LUTHER J. CALAHAN, Manchester Center.

To Hoboken, N. J., for duty, from Camp Dix, Major WILLIAM W. TOWNSEND, Rutland.

Virginia

To Fort McPherson, Ga., for temporary duty, Lieuts. LANDON E. STUBBS, Gloucester; ALBERT T. RANSONE, Hampton.

To Fort Oglethorpe for instruction, Lieuts. HAMIL S. SCOTT, Emory; ARTHUR H. DEEKENS, Lynchburg; from Fort Monroe, Lieut. SAMUEL M. FORD, Lebanon.

To Rockefeller Institute for instruction, and on completion to Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. JOHN O. BOYD, Roanoke.

To Army Medical School for instruction, Lieut. HARTWELL G. STONEHAM, Waverly.

To Boston, Mass., Harvard Graduate Medical School, for instruction in orthopedic surgery, from Fort Oglethorpe, Lieut. CHARLES W. MERCER, Richmond.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Dix, Lieut. RAYMOND C. HOOKER, Richmond. Base hospital, from Fort Oglethorpe, Lieut. PATRICK M. CARROLL, Rio Vista.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Major GEORGE A. RENN, Norfolk.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. BASIL E. STRODE, Amherst.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Fort Oglethorpe, Lieut. THOMAS R. COLLIER, Hampton.

To Camp Sevier, Greenville, S. C., base hospital, from Atlanta, Lieut. EDWARD B. BROOKS, Chase City; from Camp Gordon, Lieut. LUCIUS G. GAGE, University; from Fort Monroe, Major LOMAX GWATHMEY, Norfolk; from Fort Oglethorpe, Capt. MINOR C. LILE, University; Lieuts. JOSEPH S. HUME, Norfolk; LEVIN F. MAGRUDOR, Richmond; LEROY W. HYDE, University; from Fort Riley, Capt. HENRY J. HAYES, Richmond; from University, Major WILLIAM H. GOODWIN, Charlottesville.

To Fort Oglethorpe for instruction, Capt. HUGH S. MAHOOD, North Emporia; Lieuts. A. NULL OSBORNE, Clinch; ISAAC E. WOLFE, Coeburn; from Philadelphia, Lieut. WILLIAM L. POWELL, Roanoke; from Richmond, Lieut. CARRINGTON WILLIAMS, Richmond; from Camp Wheeler, Lieut. LEWIS G. RICHARDS, Roanoke.

To Fort Riley, base hospital, from Army Medical School, Lieut. CLIFFORD A. FOLKES, Roanoke.

To Hoboken, N. J., for temporary duty, from Fort Oglethorpe, Lieut. SAMUEL A. RHYNE, Norfolk.

To New York City, Cornell Medical College, for instruction in military roentgenology, and on completion to Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. JOSEPH T. MCKINNEY, Richmond.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM NELSON, Rustling.

Washington

To Camp Lewis, American Lake, Wash., base hospital, from Camp Fremont, Lieut. IRVING M. LUPTON, Spokane; from Camp Lewis, Lieut. HARRY C. BLAIR, Tacoma.

To Portland, Ore., for duty, Lieut. WARREN B. PENNEY, Tacoma.

To Vancouver Barracks, Wash., for duty, from Camp Fremont, Lieut. LEWIS B. COLLIER, Seattle.

Honorably discharged, Lieut. CARL O. LIND, Seattle.

West Virginia

To Camp American University, Washington, D. C., for duty, Lieut. STEPHEN W. BULL, Spencer.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. LEROY J. BUTLER, Hansford.

To Camp Devens, Ayer, Mass., as member of the board examining the command for tuberculosis, from Fort Hancock, Capt. GEORGE H. BARKSDALE, Charleston.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. FRED W. BARGER, Hiawatha.

To Fort McDowell, Calif., for duty, from Fort Oglethorpe, Lieut. WALTER S. LINK, Parkersburg.

To Fort Oglethorpe for instruction, Capt. McRAE C. BANKS, Raleigh; Lieut. ERNEST J. WICHTERMAN, Masontown.

Honorably discharged, Lieuts. NOAH E. STEELE, Chauncy; MICHAEL P. LINK, Matewan.

Wisconsin

To Camp Grant, Rockford, Ill., base hospital, from Camp Dodge, Lieut. DONNE F. GOSIN, Green Bay.

To Camp Wheeler, Macon, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. BERNARD O. BENDIXEN, Kewaskum.

To Fort Oglethorpe for instruction, Capt. ANFIN EGD AHL, Menomonie; Lieut. CHARLES E. STOLZ, Milwaukee.

To Fort Riley for instruction, Lieut. CARLTON M. BEEBE, Sparta.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. HAROLD McM. HELM, Beloit.

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. MICHAEL R. WILKINSON, Oconomowoc.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CHARLES A. CRITCHLOW, Mellen.

Wyoming

To Chicago, Ill., for instruction, from Fort Riley, Lieut. ROBERT H. SANDERS, Kemmerer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hookworm in the Mines.—California is carrying on a systematic campaign against hookworm in the mines of the state. The *Bulletin* of the state board of health for March contains an article on sanitation in the mines and the prevention of hookworm. Illustrations and specifications for sanitary conveniences to be used in mines are shown.

Birth Control Literature Not Obscene.—Judge M. T. Dooley, of the United States District Court at San Francisco, handed down an opinion, March 18, in the case of A. Belinski, charged with having put into the mail some of Margaret Sanger's birth control literature. He holds that the statute penalizing the posting of obscene matter does not include birth control or similar literature.

Full-Time Health Officers.—The death rate of Palo Alto, the seat of Stanford University, is about half that for the state. The city has a population of 6,000 and employs a full-time health officer, to which fact the low death rate is attributed. Since 1911, according to the *Bulletin* of the state board of health for March, there have been no deaths of infants under 2 years of age from diarrhea or enteritis, whereas during the same period in all other parts of the state there were 5,528 deaths of infants under 2. At the beginning of 1918 there were three known cases of tuberculosis in the city. The cost of the health department for 1917 was \$3,310, or 56 cents per capita.

CONNECTICUT

Society Endorses Board.—The New Haven Medical Society at its meeting, March 7, adopted resolutions endorsing the board of health of the city and stating that any attempt to curtail the budget of the board should be regarded as a public calamity.

Health Survey.—At the request of the mayor of Middletown and other public and semipublic officials and organizations, Prof. Charles E. A. Winslow of the Department of Public Health, Yale School of Medicine, assisted by David Greenberg and Ira D. Joel of the same department, made a survey of health and sanitary conditions and the administration of the health service of Middletown. The results and their recommendations have been printed in a well illustrated pamphlet with an introductory article by Professor Winslow. It was found that there is considerable room for improvement of conditions in the city, and the officials and organizations asking for the survey have pledged themselves to carry out as far as possible the committee's recommendations, of which there are about forty specifically set forth. One of the things in need of correction is the incidence of malaria, about 200 cases of which were treated during the year 1917.

HAWAII

Report of Board of Health for 1917.—The report of the president of the Hawaii Board of Health to the governor for the year ending June 30, 1917, indicates that health in the islands was good, as shown by a decrease of 442 in the number of deaths and 2,573 in the number of cases of contagious disease. Diarrhea and enteritis, tuberculosis in all forms and pneumonia lead in the causes of death. Interesting data are given with reference to sanitation, mosquito elimination, rat destruction and examination, medical school inspection, foods, insane and leper hospitals, tuberculosis, etc.

Medical News.—The board of medical examiners of the territory in 1917 lost one member by death, Dr. W. L. Moore, Dr. Grover A. Batten being appointed to succeed him. During the year ending June 30, 1917, 17 physicians were recommended for license, whose nationalities were as follows: American 10, Japanese 5, Chinese 1, Korean 1. On the date named there were 138 physicians in the territory licensed to practice, as follows: American 72, British 11, Japanese 44, Chinese 4, German 4, Portuguese 1, Norwegian 1, Korean 1. By deaths and resignation, the number of physicians remains the same as during the previous year. The license of one

Japanese physician was revoked on account of "gross carelessness and manifest incapacity," according to the report of the board of medical examiners.—The president of the board of health, Dr. J. B. S. Pratt, attended the annual conference with Surgeon-General Blue of the Public Health Service in Washington, D. C., and also the conference of state and provincial boards of health of North America in April and May, 1917, making a full report to the governor of the work done at the conferences.

ILLINOIS

Will Require Practical Examinations.—The department of registration and education of Illinois has adopted the requirement that hereafter the examination for the license to practice medicine in Illinois will include practical examinations in pathology and bacteriology; surgery and gynecology; medicine, including pediatrics and neurology, and diseases of the eye, ear, nose and throat. These practical tests will be held at the Cook County Hospital, Chicago, immediately following the written examination.

Activities of the State Department of Health.—In the January number of the *Illinois Health News*, the bulletin of the department, a history is given of the legislation abolishing the old state board of health and creating the new department of health and the sloughing off of many duties not properly belonging to a health department, such, for instance, as the examination of applicants for license to practice medicine, midwifery, embalming, drugless healing, etc., which is now performed by the department of education and registration. The department now has a director and an assistant director, and the functions are classified under ten different divisions, which have been in operation since July, 1917. The service performed by each of these divisions is described in the bulletin, and the heads of each are named. There are five laboratories in different cities of the state—Springfield, Chicago, Mount Vernon, Urbana and Galesburg.

Chicago

Reconstruction Work.—Cripples in Cook County Hospital are being taught basket weaving, rug making, wood cutting and similar arts, in the manual arts department recently opened by the social welfare department of the hospital. A similar service for crippled soldiers will be rendered by the department under the direction of Miss Stesser. This instruction is undertaken as an economic measure, to offer an opportunity whereby the maimed and crippled may become self-sustaining.

INDIANA

Sanitary Meeting.—The annual convention of the Indiana Sanitary and Water Supply Association was held in Indianapolis, March 27 and 28. The membership of the association consists of mayors, waterworks superintendents, health officers and sanitary engineers.

Personal.—Dr. Harley W. Taylor, Rochester, suffered a fracture of four ribs and other injuries in a collision between a motor truck and the automobile in which he was riding, near Michigantown, March 20.—Dr. Anthony P. Witting, Evansville, was operated on at St. Mary's Hospital, Evansville, recently and is reported to be doing well.—Dr. James Y. Welborn, Evansville, has resigned from the board of trustees of the Vanderburg County Antituberculosis Society.

Inquiry Regarding Child Mortality.—At Gary, April 15, sixteen women agents of the federal Children's Bureau, began the second stage of their inquiry into conditions affecting children of preschool age. There are 4,622 mother of children under 7 years of age who will be visited for the purpose of discovering what adverse social, economic, and industrial conditions cause the death of large numbers of infants under 1 year of age. This inquiry will be supplemented by conferences which will begin about June 1, at which mothers of children under the age of 1 year will have an opportunity to consult a government expert on the care of their children.

IOWA

Meeting of State Medical Society.—The Iowa State Medical Society will meet at Fort Dodge, May 8, 9 and 10 for the 1918 session.

Personal.—The drugstore of Dr. U. S. Rogers, Washta, was destroyed by fire, March 18.—Dr. James B. Rogers, Independence, has been appointed bacteriologist at the Cincinnati Municipal Tuberculosis Sanatorium, succeeding Dr. Johannes Hermanies, Chicago, resigned.

Reporting of Venereal Disease.—The city physician of Davenport has recommended to the board of health that an ordinance be passed requiring that a report be made to the board of all cases of venereal disease. The recommendation was referred to the Scott County Medical Society for its consideration.

Miscellaneous.—At Mount Pleasant the local board of health passed a resolution recommending, for the approval of the state board of health, a plan of chemical or other treatment of industrial sewage from creameries, slaughter houses, canning factories, etc., before being discharged into the sanitary sewers.—At Rock Rapids the board of education has secured the services of a trained nurse to help to stamp out scarlet fever which has been prevalent in the schools the greater part of the winter.

Hospital News.—The mayor and city clerk of Boone have been instructed by the city council to enter into an agreement with Boone County to build a detention hospital on a lot belonging to the county. The county will assure one half of the cost.—Improvements to cost about \$10,000 are to be made at the Santa Fe Hospital, Fort Madison. A separate ward is to be established for Mexican laborers.—A delegation from Grinnell recently visited Atlantic to inspect the new hospital. It is their intention to erect a similar hospital in Grinnell.

KENTUCKY

Health Board Not to Move.—After inspection of the present quarters of the state board of health at Bowling Green, and the proposed sites of Frankfort and Lexington, the house committee of the legislature has reported that in its opinion the immediate removal of headquarters will be inadvisable.

Merger of Board.—March 27, Governor Stanley signed the bill merging the state tuberculosis commission and the hotel inspection department with the state board of health. The bill creates a new state board of health to be composed of ten members, of whom all but one are to be appointed by the governor.

Personal.—Dr. Addie M. Lyon, county health officer at Sandy Hook handed in his resignation, giving his reason the opposition he had encountered in enforcing the quarantine regulations of the state board of health. The resignation was not accepted. Dr. Lyon was urged to continue his services.—Dr. L. A. King has been appointed local director of free dental service in the fourth district, comprising Henderson, Union, Hopkins and Webster counties.—Dr. Jesse I. Whittenberg, county health officer for Jefferson County, has resigned, and a successor will soon be named. The salary of this official was reduced from \$3,000 to \$2,500 per year by the new board of county commissions several weeks ago. Dr. Clarence H. Harris, a member of the county board of health, has been elected county health officer pro tem.—Dr. David C. Morton has resigned as a member of the board of directors of the Louisville Municipal Tuberculosis Sanatorium and has been succeeded by Mr. Isaac Hilliard.—Dr. Argus D. Willmoth, Louisville, has been appointed a member of the state tuberculosis commission.—Drs. Henry Enos Tuley, George S. Coon, Eugene Y. Johnson and George A. Hendon have been sworn in as members of the board of directors of the Louisville Municipal Tuberculosis Sanatorium.

Miscellaneous.—The annual meeting of the health officers of the state which convenes in Louisville, May 1, for a three-day session, was arranged for at the meeting of the state board of health, March 20. At this meeting the meningitis situation in the state was discussed, and the Flexner serum treatment was approved. It was reported that out of eighteen cases of meningitis at Berea, there were no deaths.—The meningitis situation at Glasgow has improved, following the investigation by Dr. Lillian H. South, Bowling Green, bacteriologist of the state board of health, and Dr. J. Paul G. Prebles of the United States Public Health Service.—Dr. W. H. Dunn, a chiropractor in Louisville, March 1, was tried in the criminal court for practicing medicine without a license. His defense was that he did not administer medicine and did not practice surgery. Dunn was formerly fined \$50 by the jury of the charge.—A beautiful service flag was raised at the Jewish Hospital in honor of nine nurses who have joined the Army Red Cross. Capt. Virgil E. Simpson of Base Hospital Unit No. 40, now at Camp Zachary Taylor, made the principal address.—A service flag bearing forty stars has been unfurled at the University of Louisville, medical department, in honor of those members of the teaching staff who are now actively in the service of the Medical Corps of the Army.

LOUISIANA

Personal.—Dr. Henry B. White, Gueydan, has resigned as a member of the state board of health.

Health Officer Barred from Plant.—On March 20, President Oscar Dowling of the state board of health, with two inspectors, was refused admission to the shipbuilding plant of the United States Shipbuilding Board at Slidell.

New Hospital Unit.—Mrs. John Debeit, New Orleans, has contributed \$100,000 toward the initial equipment of a base hospital unit which is to be sent to Italy under the directorship of Major Joseph A. Danna, New Orleans. It will be known as the Loyola Unit.

Hair Brush Abolished.—On account of the menace of the public hair brush, which is said to be responsible for 90 per cent. of baldness, as well as being the conveyor of skin infections, the Louisiana State Board of Health has prohibited the use of the hair brush in barbershops, hair-dressing establishments and other public places.

Constructive Health Recommendations.—In a report made by the bureau of venereal diseases to the state board of health, March 22, the following recommendations were made: compulsory treatment of venereal diseases in all their phases; a certificate of good health by a physician as prerequisite to the issuance of marriage licenses, and the establishment of an arsphenamin factory at Alexandria. The report was adopted with slight amendments. Dr. Dowling was authorized to call for plans for laboratory buildings at New Orleans and Alexandria.

MARYLAND

Personal.—Dr. James W. Magruder, Baltimore, who has resigned as secretary of the federated charities to become associated with the Maryland War Commission on Camp Activities, was tendered a farewell dinner by the Baltimore Social Service Club, March 27.

Sanitary District.—A bill has been introduced into the house creating a sanitary district in Baltimore County, consisting of a wide belt of territory encircling the city of Baltimore to include Sparrow's Point, Back River, Towson, Catonsville and Relay. The plan must have the approval of the state board of health.

Would Revise State Law.—A bill has been introduced in the house by Delegate Benson of Baltimore County, which revises the state laws, regulating the practice of medicine, surgery and osteopathy and creates a state board of examiners to consist of eleven members, eight of whom are to be selected by the Medical and Chirurgical Faculty of Maryland, two by the Maryland State Homeopathic Medical Society and one by the Maryland Osteopathic Association.

Patients Leave Fort McHenry.—Departing in units of various sizes, 174 men were transferred, April 12, from the U. S. Army General Hospital No. 2 at Fort McHenry to government hospitals in other cities. Of the number leaving, eight were officers and the remainder enlisted men. The largest unit was sent to New Haven, Conn. Others went to Lakewood, N. J.; Fort McPherson, Ga.; the Walter Reed General Hospital, Washington, D. C., and Cape May, N. J. With the department of these men, only eight patients were left at the fort, but others are expected shortly.

Physical Training for Schoolchildren.—One of the small but important bills recently passed by the general assembly of Maryland provides for physical education and training in the public schools. This bill was introduced at the request of Dr. William Burdick, director of the public athletic league. It directs that physical training shall be given the pupils in all public schools of the state and in all schools aided or maintained by the state. In the elementary public schools this is to consist of at least fifteen minutes on each school day and one hour outside the regular classroom work in each school week. In public high schools, the period of physical training is to be at least one hour in each school week and two hours of directed play and athletics for all pupils outside of the regular classroom work in each week.

MASSACHUSETTS

Miscellaneous.—Harvard has voted certificates of honor to every member of the university who gives up his studies to enter either branch of the service.

License Revoked.—The Board of Registration in Medicine of Massachusetts has, it is reported, suspended the license of Dr. Joseph M. Tessier, New Bedford, to practice in the state.

Harvard Appoints New Professors.—Assistant professorships in medicine and surgery, etc., were recently filled in Harvard as follows: Drs. Howard A. Lothrop and Hugh Cabot, in surgery, Worth Hale in pharmacology, Benjamin L. Ragle, in medicine, and Robert L. De Normandie in obstetrics.

Personal.—Dr. Morton Prince, Boston, has been given a decoration by the Emperor of Japan.—Dr. J. Armand Bedard of Lynn has arrived in France.—Dr. William H. McBain, associated medical examiner (coroner) of Malden and Medford districts, has been appointed city bacteriologist of Malden, succeeding Dr. Clarence H. Staples, resigned.—Dr. LeRoy A. Woodward has been appointed surgeon for the outpatient department of the Worcester City Hospital.

Hospital at Holden.—In order that the private hospital at Holden, which has been in operation for the past three years, might not be discontinued, as was contemplated, the citizens organized a corporation for the purchase of the buildings and equipment of the Holden Cottage Hospital, and it will now be run under new management for the benefit of the town. Among the physicians connected with its staff and management are Drs. Walter H. Welch and Frank H. Washburn.

MICHIGAN

Personal.—Dr. Lyman S. Crotser, Petoskey, fell, March 25, fracturing his hip. He is under treatment at a local hospital.

Sterilization of Defectives Unlawful.—The act of the Michigan legislature of 1913, which authorized the sterilization of mentally defective inmates of public institutions was declared unconstitutional by the supreme court of the state, March 28.

Sanatorium Annex for Soldiers and Sailors.—At a special meeting, March 22, the trustees of the Detroit Tuberculosis Sanatorium ordered the erection of a building to house soldiers and sailors invalided on account of tuberculosis. The new unit will cost \$10,000 and will accommodate twelve patients.

Votes for Municipal Medical School.—The board of education of Detroit has voted in favor of taking over the Detroit College of Medicine and Surgery and of converting it into a municipal institution. The trustees of the college agree to turn over to the city, free of debt, the buildings and equipment of the college which are valued at approximately \$160,000. The proposal provided that the present faculty should resign and that a new faculty be appointed by the board.

NEW YORK

Medical Scholarship for Women.—A scholarship in medicine for a college woman has been endowed by Mrs. E. T. Stotesbury and placed in charge of Dr. Elizabeth Thelberg of Vassar College. The gift was made because of the reported lack of physicians due to the war.

Gift for Women Students.—Columbia University reports a gift of \$5,000 from an association of women physicians, which with gifts of \$18,000 received from other donors will be expended for a new building for the use of women students. Additional laboratories will also be provided.

Red Cross House at Base Hospital No. 1.—The Red Cross House in connection with United States General Hospital No. 1, Gun Hill Road and Bainbridge Avenue, was opened, March 30. This is the first of a number of similar houses now being built by the American Red Cross at the larger base hospitals. It is intended as a lounging and rest-room for convalescent soldiers and as an administration center for the Red Cross field director, through whom relatives may obtain accurate information as to the welfare of the patient. These houses contain many features which will contribute to the comfort of the soldiers. There is a solarium, a women's reception room, billiard rooms, committee rooms, an assembly room and a diet kitchen.

Summer Training School.—The training of teachers for teaching the feeble-minded, as well as special classes in the public schools, will be carried on in the Rome State Custodial Asylum during the summer, from July 1 to July 27. The course will be open to graduates of normal schools and teachers' training schools. The school is supported by the state and there will be no charge for tuition, but a charge of \$20 for board and lodging in the institution. The asylum cares for 1,550 feeble-minded and has fourteen teachers and 200 officers and employees. The work will be by lectures and practical work among the inmates. There are many vacancies for this class of teachers, who receive higher pay than teachers in general primary work. Information may be obtained from the superintendent.

New York City

Zionist Hospital Unit Ready.—A hospital unit, equipped at a cost of \$259,000, by the women's branch of the Zionist movement, will sail for the Holy Land in a few days. The unit has a personnel of forty-one of whom fifteen are physicians. A hospital in Jerusalem has already been placed at the disposal of the unit.

Personal.—Dr. John Dorning has been reappointed by Mayor Hylan to the New York City Board of Inebriety.—Dr. Anna I. von Sholly, who is in service with the Women's Overseas Hospitals, was recently caught in the zone of fighting, and, at latest reports, was still cut off from her headquarters in Paris. She had gone into the fighting zone to prepare a new hospital for occupation.

New Clinic for Rehabilitation of Injured Soldiers.—Through the beneficence of an anonymous donor, New York is to have a new clinic and hospital devoted to the functional reeducation of maimed military men and civilians. The institution is to be opened within six weeks and will occupy a part of the plant formerly used by the New York Infirmary for Women and Children at Stuyvesant Square and Fifteenth Street. The institution is to be known as the New York Clinic for Functional Reeducation of Disabled Soldiers, Sailors and Civilians. The president of the organization is Dr. W. Gilman Thompson.

Health Department Undergoing Investigation.—In compliance with an order from Mayor Hylan an investigation of the health department is being conducted by the commissioner of accounts in cooperation with the civil service commissioner. The health commissioner, Dr. Lewis J. Amster, is sitting with these investigating bodies. The investigation is being made with a view of correcting alleged violations of the civil service law and of removing from the payroll the names of persons found to be illegally employed and reducing to their proper status all persons who are enjoying the emoluments of grades higher than those for which they took promotion tests. At a conference with the public health committee of the New York Academy of Medicine, Dr. Amster explained that he wished to determine whether the directors of the seven bureaus of the health department held their places legally under the charter and whether these bureaus were under proper authority of law. At the stated meeting of the section on pediatrics of the New York Academy of Medicine, resolutions were adopted protesting against the proposal to abolish the bureau of child hygiene. These resolutions were presented to the executive committee of the public health committee of the academy to emphasize the vital importance of the bureau to the welfare of the city.

OHIO

Chiropractor Convicted.—Torizo Tanaka, a Japanese chiropractor, who was conducting an elaborate office at Cleveland, and who had the legal backing of the combined chiropractic interests, was convicted of practicing medicine and surgery without a license and sentenced to thirty days in the work-house and fined \$250 and costs.

Miscellaneous.—On account of the scarcity of men physicians, Dr. William H. Peters, chief medical inspector of the board of health of Cincinnati, has announced that he has recommended that three women be appointed as district physicians. Waiving its rule against nonresident physicians, the board of health has appointed Dr. A. M. Freund, Appleton, Wis., as a member of the health staff.

Personal.—Dr. William B. Bryant, Dayton, has resigned from the city staff. He has been succeeded by Dr. Leo R. Courtright.—Dr. John E. Monger, Greenville, state registrar of vital statistics spoke on the value of vital statistics as an index to community health, before the March meeting of the Clark County Medical Society.—Dr. H. H. Goddard, of Vineland, N. J., who has been appointed head of the department of juvenile research of the state board of health, will report for duty, May 1. The salary is \$7,500 a year.—Dr. Sara E. Stevens, Boston, visiting in Xenia early in March, will spend a year in Hawaii.—Dr. Virgil E. Hutchens, New Antioch, was operated on for appendicitis in the Hale Hospital at Wilmington, March 22.—Dr. George W. Wire, health officer of Wilmington, has resigned and Dr. Frank A. Pelle, Wilmington, has been appointed in his place.—Drs. Rollin M. Schwartz, Columbiana; Edwin W. Mitchell, Cincinnati, and Andrew W. Schiller, Salem, have been certified from the civil service list for appointment as health officers at Salem.

PENNSYLVANIA

Sanatorium Becomes a War Hospital.—The Markleton Sanatorium in Somerset County has been taken over by the government for a war hospital.

The Pennsylvania Association for the Blind.—The Pennsylvania Association for the Blind has offered to the members of the senior class of the medical school, University of Pittsburgh, a prize for the best essay of 2,000 words on the prevention of blindness. The committee on award consists of some of the best known oculists and laymen in western Pennsylvania. It is expected to make this offer annually to each senior class. The prize will be \$100.

License Revoked.—April 10, the Pennsylvania Bureau of Medical Education and Licensure revoked the license of Dr. Nathan C. Kartub of East Vandergrift, who had pleaded guilty and was convicted "of murder in the second degree." The bureau also revoked the license of Dr. Frank J. Kenney, who had been convicted and plead guilty on a charge of larceny. According to reports, Frank J. Kenney was arrested in November, 1917, in connection with a diploma mill scandal in Boston, pleaded guilty to an indictment charging him with larceny and was sentenced "to six months in the common jail."

Conference of Industrial Physicians.—The sixth conference of the Industrial Physicians and Surgeons of Pennsylvania and the second meeting of the Pennsylvania Chapter of the American Association of Industrial Physicians and Surgeons were held jointly in Harrisburg, April 16. The meeting assembled under the direction of the Pennsylvania Department of Labor and Industry in the hall of the house of representatives. Among the questions taken up were those relating to health hazards to women as a result of war emergency work and the reconstruction and rehabilitation of the injured and diseased in industry as well as in war. Dr. Francis D. Patterson, chief of the division of hygiene and engineering of the department of labor and industry, presided at the sessions which lasted from 9 a. m. to 6 p. m. Among the speakers were Dr. Loyal A. Shoudy, chief surgeon in the Bethlehem Steel Company; Dr. Edward Martin, Philadelphia; Major Joseph C. Bloodgood of Baltimore; Dr. Alfred Stengel, professor of medicine at the University of Pennsylvania, and Dr. John B. McAlister, past president of the medical society of Pennsylvania.

Personal.—Dr. Lowell M. Gates of Scranton is president of the New American Bank of Commerce which opened in Scranton, March 16.—Dr. Roger R. Rupp, Leighton, has succeeded the late Dr. John W. Luther as chief surgeon of the Palmerton Hospital.—Dr. John A. Klump, Williamsport, succeeds Dr. Albert F. Hardt as member of the Middle Judicial District Exemption Board of Appeals.—Dr. Edward S. Dougherty, Ashley, was severely injured recently when an automobile in which he was riding crashed into a telegraph pole.—Dr. John G. Wilson, Montrose, has been appointed resident physician at the Hillside Sanitarium for Mental Defectives and Indigents, near Scranton.—Dr. James W. Harper, Forest Grove, has accepted a surgeonship with the Westinghouse Electric Company, Pittsburgh.—Dr. Irving Gellman, a native of Odessa, Russia, who is a graduate of the College of Physicians and Surgeons of Boston and who has done a great deal of tuberculosis work in connection with the Montefiore Home, Bedford Hills, N. Y., and with the Minnesota State Sanatorium, has been appointed resident physician to the state sanatorium for tuberculosis at Hamburg.

Philadelphia

New Section of College of Physicians.—The College of Physicians has organized a section on industrial medicine and public health, which will hold meetings in October, December, February and April of each year.

Medical Club Reception.—April 19, a reception was tendered to Rear-Admiral J. M. Helm, U. S. Navy, Commandant, Fourth Naval District, and Rear Admiral Benjamin Toppan, U. S. Navy, Commandant, Philadelphia Navy Yard, at the Bellevue-Stratford Hotel, by the Medical Club of Philadelphia.

Personal.—Drs. Edward A. Mallon and Max F. Herrman have been appointed chief visiting physicians to St. Joseph's Hospital.—Dr. William E. Quicksall has been appointed laryngologist to St. Joseph's Hospital.—Dr. George A. Knowles has been appointed by Governor Brumbaugh, trustee for the state hospital, Norristown.—Dr. Annie J. Gardner Young has recently been appointed resident physician in the Pennsylvania State Sanatorium for Tuberculosis at Hamburg.

RHODE ISLAND

First Aid and the Medical Practice Act.—The *Bulletin* of the Rhode Island State Board of Health calls attention to the violation of the medical practice act by manufacturing plants which allow the "first aid" treatment applied by an attendant who is not a physician to suffice in case of injuries to employees. It says it is absurd to have strict regulations regarding the practice of medicine and the licensure of physicians and then permit the treatment of dangerous wounds by a nurse or other nonqualified person.

TEXAS

Nurses Association Organized.—At Port Arthur, April 1, the Graduate Nurses Association of Port Arthur and vicinity met and dissolved to form the Jefferson County Nurses Association, with the idea of becoming affiliated with the state nurses association. Officers were elected.

VIRGINIA

Miscellaneous.—Announcement has been made of, and bids asked for, the construction of a modern hospital corps school at the Hampton Roads naval base. The structure will be of brick, 156 by 80 feet, three stories high and will be provided with laboratories and all modern facilities for teaching purposes. The new unit memorial hospital for colored patients, now under construction at Richmond, will be seven stories high, will be fireproof, will have large sun porches on every floor, and will be a completely designed and equipped modern hospital, which may be operated in connection with the other units of the hospital or independently. The building is of brick with ornamental limestone trimmings.—The state legislature has voted to increase the appropriation for community sanitation and medical inspection conducted by the state board in connection with the International Health Board from \$7,200 to \$15,000. Under the stimulus of this work, a number of counties have now employed full-time health officers, and it is proposed that the citizens of the state should furnish an additional sum of money equal to that appropriated by the two bodies named for the purpose of extending the work.—Steps have been taken by Health Officer Roy K. Flannagan of Richmond to carry out the plans of the federal health service in combating venereal diseases.—At Norfolk, the county board of health, March 7, adopted ordinances prohibiting the pollution of the bay which is used for bathing purposes. This will require the cottage communities at Ocean View, Willoughby Beach and on the bay side to install plumbing and waste disposal arrangements. An ordinance was also adopted providing for the regulation and sale of meats and foods in the county, as well as for their preparation. Ordinances requiring the reporting of communicable diseases and regulating vice for the protection of men in the service were also passed.—Dr. Mosby G. Perrow, health officer of Lynchburg, reports that, during the last twelve months, at least fifty letters have been received at the health office asking for the date of birth of former citizens of Lynchburg. These letters, which could not be satisfactorily answered, have come from New Zealand, Australia, South Africa and from many places in this country. There were 740 births reported in 1917, but the health officer believes that at least 100 were not reported. Reporting of births began in 1910 and has been steadily improving.—The Richmond Anti-tuberculosis Association has rejected the proposition of the city health department to place the association's nurse under the direction of the health department.—Governor Davis has signed a bill passed by the legislature amending the health law in regard to the appointment of local boards of health throughout the state.—The bill for an increase of salary of the state commissioner of health, Dr. Ennion G. Williams to \$5,000 a year has been vetoed by Governor Davis. He recommends that the salary be made \$4,000.—Richmond, during 1917, had the lowest death rate in its history, 16.92, and also the lowest typhoid death rate, 6.97.—Among the health bills passed by the present session of the legislature and signed by Governor Davis are bills to provide for public health nursing and medical inspection of schoolchildren.—A bill for the compulsory use of the prophylactic treatment to prevent ophthalmia neonatorum has been passed by the state legislature. The prophylactic will be furnished free by the state board of health.

CANADA

Personal.—Capt. Robert S. Armour, R. A. M. C., Campbellford, Ont., has been mentioned in despatches for meritorious work in East Africa. He is a graduate in medicine of the Uni-

versity of Toronto, 1915. He is at present in charge of a base hospital in the East African expeditionary force.—Lieut.-Col. Henry D. Johnson, Charlottetown, P. E. I., is in Toronto to look for a site for new medical stores. He returned from overseas a short time ago.—Dr. J. McKelvey Bell, Eufaula, Alta., director of medical services for the Invalided Soldiers' Commission, is in Toronto to talk over the affairs of that body with local representatives. It is likely that Capt. Edward Ryan, Kingston, will be continued in charge of this district.—The rank of surgeon-general has been abolished in Canada, and in the future the officers who have been known by this title will be addressed as either lieutenant-general or major-general.

GENERAL

American Public Health Association.—The American Public Health Association meeting for 1918 will be held in Chicago, October 14 to 17. The central theme of the meeting will be "The Health of the Civil Population in War-Time."

To Standardize Hospitals.—At a recent meeting of the Board of Trustees of the American Medical Association, funds were appropriated to permit the Council on Medical Education to extend its work of standardizing and listing such hospitals as, on investigation, shall be found in position to furnish acceptable internships for medical graduates. In 1914 the Council issued a list of such hospitals which was revised and reissued in 1916. Another revision will appear this summer.

Fatigue and Communicable Diseases Among Sailors.—In an investigation into the prevalence of communicable diseases by the division of sanitation of the bureau of medicine and surgery of the Navy Department, it was decided that fatigue is a factor in the spread of these diseases, and that "the attempt to make a sailor too rapidly is to invite disaster." This has been shown and is the subject of comment in the report comparing thoroughly seasoned men and recruits at the various training stations.

Change in National Institute.—The National Medical Institute of Mexico, founded in 1890 for research on and exploitation of the flora, fauna and climatology and geography of Mexico has been transformed into the Institute of General and Medical Biology by a recent decree. The institute has been engaged in the study and classification as well as the action of native plants, among them being axocopaque, or native wintergreen; yoloxochitl, which has action resembling that of digitalis; candelilla, which was said to have anti-syphilitic action, an assertion which on investigation was found not to be true, though the plant has proved an important source of wax; and various other plants with diuretic and purgative action.

Early Graduation.—As a result of the agitation a year ago for the adoption of the continuous session for medical students, several schools provided that the senior session should begin in the summer of 1917 immediately following the class of the junior year, by which plan those students were graduated in February of the present year, instead of in June. The schools thus far reporting are Bowdoin Medical School, Portland, Me.; Columbia University College of Physicians and Surgeons, New York; Fordham University, School of Medicine, New York; University and Bellevue Hospital Medical College, New York; Tufts College Medical School, Boston, and St. Louis University School of Medicine, St. Louis. Rush Medical College, Chicago, and Leland Stanford Junior University School of Medicine, San Francisco, have the quarter system under which the sessions are continuous.

Conference on Social Work.—The National Conference of Social Work will hold its forty-fifth annual session at Kansas City, Mo., from May 15 to 22. Among the themes of papers and addresses on the program and topics for discussion are the care of convalescents, medical inspection of schools, public health nursing, hospital social service, nutrition, health centers, a national program of infant welfare, national salvage of the handicapped, preparing the soldier incapacitated by nervous or mental diseases for return to civil life; this last topic is the subject of discussion by Major Richard Hutchings, M. R. C., U. S. War Department, Washington, D. C. "Types of After the War Problems," by E. E. Southard, director of the state psychopathic hospital, Boston, is the topic discussed by C. Macfie Campbell, of the Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore. The "Care of the Feeble-minded: Results and Significance of Mental Hygiene Work in the Army," to be handled by Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene, New York City, is a further topic of interest to the profession. Under public agencies

and institutions there will be a discussion of private and state hospitals, sanatoriums, almshouses and jails. Infant mortality and Miss Julia Lathrop's efforts to save 100,000 babies this year out of the 300,000 whose lives needlessly have been lost each year is another topic that will be discussed.

CENTRAL AND SOUTH AMERICA

School of Preventive Medicine at Havana.—Dr. Pazos, of the public health service of Cuba, is agitating for the organization of a school of preventive medicine to train a corps of expert hygienists at Havana. The medical organizations of the country are sustaining his appeal.

Training School for Nurses in Costa Rica.—The *Gaceta Medica* of Costa Rica states that last year the medical department of the University of San José, Costa Rica, founded a training school for nurses. The school is in charge of Prof. B. Hernandez. Prof. C. Pupo was dean of the medical school last year. Prof. E. Rojas is the present dean.

Pedagogic Congress in Colombia.—A gathering of teachers, physicians, school inspectors and others was held recently at Bogota to discuss subjects connected with child welfare. The faculties of medicine, law and engineering of the university were prominent in the debates, and the resolutions adopted by the gathering call on the government for a number of promising reforms.

Death of Castilla.—The republic of Colombia is mourning the recent death of Dr. R. R. Castilla, a prominent physician who took a leading part in medical and civic matters, serving as chief of the public health service, editor of the *Gaceta Medica*, and organizer of the annual gatherings of medical men. He planted the first rubber plantation and cinchona plantation in the country, introduced coffee plantations and the cultivation of the potato in regions previously deemed incapable of raising them, and did much to raise the standard of the stocks of horses and cattle in the country and open up the mineral springs. He received his medical training in France and remained to practice medicine at Paris for a number of years. Among his publications was one on a sign of valvular stenosis. The *Repertorio* of Bogota comments that the 80 years of his life were crowded with energy and service.

Medical Congress of Colombia.—The third national gathering of the physicians of the Republic of Colombia was held recently at Cartagena. Among the numerous progressive resolutions adopted were some to the effect that the fight against tuberculosis requires the cooperation of parents, teachers and clergy besides official state support and the work of physicians, dentists and veterinarians. Other resolutions were that a certificate as to health conditions should be required in renting a house, and that the physician should persuade the head of the household to notify the authorities when there is a case of tuberculosis in the family, the physician thus respecting professional secrecy while accomplishing the desired notification. Another resolution appealed to the government to supply the drugs to cure tropical anemia, either gratuitously or at cost. It was also voted that the local authorities should take the necessary prophylactic measures. Other measures on which the state was urged to take action were the foundation of institutes of toxicology in the different centers of population, study of the great question of immigration, legislation to protect the public against unqualified practitioners of medicine, appointment of medical school inspectors, and free dispensaries for venereal diseases. The final resolution advocated the organization of the profession along the lines that work well in other countries.

FOREIGN

Miss Stern Appointed Professor at Geneva.—Privatdozent Lina Stern has been appointed professor extraordinary of physiologic chemistry at the University of Geneva.

Water-Bed Pavilion at Vienna.—The *Nederlandsch Tijdschrift* mentions that the Allgemeines Hospital at Vienna has equipped one pavilion with water-beds. There are fourteen rooms, each with from two to four water-beds, 100 water cushions, and 300 air cushions. It is said that many of the wounded and other patients who could find no relief before have been materially benefited by these water contrivances.

The Medical Service of the Portuguese Troops in France.—The *Medicina Contemporanea* relates that there are now nine Portuguese ambulances at the front. Several are advanced surgical stations. One, from last August to date

of writing had had 2,738 operative cases. The Portuguese force has had 442 men killed, including six officers and nine men succumbing to gassing; 111 have been disqualified by sickness.

Prize for Work on Physical Science.—The *Gazzetta degli Ospedali* says that the Royal Academy of Sciences of Turin, Italy, has announced a prize of 26,000 lire (\$5,200), to be awarded for the most remarkable and most celebrated work on any of the physical sciences published in the four years ending Dec. 31, 1918. The prize fund is a bequest from a senator of the realm, T. Vallauri. Competition is open to Italian and foreign scientists, and the term "physical sciences" is to be taken in the broadest sense.

Typhus in Portugal.—The city of Porto is suffering from an epidemic of typhus. Three hundred and fifty-two cases with twenty-three deaths were reported in the week ending March 5. This number is 148 less than the cases of the preceding week, but since then the number has risen again. Prof. R. Jorge is in charge of the campaign against the disease, and energetic measures are being taken to stamp out the epidemic. Scattered cases were reported elsewhere the same week, one in Lisbon. Typhus occurs nearly every year at Lisbon. Only twelve years have passed since 1882 without from one to ten cases of typhus at Lisbon, according to the *Medicina Contemporanea*.

The French Medical Journals and the War.—Some statistics have recently been published showing that of the 345 medical and other scientific journals published in France before the war, about 270 have suspended publication. Others have changed from weekly to a monthly issue and others issue only four numbers a year. The total quantity of the paper used by them now does not amount to more than 35 tons a month, less than half that used daily by a newspaper. The important discoveries and experiences of the war and the lessons from them have been spread broadcast by the medical journals, so that surgeons and physicians have been able to keep abreast of progress and thousands of lives have been saved. The organized medical press in France is pleading with the authorities for special concessions during the period of the prevailing scarcity of paper, but no heed has been paid the appeal as yet.

Deaths in the Profession Abroad.—M. S. Bombin, a leading syphilologist of Madrid, aged 71.—J. S. de Figueroa of Barcelona, editor of the *Gaceta Medica Catalana* and inspector of the public health service, aged 32.—N. Granés of Madrid, aged 70, editor of the *Progresos de la Clinica*.—C. Ruata, formerly professor of materia medica at the University of Perugia, author of numerous works on hygiene and public matters and also of works denouncing vaccination against smallpox. He was president of an international anti-vaccine society.—P. Imbriaco, aged 72, long a medical inspector in the medical department of the army and president of the Scuola di applicazione de sanita militare, located at Florence. He published a number of works on war surgery and the effects of projectiles.—The *Nederlandsch Tijdschrift* reports the death of Prof. O. v. Angerer of Munich, aged 68, author of numerous works on surgical questions and since 1917 editor of the *Zeitschrift für aerstliche Fortbildung*. He was called to the chair of surgery at the University of Munich in 1885.

PARIS LETTER

PARIS, March 14, 1918.

Work of the Medical Department of the French Army at the Front

At the meeting before the last of the Académie de médecine, Dr. Sieur, medical inspector, showed that considerable progress had been made by the Service de Santé since the beginning of the war and detailed the work that this service is doing at the present time. The wounded are being brought in early. Not more than from four to six hours elapsed between the time of wounding and the arrival of the patient at one of the advanced ambulances. More than this, whenever it is possible, advanced first aid posts are established where extremely urgent operations can be done. In order to give such immediate care as is necessary in these cases, advanced ambulances have been organized, where, during offensive action, wounds of the soft parts can be treated, as well as the recuperable and those who cannot be transported, and where the sorting of the wounded may be done with a proper regard for their distribution to the evacuation hospitals and certain special formations farther back.

In the evacuation hospitals, the hospitalization quarters are organized adjacent to the quarters for the evacuable. It is in these quarters that the surgical automobile ambulances have been installed, where cases of head, chest and abdominal wounds can be treated with much dispatch. In short, if the condition of the wounded permits it, only fracture cases are sent to the special hospitals established farther back behind the lines. The evacuation hospitals, one for each army corps, are arranged to receive the wounded who are sent to them directly by the receiving posts and by the advanced ambulance groups. In case the admissions to the hospital are greater than the number that the hospital can take care of, there have been established in the zone of the *éclapés* hospitals known as *hôpitaux de liaison chirurgicale*, where the postponed suturing and the secondary suturing can be done on those patients whose wounds have been dissected free of damaged tissue, but not sutured, in the front line formations.

Because of this arrangement it is now possible to secure primary wound healing even in those cases which heretofore have been regarded as most grave. The results obtained are excellent. Dr. Sieur has been able to restore to the army 78 per cent. of the wounded after a hospital stay of not more than twenty-eight days on an average.

Late Migration of Rifle Bullet from the Inferior Vena Cava to the Right Ventricle

Dr. Tuffier recently reported a typical case of tardy migration of a war projectile in the circulatory apparatus. The soldier had been wounded by a rifle bullet in the right lumbar region. The first intervention consisted of a simple dissection of the lumbar wound. A month later a roentgenogram revealed the bullet at the level of the first and second lumbar vertebrae, about 9 cm. from the anterior wall. Eight days later, a second roentgenogram showed that the bullet had disappeared from its original location and that it was then in the heart itself, moving synchronously with the pulse beats. The patient, who until then had not complained of any symptoms, said that he was suffering from oppression and distress, anginous in character. The operation was proceeded with, but had to be stopped soon after the flap had been cut in the chest wall because the patient presented symptoms of respiratory arrest, thready pulse, dilatation of the pupils and finally syncope. Under proper treatment the immediate danger was overcome, and the patient felt fairly well during the next two days, but on the third day he died suddenly.

The necropsy disclosed that the bullet had entered the body in the lumbar region, furrowed the anterior surface of the right kidney (the superior portion of this kidney had undergone atrophy, doubtless the result of the traumatic obliteration of a branch of the renal artery) and subsequently entered the vena cava, where it had burrowed in the rear outer wall of the vessel a real *logette en nid de pigeon* of the internal tunic (dry wound of the vena cava). After six weeks, the bullet left this position, reached the auricle and then dropped into the right ventricle, where it was found embedded in the myocardium.

LONDON LETTER

LONDON, March 19, 1918.

The Food Situation

Under the present system of rationing, the allowances of some of the principal articles of diet are greatly limited. But, excepting in the case of sugar, our position is much better than that of Germany, as is revealed by the following allowances of staple foods in London and Berlin:

	London		Berlin	
	Ounces	Pounds	Ounces	
Butter and margarin.....	4		2¾	
Meat	20		8¾	
Sugar	8		8¾	
Potatoes	Unlimited	7	10½	
Bread	Unlimited	4	4¼	

Moreover, in the case of persons engaged in heavy work, it is proposed to allow extra rations, if supplies permit, as soon as possible after April 7. The supplementary ration in the first instance will be limited to bacon, rabbits, poultry, and meats other than fresh butchers' meat. At the outset the ration will be uniform for all persons classed as heavy workers. Provisionally it is expected to amount to an increase of 50 per cent. above the present ration. With a view to possible differentiation later either in respect of the meat ration, or of other rations, the work people qualified for extra supplies will be graded in three classes: (a) men engaged

in very heavy industrial work, and generally exposed to weather or heat; (b) men in agricultural work, and (c) men in heavy industrial work. The supplementary ration will be granted to women engaged in work corresponding to that of men in Classes A and B, but not to women doing ordinary factory work, which does not involve exceptional physical strain or exposure to heat or weather. It is expected that the total number of persons qualified to apply for the supplementary ration will be about one seventh of the population.

The Smallpox Outbreak in London

The outbreak of smallpox in the East End of London so far has not increased to any extent. The health authorities have closed the street in which the first cases occurred. They do not believe that the few cases of smallpox that have occurred need give rise to serious alarm. So far outbreaks of smallpox in London have appeared in cycles, and one of these cycles was due last year, but not a single case was then reported in the whole of London. In 1916 there was only 1 case; in 1915 there were 11, 10 of which occurred among Belgian refugees; in 1914 there was 1 case, in 1913 1, in 1912 there were 5, and in 1911 there were 70. Between 1904 and 1911 there were 60 cases; in 1904 there were 449, and between the winter of 1901 and the spring of 1902 there were 7,916.

The Treatment of Venereal Diseases

Considerable attention continues to be given to the problem of venereal diseases. At a meeting of the National Council for Combating Venereal Diseases, Sir Thomas Barlow, who presided, said that the government scheme has now been on trial for a year, and he feels sure that after another year treatment centers will have been established in nearly all towns. Lady Barrett, M.D., said that experience at the venereal clinics has shown the need for further beds for infected pregnant women after repeated miscarriages and stillbirths. Gonorrhea is more difficult to cure than syphilis, especially during pregnancy, and beds are required not only for the child's sake but even more for the mother's. Dr. W. G. Savage, health officer for Somersetshire, complained that the government scheme is framed only for urban conditions. In rural districts, owing to the long distance from clinics, traveling expenses will have to be paid, but even this does not meet the loss of time. He suggested that the clinical medical officer, who should be a whole-time man, should go to the villages and make a temporary clinic of the office of the local physician, with whom he can talk cases over.

Air Raid Shelters and Infection

During the air raids, a large proportion of the population, especially women with children, take refuge in various shelters, such as underground railway stations and large buildings. Among the latter are the government schools, which are scattered all over London. The school medical officer has presented a report on the connection between crowding in air raid shelters and the increase of infectious disease. He finds that the prevalence of disease has risen in definite relation to times of crowding. The conclusion reached is that it is an open question whether recourse to shelters is not a more serious danger than the small risk that would be incurred if they were not used.

Marriages

LIEUT. WALTER LEE BRANDON, M. R. C., U. S. Army, on duty at Fort Sill, Okla., One Hundred and Fortieth Field Hospital, to Miss Lola Clark, both of Broseley, Mo., at Lawton, Okla., April 4.

MAJOR PHILIP STANLEY CHANCELLOR, M. R. C., U. S. Army, Santa Barbara, Calif., to Mrs. Charlotte Thorne Lewis, at Montecito, Calif., April 3.

LIEUT. JOHN WILLIAM MANN, M. R. C., U. S. Army, Pittsburgh, to Miss Naomi Pries of Lancaster, Pa., at Portland, Me., about March 28.

DAVID ROSWELL ROTHROCK, Milton, Pa., to Miss Zella O. Stadler of Watsonstown, at Milton, Pa., March 29.

LEO RUDOLPH MOJOEWSKY, Cincinnati, to Miss Emilie Fries of Covington, Ky., March 26.

ELVIRA DUDLEY DEAN to Mr. Frank D. Abell, both of Morriston, N. J., April 2.

Deaths

Lieut.-Col. William W. Reno, Medical Corps, U. S. Army; Michigan College of Medicine and Surgery, Detroit, 1900; aged 45; a Fellow of the American Medical Association; commissioned lieutenant, Medical Corps, U. S. Army, 1901; captain in 1906; major in 1910, and lieutenant-colonel in 1917; died at sea, March 21, 1918, disappearing from U. S. S. *Susquchanna* while returning home invalided from France. Colonel Reno was conspicuous for pioneer work with the ambulance company and field hospital, the efficiency of which organizations was promoted by his initiative. His interest in the physical efficiency of the individual soldier was manifested in his study of the soldier's foot, the results of which he published. He was a frequent contributor to medical journals on varied subjects pertaining to the duties of the military medical officer. While instructor at the training camps for medical officers he endeared himself to every officer with whom he came in contact by his kindly tact and consideration.

William W. Tarvin, Covington, Ky.; Medical College of Ohio, Cincinnati, 1886; aged 53; a Fellow of the American Medical Association; formerly a member of the staff of the Speer's Memorial Hospital, Dayton, Ky., and surgeon of the Covington Protestant Children's Home; a member of the Kenton County Board of Health; for many years surgeon for the Chesapeake and Ohio Railroad in Kentucky; died, March 28, after an illness of three months from injuries received in an automobile accident.

Joseph P. Creveling, Albany, N. Y.; University of Michigan, Ann Arbor, 1870; aged 70; a Fellow of the American Medical Association; formerly served as president of the Albany Academy of Medicine, and surgeon for the Lehigh Valley Railroad; in 1905 and 1906 was president of the New York and New England Association of Railway Surgeons; died at his home, March 30, from cerebral hemorrhage.

William F. McAllister, San Francisco; University of Pennsylvania, Philadelphia, 1870; aged 72; formerly a member of the Medical Society of the State of California; assistant surgeon in the Veteran's Home of California; formerly a member of Napa County Board of Health; for fourteen years collector of the port and sometime commissioner of immigration in San Francisco; died at his home, March 26.

Harrison Girard Wagner, Cleveland; Cleveland College of Physicians and Surgeons, 1895; aged 52; a member of the Ohio State Medical Association; formerly visiting physician to the Cleveland City Hospital, and demonstrator of physical diagnosis in the Western Reserve University; also a pharmacist; died at the Lakeside Hospital, Cleveland, March 21, from cardiorenal disease.

Edward Payson Hammond Griswold, Niagara Falls, N. Y.; New York University, Medical Department, New York City, 1878; aged 62; a member of the Medical Society of the State of New York; formerly surgeon of the Forty-Second Separate Company of the New York National Guard; formerly health officer of the village of Niagara; died, April 2, at his home.

George Horsley Shedd, North Conway, N. H.; Bowdoin Medical School, Portland, 1879; aged 65; a Fellow of the American Medical Association; surgeon in chief of the Memorial Hospital of North Conway, and a member of the state board of medical examiners since 1897; died at his home, March 21, from angina pectoris.

William Parsons, Chicago; Rush Medical College, Chicago, 1874; aged 74; a Fellow of the American Medical Association; formerly chief surgeon for Armour and Company and Swift and Company, in the early days of the packing industry; formerly surgeon for the Chicago Junction Railroad; died at his home, April 6, from gangrene.

Elmer Davis Maddux, La Crosse, Ind.; Chicago College of Medicine and Surgery, 1910; aged 39; a Fellow of the American Medical Association; formerly a lieutenant in the Medical Reserve Corps; died in a hospital in Chicago, April 5, as the result of injuries received in an automobile accident.

Walter S. Daly, Ogdensburg, N. Y.; McGill University, Faculty of Medicine, Montreal, 1885; aged 59; a Fellow of the American Medical Association; a member of the American Laryngological, Rhinological and Otolological Society; died at his home, March 18, from pneumonia.

William F. Patterson, Chapelhill, N. J.; Albany (N. Y.) Medical College, 1875; aged 67; formerly assemblyman for

the third district of Monmouth County; collector of Middletown Township for a number of years; died at his home, March 5, from cerebral hemorrhage.

J. Albert Gaar, Jonesboro, La.; Memphis Hospital Medical College, 1904; aged 38; a member of the Louisiana State Medical Society; formerly resident physician to the New Orleans, Eye, Ear, Nose and Throat Hospital; died at his home, March 12, from heart disease.

Bartlett H. McMullen, Cadillac, Mich.; Detroit Medical College, 1879; aged 60; formerly a Fellow of the American Medical Association; a member of the Michigan State Medical Society; for two terms mayor of the city of Cadillac; died in Rochester, Minn., April 1.

Lieut. Edward Leland Mooney, Jr., M. R. C., U. S. Army, Syracuse, N. Y.; Syracuse University, College of Medicine, 1917; aged 26; a Fellow of the American Medical Association; on duty with the American expeditionary forces in France; was killed in action, March 26.

Frank Hart White, Hackensack, N. J.; University Medical College, New York City, 1883; aged 55; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; died in the Hackensack Hospital, April 2, from pneumonia.

William Harold Wetmore, Oswego, N. Y.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1908; aged 33; a Fellow of the American Medical Association; died at the home of his mother, Syracuse, N. Y., March 28, from tuberculosis.

Homer S. Jeffrey, Upland, Ind.; Kentucky School of Medicine, Louisville, 1894; aged 45; formerly a member of the Indiana State Medical Association; died at the Grant County Hospital, Marion, Ind., February 14, from bronchial pneumonia.

Marion Howard Cazier, Detroit; Rush Medical College, Chicago, 1880; aged 60; formerly a Fellow of the American Medical Association; died, March 5, from the effects of a gunshot wound of the head, self-inflicted, it is believed.

Clarence A. Chaloner, Stephentown, N. Y.; Albany (N. Y.) Medical College, 1881; aged 60; a member of the Medical Society of the State of New York; supervisor of the town of Stephentown; died suddenly at his home, March 20.

Elisha J. Thurman, St. Louis; Washington University Medical School, St. Louis, 1873; aged 77; a member of the Missouri State Medical Association; a veteran of the Civil War; died at his home, March 31, from senile debility.

George Scribner Ten Eyck, Syracuse, N. Y.; Syracuse University, College of Medicine, 1908; aged 37; died in New York, March 29, following an operation for appendicitis.

Robert Murdock, Wilkes-Barre, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1872; aged 70; died suddenly at his home, March 22, from heart disease.

Alanson Tucker Schuman, Gardiner, Me.; New York Homeopathic Medical College and Hospital, 1872; aged 71; died in St. Petersburg, Fla., about March 24.

Alvin Shattuck, Los Angeles; College of Physicians and Surgeons, Los Angeles, 1913; aged 37; died at his home, January 22, from pulmonary tuberculosis.

Henry Allen Wilson, Niagara Falls, N. Y.; University of Buffalo, 1882; aged 66; died at the Memorial Hospital, February 24, from Bright's disease.

William Houston Taylor, Little Rock, Ark.; Vanderbilt University, Medical Department, Nashville, Tenn., 1875; aged 70; died at his home, March 30.

Fannie W. Sanborn, Scranton, Pa. (licensed, Pennsylvania, 1877); aged 79; died at the home of her niece in Clark Summit, March 22.

Justus R. Conklin, Omaha; Rush Medical College, Chicago, 1859; aged 85; died at Dunedin, Fla., March 20, from cerebral hemorrhage.

Ozias Paquin, St. Louis; St. Louis College of Physicians and Surgeons, 1888; aged 53; died at the City Hospital, March 29.

Samuel Taylor Murray, Greentown, Ind. (license, Indiana, 1897); aged 77; died at his home, March 24, from heart disease.

A. Milliken, Placerville, Calif. (license, California, 1876); aged 84; died at his home, January 26, from bronchial pneumonia.

Maze A. L. Enochs, Flatcreek, Tenn.; University of Nashville, Tenn., 1872; aged 74; died at his home, March 17.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MISBRANDED NOSTRUMS

Some "Patent Medicines" for Which Fraudulent Claims Have Been Made

Ascatco.—Four dozen small and one and one-half dozen large bottles of "Ascatco" put out by the Ascatco Laboratory, New York, were seized by the government on the charge that the stuff was misbranded. The product contained 13 per cent. alcohol and some opium. It was sold under the claims, either direct or inferential, that it would cure asthma, hay-fever and catarrh, would relieve coughs and colds and would prevent hay-fever. The government charged that the claims made for the preparation were false, misleading and fraudulent. No one appeared to claim the property and the court entered judgment of condemnation and forfeiture and ordered that the article should be destroyed by the United States marshal.—[*Notice of Judgment No. 4600.*]

Mexican Oil.—"Mexican Oil," manufactured by the Hausman Drug Co., Trinidad, Colo., was sold under claims that it was an effective remedy for diarrhea, dysentery, summer complaint, cholera morbus, sciatica, rheumatism, gout, bronchitis, dyspepsia and various other conditions. It was analyzed by the federal chemists who reported that it contained over 57 per cent. alcohol together with essential oils, glycerin, red pepper, emodin, menthol and a small amount of opium alkaloids. The claims made for the preparation were declared false and fraudulent. The company pleaded guilty and was fined \$25 and costs.—[*Notice of Judgment No. 4616.*]

Persil.—"Persil," a nostrum of the "boozie" type, was labeled as being prepared for Thompson & Co. of Boston by Arrow Distilleries Co., Peoria, Ill. It contained 40 per cent. alcohol and was claimed to contain, in addition, asparagus, parsley, celery, buchu and juniper berries. The government chemists analyzed it and declared that while it had the amount of alcohol claimed, it did not contain appreciable quantities of celery, buchu, juniper, asparagus or parsley. The government charged that the product was misbranded because it was false and fraudulently claimed that the stuff was an effective remedy for bladder and kidney trouble when in fact it was not, "but did contain ingredients which might render the article harmful when used in the treatment of diseases of the kidneys or bladder due to, or accompanied by, inflammation." The Peoria concern admitted its guilt and was fined \$100 and costs.—[*Notice of Judgment No. 4635.*]

Dr. D. Kennedy's Favorite Remedy.—The Dr. David Kennedy Co. of Rondout, N. Y., shipped this product. It was found by the federal chemists to contain 18 per cent. alcohol, nearly 50 per cent. of sugar, over 4 per cent. of potassium acetate with methyl salicylate, aloes, licorice and a little of sassafras present. False and fraudulent claims were made for this stuff to the effect that it would correct the worst cases of constipation, that it was a valuable remedy for the diseases and weaknesses peculiar to females, that it was a remedy for skin diseases, rheumatism, ulceration of the kidneys and bladder, diabetes, syphilis, malaria, milk leg and various other conditions. The company pleaded guilty and was fined \$50.—[*Notice of Judgment No. 4673.*]

Our Standard Remedy.—S. Donovan Swan, who did business under the name "Standard Medical Society" from Baltimore, Md., shipped a quantity of "Our Standard Remedy" to New York. The nostrum was in the form of tablets which, according to the government chemists, contained rhubarb,

senna, scoparius, licorice, red pepper and some ammonia compound with indications of aloes. The label conveyed the impression that these tablets were an effective remedy for rheumatism, kidney disorders, neuralgia, dyspepsia, chills and fever, female disease, erysipelas, etc., claims that the government declared recklessly and wantonly false and fraudulent. Swan would neither affirm nor deny his guilt. He was fined \$15.—[*Notice of Judgment No. 4676.*]

Dr. King's Throat and Lung Balsam.—This preparation, alleged to have been prepared by the King Medicine Co., Chicago, Ill., was shipped by the Ritchey Portrait Co. of Chicago to Georgia in violation of the Food and Drugs Act. The stuff was declared misbranded because the claims that it would relieve any ordinary cough or cold as well as any consumptive patient in the last stages of the disease were false and fraudulent. No claimant appeared for the property and the court ordered that it should be destroyed.—[*Notice of Judgment No. 4713.*]

"White Pine Expectorant" and "White Pine Balsam."—These preparations were shipped by the Allan-Pfeiffer Chemical Co., St. Louis, Mo., into the State of Illinois in violation of the Food and Drugs Act. The federal chemists reported that "White Pine Expectorant" and "White Pine Balsam" were each "essentially a sirupy solution containing a small amount of alkaloid (probably morphin), chloroform, alcohol, benzoic acid, and a large amount of plant extractives unidentified." The preparations were declared misbranded because the names indicated to the purchaser that each of the articles contained, as one of its essential ingredients, extract or tar of white pine when, in fact, neither article contained these substances. They were declared further misbranded because the labels contained false and fraudulent therapeutic claims to the effect that the products were effective remedies for consumption and all inflamed conditions of the lungs. The company pleaded guilty and was fined \$40 and costs.—[*Notice of Judgment No. 4913.*]

California Tuna Tonic Tablets.—These tablets were shipped in interstate commerce by the California Good Health Co. of Louisville, Ky. When analyzed by the government chemists they were found to be coated pills containing essentially iron carbonate with a small quantity of nux vomica alkaloids (strychnin, etc.). In the circular around the bottle it was claimed that these pills were a remedy for nervous prostration, spinal affections, rheumatism, partial paralysis, insanity, consumption, leucorrhea, *la grippe* and all diseases of the nervous system. It was on a basis of these preposterous falsehoods that the government declared the pills falsely and fraudulently advertised. The company pleaded guilty and was fined \$25.—[*Notice of Judgment No. 4926.*]

Alorine Antiseptic Suppository.—Henry E. Currey, who did business under the trade name Live and Let Live Drug Co. at Baker, Ore., was charged with shipping this preparation in violation of the federal Food and Drugs Act. The government chemists reported that Alorine Antiseptic Suppository was made of cacao-butter and contained quinin sulphate, boric acid and tannic acid. The circular around the bottle contained the following claims:

"A prompt and effectual Relief for Leucorrhea, . . . Tumors, Polypus, Profuse and Difficult Menstruation, Laceration of Cervix, Gonorrhea, Falling of the Womb, and all Female complaints in General. A remedy of great medicinal value; and has been used in hundreds of the most severe cases, producing instant relief, followed by a speedy cure. . . . Important. The suppositories are a positive preventative and protection from Venereal Diseases. . . ."

The government very naturally declared that these claims were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. Currey pleaded guilty and was fined \$50.—[*Notice of Judgment No. 4929.*]

St. Joseph's Quick Relief.—The Gerstle Medicine Co., Chattanooga, Tenn., shipped this stuff in interstate commerce. "St. Joseph's Quick Relief," when analyzed by the federal chemists, was found to contain 32 per cent. alcohol with Peru

balsam, camphor and red pepper. The claim was made in the trade package that the preparation was an effective and quick remedy for colic, cholera morbus, dysentery, diarrhea, neuralgia, headache, toothache, earache and various other aches. These claims the government declared recklessly false and fraudulent. The company "entered its submission to the information" and was fined \$37.50 and costs.—[*Notice of Judgment No. 4939.*]

"Andrews' Wine of Life Root or Female Regulator" and "Andrews' Wine of Life Root Annex Powders."—These imposingly named products were shipped by Ernest L. Andrews, who traded as the Andrews Manufacturing Co., Bristol, Tenn. The "Female Regulator," according to the federal chemists' analysis, contained over 14 per cent. alcohol, considerable sugar and small amounts of methyl salicylate and tannin. The "Annex Powders" were composed of almost equal parts of common salt and baking soda with a small amount of washing soda. The "Female Regulator" was represented as a remedy for all diseases peculiar to the female sex, as a regulator of all derangements of the menstrual organs, as a panacea for woman's ills, as a remedy for sterility and, in fact, as a cure for all diseases from which women suffer, provided it was used in connection with the "Annex Powders." These claims were declared false and fraudulent. Andrews "entered his submission to the information" and was fined \$50 and costs.—[*Notice of Judgment No. 4943.*]

Clark Stanley's Snake Oil Liniment.—Clark Stanley of Providence, R. I., sold this stuff. It was found by the federal chemists to be nothing more marvelous than a light mineral oil mixed with about 1 per cent. of fatty oil (probably beef fat), red pepper and possibly a trace of camphor and turpentine. It was falsely and fraudulently represented as a remedy for rheumatism, neuralgia, sciatica, sore throat and bunions, and as a cure for partial paralysis and effective to kill the poison from bites of animals, insects or reptiles. Stanley entered a plea of *nolo contendere* and was fined \$20.—[*Notice of Judgment No. 4944.*]

Correspondence

BRITISH CORDIALITY TOWARD M. R. C. OFFICER

To the Editor:—I came over here, sailing about the 20th of July and reaching "Old Blighty" on the ———. We had a foretaste of what was coming in the following incidents. We suddenly awoke one Sunday morning to the thunder of gunfire. About 600 miles off the ——— a submarine came up about ——— behind us and commenced to shell us. Soon we were replying and putting on full steam. Ultimate score was one run for us with no hits on either side. Next day a deckhand reproved the chief gunner for his inaccuracy. He replied somewhat as follows: "You do not understand the science of gunnery, fellow. If our 6-inch shell had hit them square it would have simply put two clean holes in her sides like a punch and they could stuff them up with their coats and go on about their business. We were trying to ricochet a shot into her, by hitting the water first to slow its speed. Then the shell would have had a chance to explode inside of her and blow her up." Quite ingenious as an explanation!

On arriving at a town 24 miles behind the line, we received our first introduction to shell fire. "Good Heavens," I thought, "if this is what happens at this distance, what is the front like?" Three British colonial officers coming along just then and probably seeing the dismay on my face, laughingly dragged me into an officers' club and started a childish game of floor-croquet to make me forget it. They soon succeeded and when the bombardment was finished, went out about their business again.

Since that day the British have given me the most varied experience: four weeks in a base hospital; two weeks in a

casualty clearing station; three months in the various phases of the field ambulance, at a rest station, main dressing station, advanced dressing station and as bearer officer; nearly two months as regimental medical officer and, up to the present, over two months as medical officer to a large artillery school. This position has given me an insight into sanitary problems that probably I should not have otherwise obtained.

And all the way through my associations have been with men of the most splendid type. I came over with some compunction, fearing that as a stranger, I should have a cold and unfriendly time of it. For the first two or three days this impression is confirmed. But it is only temporary. These men are coolly taking your measure or, perhaps, it is shyness. But suddenly the ice breaks and you are one of them.

I wish you could collect further expressions of appreciation for what the British are doing for us of the medical reserve and publish it. I am sure you would find everywhere the same feeling that I possess. Every one whom I have thus far met has been loud in his praise of the kindly hospitality and the keen eagerness to teach us all they possibly can, that our allies have shown us.

GEORGE S. SILLIMAN, Lieutenant, M. R. C., U. S. Army.
B. E. F., France.

RED CROSS RELIEF WORK AT GUATEMALA

To the Editor:—The American Red Cross Relief Commission, sent by the National Red Cross to Guatemala to aid the sufferers of the earthquakes that have destroyed Guatemala City, consisting of Dr. Alvin M. Struse of the Rockefeller Foundation as medical director, Mr. J. J. O'Connor of the Red Cross as relief administrator, Mr. Edward Stuart, who recently was in charge of sanitary work for the Red Cross in Serbia, as sanitary engineer, and Mr. Mayo Tolman of West Virginia as assistant sanitary engineer have organized a large camp for the homeless on the outskirts of the city.

The United States War Department has contributed 4,000 tents for this purpose, and the American Red Cross has sent supplies and medical equipment to the value of \$150,000.

Large quantities of smallpox vaccine and typhoid and paratyphoid vaccine have been sent, and the entire population of the city is being vaccinated. Preventive measures are also being taken against typhus fever and intestinal infections. A temporary water supply to replace the former system, now ruined, is about to be constructed, and the American Red Cross is shipping two chlorination plants for the disinfection of the water.

J. S. HOAGSDON, Guatemala.
Director-General, American Red Cross, Guatemala Relief.

MORE CONTRACT SURGEONS

To the Editor.—A new call for medical men for the Army has gone forth. There are many physicians who are over the age limit and yet who are able to do much work; there are others who have some slight physical defect, others who are financially unable to enlist, and finally a large class of medical teachers, who are practically the cream of the profession, and yet who are urgently needed for the training of medical students. Near many of the cantonments and camps are great medical centers or large cities, and from these a large number of physicians could be recruited for half-time medical work; they could supervise much of the work in the Army camps just as they do in civilian hospitals. Therefore would it not be wise to appoint some of these men, including specialists, as contract surgeons to give a certain proportion of their time to the Army, and to set free for more strictly military work a large number of Army doctors?

H. H. HAZEN, M.D., Washington, D. C.

Syphilis and Infant Mortality.—Official statistics of public charity give a total of 458 children dead in 996 births from syphilitic women who came to be confined in the hospitals of Paris from 1880 to 1885. Proportion of infantile mortality, 40 per cent.—Alfred Fournier, *Social Danger of Syphilis*, p. 22.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 14-15. Sec., Regular Board, Dr. T. J. Stout, Brinkley; Sec., Homeopathic Board, Dr. W. B. Hughes, 900 Scott St., Little Rock; Sec., Eclectic Board, Dr. C. E. Laws, Ft. Smith.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

Colorado January Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 8, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 6, including 4 osteopaths, passed, and 3, including 1 osteopath, failed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists	(1915)	78.2
Ohio State University College of Medicine	(1917)	89.2
FAILED			
University of Alabama	(1900)	*
Kansas City College of Medicine and Surgery	(1917)	71.1
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Columbian University	(1899)	Illinois
Rush Medical College	(1904)	Wisconsin
College of Physicians and Surgeons, Chicago	(1905)	Illinois
.....	(1910)	Iowa
Iowa State University of Iowa College of Medicine	(1914)	Iowa
Hamline University	(1909)	Minnesota
Barnes Medical College	(1899)	Illinois
Marion-Sims College of Medicine	(1892)	Missouri
John A. Creighton Medical College	(1909)	Nebraska
Long Island College Hospital	(1893)	New York
Jefferson Medical College of Philadelphia	(1898)	New Mexico
Medico-Chirurgical College of Philadelphia	(1912)	Nevada

* No grade given.

District of Columbia January Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Jan. 8-10, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. One candidate was licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1917)	76.2, 83.3
Howard University	(1916)	75.7, 81.3
Chicago College of Medicine and Surgery	(1915)	82.4
Harvard University	(1916)	81.2
Michigan College of Medicine and Surgery	(1904)	76
FAILED			
St. Louis College Medical School	(1894)	70
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Howard University	(1914)	W. Virginia

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary of the Michigan Board of Registration in Medicine, reports that 5 candidates were licensed through reciprocity from Jan. 8 to 23, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1912)	Illinois
Northwestern University	(1906)	Illinois
University of Illinois	(1916)	Illinois
Vanderbilt University	(1917)	Tennessee
Marquette University	(1916)	Wisconsin

Minnesota January Examination

Dr. Thomas McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, Jan. 2-4, 1918. The examination covered 15 subjects and included 80 written questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Nine candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University	(1917)	88
Rush Medical College	(1917)	85
Bowdoin Medical School	(1917)	78
University of Nebraska	(1917)	83
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University	(1901) Illinois;	(1908) N. Dakota
Rush Medical College	(1911) (1913)	Illinois
University of Michigan Medical School	(1912)	Michigan
John A. Creighton Medical College	(1916)	Nebraska
University of Nebraska	(1906)	Nebraska
University of Pennsylvania	(1911)	N. Carolina
Milwaukee Medical College	(1910)	Wisconsin

Oklahoma January Examination

Dr. J. J. Williams, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 8-9, 1918. The examination covered 13 subjects and included 90 questions. An average of 70 per cent. was required to pass. Three candidates were examined, including 1 osteopath, all of whom passed. Twenty-four candidates, including 5 osteopaths, were licensed through reciprocity. Eight candidates, including 1 osteopath, were granted reregistration licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Memphis Hospital Medical College	(1908)	75
University of West Tennessee	(1916)	76
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago Physio-Medical Institute	(1890)	Missouri
College of Phys. and Surg., Chicago	(1890)	Arkansas
College of Physicians and Surgeons, Keokuk	(1882)	Iowa
University of Kansas	(1906)	Kansas
University of Louisville	(1911)	Kentucky
Tulane University	(1893) (1902)	Texas
College of Phys. and Surg., Baltimore	(1905)	W. Virginia
St. Louis College of Physicians and Surgeons	(1912)	Tennessee
University Medical College of K. C.	(1908)	Kansas
Washington University	(1915)	Missouri
Lincoln Medical College	(1898)	Nebraska
Syracuse University	(1875)	Kansas
Cleveland College of Physicians and Surgeons	(1903)	Ohio
Memphis Hospital Medical College	(1909)	Tennessee
University of Nashville	(1903)	Arkansas
Fort Worth School of Medicine	(1901)	Texas
McGill University	(1887)	Kansas

Wisconsin January Examination

Dr. J. M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the practical and written examination held at Madison, Jan. 10, 1918. The examination covered 24 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 13 candidates examined, 12 passed and 1 failed. Four candidates were licensed through reciprocity, and 1 candidate was granted a reregistration license. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1915)	89.5
Chicago Coll. of Med. and Surg.	(1912) *; (1914) 85; (1915)	80
Rush Medical College	(1916)	92.5
University of Illinois	(1916)	82
Harvard University	(1917)	86
New York Homeo. Med. Coll. and Flower Hosp.	(1917)	85.5
University of the City of New York	(1885)	78
Vanderbilt University	(1916)	88.5
Marquette University	(1917)	87
University of Christiania	(1916)	75

FAILED			
Chicago College of Medicine and Surgery	(1915)	*
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons	(1899)	Georgia
Bennett Medical College	(1914)	S. Dakota
St. Louis University	(1915)	Iowa
National University, Athens	(1909)	Illinois

* No grade given.

Book Notices

A CLINICAL MANUAL OF MENTAL DISEASES. By Francis X. Dercum, A.M., M.D., Ph.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Second edition. Cloth. Price, \$3.50 net. Pp. 497. Philadelphia: W. B. Saunders Company, 1917.

This edition does not materially differ from the first, although it has been revised and to some extent enlarged and altered. It remains a good descriptive textbook. The author's strong points are delineation of clinical types and therapeutic procedures. His weak points are psychology (normal and abnormal) and, consequently, classification. The book aims to be a practical guide for students and practitioners, and it is; but with a somewhat loose or superficial psychology, and a classification here and there a bit careless, it is a guide that might occasionally lead one astray. To write about the insanity of the special fears, the insanity of indecision, and the insanity of deficient inhibition might easily mislead the inexperienced, even though the description of the patients is good, for these are not insanities at all. On page 195 the author makes the common though radical error of confusing phobia with impulse. In the chapter on psychologic interpretation of the symptoms he gives an outline of the principles and technic of freudian psychanalysis which is as fair as could be expected from an avowed opponent. It cannot be assumed to be such as would satisfy freudians. Obviously, the chapter on treatment is the result of experience and not of theory; consequently, it is good. Such details as methods of feeding and alternation of nurses will be of immediate and practical value to the practitioner. In conclusion, the reviewer is impelled to remark that to criticize a textbook on psychiatry is superlatively easy; to write a good one, exceedingly difficult.

WAR NURSING. A Text-Book for the Auxiliary Nurse. By Minnie Goodnow, R. N., War Nurse in France. Cloth. Price, \$1.50 net. Pp. 172, with 120 illustrations. Philadelphia: W. B. Saunders Company, 1917.

This book is intended to supply the demand for a work on nursing as applied to war. While nursing and the fundamental principles governing the work are the same in civil as well as in base hospitals at the front in a war, at the same time there is a decided variance not only in the radically different conditions in surroundings, but also in that all the patients are soldiers. This fact is emphasized in the first sentence of the book: the relationship between the sick man and his nurse is one that does not exist in ordinary life. Of course there is a difference in the hospital itself, and this difference is described. The nurse, like every one else, is subject to military rules and regulations, and she must accept conditions in this regard that she might not be willing to accept in private life. She must obey without protest or attempt at evasion. "She must be a good soldier, uncomplaining, unquestionably obedient." But she has her satisfaction in that "patients are subject to the orders of the nurse, acting under the medical officers or charge nurse." While intended specifically for war nursing, this book contains information and suggestions that will be found of very practical value to all nurses, for, as we have stated, nursing is the same to a great extent no matter whether in a war or in a civil hospital. The book is full of good, common sense, of practical instruction and of sound advice. It is also well illustrated.

ORAL ROENTGENOLOGY. A Roentgen Study of the Anatomy and Pathology of the Oral Cavity. By Kurt H. Thoma, D.M.D., Lecturer on Oral Histology and Pathology, Harvard University Dental School. Cloth. Price, \$4 net. Pp. 213, with 311 illustrations. Boston: Ritter & Co., 1917.

This book is a roentgenographic atlas consisting of 311 halftone reproductions of roentgenograms of the teeth and maxillary bones, and thirty-five pages of text. It is divided into four parts: (1) studies of the normal tissues; (2) studies of pathologic oral conditions; (3) use of roentgenograms as an aid in treatment, and (4) examination of the oral tissues in somatic disease. The first part illustrates the development of both the temporary and the permanent teeth, and the structure of the several regions of the maxillae

and mandible. In the second part there are forty-three illustrations of unerupted and misplaced teeth, mostly lower third molars and upper cuspids; forty-one in the group illustrating alveolar abscess, twenty-seven in the group illustrating chronic pericementitis, three of fractures of the mandible, two of odontoma, and eleven of various types of cysts. The third part is devoted almost entirely to root canal fillings, and a number of groups showing alveolar abscesses, the condition immediately after amputation of root apexes, and at subsequent examinations. Brief case histories accompany many of the illustrations and add to their interest. Most of the illustrations appear to be unusually good reproductions of the roentgenograms. The book would be of greater value if both the text and the case histories were extended. Four new terms are used: radiability, the property of an object to transmit the ray; radioparent, offering no barrier to the ray; radiolucent, offering slight resistance, and radiopaque, impervious to the ray.

SOINS OCULAIRES À L'USAGE DES INFIRMIÈRES. Par H. Coppez, Agrégé à l'Université libre de Bruxelles, et A. Van Lint, Chef de Service à la Policlinique de Bruxelles. Paper. Pp. 186, with 114 illustrations. Paris: Masson & Cie, 1916.

This small French volume, which might be compared to the various compends published in the English language, is profusely illustrated, many of the illustrations admirably portraying the subject matter. The book is divided into four parts. The first part describes the anatomy and methods of examination of the eye. The second part is devoted to therapeutics in general, explaining the use of bandages, thermotherapy, electrotherapy, massage, cupping, etc. The third part deals with surgical technic, preparation of the patient, the operating room, care of instruments, and post-operative treatment. The fourth part contains brief descriptions of special conditions, tells how to handle children and emergency cases, gives directions for instructing the patient how to insert and remove an artificial eye, and finally enumerates a list of the medicines and instruments most commonly used. The book is a multum in parvo, and will serve as a handy reference book to oculists engaged in dispensary practice.

Medicolegal

Liability for Cataract Where No Operation Is Had

(*Joliet Motor Co. vs. Industrial Board et al. (Ill.)*, 117 N. E. R. 423)

The Supreme Court of Illinois reverses a judgment that confirmed an order of the industrial board sustaining an award to one Goodwin of \$9 per week for 100 weeks for complete loss of sight of his left eye, to be paid by the Joliet Motor Company, the board taking the position that it had no power to force an operation for the removal of a cataract. The court says that Goodwin, while in the employ of the motor company, was injured, May 2, 1914, by a particle of steel entering his left eye; that a cataract gradually formed on the eye; and that Aug. 18, 1915, fifteen months after the accident, was fixed as the time when there was an entire loss of sight. The evidence was that an operation for the removal of a cataract is neither serious nor dangerous to an ordinary person in good health, and a very large majority of such operations are successful. There was a good probability of recovering normal vision for ordinary purposes by removal of the cataract, and the industrial board found that Goodwin ought to have the operation performed. The fact that the board had no power to force him to submit to an operation did not determine the question involved, which was whether the total loss of sight was attributable to the accident, which caused the slow growth of a cataract, or to an unreasonable refusal of Goodwin to have the cataract, which caused the loss of vision, removed. The statutory provision for reducing or suspending compensation if an employee shall persist in insanitary or injurious practices, which tend either to imperil or to retard his recovery, or shall refuse to submit to such medical or surgical treatment as shall be reasonably essential

to his recovery, does not apply to an original application for compensation on account of an entire loss of the sight of an eye when the question to be decided is whether that loss is due to an unreasonable refusal to remove the cause. The evidence was that the proposed operation would not be attended with any risk, and appeared to be such as any reasonable man would take advantage of, if he had no one against whom he could claim compensation, and the board found that it was the duty of Goodwin to have the operation performed. Under that finding the refusal of Goodwin was unreasonable, and the continued loss of sight should be attributed to such refusal, and not to the accident. The order of the board was not consistent with its finding. If the operation for the loss of sight should be had, and prove unsuccessful, the Joliet Motor Company would be liable for the loss of sight, as well as the surgical and hospital services necessary for the operation and the treatment already received; but, if successful, its liability would be for the temporary loss of time and treatments had, and surgical and hospital expenses necessary for the operation, and if the operation should not be a substantial success there would be a different basis of compensation from a case of total loss of eyesight. It was urged that no claim for compensation was made on the Joliet Motor Company until after the expiration of more than six months after the accident; but the foreman knew of the accident when it occurred, and afterward the company's manager offered Goodwin \$200 in settlement of the injury. Goodwin told the secretary or treasurer that he was going to look to the company to reimburse him, and the manager said that was all right, and advised him to take care of the eye. The notice was sufficient.

Wife's Separate Estate Obligated to Pay for Medical Services

(*Charron v. Day* (Mass.), 117 N. E. R. 347)

The Supreme Judicial Court of Massachusetts overrules exceptions to a finding for the plaintiff in this action by a physician against an executor to recover for services rendered to the defendant's testatrix during a period of years prior to her decease. The court says that the testatrix was then a married woman living with her husband, who worked for the support of the family and furnished her the money with which she paid the household bills, including certain cash payments to the plaintiff.

The law implies an obligation on the part of the husband to pay for medical attendance rendered to his wife. But under present statutes the wife also may incur an obligation to pay for such attendance. Massachusetts Statutes of 1910, Chapter 576, whereby a married woman may be held liable under stated conditions jointly with her husband for debts for necessities not exceeding \$100 in value, have no application to the facts of the case at bar. But a married woman may bind her separate estate to pay for necessities furnished to her by an express promise or by conduct and words from which an intentional obligation to that effect may be inferred. The auditor's findings bearing on this point were that:

"No express agreement was made by Mrs. Day to pay Dr. Charron for his services. . . . Mrs. Day often told Dr. Charron that there would be property enough left by her after her death to pay him and that he would get his pay. . . . All payments made on account of this bill were cash with the exception of one item of credit, which was one load of hay, Dec. 5, 1910, \$10. Mrs. Day owned the land from which this hay was cut and knew of the transaction. . . . His charges were made against Mrs. ——— Day and whenever payments were made on account of his bill Mrs. Day made them or they were made by her direction," presumably, however, out of money furnished by her husband. "I do not find that . . . she knew the amount of Dr. Charron's charges against her, nor that she knew that Dr. Charron was charging her for services to other members of the family, nor do I find that there was ever any promise to pay on her part any bill of Dr. Charron during her lifetime, but that she told the doctor that, if you do not get your money now, you will some time after my death. . . ."

The finding was against the plaintiff so far as services rendered to other members of the family were concerned, and no question arose on that point.

The request of the defendant for a ruling that the plaintiff could not recover was denied rightly in view of these findings

of fact. The testatrix knew the attendance was rendered to her and apparently knew that the charges were made against her. One credit on the account was made seemingly out of her property with her knowledge and consent. The finding that there was no "express agreement" on her part to pay must be considered in connection with the further finding that she said to the doctor that she would leave property enough to pay the bill, and that he would get his pay after her death. The fair implication of these words might reasonably be found to be that she intended him to understand that her estate should be bound to pay his charges, if they were not paid before her decease. If this was so, then it would be equivalent to a direct promise to pay the debt after her death. A contract to pay money after one's own death is valid.

Cross-Examination Allowed as to Previous Ailments

(*Lampel v. Goldstein et al.* (N. Y.), 167 N. Y. Supp. 576)

The Supreme Court of New York, Appellate Term, First Department, says that, in this action to recover damages for personal injuries, the plaintiff's physician testified that he treated her for about two weeks after the accident for contusions and lacerations, and for a hysterical and nervous condition. He further testified, on cross-examination, that he had treated her professionally before the accident and also treated her after the expiration of the two weeks. The trial court, however, refused to allow the defendants to question the physician about the nature and symptoms of the ailments for which he treated the plaintiff shortly before the accident and shortly after the two weeks following the accident, apparently basing its ruling on the question of privilege. This was clearly error, as, the physician having been called as a witness by the plaintiff, the defendants had the right to cross-examine him about the other ailments from which the plaintiff had suffered before the accident, and to bring out, if possible, that the hysterical and nervous condition treated by him after the accident was due to the previous ailments.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.
- Alpha Omega Alpha Society, Chicago, June 10.
- American Climatological and Clin. Assn., Boston, June 5-6.
- American Dermatological Association, Philadelphia, May 23-25.
- American Gastro-Enterological Association, Atlantic City, May 6-7.
- American Gynecological Society, Philadelphia, May 16-18.
- American Laryngological Association, Atlantic City, May 27-29.
- Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
- American Medico-Psychological Association, Chicago, June 4-7.
- American Neurological Association, Atlantic City, May 9-10.
- American Orthopedic Association, Washington, D. C., April 22-23.
- American Otological Society, Atlantic City, May 28-29.
- American Pediatric Society, Lenox, Mass., May 27-29.
- American Proctologic Society, Chicago, June 10-11.
- American Surgical Association, Cincinnati, June 6-8.
- American Therapeutic Society, Richmond, Va., June 7-8.
- Arizona Medical Association, Phoenix, April 24-25.
- Arkansas Medical Society, Jonesboro, May 7-9.
- Association of American Physicians, Atlantic City, May 7-8.
- Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
- Connecticut State Medical Society, Hartford, May 15-16.
- Illinois State Medical Society, Springfield, May 21-23.
- Iowa State Medical Society, Fort Dodge, May 8-10.
- Kansas Medical Society, Kansas City, May 1-3.
- Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
- Massachusetts Medical Society, Boston, June 18-19.
- Michigan State Medical Society, Battle Creek, May 7-9.
- Mississippi State Medical Association, Jackson, May 14-15.
- Missouri State Medical Association, Jefferson City, May 6-8.
- Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
- Nebraska State Medical Association, Omaha, May 7-9.
- New Hampshire Medical Society, Concord, May 15-16.
- New Jersey Medical Society, Spring Lake, June 25-26.
- New York State Medical Society, Albany, May 21-24.
- North Dakota State Medical Association, Fargo, June 19-20.
- Oklahoma State Medical Association, Tulsa, May 14-16.
- Oregon State Medical Association, Portland, June 27-29.
- Rhode Island Medical Society, Providence, June 6.
- South Dakota State Medical Society, Mitchell, May 21-23.
- Texas State Medical Association, San Antonio, May 14-16.

Current Medical Literature**AMERICAN**

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March, 1918, **23**, No. 2

- 1 Formation and Structure of Zona Pellucida in Ovarian Eggs of Turtles. A. Thing, Cleveland.—p. 237.
- 2 Fontanella Metopica and Its Remnants in an Adult Skull. A. H. Schultz, Washington, D. C.—p. 259.
- 3 Isolation, Shape, Size and Number of Lobules of Pig's Liver. F. P. Johnson, St. Louis.—p. 273.
- 4 Brachial Plexus of Nerves in Man, Variations in Its Formation and Branches. A. T. Kerr, Ithaca, N. Y.—p. 285.
- 5 Age of Human Embryos. F. P. Mall, Baltimore.—p. 397.
- 6 Determination of Size of Heart by Means of Roentgen Rays. C. R. Bardeen, Madison, Wis.—p. 423.

American Journal of Ophthalmology, Chicago

March, 1918, **1**, No. 3

- 7 Satisfactory Operation for Muscle Shortening or Advancement. W. B. Lancaster, Boston.—p. 161.
- 8 Secondary Optic Atrophy Due to Gassing. W. E. Kershner.—p. 168.
- 9 Latent Nystagmus. M. W. Jacobs, St. Louis.—p. 171.
- 10 Congenital Paralysis of External Rectus Muscle. W. H. Crisp, Denver.—p. 172.
- 11 Operation for Extraction of Lenses Fully Dislocated into Vitreous. H. S. Paine, Glens Falls, N. Y.—p. 177.
- 12 Theory as to Etiology of Glaucoma. R. S. Lamb, Washington, D. C.—p. 183.
- 13 *The Eye in Dementia Praecox. F. F. Teal, Lincoln, Neb.—p. 185.
- 14 Artificial Daylight Illumination for Perimetric Study and General Office Use. L. C. Peter, Philadelphia.—p. 189.

13. **Eye in Dementia Praecox.**—Teal's observations include an examination of fifty-three cases of dementia praecox and thirteen cases of manic-depressive insanity. The most constant feature of the change in retinal appearance was the dilated and sometimes tortuous condition of the veins, together with the contracted arteries. The disk at times was of a normal appearance, while at others it would range from a hyperemic condition to a quite well marked papillitis, and occasionally the inner side was congested, and the temporal side pale. The cupping was normal in 40 per cent., diminished in 45 per cent. and filled in 15 per cent. The fields were examined in 15 selected cases of dementia praecox in the more recent stages of the disease. The charts showed in the majority of instances the concentrically contracted field for form and color, with frequent interlacing of the color fields. The contraction ranges from slightly less than normal to 30 degrees, which is practically the same result shown in the investigation of the others mentioned. The manic depressives showed the cup filled with deep congestion, in 35 per cent. and partially filled in the remainder, even to slight elevation.

American Journal of Public Health, Boston

March, 1918, **8**, No. 3

- 15 Production and Conservation of Food Supplies. P. H. Bryce, Ottawa.—p. 185.
- 16 Influence of Heat on Growth Promoting Properties of Food. E. V. McCollum, Baltimore.—p. 191.
- 17 Present Status of Preservation of Food by Canning, and Possibilities of Increase. H. Burden, Washington, D. C.—p. 195.
- 18 Municipal Food Departments in Modern War. O. Salthe, New York.—p. 197.
- 19 Fish Canning Industry. C. M. Hilliard, Boston.—p. 202.
- 20 Fruit and Vegetable Dehydration from Technical Standpoint. C. V. Ekroth, New York.—p. 205.
- 21 Retail Distribution and Marketing. M. Talbot, Chicago.—p. 208.
- 22 Problems of Canning Operations. W. D. Bigelow, Washington, D. C.—p. 212.
- 23 Bacteriology of Swelled Canned Sardines. W. Sadler, St. Andrews, N. S.—p. 216.
- 24 Cold Storage; Its Capabilities and How to Best Utilize and Extend Them. F. A. Horne, New York.—p. 221.
- 25 Milk Standards. C. E. North, New York.—p. 228.
- 26 Uniform Statistics of Mental Diseases. H. M. Pollock.—p. 229.

Arkansas Medical Society Journal, Little Rock

March, 1918, **14**, No. 10

- 27 Colon, Reservoir of Infection. M. G. Thompson, Hot Springs.—p. 196.

Boston Medical and Surgical Journal

March 28, 1918, **178**, No. 13

- 28 Place of Home, Dispensary, Sanatorium or Hospital in Treatment of Tuberculosis (Value of Diet, Rest, Fresh Air, etc.) E. O. Otis, Boston.—p. 417.
- 29 Some Modern Medical Problems. T. Leary, Boston.—p. 422.
- 30 Revised Ideas Concerning Foot Defects and Orthopedic Footwear. H. W. Marshall, Boston.—p. 428.
- 31 Dispensaries in Massachusetts, Particularly in Boston. M. M. Davis, Jr., Boston.—p. 432.
- 32 *Possible Nature of Measles. L. D. Bristol, Augusta, Me.—p. 437.

32. **Nature of Measles.**—Bristol's suggestion that measles is nothing more than the manifestation of a pneumococcic anaphylaxis is worthy of consideration, as is also the suggestion that scarlet fever is dependent on a streptococcic anaphylaxis.

Journal of Biological Chemistry, Baltimore

March, 1918, **33**, No. 3

- 33 Foam Inhibitor in Van Slyke Amino Nitrogen Method. H. H. Mitchell and H. C. Eckstein, Urbana, Ill.—p. 373.
- 34 *Blood Fat and Lipoids of Dog Before and After Production of Experimental Anemia. H. Dubin, Philadelphia.—p. 377.
- 35 *Animal Calorimetry. Influence of Mechanical Work on Protein Metabolism During Height of Meat Digestion in Dog. H. V. Atkinson, New York.—p. 379.
- 36 Direct Determination of Urea and Ammonia in Placenta Tissue. F. S. Hammett, Boston.—p. 381.
- 37 Comparison of Glucose and Cholesterol Content of Blood. F. H. McCrudden and C. S. Sargent, Boston.—p. 387.
- 38 *Analysis of Milk Secreted by Suckling Doe Kid. R. L. Hill, College Park, Md.—p. 391.
- 39 Catalase Content of Ascaris Serum, with Suggestion as to Its Role in Protecting Parasites Against Digestive Enzymes of Their Hosts. T. B. Magath, Chicago.—p. 395.
- 40 *Fatty Acids in Human Blood in Normal and Pathologic Conditions. F. A. Csonka, Pittsburgh.—p. 401.
- 41 Biologic Analysis of Pellagra Producing Diets. Nature of Dietary Deficiencies of Diet Derived from Peas, Wheat Flour, and Cottonseed Oil. E. V. McCollum, N. Simmonds and H. T. Parsons, Baltimore.—p. 411.
- 42 Structure of Yeast Nucleic Acid. Ammonia Hydrolysis. P. A. Levene, New York.—p. 425.
- 43 Detailed Method for Preparation of Histidin. H. M. Jones, Chicago.—p. 429.
- 44 Growth of Chickens in Confinement. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 433.
- 45 Effects of Electrolytes on Gelatin and Their Biologic Significance. Effect of Salts on Precipitation of Acid and Alkaline Gelatin by Alcohol. Antagonism. W. O. Fenn, Cambridge, Mass.—p. 439.
- 46 *Effect of Potassium Bromate on Enzyme Action. I. S. Falk and C. E. A. Winslow, New Haven, Conn.—p. 453.
- 47 Cell Penetration by Acids. Penetration of Phosphoric Acid. W. J. Crozier.—p. 463.
- 48 *Studies of Experimental Scurvy. Influence of Grains, Other Than Oats, and Specific Carbohydrates on Development of Scurvy. W. Pitz, Madison, Wis.—p. 471.
- 49 Chemical Study of Food Fishes. Analysis of Twenty Common Food Fishes with Especial Reference to Seasonal Variation in Composition. E. D. Clark and L. H. Almy, Philadelphia.—p. 483.
- 50 Method for Preparation of Taurin in Large Quantities. C. L. A. Schmidt and T. Watson, Berkeley, Calif.—p. 499.
- 51 Elimination of Taurin Administered to Man. C. L. A. Schmidt, E. von Adelung and T. Watson, Berkeley, Calif.—p. 501.
- 52 Synthesis and Oxidation of Tertiary Hydrocarbons. P. A. Levene and L. H. Cretcher, Jr., New York.—p. 505.
- 53 Copper-Phosphate Mixtures as Sugar Reagents. Qualitative Test and Quantitative Titration Method for Sugar in Urine. O. Folin and W. S. McEllroy, Boston.—p. 513.
- 54 Determination of Lactose in Milk. O. Folin and W. Denis, Boston.—p. 521.
- 55 Nitrogen Content of Bacterial Cells. H. C. Bradley and M. S. Nichols, Madison, Wis.—p. 525.
- 56 Ionization of Proteins and Antagonistic Salt Action. J. Loeb, New York.—p. 531.
- 57 Study of Nonprotein Nitrogen of Wheat Flour. M. J. Blish, Bozeman, Mont.—p. 551.

34. **Fat and Lipoids of Dog's Blood Before and After Experimental Anemia.**—The results obtained by Dubin are in accord with the findings of Bloor in pernicious anemia associated with carcinoma of the stomach.

35. **Animal Calorimetry.**—It is clear from Atkinson's work that mechanical work has no influence on the hourly rate of absorption of protein or on the intensity of the hourly metabolism of protein in a dog which has been given meat in large quantity.

38. **Analysis of Doe's Milk.**—A 4 months old virgin doe kid spontaneously commenced to secrete milk having all the

characteristics, properties, and chemical composition of the milk secreted by its mother and other goats under observation. At no time, from the earliest secretion of milk to the present time, has there been any colostrum secreted. Hill thinks that this would indicate that the secretion of colostrum is associated with and possibly is produced by the cessation of pregnancy and may not occur in lactation not associated with pregnancy.

40. Fatty Acids in Human Blood.—Csonka states that unsaturated fatty acids are a product of normal metabolism, being present in normal human blood, in which they form 48.0 per cent. of the total fatty acids. Judged by their iodine absorption power there are, in addition to oleic acid, other unsaturated fatty acids both higher and lower than oleic, although in small amounts. The iodine numbers of the unsaturated fatty acids in pathologic conditions are generally higher than in normal individuals, especially in cases with low hemoglobin values. As such acids exist in normal human blood as well as in pathologic conditions without anemia, Csonka says, it is necessary to look further for the primary cause of toxic hemolysis.

46. Effect of Potassium Bromate on Enzyme Action.—The authors found that potassium bromate appears to exert consistently favorable influence on the digestion of casein by trypsin in vitro in the dilutions studied, the action being most marked at bromate concentrations of 1 part in 100,000 to 1 part in 200,000. Potassium bromate in concentrations of 1 part or more in 10,000 appears to exert a slight inhibitive influence on the digestion of casein by pancreatin, while in higher dilutions (1 part in 200,000 or 1 part in 250,000) it appears to exert a stimulating action.

48. Studies of Experimental Scurvy.—Pitz succeeded in producing scurvy in the guinea-pig by feeding a ration of unmilled grains and milk.

Journal of Urology, Baltimore

February, 1918, 2, No. 1

- 58 *Chemical Blood Observations in Urologic Cases. J. B. Squier and V. C. Myers, New York.—p. 1.
59 Operative Technic of Lithotomy in Eighteenth Century. C. G. Cumston, Geneva, Switzerland.—p. 23.
60 *Employment of High Frequency Current for Extraction of Calculi Incarcerated in Lower End of Ureter. H. H. Young, Baltimore.—p. 35.
61 Device Facilitating Introduction of Cystoscope in Certain Difficult Cases. W. A. Frontz, Baltimore.—p. 39.
62 *Absorption of Drugs and Poisons from Bladder and Urethra. Absorption of Apomorphin and Morphin. D. I. Macht, Baltimore.—p. 43.

58. Chemical Blood Observations in Urologic Cases.—Observations are reported by Squier and Myers on seventy-five cases divided as follows: Fifty-eight cases with prostatic obstruction, seven nephrectomy cases, one double decapsulation in a case of bichlorid poisoning and nine miscellaneous urologic cases. Data have been collected on these cases for the past three years. Emphasis is placed particularly on the usefulness of the urea nitrogen estimation. Since an appreciable retention of creatinin does not occur until the impairment in renal function is advanced, it would appear to be of decidedly less value as a preoperative test than the urea, although a high creatinin, when found, would indicate the inadvisability of operating. In the prostate series, seven cases showing 3.5 mg. or more creatinin were all among the fatal ones. There were several cases in which the determination of the blood sugar data was of special diagnostic significance (diabetes). Excepting these cases, a few others showed blood sugars appreciably above normal (those above 0.16 per cent.), in which glycosuria was not noted. Some of these are associated with the retention phenomenon of advanced nephritis, but a few would appear to be mild cases of diabetes in which the condition had not been disclosed by the urine examination. The authors state that cases showing urea nitrogen figures under 20 mg. per 100 c.c. of blood may be regarded as good operative risks so far as the kidneys are concerned. When the urea nitrogen figures are found between 20 and 30 mg., and especially between 25 and 30, the patient should be operated on with considerable caution

and best after a period of preliminary treatment directed to relieve the nitrogen retention. The gas-oxygen method is the anesthesia of choice. The data recorded indicate that with urea nitrogen figures over 30 the operative prognosis is bad.

60. High Frequency Current.—Young says that the employment of the high frequency current in cases of calculus, incarcerated in the intramural and intravesical portions of the ureter, is successful in enlarging the orifice sufficient to permit its passage. Furthermore this operation is simple, can be carried out without anesthesia, and does not produce more than slight hemorrhage.

62. Absorption of Apomorphin and Morphin.—Macht found that the absorptive power of the posterior urethra is distinctly greater than that of the anterior.

Medical Record, New York

March 30, 1918, 93, No. 13

- 63 Problem of Tuberculosis in Modern Armies at War; Its Study and Solution in Italian Army. A. M. Caccini, New York.—p. 529.
64 Acute Laryngitis with Edema of Glottis; Report of Three Cases Requiring Intubation; Recovery. L. Fischer, New York.—p. 539.
65 Differential Diagnosis and Treatment of Folliculitis and Conjunctivitis. W. M. D'A. Carhart, New York.—p. 540.
66 Use of Hormone Equations in Acute Infectious Diseases. C. R. Carpenter, East San Diego, Calif.—p. 543.
67 Chronic Urethral Discharge. P. S. Pelouze, Philadelphia.—p. 546.
68 Autosensitized Foreign Protein; Claim of Superiority for it as Subcutaneous or Intravenous Injection. W. L. Secor, Kerrville-on-the-Guadalupe, Texas.—p. 548.

Military Surgeon, Washington, D. C.

March, 1918, 42, No. 3

- 69 Malingering in U. S. Troops, Home Forces, 1917.—p. 261. To be continued.
70 *Injuries of Head. H. Gage.—p. 276.
71 *Case for More Efficient Treatment of Light Casualties in Military Hospitals. R. I. Lee.—p. 283.
72 *Ankylostoma Duodenale in U. S. Army. E. McD. Trabue, R. A. Kiely and C. W. Havercampe.—p. 287.
73 Austrian Reserve Hospital. G. J. Korby.—p. 298.
74 Gunshot Fractures of Long Bones of Extremities. H. M. Frost.—p. 306.
75 *Reaction Following Use of Antipneumococcic Serum. A. Friedlander and S. C. Runnels.—p. 320.
76 Lessons Derived from Training of Medical Officers. B. F. Duckwall.—p. 326.

70. Injuries of the Head.—The rules for operating which Gage has laid down for himself are as follows: In all cases of localized pressure, as determined by localized symptoms of paralysis or cortical irritation, operate. In every suspicious border line case, determine condition of bone over suspected area by exploratory incision of scalp. In every depressed fracture simple or compound, with or without symptoms, elevate. In all depressed or perforating wounds remove all sharp spicules of bone that can be felt loose or detached in the wound; leave the edges of the bony opening and the under surface of the skull around it clean and smooth. Remove foreign bodies always if they are likely to cause infection, or if they are giving rise to symptoms—in other cases, for instance, in case of small bullets, remove when possible without too much traumatism to the brain, remembering always that the possibility of such becoming harmlessly encysted, is better than the certainty of destroying important cerebral centers.

England, France and Germany agree that operation should be done as soon as possible after the receipt of injury, but they are equally insistent on getting the wounded back at least to the evacuation hospital if it can be done. After operation they should not be moved again until convalescent, so that if they are primarily evacuated to a field ambulance or field hospital nothing should be attempted there except the shaving, scrubbing, trimming and dressing. They should then be immediately evacuated to a more quiet and permanent hospital where operation should be done at once if indicated. How extensive should the first operation be? Here the English and German are inclined to be rather conservative, while the French are much more radical—all agree that the first thing to be done is to trim off any crushed and infected tissue, so that the danger of sepsis, which is rendered much

greater than in civil life by the nature of the wounds and the delay in transportation, may be minimized. If received at an evacuation hospital the French advocate doing all that is necessary at once—even to removal of foreign bodies. This latter is accomplished after careful roentgen ray localization by the use of the little finger and a gallstone scoop, the wound is closed without extradural drainage and dural defects closed by pieces of fascia or with rubber tissue. Gage prefers the latter.

The English and Germans lay the same stress on thorough removal of devitalized and infected tissue and on closure of wound with only extradural drainage, but are much less inclined to remove deep seated foreign bodies unless indications, that is, symptoms, are very clear. Sergeant and Holmes found the late results of those wounded, evacuated to hospitals, in England so good that they recommended only such surgical interference at the front as may be called for to establish necessary drainage and the healing of the wound. An interesting work, in the way of reconstruction, has been done by the French in filling up defects in the skull with pieces of cartilage taken from the cartilages of the ribs; a shaving $\frac{1}{16}$ to $\frac{1}{8}$ inch thick taken from the rib cartilage, its full width and length if possible, is placed in the defect.

71. Treatment of Light Casualties in Military Hospitals.—

The purpose of Lee's communication is to try to point out the advantages of a first class department devoted to the diagnosis and treatment of these so-called light cases. A proper solution would be to have what is known as an outpatient department, especially designed and adequately officered for the treatment of these cases. In contrast to civilian hospitals, one frequently sees, in the same wards, patients who are critically ill or seriously wounded and those who have little the matter with them, and who in civil life would be treated in an outpatient or dispensary department. It would seem wise to recognize this fact as has been done in many of the large civil hospitals, and to have a somewhat distinct, but at the same time closely related, outpatient or dispensary department for ambulatory patients. By this distinction it would be possible to concentrate special ward attention on the very sick and on the seriously wounded, and likewise, by the furnishing of adequate facilities, to care effectively for ambulatory patients, who are of so great value from a military and economic viewpoint. The ambulatory patients could be adequately housed in barracks with a minimum requirement for nurses and orderlies. This would mean the establishment of an outpatient or dispensary department in connection with every hospital.

The outpatient department should be commodious, built of wood, with adequate light and heat if necessary. It should have adequate facilities for the dressing of all wounds. There should be a room for minor operations, such as the opening of boils, small abscesses, and the removal of subcutaneous foreign bodies. This, in itself, would prevent the overcrowding of the main operating room, which is now inevitable in times of pressure. There should be opportunity for complete physical examinations. The various specialists should have compartments or rooms for their use. Experience has indicated that the usual roentgen ray equipment in the base hospital is hardly adequate to take care of both the severe cases and the light cases. Yet, in connection with the light cases, the determination of the presence or absence of a fracture or foreign body is often the deciding point as to the disposal of the case. It would be well to consider the establishment of a roentgen-ray plant, of relatively small capacity, in direct connection with the outpatient department. This would add greatly to the efficiency of the organization.

72. *Uncinaria* in Army.—Of 6,159 examinations of feces for *uncinaria* eggs made by the authors, 1,504, or 24.4 per cent., were found positive. The work was accomplished in less than a month by a detail of fifteen enlisted men with the cooperation of regimental surgeons in the collecting of specimens and the administration of treatment. Oil of chenopodium was used in approximately 5,000 doses without untoward manifestations. Reexamination of all the positive cases, three weeks after treatment, is now in progress and indicates that good results are to be looked for. A second

treatment has been given in a few cases and a third and fourth is contemplated, until all cases are cleared up as nearly as possible. The outcome of such a survey should result in a more efficient fighting force, a diminished susceptibility to contagious disease among the men and an increase in resistance, should infection be contracted.

75. Reaction Following Use of Antipneumococcic Serum.—

Only twice in a series of 200 cases did the authors see symptoms during the giving of the desensitizing doses. One patient had a slight nausea lasting for ten minutes after the 4 c.c. dose. The other patient had an urticaria over a small area surrounding the site of the 2 c.c. dose. In both cases the reaction following the therapeutic dose was very mild. For treatment 100 c.c. of serum is the dose usually used. This is diluted with 100 to 150 c.c. of normal salt solution, heated to slightly more than body temperature and injected slowly into the vein, the conducting tubes being warmed with hot-water bottles. It is the endeavor to inject the serum so slowly that half an hour will be consumed in the process. The reaction that follows is never the same in any two patients, neither is it the same in the patient when the serum is exhibited more than once. A patient having a severe reaction the first time may escape the reaction altogether on repeated doses, or may have a mild reaction or, again, one as severe as in the first instance. Some cases that have little or no reaction on the first dose will show most profound symptoms on the second. The interval of time between doses seems to have no bearing on the reaction with the second dose, although the longest period that has elapsed between doses is ninety-six hours.

The reactions following the use of antipneumococcus serum are so various that one can never be sure just what to expect. The reaction may begin as early as ten minutes after the serum of the final dose begins to enter the vein, or it may be delayed for some time after the treatment is over. The typical reaction may be divided into four stages occurring in rapid succession and a series of secondary symptoms occurring some days later. The first stage may be termed the stage of irritability, the second the stage of shock, the third the stage of hyperpyrexia and the fourth the stage of relaxation. Any of these stages may be very lightly stressed or even absent entirely. If any of the syndrome be absent it is more apt to be the symptoms of shock. The third stage is not always well marked, although some hyperpyrexia is practically always present. Because the reaction starts mildly or severely it does not follow that the subsequent stages are going to develop as initiated.

New York Medical Journal

March 30, 1918, 107, No. 13

- 77 Hay Fever and Asthma. R. A. Cooke, New York.—p. 577.
- 78 Is Early Operation Indicated in Fractures of Spine with Cord Symptoms? A. S. Taylor, New York.—p. 583.
- 79 Pituitary Tumors from Surgical Standpoint of Rhinologist. O. J. Stein, Chicago.—p. 585.
- 80 Ischio-rectal Abscess from Broken Surgical Needle. J. F. Saphir, New York.—p. 589.
- 81 Nauheim Method. N. P. Norman, Watkins.—p. 590. Concluded.
- 82 Correlation of Diagnostic and Musical Ear. C. Hamlin, New York.—p. 597.
- 83 Septic Cellulitis; Report of Case. R. D. Garcin, Richmond, Va.—p. 598.
- 84 Instruction Corps for Medical Reserve Officers and Cadets. C. E. de M. Sajous, Philadelphia.—p. 599.
- 85 Present Status of Pathology of Paratyphoids. C. G. Cumston, Geneva, Switzerland.—p. 603.

New York State Journal of Medicine

March, 1918, 18, No. 3

- 86 Differential Diagnosis of Enlargements of Cervical Lymph Nodes. R. S. Haynes, New York.—p. 91.
- 87 Nose and Throat in Cervical Adenitis. G. B. Wood, Philadelphia.—p. 95.
- 88 Roentgen Therapy in Cervical Adenitis. G. E. Pfahler, Philadelphia.—p. 99.
- 89 Cervical Lymph Adenitis Due to Infections Arising in and About Teeth. T. B. Hartzell, Minneapolis.—p. 103.
- 90 Indications for Removal of Enlarged Cervical Lymph Nodes. C. N. Dowd, New York.—p. 109.
- 91 War! Some of Its Effect on Health of Military and Civil Population Both During and After War. G. W. Goler, Rochester.—p. 113.

Northwest Medicine, Seattle

March, 1918, 17, No. 3

- 92 **Lost Art of Obstetrics.** P. Findley, Omaha.—p. 67.
93 **Analgesics in First Stage of Labor.** R. W. Stearns, Medford, Ore.—p. 71.
94 **Value of Pituitary Extract in Incomplete Abortion and Placenta Praevia.** A. Lipkis, Salt Lake City.—p. 74.
95 **Old Parentage vs. Young Parentage.** C. L. Redfield, Chicago.—p. 75.
96 **Renal Function Tests in Children.** C. U. Moore, Portland, Ore.—p. 78.
97 **Diagnosis and Treatment of Pyelocystitis in Infancy.** C. G. Grulee, Chicago.—p. 82.
98 **Important Phases of Allen Treatment for Diabetes.** A. H. Rowe, Oakland, Calif.—p. 85.
99 **Wassermann Technic.** H. Wehrbein, Butte, Mont.—p. 88.

South Carolina Medical Association Journal, Greenville

March, 1918, 14, No. 3

- 100 **Treatment of Fractures of Elbow Joint.** E. C. Doyle, Seneca.—p. 67.

Surgery, Gynecology and Obstetrics, Chicago

April, 1918, 26, No. 4

- 101 ***Cancer of Stomach.** W. J. Mayo, Rochester, Minn.—p. 367.
102 **Id. A. J. Ochsner, Chicago.**—p. 370.
103 **Restoration and Repair of Wound, Combating Contamination and Infection.** G. W. Crile.—p. 372.
104 **Presentation of Radical Operation for Tuberculosis of Seminal Tract.** H. H. Young, Baltimore.—p. 375.
105 **Cholangiostomy; Report of Case.** R. E. Pasman, Buenos Aires, Argentine.—p. 385.
106 **Elephantiasis Treated by Kondoleon Operation.** W. E. Sistrunk, Rochester, Minn.—p. 388.
107 ***Unusual Skin Infection Due to Bacillus Mucosus Capsulatus Associated with Bladder Drainage after Prostatectomy.** E. A. Graham, Chicago.—p. 394.
108 ***Immediate Surgery of Gunshot Wounds of Cranium.** K. Speed.—p. 396.
109 ***Treatment of Septic Abortion.** E. Ries, Chicago.—p. 400.
110 ***Method of New Joint Formation in Arthroplasty.** D. B. Phemister and E. M. Miller, Chicago.—p. 406.
111 **Case of Primary Hydatid Cysts of Uterus.** A. Turenne, Montevideo, Uruguay.—p. 446.
112 **Paraffin Wax or Closed Method of Treatment of Burns.** W. O'N. Sherman, Pittsburgh.—p. 450.
113 **Treatment of Bunions.** J. L. Porter, Chicago.—p. 460.
114 **Complete Atresia and Disappearance of Vagina in Multipara.** J. F. Baldwin, Columbus.—p. 463.

101. **Cancer of Stomach.**—During a period of twenty years, 651 resections of the stomach for cancer were done at the Mayo Clinic. Of 427 patients operated on more than three years ago who recovered from the operation, 311 have been traced; 120 (38.6 per cent.) were alive three years or more after operation. Of 313 patients who were operated on more than five years ago, 239 who recovered from the operation were traced, and 62 (26 per cent.) of these were alive five years or more after operation. No special effort was made to trace patients after the five-year period, but incidentally it was learned that 35 lived six years or more after operation, 27 lived seven years or more, 18 lived eight years or more, 10 lived nine years or more, 7 lived ten years or more; 5 lived eleven years or more, 3 lived twelve years or more, and 1 lived more than fifteen years after operation.

107. **Skin Infection Due to Bacillus Mucosus-Capsulatus.**—A peculiar ulcerative lesion of the skin following a suprapubic prostatectomy in a man 83 years of age, was found to yield an organism resembling the *Bacillus mucosus-capsulatus*. After running a clinical course of over three weeks with no improvement, it responded quickly to a single cauterization with stick silver nitrate.

108. **Gunshot Wounds of Cranium.**—Of forty-six patients on whom craniotomy was performed following gunshot nine died. None of the patients operated on early developed epilepsy while under observation, but bromids were given as a routine to all who could take them. The author still believes that occipital wounds offer the poorest and frontal the best prognosis on the whole. Considering the variance in mortality where foreign bodies are removed and left in the brain, he is inclined to advocate again their early removal. From the observation of these head wounds, on his own service, and of those of several other surgeons at the clearing stations, Speed believes that much dreaded hernia cerebri

seldom follows early operation. Middle meningeal hemorrhage was encountered six times, with only one death, after operation and ligation. Three of these cases sustained depressed fractures of the skull. Bone sinus injuries were found five times. The frontal and mastoid sinuses were involved. When this complication is present with brain injury, it seems wiser to perform an early radical operation to avoid possible infection from the sinus lining. There was only one death in this group of patients, that was undoubtedly influenced by the presence of other wounds. When the frontal sinus connected with the wounded cortical area it was considered best to remove carefully by gentle curettage all mucous surface and to leave small drains to the depth of the sinus.

With four instances of blood sinus injury, there was but one death. These sinus injuries are extremely interesting on account of the tremendous hemorrhage which arises when depressed bone adherent to the sinus wall is removed. On the whole it appears better to leave depressed bone alone under these conditions and to prefer to take a chance on subsequent septic sinus thrombosis rather than to excite an uncontrollable hemorrhage. Gauze packings or packing with a piece of muscle belly removed under sterile precautions from another part of the patient will sometimes control the bleeding quickly. Another technical possibility lies in inserting fine stitches in the dura about the area which threatens hemorrhage. A suitable piece of fascia lata with muscle adherent on the under surface is prepared from the patient's thigh. One end of each thread of the dural stitches is then caught around the edge of the transplanted fascia and muscle at proper intervals, the depressed bone is removed, and if hemorrhage follows, the transplant is rapidly tied into place to control the leakage. The symptom of generalized muscular rigidity, so indicative of blood sinus injury, was present in two of these patients. Partial aphasia were quite common. They were for the most part motor (ataxic) and less often sensory. No instances of optic amnesic aphasia nor auditory aphasia (word-deafness) were encountered. As expressed elsewhere the author still has doubts about the validity of Broca's speech center in the left third frontal convolution. All instances of aphasia made rapid improvement while under observation, and promised ultimate recovery.

109. **Treatment of Septic Abortion.**—The treatment which Ries recommends and carries out in cases of septic abortion is as follows: If a patient with septic abortion is admitted to the hospital, expectant treatment is followed until the abortion is completed spontaneously. Rectal examination is used exclusively and that as rarely as possible. The patient is kept in bed and on a light diet. If severe or protracted slight hemorrhage makes interference unavoidable, the uterus is packed. The packing is removed after twelve to twenty-four hours and frequently the whole remnants of the abortion come away with the packing. If not, the packing has usually dilated the cervix sufficiently so that the uterus can be emptied manually. Repeated packing is not favored as dangerous in itself. If the uterus is not empty after the removal of the packing, it is emptied preferably by hand, if necessary after additional dilatation with Hegar's dilators and if the hand is insufficient, with the sharp curet. The longer the interval between the last rise of temperature and the operation the better. Packing afterward is avoided, unless necessitated by severe hemorrhage. The uterus is never irrigated. Ergot is given only when hemorrhage exists after complete evacuation of the uterus. Vaginal douches are never given until at least a week after the abortion and then only for subinvolution, not for purulent discharges. If the temperature is normal after the abortion, the patient is allowed out of bed at any time she feels ready, unless she is very anemic. The patient is fed well as soon as possible. The patient is discharged three days after the last rise of temperature, unless anemia, subinvolution, etc., require longer hospital treatment. Rectal examination is repeated before discharge.

110. **New Joint Formation in Arthroplasty.**—The changes which follow resection of the articular surfaces and construction of a new joint were carefully studied by Phemister

and Miller. Dogs were operated on by three methods: the no-flap; free flap; pedunculated flap. The results showed that it matters little in experiments on the normal knee and elbow joints of dogs, whether arthroplasty is performed by the no-flap, pedunculated flap, or free flap method. The flaps when used very largely break down and the newly formed joint is about the same, both structurally and functionally, following the three types of operations. The most important steps are the construction of a well-fitting new joint, the excision of any thickened or obstructing fibrous tissues and proper after-treatment for the maintenance of mobility.

Tennessee State Medical Association Journal, Nashville

March, 1918, 10, No. 11

- 115 Treatment of Chronic Parenchymatous Nephritis. E. R. Zemp, Knoxville.—p. 423.
- 116 Tuberculosis of Bladder. P. Bromberg, Nashville.—p. 429.
- 117 Transfer of Casualties from Front Line Trenches to Evacuation Hospital. W. J. Bell.—p. 438.
- 118 Treatment of Purulent Conjunctivitis. J. T. Herron, Jackson.—p. 445.

Texas State Journal of Medicine, Fort Worth

March, 1918, 13, No. 11

- 119 Amblyopia Ex Anopsia. R. W. Moore, Fort Worth.—p. 381.
- 120 Prolapsed Ovaries; Diagnosis and Treatment. J. H. McLean, Fort Worth.—p. 384.
- 121 Relation of Colonic Stasis to General Diagnosis. H. G. Walcott, Dallas.—p. 385.
- 122 Blood Transfusion. E. L. Goar, Houston.—p. 388.
- 123 Importance to Applicant of Careful Life Insurance Examination. J. H. Vaughn, Liberty Hill.—p. 389.
- 124 Toxic Amblyopia. T. F. Roberts, Paris.—p. 391.

Washington Medical Annals

March, 1918, 17, No. 2

- 125 Metastatic Bone Carcinoma Following Primary Adenocarcinoma of Left Breast. Mediastinal Tumor with Metastases in Thyroid. C. A. Pfender, Washington.—p. 92.
- 126 Two Cases of Uterus Didelphys. S. R. Karpeles, Washington.—p. 95.
- 127 Case of Abdominal Symptoms from Referred Pain. W. J. Mallory, Washington.—p. 99.
- 128 Treatment of Infected Wounds. W. C. Borden.—p. 101.
- 129 Id. W. P. Carr, Washington.—p. 111.
- 130 Two Cases of Phlegmonous Colitis. J. R. Verbrycke, Jr., Washington.—p. 122.
- 131 Cases of Developmental Alexia or Congenital Word Blindness. G. H. Heitmuller, Washington.—p. 124.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 9, 1918, 1, No. 2984

- 1 *Suggestions for Prevention of Postoperative Thrombosis and Embolism. F. McCann.—p. 277.
- 2 *Myomectomy or Hysterectomy. V. Bonney.—p. 278.
- 3 *Laminectomy for Gunshot Wound. D. M. Hughes.—p. 280.
- 4 Five Intestinal Operations on Same Patient. H. Hartley.—p. 282.
- 5 Surgical Work in General Hospital. J. S. Dunne.—p. 283.
- 6 Two Cases of Infected Fractures; Treated by Lane's Plates and Carrel Dressing. J. MacIntyre.—p. 284.
- 7 *Gonorrhea Complicated by Syphilis. N. P. L. Lumb.—p. 285.

1. **Postoperative Thrombosis and Embolism.**—McCann believes that transfixion or ligating blood vessels *en masse* favors the development of postoperative thrombosis and embolism. Statistics favor the view that thrombosis and embolism more frequently follow operation on the female genitalia than in other situations. This preponderance was explained by the nature of the tissue involved, but McCann came to the conclusion that the operative technic must also be at fault. He therefore determined to give up transfixion and to operate anatomically, picking up vessels cleanly and ligaturing them without encompassing masses of tissue. The result has been that he has never had another case of postoperative embolism or thrombosis either in private or hospital practice. He says that "never transfix a vascular area" should become a surgical axiom. By transfixion vessels are liable to be punctured and bleed either externally or into the tissues; the transfixing ligature is tied to arrest the bleeding, and the result may be that the ligature remains in the lumen of the vessels. If this ligature is of doubtful asepticity or

becomes subsequently infected, the natural process of clotting in the vessel may be arrested, the clot liquefying and becoming detached in portions or in its entirety. Although the diminution of sepsis has been a great factor in improving results, yet it is worthy of note that it is not the severe infections that are followed by these troublesome complications, but rather those of a milder type. If a vessel has been punctured the ligature should be withdrawn and the vessel clamped and tied after removal of the blood clot. The object of a ligature is to approximate the coats of a vessel and to keep them in apposition, not to cut them; hence, do not tie or stitch too tightly and cut into blood vessels.

2. **Myomectomy or Hysterectomy.**—Experience has convinced Bonney that the practice of myomectomy as an alternative to hysterectomy should be considerably extended. He now frequently performs the conservative operation with complete success, where a few years ago he would have removed the uterus. When the tumors are small or of moderate size, the proceeding can be carried out very well through a transverse incision across the pubic hair field. This is a great advantage in relatively young women, especially if unmarried, for it leaves no visible scar.

3. **Laminectomy for Gunshot Wound.**—In the three cases reported by Hughes, (a) the paralysis was incomplete in the sense that sphincter trouble was absent; (b) the injury was indirect, and due to damage to the spinal column and not to the cord itself; and (c) recovery was complete. The immediate effects of the operation in restoring or improving the circulation in the cord were not determined in any case. The dura was not opened in any one of the three cases.

7. **Gonorrhea Complicated by Syphilis.**—Lumb emphasizes the fact that modern antisyphilitic treatment at times (1) stirs a latent gonorrhea into activity; (2) leads to the development of complications; (3) renders the gonorrheal lesions very intractable. A patient presenting himself with signs of both syphilis and gonorrhea is commonly given thorough antisyphilitic treatment without delay, while the sum total of the treatment advised for gonorrhea is an irrigation twice a day with permanganate of potassium. This plan is unsatisfactory.

Edinburgh Medical Journal

March, 1918, 20, No. 3

- 8 Gunshot Wounds of Peripheral Nerves, with Reference to Indications for Resection and Suture. E. Bramwell.—p. 147. To be continued.
- 9 Acquired Acholuric Jaundice (Hemolytic Icterus). J. Eason.—p. 158.

Indian Journal of Medical Research, Calcutta

October, 1917, 5, No. 2

- 10 *Two Years Experience of Sodium Gynocardate and Chaulmoograte Subcutaneously and Intravenously in Treatment of Leprosy. L. Rogers.—p. 277.
- 11 Dysentery in Mesopotamia. F. W. Cragg.—p. 301.
- 12 Dysentery in Jails of Eastern Bengal. J. Cunningham and H. H. King.—p. 330.
- 13 Bacteriologic Studies of Cholera-Like Vibrios Isolated from Stools of Cholera Cases in Calcutta. E. D. W. Greig.—p. 340.
- 14 Final Report on Ankylostome Inquiry in Darjeeling District of India. C. Lane.—p. 350.
- 15 *New Species of Spirochete Isolated from Case of Rat-Bite Fever in Bombay. R. Row.—p. 386.
- 16 Summary of Results of Observations on Treatment of Oriental Sore by Antimony Tartarum. E. D. W. Greig.—p. 394.
- 17 *Intravenous Injections of Mercuric Chlorid in Treatment of Enlarged Spleen. E. D. W. Greig and W. D. Ritchie.—p. 401.
- 18 Preparation of Bacteriologic Nutrient Medium by Means of Mineral Acid. T. C. Boyd.—p. 408.
- 19 Etiology, Course and Treatment of Rabic Infection. A. G. McKendrick and C. J. Fox.—p. 413.

10. **Treatment of Leprosy.**—A year's further experience has confirmed Rogers' previous observation that intravenous injections of the sodium salts of the fatty acids of chaulmoogra oil obtained from the seeds of *Taraxogenos kurzii* produce reactions in leprosy tissues with breaking down of the acid-fast bacilli, which reactions are followed by great improvement. The higher melting point acids, which furnish sufficiently soluble salts (melting points of from 49 to 62 C.) are considerably more active than the lower 37 C. melting point acids first used by the author for injection. Subcu-

taneous injections do not produce reactions in the leprosy tissues and are less effective than intravenous ones. Prolonged oral administration in quantities of 20 grains and upward daily has a good effect, especially if intravenous injections have previously been given and also in conjunction with them. Between one and two years were required to cause the lesions to disappear in the successful cases treated by Rogers, but, he thinks, that this period may possibly be reduced by the use of the more active higher melting point preparations, which have only been under trial for the last six months. The lesions have disappeared in 50 per cent. of cases treated within three years of the onset of the disease, including cases treated for only three to twelve months, but in cases of from three to fifteen years' duration, only 25 per cent. cleared up under the treatment. The most active constituent of the oil has not yet been obtained in a pure state.

During the last fourteen months Rogers has employed the intravenous route very extensively, and has now given well over 1,000 intravenous injections of the drug without any ill effects beyond temporary giddiness and headache and occasional localized clotting in the veins, while the results have been most encouraging. The sodium salts of the fatty acids obtained from chaulmoogra seeds are dissolved in water in a strength of 3 per cent., so that 2 c.c. contain 1 grain of the salts, which allows of the ready calculation of the doses in either grains or fractions of a gram. The solution may be sterilized in an autoclave and 0.5 per cent. phenol added, or it may be phenolized first and then heated on a water bath to 100 C. for twenty minutes. Rogers begins treatment with at least half a grain in 1 c.c. and increases by 0.5 to 1 c.c. at a time until 2 to 2½ grains in 4 or 5 c.c. is reached, provided severe giddiness is not produced. The higher melting point preparations are slightly more toxic than the lower ones. The injections may be given once or twice a week, and on the other days 2-grain pills or tablets of the drug may be taken by mouth after meals, beginning with one three times a day and increasing by one daily until ten or twelve are taken each day, as long as the digestion is not disturbed or giddiness produced; some patients are able to take as much as 40 grains in twenty pills daily with advantage. In most of the cases detailed only intravenous injections were given and no pills taken, so that good results can be obtained with the injections alone. This is of importance in leper asylums with strictly limited incomes.

15. Spirochete from Case of Rat-Bite Fever.—The rat-bite fever of the patient under consideration was caused by the inoculation of a specific spirochete by the bite of the rat which had probably a generalized spirochetosis. The spirochete recovered from the human lesion was quite different from any hitherto described, being from 2 to 3 microns in length and showing only two or sometimes three curls. This spirochete was communicable and pathogenic to mice and rats. Before the demonstration of the virus in the papules, the typical paroxysms of the fever with crises and relapses suggested a spirochetel infection clinically, and the subsequent demonstration of the spirochetes in the lesions confirmed the diagnosis. The complete cure after the injection of neosalvarsan and the rapid disappearance of the eruption (on the third day after the injection) is considered by Row to be further evidence of the spirochetel cause of the symptoms in the case under consideration.

17. Mercuric Chlorid in Treatment of Enlarged Spleen.—Fifty cases of chronic malaria with enlarged spleen were treated by Greig and Ritchie with mercuric chlorid and quinin and fifty-four cases with quinin alone, the latter being controls. The procedure was to administer intravenously 11 c.c. of a 1 to 1,000 mercuric chlorid solution in normal saline on alternate days; and a daily dose of 30 grains quinin in three portions was given by the mouth to both injections and controls. The injections covered a fortnight—eight doses being given—and were then stopped, but quinin was continued for another week to all the patients and a final inspection of the spleens was made at the end of the third week. Very few patients had fever and all were on splenic mixture containing 5 grains quinin per dose two days before the test

began. The results of the authors' observations have brought out several points of considerable interest. In the first place, their experience does not entirely confirm the work of the American observers as regards the reduction in size of the spleen by combined treatment with intravenous injections of perchlorid of mercury and quinin, although the combined method of treatment had a greater effect in reducing splenic enlargement than quinin alone. The group on quinin alone had sixteen cases in which treatment failed, while the group on quinin and mercuric injections had only seven failures. Sixteen cases of the combined treatment series showed a two-fingers reduction in size of spleen as compared with eight in the case of quinin alone.

Indian Medical Gazette, Calcutta

December, 1917, 52, No. 12

- 20 Epidemic of Jaundice in Waziristan Field Force. C. H. L. Meyer.—p. 425.
 - 21 Necrosis. Produced by Intramuscular Injections of Strong Solutions of Quinin Salts. A. C. MacGilchrist.—p. 426.
 - 22 Anomalous Type of Kala-Azar. G. D. Price.—p. 427.
 - 23 Presence of an Easily Precipitable Anticomplementary Globulin Like Substance in Human Serum and Its Importance in Diagnosis of Kala-Azar. U. N. Brahmachari.—p. 429.
 - 24 Tuberculin in Dispensary Practice. J. C. Vaughan and G. Das Gupta.—p. 431.
 - 25 Report of Vaccination Carried Out of East Indian Railway Medical Staff Over a Period of Nineteen Years from 1893 to 1913. H. G. Waters.—p. 434.
 - 26 Prevalence of Helminth Infection among Prisoners Admitted in Central Jail, Myingyan. T. V. A. Nambiar.—p. 436.
 - 27 Some Personal Equations and Pathogenic Coefficients in Diabetes. B. N. Anklssaira.—p. 439.
 - 28 Multiple Abscess in Brain. F. F. S. Smith and L. S. Dudgeon.—p. 443.
 - 29 *Palmyra Fiber, as Suturing Material in Place of Silkworm Gut. G. Srinivasamurti.—p. 444.
- January, 1918, 53, No. 1
- 30 Destruction of Rats as Means for Prevention of Plague. G. W. P. Dennys.—p. 1.
 - 31 Three Cases of Actinomycosis Hominis. T. Sur.—p. 5.
 - 32 Case of Actinomycotic Pleuro Mediastinitis. B. Saha.—p. 11.
 - 33 New Operation for Cataract. T. Husain.—p. 12.
 - 34 Rectal Anesthesia; Report of Eighty-Two Cases. R. H. H. Goheen.—p. 17.

29. Palmyra Fiber, Suturing Material in Place of Silkworm Gut.—This fiber is obtained from the fibrous netting that surrounds the bases of the leaves of the toddy palmyras growing luxuriantly on the West Coast, especially Malabar. The fiber is easily obtained and can be had in all required sizes, requires very little preparation before it is ready for use and is easily preserved, keeps well and is easily sterilized, is fairly strong and sufficiently flexible, is phenomenally inexpensive and the supply is well nigh inexhaustible. The author strongly recommends the use of palmyra fiber in all cases in which silkworm gut is used.

Journal of Tropical Medicine and Hygiene, London

March 1, 1918, 21, No. 5

- 35 Tinea Imbricata in South Africa. A. Pijper.—p. 45.

Medical Journal of Australia, Sydney

Feb. 9, 1918, 1, No. 6

- 36 Gunshot Wounds of Knee Joint. F. L. Gill.—p. 102.
- 37 Case of Preputial Calculus. A. Mahon.—p. 105.
- 38 *Two Cases of Ruptured Duodenal Ulcer. L. W. Roberts.—p. 105.

Feb. 16, 1918, 1, No. 7

- 39 Experimental Pathology of Acute Poliomyelitis (Infantile Paralysis). A. W. Campbell, J. B. Cleland and B. Bradley.—p. 123.
- 40 Labor after Decapsulation of Both Kidneys. J. Rosenthal.—p. 128.

Feb. 23, 1918, 1, No. 8

- 41 Anesthetic and Other Notes. R. W. Hornabrook.—p. 143.
- 42 Dermatomyosis in Mice and Men. H. Lawrence.—p. 146.

38. Ruptured Duodenal Ulcer.—An alcoholic dyspeptic, aged 61, had sudden intense general abdominal pain with bilious vomiting. When seen thirty hours later he had an abdominal facial aspect, was perspiring profusely; pulse rate 70; temperature normal; no actual collapse. The abdomen was generally tender with increased pain over and at a level of the umbilicus; right-sided rigidity, more marked at the lower quadrant. His case was regarded as an acute appendicitis. The abdomen was opened forty-eight hours after the

onset by the usual appendix incision, and the appendix, which was in a state of chronic thickening, but quite quiescent, was removed and a quantity of thin creamy fluid with fibrinous flakes evacuated. No free gas was noticeable. A paramedian incision made in the epigastrium revealed a small ruptured ulcer in the anterior part of the first portion of the duodenum and a generalized plastic peritonitis. The duodenal area, the right kidney pouch and the pelvis (through a suprapubic stab) were all drained after closure of the ulcer. The patient progressed well for a fortnight, when he experienced a sudden attack of sharp pain in the left side of the chest. There was detected a slight pleuritic rub. The attack was succeeded by a continuous pulse rate of over 110, and for three nights there was a slight nocturnal rise of temperature to 38 C. Early the next morning he suddenly coughed up quantities of blood-stained pus, and died suffocated in six hours. Permission to perform a postmortem examination was not obtained, and death was certified as having been due to lung abscess, either caused by a septic pulmonary infarct (shown by the pain in the chest five days previously) or rupture through diaphragm of a subphrenic abscess. In the second case the diagnosis lay between an acute appendicitis, a ruptured gastric ulcer and, less probably, an ectopic pregnancy. At operation it proved to be a perforated stomach ulcer, the result of the lifting of a heavy tub.

Archives de Médecine des Enfants, Paris

March, 1918, 21, No. 3

- 43 *Normal Weight of Schoolchildren. J. E. L. Camescasse.—p. 113.
44 *Backward Development of the Bowels. J. Comby.—p. 150.

43. **Weight of Schoolchildren.**—This article analyzes the data at a rural sanatorium and orphan asylum for Paris children; 2,571 boys and 2,506 girls were weighed at regular monthly intervals. Camescasse deduces from his statistics a set of diagrams showing the normal weight at different ages. For example, three girl babies weighing, respectively, 2, 3 and 4 kg. at birth, at the age of 16, each developing normally, should weigh, respectively, 39, 49 and 59 kg. Three boys weighing 2, 3 and 4 kg. at birth, at 16 should weigh 36, 49 and 62 kg. A girl weighing 14 kg. at 4 should weigh 19.1 kg. at 7; 27 kg. at 11; 40 kg. at 14, and 56 kg. at 20. By comparing the actual weight with the standard weight for the age we can detect possibly latent disease, and if the weight does not increase proportionately under hygienic conditions, the outlook is less promising. The two charts he has drawn for girls and boys, and here reproduces, are proving very useful standards for this purpose.

44. **Infantilism of the Intestine.**—Comby does not approve of Stoo's statements in regard to infantilism of the bowel. The fourteen cases he described do not require this label as they fit into the ordinary picture of infants debilitated by digestive disturbances or repeated gastro-enteritis.

Bulletin de l'Académie de Médecine, Paris

Feb. 19, 1918, 79, No. 7

- 45 Significance of Elements of Scapular Girdle in Vertebrates. R. Anthony.—p. 146.
46 Projectile Reaching Right Ventricle from Inferior Vena Cava. F. Menuet.—p. 148.
47 The Spiroscope to Train in Breathing After War Wounds of the Chest. J. Pescher.—p. 151.

Feb. 26, 1918, 79, No. 8

- 48 *Emotive Psychoneuroses; Two Cases. M. de Fleury.—p. 157.
49 *Meningitis in Troops on Active Service. Dopfer.—p. 169.
50 Intravenous Injection of Drugs Insoluble in Water. Chevallier.—p. 171.
51 Discontinuous Chloroform Anesthetization. H. Chaput.—p. 173.
52 Adhesive Plaster Occlusion Treatment of Lupus. Chateaubourg.—p. 174.
53 Appendicitis with Pseudomyxomatous Diverticulum. Villar.—p. 175.

48. **Emotive Psychoneuroses.**—De Fleury agrees with Dupré that besides neurasthenia and hysteria we must accept a third group of psychoneuroses, the emotive type, a constitutional or acquired *émotivité*. They have been classed hitherto mostly as traumatic neuroses, but the traumatism merely reveals or aggravates the constitutional instability. The train

of symptoms from loss of balance in the circulatory, respiratory or digestive system, the tremor, the disturbance in the rhythm of the heart beat, the exaggeration of the reflexes—all this represents an enormous total of automatic neuromuscular activity which has nothing in common with the clinical exhaustion of neurasthenia. The spasmodic constriction of the muscles of the neck, and local spasms elsewhere distinguish the emotive psychoneuroses from hysteria. These two conditions are not only distinct but are separated by a deep chasm, the chasm which parts honest veracity from a morbid tendency to falsehood. With the emotive psychoneurosis the subject is ashamed of his symptoms and seeks to conceal them, while with hysteria, the subject seeks to display them theatrically, and the symptoms vanish when there are no longer any witnesses. This conception of the hyperemotive constitution clears up at once the puzzling field of psychoneuroses. They all fall naturally into the three classes: neurasthenia, hysteria and the emotive constitution, sincerity being an attribute of the latter in distinction from hysteria.

49. **Meningitis Among the Troops.**—Dopfer relates that epidemic meningitis occurred in the *zone des armées* in the proportion of 0.42 per thousand men in 1915; 0.18 in 1916, and 0.15 in 1917. Most of the cases were in the training camps, the infection being brought in by new arrivals from regions where a few cases had been observed; the fatigue of the trip and the chilling on the way were certainly predisposing factors. The disease presented an endemic character, the cases were scattered at relatively distant points, but occasionally six or eight sick or carriers were found at one point. Prophylaxis was carried out as in times of peace by isolation of the sick, and isolation of the contacts (men under the same roof or in the same shelter) until they were all examined and found free from meningococci. Not many carriers were discovered.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 28, 1917, 41, No. 37

- 54 Paralysis of Brachial Plexus from Tuberculous Apical Process; Three Cases. A. Léri and M. de Teyssieu.—p. 1309.
55 Motor Aphasia from Concussion. A. Léri.—p. 1314.
56 *Suprarenal Insufficiency in the Troops. A. Satre.—p. 1318.
57 Chronic Nephritis and Pulmonary Tuberculosis. Nathan.—p. 1323.
58 Epidemic Meningitis with Intermittent Fever. Serr and Brette.—p. 1325.
59 Streptococcus Sepsis and Arthritis plus Pneumococcus Pneumonia. F. Rigaux and J. Gaté.—p. 1331.
60 *Leukoplasia. G. Railliet.—p. 1333; (id.)—p. 1336.

56. **Suprarenal Insufficiency in the Troops.**—In the case described a man of 26 was vaccinated against typhoid and this upset the unstable balance of latent disease of the suprarenals. Acute suprarenal insufficiency followed. Sergeant, in the discussion that followed Satre's report, called attention to the increasing prevalence of symptoms of suprarenal insufficiency in the men on active service. The conditions of trench life tend to depress suprarenal functioning, and men with weak suprarenals suffer most. He queries whether this may not be an important element in the clinical picture of shock, and whether some of the *shockés* might not benefit from immediate and systematic suprarenal treatment.

60. **Buccal Leukoplasia.**—Railliet found leukoplasia in 135 out of 409 men at the front. His experience suggests that inherited syphilis may be incriminated in certain cases. The influence of smoking is undeniable, but it seems to act only on a pathologic foundation.

Lyon Chirurgical

November-December, 1917, 14, No. 6

- 61 *Surgery at the Advanced Stations. C. Viannay.—p. 921.
62 *Infection of the Pleura with Chest Wounds. J. L. Roux-Berger and A. Policard.—p. 969.
63 *Film Dressing for Wounds. A. E. Robert.—p. 1048.
64 *Tardy Resection of Joints. G. Jean.—p. 1055.
65 Lengthwise Wounds of the Knee. R. Leriche.—p. 1079.

61. **Surgery at the Advanced Posts.**—Viannay remarks that surgery at the advanced posts has shown a constant evolution but that now, at the fourth year of the war, it seems to have reached a plane where the great principles are firmly estab-

lished. The surgeons at various scattered posts seem to have evolved these principles almost independently and simultaneously. This concordance guarantees the great verities involved: early and complete excision of all devitalized tissue, and then closing up the wound—all wounds, wounds of soft parts, joints, fractures. Immediate suture is the aim, and rapid recuperation. The majority of the wounded are healed in two or three weeks, many others, including extensive fractures, are healed in two months. He operated in 400 cases during a quiet period and sutured at once completely in 222 cases, partially in twenty-eight others. There was no need to open up the suture except in nine cases. The primary suture therefore was a success in 96 per cent. of 222 cases. With fractures, primary suture may be relied on if the projectile merely hit the bone, but if it traversed the bone, primary suture cannot be counted on with so much confidence.

62. War Wounds of the Chest.—Seventy-nine pages, with twenty-seven illustrations, are devoted to emphasizing the importance of applying the same general principles to chest wounds as to wounds on the limbs. The fractured rib should be removed, but it is impossible to excise all the devitalized lung tissue. It should be sutured, and the skin sutured. When this prompt and thorough débridement has not been done, the pleura grows thick and hard and outer portions of the lung harden into a kind of shell, while lesions of the acute bronchopneumonia type develop in the lungs. Sixteen of these old cases are reported in which the suppurating pleura was excised or decorticated, and the cavity drained and disinfected. Nine were cured by the intervention; the others were too debilitated to rally.

63. Film Dressing.—Robert mixes 100 gm. of paraffin, with a melting point of 48 or 49 C., with 3 gm. natural gutta percha, and uses this for a hot film dressing. The gutta percha permits a temperature of 80 C. without its burning the tissues, and wherever a film dressing is indicated, that is, he says, for large dry wounds, this dressing is proving very useful.

64. Tardy Resection of Infected Joints.—Jean has operated in sixty cases one or two months after the war wound, and he here holds the mirror up to these experiences. Good results were obtained almost always with the shoulder, but the wrist seldom is left with much capacity for movement. With the elbow, the outcome depends mainly on the postoperative care. In his ten hip cases, 80 per cent. of the men died. With an old discharging fracture of the knee, with fever and bad general state, he advises amputation, as also when the lesion extends over an area more than 10 cm. in length, and when the tibia is mainly involved in the injury. His experience testifies to the advantages of resection when the general state permits. For simple ankylosis with fistula he advises merely curetting and heliotherapy.

Paris Médical

Feb. 16, 1918, 8, No. 7

- 66 *The Oculocardiac Reflex in Shock. H. Dorlencourt.—p. 130.
67 Aerophagia in the Tuberculous. C. Sabourin.—p. 136.
68 *Deep Palpation of the Stomach. L. Pron.—p. 139.
69 *Prophylaxis of Venereal Disease. Bourdinière.—p. 141.

66. The Oculocardiac Reflex during Shock.—Summarized in the Paris Letter, p. 1021.

68. Deep Palpation of the Stomach.—Pron describes the technique with which he has often found it possible to determine the lower margin of the stomach, the patient reclining supine and breathing deep. The palpation is done with the radial margin of the hand in semipronation during the patient's expiration.

69. Prophylaxis of Syphilis, and Medical Secrecy.—Bourdinière presents a number of arguments based on his daily practical experience as medical officer to a regiment of heavy artillery. The men are from southern France and northern Africa, and 50 per cent. of the creoles have long had syphilis, as also 6 per cent. of the other men. In civilian circles every effort is made to respect the desire for secrecy in cases of venereal disease, but every soldier who goes for treatment to the special venereal disease hospital is certain that every one in the company or the battery will know of it. Hence both

officers and privates try to conceal their infection and neglect treatment. The man's card record also shows his infirmity to all who read it, thus annulling the efforts at secrecy by some of the medical officers through whose hands he has passed. Bourdinière's daily experience confirms the disadvantages of this lack of secrecy and the harm wrought by it, the men losing their confidence in the physician. Among the measures he suggests to correct this is that the medical inspection should be private, apart from the eyes and ears of others. The man's card should not specify that he has venereal disease. This information should not be given to any one except the superior medical officer. The venereal hospital services should form part of the general hospital, to avoid any stigma. Bourdinière adds that greater use should be made of the natural curiosity of many men, officers and privates, as to the damages that may be wrought by syphilis and gonorrhea. Moving pictures portraying them might be shown the men two or three times a year, by orders from headquarters. In conclusion he remarks that progress would be realized if the commanding officer of the locality where the infection was contracted were notified by the regimental physician so that the authorities could be on their guard, but specific denunciation of the house is impracticable.

Presse Médicale, Paris

March 4, 1918, 26, No. 13

- 70 *Bone Grafting. L. Bérard.—p. 113.
71 The Fifth Cusp. E. Jeanselme.—p. 116.
72 Intramuscular Injections of Quinin in Malaria. Leenhardt and T. Tixier.—p. 119.

70. Bone Grafting.—Bérard refers to grafts to repair gaps in the tibia left by war wounds. If sequesters are left, with plenty of periosteum, there may be spontaneous regeneration of bone tissue. In three cases a sequester 7 or 10 cm. long, protected against necrosis by Carrel irrigation or other means, enabled regeneration so extensive that in from five to eight months a solid callus formed restoring the complete use of the leg. If this has not occurred in the course of eight or twelve months he then resorts to bone grafting. He takes the graft from the tibia itself, instead of sacrificing a sound bone, and has always been successful in this line. In two of his five cases, however, there was residual infection, requiring reopening of the wound and Dakin sterilization, but this did not interfere with the final consolidation. He gives illustrations of the findings at different intervals. The graft was split off from the tibia above or below the gap, cutting it to fit exactly into the space, the ends pointed or beveled to fit into the bone above and below. Some of the illustrations show the man standing on the grafted leg, holding his other leg up in the air.

Progrès Médical, Paris

Jan. 19, 1918, 33, No. 3

- 73 Treatment of Chest Wounds. R. Dupouy and E. Lebrun.—p. 19.
74 Association of Paratyphoid B and Spirochete in Case of Infectious Jaundice. J. Tapie.—p. 22.

March 9, 1918, 33, No. 10

- 75 *The Epinephrin Functional Test of the Heart. Loeper, Wagner and D. Roquebert.—p. 83.
76 Imported Malaria. M. Blatin and H. Paillard.—p. 84.
77 Paradoxes of Odors. P. Voivenel.—p. 88.

75. Epinephrin Functional Test of the Heart.—Loeper and his co-workers here give their conclusions from prolonged study of 100 cases before and after administration of epinephrin. This induces vasoconstriction which raises the blood pressure, thus throwing extra work on the heart. The sound heart responds with energy, and radioscapy shows slight if any change in the outline of the heart an hour later. A weak heart dilates at once and the dilatation persists some time. This indicates weakness of the myocardium, either of the muscle itself or the innervation, simple exhaustion or a valvular lesion. The dilatation is most pronounced with mitral disease. With aortic insufficiency, the aorta may become dilated under the epinephrin test while the apex region shows no change. The test dose of epinephrin is 1 mg., and the subject has to keep absolutely still, against the table used in

the test. The radioscopy is repeated three times at half hour intervals; the findings at one hour are the criterion. The normal heart shows a very slight shrinking of the outline after an hour and a half, testifying to the secondary constricting action on the musculature of the heart.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 9, 1918, 48, No. 6

78 *Differential Diagnosis of Neuroses. O. Nägeli.—p. 161.

79 *Somatic Changes with Emotions. E. Frankhauser.—p. 178.

80 *Changes in Weight with Healing Tuberculosis. G. Jchok.—p. 190.

Feb. 16, 1918, 48, No. 7

81 *Bacteria Carriers. W. Silberschmidt.—p. 209.

Feb. 23, 1918, 48, No. 8

82 *Postoperative Psychoses. M. Tramer.—p. 241.

83 *Goiter in Switzerland. H. Hunziker.—p. 247. Commenced in No. 7 p. 220.

84 Ski Stretcher. J. Poult.—p. 261.

85 Whole Wheat Bread. M. Hindhede.—p. 265; E. Feer.—p. 265.

78. **Neuroses.**—Nägeli remarks that nowadays the most important thing in the field of internal medicine is a good knowledge of the neuroses, and in nothing else are there so many blunders made in diagnosis and treatment. Symptoms are ascribed to hysteria or to neurasthenia and a grave organic lesion is overlooked, or, even more frequently than this, grave organic disease is assumed when the symptoms are merely of a functional nature. In study of the neuroses, the neurologic findings must be disregarded and the psychic condition determined as the basis for diagnosis and treatment. The more numerous and diverse the complaints of subjective symptoms, the more probable the assumption of a neurosis, and in all cases the early recognition of the neurosis and the return to work are greatly to the true advantage of the patient. He cites figures to the effect that five sixths of the cases of sciatica at Baden spas in 1917 proved to be merely neuroses, and three fourths of the cases of supposed heart disease at Nauheim, and in these cases the spa treatment is of no benefit. Nägeli's own experience further confirms that in a large proportion of cases of rheumatism the trouble is merely a neurosis. Physicians shrink from telling the patient that his trouble is merely a neurosis. Only the combination at the same time of dilatation, hypertrophy, murmurs and possibly changes in the pulse exclude a cardiac neurosis, as a rule, and even this combination only when it fits into the frame of a given valvular disease.

79. **Somatic Changes Under the Influence of Emotions.**—Frankhauser presents data from physiology and pathology to sustain the assumption that strong emotions may induce somatic processes in the brain, modifying the innervation of certain still unknown neurons and possibly also of the glands with an internal secretion. Hysteria, shell shock and certain other neuroses are accompanied by disturbance of this innervation. This disturbance may occur from purely physical or purely psychic causes, or from both. Psychotherapy acts by setting in play other emotions which are capable of influencing the morbid innervation processes, and hence are liable to influence purely somatic phenomena. Because some morbid somatic process can be thus influenced by psychotherapy, this does not justify the assumption that the morbid process is necessarily of a psychogenous nature.

80. **The Variations in Weight with Healing Tuberculosis.**—Jchok analyzes the weight findings in about 100 tuberculous French soldiers interned in a Swiss sanatorium. The course at the sanatorium averages sixteen months, and the food averages 3,370 calories a day. This includes only 80 gm. of fat. The men gained in weight at first but as they improved they lost considerably in weight. This, he explains, is merely the casting off of the superfluous fat and is not a cause for alarm. As the men resumed exercise and work, the added fat was lost; as there was no return of symptoms, this must be regarded as merely the organism adapting itself anew to the conditions of life. The cicatrization of the infected areas in the lung deprives the body of that much functionally capable tissue, and the circulation and total metabolism are reduced in proportion, and the body gradually settles into a physiologic balance.

81. **Bacteria Carriers.**—Silberschmidt discusses the importance of carriers with epidemic meningitis, diphtheria and typhoid according to the findings at the Hygiene Institute of the University of Zurich. There have been a number of small epidemics of meningitis in barracks in Switzerland since 1906. The largest number was eleven in any one epidemic, and the cases all developed within seven or ten days. Carriers were found in from 10 to 30 per cent. and more of the men in the environment, mostly with mild catarrhal inflammation. These and other data cited justify the conclusion, he asserts, that carriers are not the main factor in the development of the disease. The large number of carriers is out of all proportion to the small number of cases. Predisposing factors are evidently mainly responsible. With diphtheria, on the other hand, carriers play an important part in the distribution of the disease, and they are comparatively few in number. It is of indispensable importance to see that convalescents are freed from diphtheria bacilli before they are released. The time and efforts required to free the convalescents from the bacilli are well spent. Typhoid convalescents and carriers must be kept under control until free from typhoid bacilli. The problem of carriers can be solved only by the working together of the hospital, the general practitioner, the bacteriologic laboratory and the hygiene institution, adapting their measures to the individual case and epidemic.

82. **Postoperative Psychoses.**—Tramer reports two cases which confirm the generally accepted view as to the benign nature of these disturbances, particularly when patients can be given specialist treatment. In both his cases there had been such extreme dread of the operation that this evidently cooperated in the production of the psychosis. He adds that surgeons might do well to warn the family of a possible postoperative psychosis when such abnormal dread is encountered.

83. **Cause and Prevention of Goiter.**—Hunziker concludes his long study of the prevalence of goiter in different regions and altitudes of Switzerland. The data he presents apparently sustain his theory that goiter is a functional hypertrophy of the thyroid caused by the effort of the organism to make up a deficit in the iodine supply. As the iodine naturally is supplied in the food, goiter is prevalent in regions where the vegetation lacks the standard proportion of iodine. Iodine-containing manure in the regions where goiter is endemic might supply the vegetables with the needed iodine, and thus exterminate goiter. The main goiter regions he found are at a moderate altitude, from 600 to 1,000 meters; above and below this, goiter is less prevalent. In one comparatively exempt canton he ascertained that the cooking salt used had an unusually high iodine content. In certain years goiters develop more numerous than in others. This may be due to rains which wash the salts out of the soil. A sandy soil yields them up more readily to the rains. In a rainy season, also, the vegetation grows less luxuriantly and takes up less of the salts in the soil. At altitudes above 1,000 meters, the vegetation grows so luxuriantly when it gets a chance to grow that it works deep into the soil and takes up the salts. It is significant further that the comparatively exempt cantons have their main rainfall in the autumn, instead of in the spring as elsewhere. In short, he declares, goiter is an adaptation to an iodine-poor diet. The iodine-poor vegetables are what connect goiter with climate and geological formations. The simplest way to remedy the poverty in iodine would be to have salt made with a small admixture of iodine. He suggests parenthetically that it had better be investigated whether the iodine in salt in bread may not be volatilized by the heat of the baking. A year of such "fertilizing" of human beings on a large scale by adding iodine to the salt would go far toward solving the problem. A still simpler plan would be to have the salt taken from the salt springs in the comparatively exempt canton of Waadt sent to a canton where goiter is very prevalent, exchanging it for the salt made from the iodine-poor salt springs in the latter canton. All the testimony and arguments presented emphasize the importance of insuring an ample iodine intake in regions where goiter is prevalent.

Archivos Españoles de Pediatría, Madrid

January, 1918, 2, No. 3

- 86 *Fractures of the Skull. E. S. Ordoñez.—p. 1.
87 Hidroa in Children; Two Cases. E. de Oyarzabal.—p. 16.
88 *Evils of Sweat-Shop System. R. Pinilla.—p. 20.
89 *Calculi in Child's Kidney. P. Cifuentes.—p. 26.

86. **Fracture of Skull in Children.**—Ordoñez gives the details of six cases of fracture of the skull in children from 4 to 12 years old, with the necropsy findings in one case. All the other children recovered. The child's brain can stand traumatism remarkably well in comparison to the child's great susceptibility to other pathogenic influences, such as meningitis. But at the same time this tolerance is not equivalent to an absolutely benign course. The prognosis depends in large measure on whether the brain is exposed or not, but even the simple closed fractures, especially in the frontoparietal region, may entail jacksonian epilepsy. With a closed fracture, abstention should be the rule; the symptoms from concussion and even focal symptoms may subside spontaneously, as in one of the cases described. Intervention is required of course if the symptoms indicating pressure on the brain are grave and prolonged, or there is paralysis or epilepsy. Even with a compound fracture, if the opening is small, abstention may prove successful, as in one of the cases reported. With extensive prolapse of the brain, deep infection seems inevitable, and prolapse is liable to follow any attempts to enlarge the opening in the skull.

88. **The Sweat-Shop System in Madrid.**—Pinilla mentions in discussing home work for pay that this system is producing in Madrid an immense number of tuberculous children, while it prevents the normal development of the women and injures the population of the future.

89. **Kidney Stones in Child.**—Cifuentes was unable to determine whether stones or tuberculosis was responsible for the hematuria and pain in the right kidney of a boy of 7. He had been complaining of pain in this region for three years and the urine was turbid, but there were no signs of pronounced cystitis although there was fever at times. The urethra is too narrow in boys of this age to admit the cystoscope, but the response to the indigo carmin test was satisfactory, and the normal aspect of the other kidney was ascertained by an exploratory lumbar incision on the left side. Thirteen days later the right kidney was exposed and found full of pus, with five branching stones, and cystic dilatation, the ureter also pathologic. Ten days after the nephrectomy there was some hematuria for a day. He is convinced that nephrolithiasis in children is sometimes mistaken for or masked by bowel trouble. Uricemia is comparatively common in children from 2 to 8, the result of food too rich in nitrogen for their age. This predisposes to lithiasis, but it generally takes the form of sand which may pass off without pain, or it may accumulate in the bladder and form a large stone. Prophylaxis depends on the diet, and this is a most important problem in the hygiene of the child.

Brazil-Medico, Rio de Janeiro

Dec. 29, 1917, 31, No. 52

- 90 *The Adams-Stokes Syndrome. H. Ribeiro.—p. 441.
91 Lice in Transmission of Smallpox. A. Ferrari.—p. 443.

Jan. 19, 1918, 32, No. 3

- 92 *Medicolegal Aspect of Findings in Air Passages. O. Freire.—p. 17.

90. **Adams-Stokes Disease.**—The workingman of 68 had a ventricle beat of only 14 and sometimes it dropped to 11; these times there were attacks of syncope and epileptiform seizures. The positive Wassermann called for specific treatment, supplemented with trinitrin, atropin or spartein, and the pulse was gradually brought up to 24 in less than a month, after which there were no further attacks. The man is still in the hospital and doing well.

92. **Medicolegal Aspect of Foreign Bodies in Air Passages.** Freire found a small snail shell impacted deep in a bronchus of a cadaver taken from the bay. He deduced from this that the man must have aspirated the shell in drowning, and that the scene of the drowning was probably close inshore where a variety of shell abounds. He cites other cases in which

a leaf, part of a flower, seed or grain in the air passages revealed not only the probable location where the death occurred but also suggested the approximate date.

Cronica Medica, Lima

January, 1918, 35, No. 655

- 93 Diagnosis of Duodenal Ulcer. E. Odriozola.—p. 1.
94 *Echinococcus Cysts in the Lungs. A. Corvetto.—p. 7.
95 The Pseudo-Beetles of Peru. (Algunos nuevos pseudomeloides.) E. Escmel.—p. 10.
96 *Meningeal Suprarenal Insufficiency. A. S. Moreno.—p. 17.
97 *The Tear Sign of Actual Death. R. A. de Toledo.—p. 20.

94. **Echinococcus Cyst in Lung.**—At necropsies of persons with pulmonary tuberculosis, Corvetto found in three cases a primary echinococcus cyst in a lung, the spleen or the liver, which had escaped detection during life. He here describes a case of primary echinococcus disease of the lung, diagnosed during life. The symptoms suggested incipient pulmonary tuberculosis, with recurring slight hemoptysis and cough, the sputum scanty and mucous. After four months of this the man felt sudden suffocation and coughed up the membrane of a hydatid cyst, about the size of an egg. All the symptoms permanently subsided. In a fatal case of pulmonary tuberculosis Corvetto found at necropsy two echinococcus cysts in one lung which had caused no reaction on the part of the parenchyma and had escaped detection during life.

96. **Meningeal Form of Suprarenal Insufficiency.**—Moreno describes a case of severe febrile and toxic gastro-intestinal disturbance in a frail little girl of 7. It proceeded to include meningeal symptoms, unequal pupils, Kernig's sign, vomiting, cephalalgia, etc., with tachycardia, low blood pressure, uncontrollable vomiting, white dermographism and extreme prostration. Moreno accepted this set of symptoms as the pseudo-meningeal form of suprarenal insufficiency, and gave the child a subcutaneous injection of 1 mg. of suprarenal extract. There was no change the next day in the apparently moribund child but he repeated the injection morning and evening, and the following day marked improvement was evident and the child was soon fully convalescent. The suprarenals probably were not strong, and the toxic action from the poisonous products generated during the severe digestive upset had evidently induced acute insufficiency on the part of these glands.

97. **The Tears in Test of Actual Death.**—De Toledo has tested on 180 cadavers and 2,000 living persons Lecha Marzo's test and has found it almost invariably positive in actual death. The test is merely the change of the reaction to litmus of tears. In the living the reaction is alkaline, and it veers to acid after death. De Toledo never found the reaction acid in tears from the living. It was not always constant in the cadavers, but when found can be relied on. The tears were always alkaline in 542 males and 537 females of all ages and conditions, and also in 1,104 patients in the eye infirmary with various eye diseases. With actual death the reaction veers to acid in from half an hour to seven and a half hours. The change seems to be slower when the weather is cold.

Repertorio de Medicina y Cirugía, Bogota

February, 1918, 9, No. 5

- 98 Training the Character. P. Rincon.—p. 229.
99 *Treatment of Infected Wounds. L. L. Pereira.—p. 257.

99. **Treatment of Infected Wounds.**—Pereira has been serving in the American ambulance in France and more than 3,000 wounded men have been cared for in his service. He has also worked with Carrel and Depage, and is now conducting a course of instruction for American surgeons on their way to organize hospitals at the front. The main principles taught are that local disinfection has to be more mechanical than chemical; that germs become accustomed to a disinfectant so that a change is necessary; that air usually should be allowed to reach the wound, and that in dressing a wound gloves and forceps should be used for each separate case as carefully as for an operation. Of the various methods of treatment he describes with illustrations, he commends to the general practitioner the soap method. He says it is a common practice of veterinarians in South America to apply

soap suds to the wound in cattle and horses after castration, and a surgeon in the Polish ambulance at Paris has been applying this method to war wounds. Although it cannot compare with the Carrel method, as primary suture is not practicable with the soap treatment, yet Pereira's experiences with it in 200 cases were good, and it should certainly be used when the hypochlorite method or its equivalents are not available. The wound is copiously washed out repeatedly with a 5 per cent. solution of soap in water, and the wound is covered with compresses dipped in a 20 per cent. soap solution. The soap is ordinary castile soap, *jabón de Marsella*. Fifty grams of shavings of the soap are dissolved in a liter of boiled water, stirring with a glass rod from time to time. This 5 per cent. solution in an irrigating can with rubber tube and ordinary glass cannula is used to flush the wound freely. The reaction which is regarded as pathognomonic is formation of glairy lumps. They do not seem to form on sound tissues. The aim should be to wash them all out and this may take up to 10 liters of the solution. The compresses are about 8 inches square and are dipped in the 20 per cent. soap solution and then rubbed in the hand until full of foam. This makes them porous so they will exert capillary aspiration as the wound is not drained otherwise. A layer of nonabsorbent cotton and a bandage are applied above, and the wound is dressed daily. The soap does not kill but seems to favor the pyocyanus, and the pus is often green, but this germ is not "wicked," and develops mostly at the edges of the wound where it can be destroyed with ether, alcohol, or gasoline. He reiterates that this soap treatment should only be used when the hypochlorite method is unavailable except possibly for wounds of the face, opening into the mouth. These heal rapidly under the soap treatment. (Compare with abstracts 13 and 14 in *THE JOURNAL*, Jan. 12 and Feb. 23, 1918, pp. 130 and 573.)

Revista de Medicina y Cirugia, Havana

Feb. 25, 1918, 23, No. 4

- 100 *Pyelotomy for Kidney Stones. J. A. Presno.—p. 89.
- 101 *Age and Cataract Operations. J. S. Fernandez.—p. 93.
- 102 *Giant Parovarian Cyst. F. Pages.—p. 105.
- 103 Supernumerary Muscle in Forearm. E. Stincer.—p. 110.

100. **Pyelotomy for Renal Lithiasis.**—Presno's experience with thirty-two operations for kidney stones has confirmed the advantages of pyelotomy when the calculi are in the pelvis or the branching calculi are small and readily accessible. He has done this operation in four cases. He incised the kidney proper in twenty-eight others, and in two cases removed the kidney. All the patients recovered except four among the nephrolithotomy cases: one succumbed to reflex anuria, one to hemorrhage, and two with pyonephrosis to infection.

101. **Age and Cataract Operations.**—Santos Fernandez reviews the literature on cataract operations in the very old, in connection with his own experience. He has operated on several patients over 80, and reports here a case in which the patient was over 95, approaching 96. He was in good condition for his age, and this is the main criterion as to operability.

102. **Giant Parovarian Cyst.**—The young woman's abdomen measured 90 cm. from the xiphoid appendix to the pubis, and the circumference at the umbilicus was 180 cm., nearly 6 feet. The unilocular cyst originated in the broad ligament; 46 liters of limpid fluid were evacuated.

Revista Medica Cubana, Havana

February, 1918, 29, No. 2

- 104 *Bilateral Extra-Uterine Pregnancy. N. G. De Rosas.—p. 61.
- 105 Medical Treatment of Gallstones. F. S. Garro.—p. 63.
- 106 *Heredity in Vascular Disease. F. Rodriguez.—p. 71.
- 107 Postpartum Paresis of the Intestines. J. A. Figueras.—p. 83.

104. **Bilateral Tubal Pregnancy.**—An ovum seemed to have become embedded in both tubes simultaneously. One ruptured after a week or two, and the bilateral tubal pregnancy was thus discovered by de Rosas and successfully operated on.

106. **Heredity with Heart Disease.**—Rodriguez comments on the increase in the number of cases of cardiovascular disease in recent years in Cuba. He has been studying the

heredity in such cases, and reports two families in which the grandmother died of heart disease; one daughter has mitral stenosis and the two granddaughters of 12 and 15 have each mitral stenosis. No case of tuberculosis is known in the family. He cites other instances showing a similar heredity of inferiority of the cardiovascular system. The manifestations of it may vary widely, but the members of the families die comparatively young, with different localizations of the same degenerative process. There may be no signs of evident heart disease but the heart's resisting power is below par; the subjects are inclined to hypertension and tachycardia, and respond poorly to extra effort, showing slight insufficiency. He adds that this vast field of inherited cardiac pathology has only recently been given attention.

Semana Medica, Buenos Aires

Jan. 3, 1918, 25, No. 1

- 108 The Blood in Diphtheria. N. S. Loizaga and E. Troise.—p. 1.
- 109 *Prophylaxis of Eclampsia. M. R. Salaberry.—p. 24.
- 110 Hookworm in Argentina. S. E. Parodi.—p. 27.
- 111 *Renal Serotherapy. J. C. Berri.—p. 29.

109. **Prophylaxis of Eclampsia.**—Salaberry analyzes a number of cases of eclampsia, drawing a lesson from each, such as that eclampsia may be anticipated when there is albumin, even traces, in the urine, and even though it may disappear later. Reduction of chlorids in the urine, even without albumin, should suggest possible eclampsia, as also any tendency to edema, no matter how limited, any nervous manifestations, disturbances in the air passages or circulation, recent infectious disease or intoxication.

111. **Renal Serotherapy.**—Berri applied serum from the renal vein in treatment of a girl with congenital stenosis of the right ureter which had entailed hydronephrosis. There were periodical attacks of pain from retention of urine. Nephropexy gave only transient relief, and pyonephrosis developed and the kidney was removed. Seven days after this there was sudden and complete anuria. Even with catheterization of the left ureter only 50 c.c. of urine could be drawn. An intravenous injection was then made of 10 c.c. of serum from the renal vein of the goat. Prompt benefit followed but three days later the anuria returned. Another injection of 20 c.c. of the serum reestablished the functioning of the kidney, and it has proceeded normally since to date. Berri relates that this renal serotherapy has been applied by Bisso and Muniguria in Argentina in four cases each of uremia from various causes. The latter reported constant success from it in nephritis, the temperature, edema, serous effusions and albuminuria all showing marked progressive and durable benefit and the diuresis improving. In Berri's case the anuria was evidently from reflex inhibition, and the renal serum seemed to stimulate the functioning of the glomerular-tubular apparatus and restore practically normal conditions.

Siglo Medico, Madrid

February 12, 65, No. 3344

- 112 *Pancreatitis Following Resection of Stomach. L. Urrutia.—p. 22.
- 113 Case of Mixed Aphasia. E. F. Sanz.—p. 23.
- 114 Biologic Standardizing of Digitalis. T. A. Redonnet.—p. 25.

112. **Pancreatitis after Resection of the Stomach.**—Urrutia sutured the stump of the duodenum to the head of the pancreas as there did not seem to be any other tissue available for peritonization of the stump of the duodenum after excision of the callous ulcer close to the pylorus. He followed Deaver's technic, but acute pancreatitis developed and proved fatal.

Vida Nueva, Havana

January, 1918, 10, No. 1

- 115 *The War against Syphilis. R. B. Agramonte.—p. 26.
- 116 Roentgen Study of the Appendix. P. L. Fariñas.—p. 38.
- 117 *Sprue. A. G. Del Valle and O. Montoro.—p. 52.
- 118 Appendicitis versus Gynecologic Disease. T. Aguilera.—p. 62.

115. **The Campaign Against Syphilis.**—R. B. Agramonte's monograph was awarded the prize of \$25 offered by *Vida Nueva*. Regulations for prostitutes are outlined, the educational value of registers and medical inspection being an important element in the campaign against venereal disease.

The name "syphilis," he recalls, is derived from Syphilus, an imaginary personage created by Fracastorio in his poem "Morbi Gallici" (1530). He coined the term probably from the Greek *sys* "swine" or "filth" and *philo*, "love of," a name appropriate for a swineherd.

117. **Sprue.**—Fariñas confirms the publications in *THE JOURNAL* on the monilia as the cause of sprue, the chronic diarrhea of tropical countries. The tongue reflects the lesions of the stomach and intestines. No drug with a specific action on it is known to date. Treatment can be only symptomatic and dietetic, with repose and change of climate. Emetin gave good symptomatic results in his cases.

Grèce Médicale, Athens

October, 1917, 19, No. 19-20

119 *Syphilitic Corneal Disease. G. F. Cosmettatos.—p. 39.

November-December, 1917, 19, No. 21-24

120 Movements Simulating Tremor in Dementia. C. Manthos.—p. 45.

121 *Tuberculosis Mortality in Greece. P. J. Rondopoulo.—p. 47.

119. **Syphilis of the Cornea.**—Cosmettatos describes the findings with punctated keratitis of syphilitic origin, giving the details of four cases. The minute whitish infiltrations are generally found on the lower segment of the cornea, and the tissues are sound between them. The reaction to them is moderate although he has seen iritis follow in one case. The keratitis was bilateral in one of his four cases. Syphilitic ulcers of the cornea are also known, and he has encountered two cases of gumma of the cornea. This lesion shows as a round plastic deposit in the parenchyma of the cornea. It differs from ulcer by the hardness and the absence of supuration notwithstanding the inflammatory phenomena, but above all by the prompt improvement under specific treatment, while ordinary measures are of no avail. Sometimes the gumma is shaped more like a comma or tear. The pains may be quite intense, with lacrimation and photophobia, and there may be complicating iritis or conjunctivitis.

121. **Tuberculosis Mortality in Greece.**—Rondopoulo analyzes various statistics, saying that in the twenty-five years, 1890 to 1914, in the fourteen larger towns of Greece, 22,008 males died from tuberculosis and 16,526 females. The mortality from tuberculosis during the sixteen years, 1899 to 1914, was 40.8 per 10,000 inhabitants, a figure much higher than in the other large cities of Europe. The deaths from tuberculosis form one sixth of the total mortality of Greece. All professions and trades are affected, the working classes, especially factory workers, showing the highest mortality.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Feb. 2, 1918, 1, No. 5

122 *The Inspirator in Treatment of Asthma. S. Elias.—p. 272.

123 The West-Polyak Operation for Chronic Obstruction of Lacrimal Duct. C. E. Benjamins and G. F. Rochat.—p. 284.

124 *Auditory Dilatation of Pupil. A. Van Ravenswaaij.—p. 289.

122. **Device to Passively Facilitate Respiration: the Asthma Inspirator.**—Elias says that he has been using for six years with constantly increasing satisfaction a device with which traction is exerted on the anterior wall of the chest, thus lifting up the wall passively, during each inspiration. It is designed mainly for asthma. The inspirator, as he calls it, consists of a piece of adhesive plaster with a reenforcing strip on the adhesive side. Four or five strings are attached to this reenforcing strip and are brought out through small holes in the large piece of plaster. The plaster is applied to one side of the chest, the median margin 2 or 5 cm. from the sternal line, the lower margin in the fourth interspace or below. The strings are brought upward over the shoulder and knotted together. He stands behind the patient and pulls on the strings isochronous with the respiration, exerting traction slightly toward the median line, over the top of the shoulder. There have never been any complaints of by-effects from its use except that one man developed eczema under the plaster, compelling its removal. The skin is cleaned with benzin before the plaster is applied, and the inspirator can be left undisturbed for two, four or eight weeks. A plaster inspirator can be applied to both sides of the front

wall of the chest at once. The relief experienced by the patients as respiration is thus facilitated and deepened is great. Roentgenoscopy shows the downward displacement of the diaphragm, and vesicular breathing sounds become evident if they had not been audible before. After the inspiration is completed, he still exerts the traction for a moment to impede expiration. The aim is to make the patient feel that he is spontaneously breathing deeper, without noticing the traction. The benefit is pronounced during the prodromal and declining phases of the attack of asthma, as well as at its height, for reasons which he sets forth, expatiating particularly on the breaking up of a vicious circle, the reduction of the residual air, the general improvement in the ventilation of the lungs reducing the tendency to the attacks or rendering them less severe.

124. **Dilatation of the Pupil from Auditory Stimulus.**—Ravenswaaij has noticed a reflex transient dilatation of the pupil which can be utilized to detect malingerers among men claiming to be totally deaf. The man is placed in a strong light, told to look at a distant object, and then a third person, several yards distant, calls out a few words, in a loud voice, with an interval between each word. The pupils dilate at each word but return almost at once to their former size. Words of military command: "attention," "forward march," elicit more of a response as the mental impression reenforces the auditory stimulus.

Hospitalstidende, Copenhagen

Feb. 6, 1918, 61, No. 6

125 *Tuberculous Bronchial Glands. E. Schmiegelow.—p. 161. Commenced in No. 5, p. 129.

125. **Pathology of Bronchial Glands.**—Schmiegelow remarks that modern methods have made it possible to determine whether enlarged bronchial glands are responsible for stenosis of the air passages, and also permit direct treatment. In 1902 only three cases were known of recovery after operative treatment of glands perforating into the bronchi. Sternberg reported in 1905 that he had found perforation into the bronchi in 36 of 6,132 cadavers, but anthracosis was responsible for it in 34 and tuberculosis only in 2. Reports from the Middlesex Hospital mention perforation found in 0.3 per cent. of 1,800 cadavers, while some German reports mention 3.2 per cent. in 796 cadavers. It is probable that the perforation into the air passages or the esophagus has often escaped detection during life and at necropsy. Enlarged glands may likewise be responsible for sudden suffocation, and Schmiegelow reports some cases of this kind in children, and tabulates 20 from the literature. One girl of 9 was apparently healthy until she suddenly developed cyanosis and coughed up large masses from a tuberculous gland perforating into the bronchus. This is the most dangerous form of glandular trouble on account of the lack of any warning symptoms. One child of nearly 3 was under treatment in the hospital for caustic stenosis of the esophagus when the symptoms from the perforation into the bronchus became apparent. Tracheotomy was done at once and the child recovered. He has found only one case on record of perforation of this kind in an adult, but has encountered one case himself.

The symptoms of stenosis from compression by enlarged glands are the difficulty in expiration while inspiration proceeds with comparative ease; the cough, which resembles that of whooping cough and occurs spasmodically; an area of dulness over the interscapular region; and the peculiar whistling character of the respiration, but these symptoms are not always present. One babe of 8 months succumbed to suffocation from compression of the trachea by enlarged glands, but they were simply hypertrophied with no signs of tuberculosis. Glands may be the seat of a tuberculous process without inducing symptoms, but they usually enlarge. With suppuration and perforation into a bronchus, the patient may cough up the extruded masses and recover. But if they are too voluminous to be coughed up, the child suffocates if operative measures are not applied in time. Sudden death from this cause may suggest a criminal factor. Symp-

toms of stenosis should warn of trouble. Direct bronchoscopy is indicated at once; it may prove possible to aspirate through the bronchoscope the contents of the gland that have broken through into the bronchus. When the tuberculous glands are in the anterior mediastinum, they can be reached as a rule only by removing the sternum. Dalziel reported 3 cases of this kind in 1915. In one case a suppurating gland was found close under the arch of the aorta. In 14 of the tabulated 20 cases the suffocation occurred without warning, and 9 of the patients died. One child of 5 was intubated and tracheotomized for assumed diphtheria, but he finally coughed up the tuberculous gland masses and recovered. One boy was treated with artificial respiration, and this forced the coughing up of the masses. One child only 11 weeks old had the tendency to suffocation keep up for five days, and then it coughed up a tuberculous gland. Two of the patients were men; tracheoscopy showed the trachea compressed. The outcome in these cases is not known. In 2 other men enlarged glands had perforated into both trachea and an artery, and fatal hemoptysis followed. There is no doubt that if the trouble had been differentiated earlier, more lives could have been saved by direct tracheoscopy, etc. Tracheoscopy is especially useful in cases developing gradually, as the best mode of treatment can then be determined with confidence. For children under 6, tracheotomy is indispensable for tracheoscopy, but for older children and adults the natural passages suffice.

Hygiea, Stockholm

February 15, 1918, 80, No. 3

126 *Bronchiectasia. H. Bergstrand.—p. 97.

127 *Mechanism of Drainage of Eye. T. Frieberg.—p. 127.

126. **Bronchiectasia.**—The findings in the cadaver of a woman of 24 suggested a probable congenital origin for the bronchiectasia, possibly from fetal syphilis. Tubercle bacilli were numerous in the sputum, also fusiform bacilli and cocci in the bronchi.

127. **Drainage of the Eyes.**—Frieberg attributes a pumping action to the canaliculi for draining the eyes into the nose. This assumption supplies a basis for the modern operations on the lacrimal sac.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1918, 79, No. 2

128 Transverse Presentation: Frequency and Causes. Drejer.—p. 153.

129 *Tests of Kidneys with Hypertrophied Prostate. F. Bie.—p. 167.

130 *Diphtheria from Epidemiologic Standpoint. P. M. Holst.—p. 186.

131 *Fever with Sarcoma. C. Schiøtz.—p. 202.

132 *Hereditary Ataxia. J. Henrichs.—p. 207.

129. **Tests of Kidney Functioning with Hypertrophied Prostate.**—Bie gives the charts from twelve *prostatikers* showing the diuresis, the elimination of urea in the urine, its specific gravity, albumin content, and the findings with the phenolsulphonephthalein test of kidney functioning—all systematically recorded daily or at brief intervals. The charts all confirm Pilcher's warning that the kidneys have been suffering from the retention and that they experience a kind of shock when the retention is overcome and the urine passes off normally. All the tests showed the depressed functioning of the kidneys, reaching its height two or three days after the retention had been corrected. After this the kidneys rapidly recuperated, usually within eight days, but not until longer than this if the kidney was pathologic. The practical conclusion from his data is that prostatectomy should be done in two sittings, first relieving the retention, and then allowing the kidneys time to recuperate before proceeding to the actual prostatectomy. The data here presented supply the scientific basis for the two-step method, the advantages of which have already been demonstrated empirically.

130. **Diphtheria.**—Holst found from two to eight carriers among three groups of recruits numbering from 163 to 385 men. Others have reported recently from 2 to 9.2 per cent. in three groups of healthy schoolchildren numbering 341, 4,277 and 967. Holst also tested the antitoxin content of the blood in 100 healthy persons, and in diphtheria patients and

convalescents. He tabulates the findings and analyzes local statistics. All tend to demonstrate, he says, that an epidemic of diphtheria immunizes the community. Only a few develop the disease, but large numbers become infected. They bear the infection without its giving rise to sickness or symptoms. In this respect diphtheria resembles tuberculosis. After a longer or a shorter interval, this immunity wears off and the way is opened for another diphtheria epidemic. The assumption that the immunity conferred by an epidemic of diphtheria lasts for about twenty years conforms to the epidemiologic facts recorded for diphtheria.

131. **Fever with Sarcoma.**—A woman of 25 entered the hospital on account of repeated chills and pseudo-intermittent fever for three weeks. There were also pains in one side and a transient exanthem. The fever kept up, with high peaks and numerous chills; the abdomen was tender and there were signs of bronchitis. Necropsy disclosed sarcomatosis involving the glandular system, periosteum and dura mater, left tonsil, stomach and ileum. Among Bull's twenty cases of sarcomatosis, fourteen were febrile and these were the younger patients. Only one case of metastasis was found in the six afebrile cases. Two other Norwegian cases are known, both in physicians. In one, long persisting evening temperature of 39.7 C. was explained by a retroperitoneal sarcoma. In the other, a melanotic sarcoma in the kidney had caused regularly returning chills and fever.

132. **Hereditary Ataxia.**—Henrichs reviews the literature on the subject of Friedreich's disease and reports with illustrations the case of two brothers, adults, one 11 years older than the other, both with typical hereditary ataxia. Both are feeble-minded, as also one sister who shows no signs of ataxia. The other eleven children in the family are normal.

Ugeskrift for Læger, Copenhagen

Jan. 24, 1918, 80, No. 4

133 *Swine Plague in Man. N. Svith.—p. 127.

134 *Pharmacology of Iodids. J. Buchholtz.—p. 139.

135 Dosage of Optochin. V. Scheel.—p. 150.

133. **Swine Erysipelas in Man.**—Svith has encountered six cases, all in men who had recently slaughtered a hog with swine plague. The incubation period ranged from twenty-four to thirty hours. Pain was the first symptom to attract attention, but the exanthem and the lymphangitis are the most characteristic features. The blotches grow to be about the size of a cent; they are reddish at first but change to a bluish gray. The nearest joint is liable to swell and be painful, and the disease displays a tendency to recurrence. Under serotherapy the whole subsides in a few days, while without it the disease may drag along for from two weeks to five months.

134. **Pharmacology of Iodids.**—Buchholtz has been conducting experimental research on the absorption of iodids from the digestive tract, their passage into the blood, and elimination in the urine. He found that they do not seem to be absorbed in the stomach at all. The iodid in the blood rose after each dose and soon dropped again, showing that to keep the organism under the influence of the iodid requires numerous small doses over the entire day. The elimination in the urine reaches its height in about two hours, but the length of the interval depends on the promptness with which the stomach contents are passed along. It makes a great difference whether the iodid is taken on an empty or a full stomach. On a constant diet, the iodid does not seem to modify the viscosity of the blood; conflicting statements have been based on tests without control of the diet. Buchholtz' extensive research on the influence of iodids on the heart action failed to reveal any change in the blood pressure or pulse rate even when the blood contained amounts of the iodid far beyond the therapeutic dosage. When the iodid content of the blood reached a very high figure, the heart action was depressed and the blood pressure dropped, as the blood was thus rendered hypertonic. The therapeutic action of iodids in circulatory disturbances thus has no experimental basis. Benefit from it suggests a syphilitic origin for the disturbances.

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RECONSTRUCTIVE SURGERY IN WAR TIME *

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ENGLAND

The energy and enthusiasm of Sir Robert Jones are responsible for the establishment in the British Isles of fifteen or twenty large, well equipped orthopedic hospitals for wounded soldiers. Over these, Sir Robert exercises a general supervision, and in them he instructs the various members of the staffs in the details of reconstructive work among the wounded. During the past nine months, it has been my good fortune to be stationed in charge of a service at one of the largest of these centers, that at Shepherd's Bush, London. During that time, I have had an opportunity of seeing and of treating large numbers of patients who, in private life, would be considered permanent cripples, but here, through the stimulating teaching and with the wise help of Sir Robert Jones, are being returned to usefulness.

The Shepherd's Bush Hospital has 1,100 beds, and is fully equipped with departments for after-treatment, massage and electricity, a gymnasium, and curative and productive workshops. It is in charge of a group of able men all specially trained in orthopedic surgery, or in one of the supplementary specialties. In my own service, I have had the opportunity to apply the various methods which the necessities of war surgery have added to those of civil life. In the light of this experience, I feel justified in attempting to sketch some of the problems that arise from war damage to bones, joints, muscles, connective tissues and nerves, and some of the methods of treatment that have been found to be of value.

SEPSIS

Fundamentally, both the problems and the methods of treatment are the same as those of orthopedic surgery in civil life. In detail, the two are radically different. This is due to several factors, first of which stands sepsis. Nowhere in private life do we meet such persistent and severe sepsis as constantly occurs among the wounded. Second in importance comes scar tissue. The great destruction of soft parts, and the active sepsis of wounds, combine to create enormous masses of dense, extremely tough, fibrous issue. Third, the crippling incident to wounds is often so widespread and so severe that very difficult problems of judgment arise in laying out a plan for the restoration to usefulness of the patient. For

example, it is far more important to preserve even badly crippled fingers on the left hand when the right hand has been wholly lost, than it is when the right hand is still useful. In this connection, let me say that our experience leads us to believe that a very poor natural leg and foot is better than an artificial one, and that any natural hand and arm, no matter how bad, is better than an artificial one. Fourth, the great length of time required to get results puts a heavy tax on the cardinal virtue of patience in the surgeon, and on the mental and moral fiber of the war weary soldier.

The greatest number of our cases are those that involve bone injury, and these come to us in two classes, the recent and the old. Of the former there are few, of the latter there are very many. The recent fractures reach us after the primary operation for drainage has been done, and the adjustment of the fragments effected. All of these are actively and violently septic, and the greatest difficulty in their treatment lies in proper fixation and alignment, with satisfactory drainage. This is, however, perfectly possible, and can always be accomplished, except in the rare case in which amputation is necessary. Indeed, fixation in perfect alignment is the most important feature in the treatment of sepsis in compound fractures. Never is it necessary to let the fracture take care of itself while the sepsis is treated. After fixation, thorough and complete drainage and counterdrainage are the most important measures. Carrell's technic is useful, but not infallible. It undoubtedly hastens the cleaning up of wounds when drainage is satisfactory. In our hands it will not overcome sepsis without efficient drainage. It seems probable that the important factor in irrigation technic is the prevention of blocking of wounds by drying of the discharge. No matter what technic is adopted, or what solution used, the prevention of drying, careful attention and thorough drainage and counterdrainage are the cardinal principles.

During the active stages of sepsis of bone injury, the most satisfactory fixation of the parts can be obtained by the use of various simple splints. The most important of these is the Thomas knee splint, which, in different sizes, is easily adaptable to the leg or the arm. It can be bent to any desired shape, and provides excellent extension. It is easy to attach to it cross supporting bands of cloth, which can be removed one at a time without disturbing the position of the fracture, and allow easy access to the wound. When its ring is properly fitted, efficient counter-extension is obtained against the tuberosity of the ischium, or against the ribs. When properly applied, it provides perfect fixation and allows almost any degree of traction. It can be adapted by simple

* From the Military Orthopedic Hospital, Shepherd's Bush, London, England.

changes in shape or position to any fracture below the neck of the femur in the leg, or to any fracture in the arm. For example, a fracture of the lower third of the femur can invariably be brought into alignment by bending the splint at the knee to from 20 to 40 degrees. When of the upper third, it may be adjusted by abducting the whole splint. If very strong traction is necessary in reduction of the deformity of the femur, this can be obtained by tying the lower end of the splint to the foot of the bed, and raising the foot of the bed from 12 to 18 inches, thus adding the extension force of gravity through the pull of the body weight. This splint is typical of the simplicity of apparatus that has proved so useful in the common septic compound fracture.

The many forms of weight and pulley support and extension are useful in certain rare cases, but as a rule they are more cumbersome and difficult to manage than are the simple splints.

Under the treatment outlined above, it has been found that sepsis clears up rapidly, and that union in good position is invariably obtained.

BADLY UNITED OR UNUNITED FRACTURES

The second great class of bone injuries which reaches us are badly united or ununited fractures of months' or even years' standing. Most of these still have discharging sinuses, due to necrotic bone and metal fragments. Some of them never were properly reduced. Others were originally well reduced, but through the exigencies of the hospital service, in passing from surgeon to surgeon and from hospital to hospital, have gradually assumed distressing deformities. Sequestrums, sepsis, scar tissue, loss of joint function, all complicate their treatment.

Sequestrums appear in almost every case, as a result of infection. These as a general rule should be left alone until every sign of active sepsis has disappeared, and they are thoroughly separated from surrounding living bone. Removal of sequestrums must be done with most careful aseptic technic, and with an absolute minimum of trauma. A large incision of the soft parts is to be preferred, because in spite of the fact that it opens more new channels to superficial infection, it gives a view of the field of operation, which allows a minimum of bone damage. Uninfected and living bone must not be cut or scraped if it is possible to avoid it. After the removal of all dead bone, thorough drying and cleaning of the whole wound is necessary. A good technic is as follows: The dead bone is removed as gently as possible, all hemorrhage is stopped, the whole wound is dried with gauze, and alcohol is rubbed gently into all corners. This is followed with a little bismuth iodoform paste rubbed with gauze gently over all raw surfaces, and the excess removed. Sequestrectomy wounds that have been so treated may be closed tight and will break down less frequently than those in which the same technic is used without bismuth iodoform paste. Chronic wounds that have been "bipped," if they do break down, close again more rapidly.

In treating the joint that stiffens during the treatment of fractures, we have the same problems that we see in civil life. They are made worse, however, by the fact that attempts to mobilize stiff joints in these war cases frequently cause a flaring up of the original sepsis, even though it was a considerable distance from the joint. This is due to the pull exerted through muscle and fascia and the scar tissue,

and has taught us that it is rarely safe to use force on such joints. Attempts at mobilization must always be gradual, and limited by pain or any sign of active inflammation. Therefore, it is best to depend on massage and exercises rather than on forcible manipulation. It is a comparatively simple matter in early fractures to prevent stiffness of adjacent joints by frequent and prompt passive motions. These can safely be begun as soon as the fracture has solidified sufficiently to prevent shortening. If the extension is removed for a few minutes each day, it can be carried out without removal of the splint.

Badly united fractures are of all degrees of deformity. Their treatment can best be considered under two heads, early and late. The early cases are those in which union has occurred but calcification is not firm from four to twelve weeks after the receipt of the injury. In this period it is almost invariably possible, by correct application of splintage and extension, markedly to decrease or even overcome the deformity. That is, although the union is apparently firm, it is really still plastic, and steady application of corrective force will mold it. This method should always be tried. When sepsis is not active in this early period, it is often safe and wise to manipulate under an anesthetic and restore alignment by this means, thus saving time. This forcible method, if carefully and gently done, does not stir up sepsis to any serious extent, but it is a measure that should be used with the greatest circumspection. Reduction by one of these two methods in the early stages of union is far easier and apt to be much more successful than is reduction by operative procedure in the late, thoroughly calcified stages.

The second class of firmly united deformed fractures almost invariably can be improved. The correction involves difficult and tedious operations, but is always worth while, because the disabilities that result from the mechanical disturbances of bone deformity are extremely trying. The key note of corrective operations is the thorough breaking up of the vicious union, so that the fragments can be molded gradually into normal position. If the breaking up of the union is complete, fixation in the corrected position at the time of operation is comparatively unimportant, because proper traction following operation will overcome extraordinary degrees of deformity and shortening. I have recently had a case of an oblique fracture of the lower third of the femur with posterior displacement of the lower fragment and $3\frac{1}{2}$ inches shortening, which had been firmly united for a year at the time of operation. The union was with great difficulty chiseled free in the line of the old fracture, and forcible attempts were made to overcome the shortening with the aid of a Hawley table. The most that could be gained under the anesthetic with the application of great force was 1 inch. Therefore the bones were left in the bad position, the wound closed and the patient put to bed in a Thomas splint, with traction applied within the splint. Additional pull was obtained by tying the splint to the foot of the bed, which was raised 18 inches. In two weeks' time, the overlapping was completely overcome and perfect alignment and position obtained and held. The bone is now reunited in perfect position. Where the shortening is due to bowing at the site of a fracture, and not to overlapping, it can be overcome completely by simple osteotomy and forcible straightening at the time of operation. Proper traction will hold it. The

results obtained by this method of osteotomy, followed by extension and fixation in all types of vicious union, have been so good that I have yet to feel the necessity for the use of any of the forms of internal splintage, such as bone plates, bone grafts, or pins. The added complication and dangers attending their use do not seem to be compensated by any corresponding improvement in result. The application of any form of internal splint often leads to a false sense of security, which engenders a neglect of proper external splints, with the result that the deformity recurs. In many cases the amount of violence needed at the time of operation to get position good enough to justify the application of an internal splint is so great as to do great harm. Sometimes, as in the case cited above, no application of force or manipulation will bring about such an immediate reduction.

Ununited fractures are far worse than they are in civil life. They are of all degrees, from simple fibrous union to gaps 3 or 4 inches in length. Absolute immobilization in good position is the key note of their treatment. Most fractures in which there is little loss of bone fail to unite because of improper fixation. Even after many months of nonunion they will often unite without operation if absolutely fixed. Syphilis has little bearing on the question of union among the men who come to us, as it is of extremely rare occurrence, if we may trust the Wassermann test.

In cases in which there is large destruction of bone, bone transplantation is invaluable for three reasons. First, it immobilizes; second, it provides a bridge along which bone cells may grow from the fragments; third, it connects together any small fragments of living bone or periosteum that lie free in the tissues. I have yet to see a bone transplant that showed any signs of proliferation. On the other hand, I have watched many transplants with the roentgen ray, and seen new bone creep gradually along the graft from the living bone at both ends, forming bridges with the graft as a trellis, gradually thickening and piling up until the graft is incorporated in a new sheath, and itself becomes incorporated as new bone. The view that the growth all occurs from the living fragments is confirmed by the fact that occasionally the graft will have to be removed after weeks or months because of low grade sepsis. Such removal does not necessarily interfere with the bridging process from the ends of the fragments, which afterward go on to union. Defects of bone 4 or more inches long are often successfully bridged by grafts.

Joint injuries and infections are those of civil life much exaggerated, and are of all sorts, from the clean penetrating wounds to the badly infected destructive lesions. Many are merely small fractures into the joint. There are also numbers of inflamed joints due to systemic infections from tonsils, teeth or intestine. These are purely civil problems, but are interesting because of the comparative frequency, on this side of the water, of bad tonsils, teeth and sinuses. The damp climate makes their treatment more difficult. Syphilis is less common as a causative factor than it is in hospital practice at home.

Most of the gunshot wounds of the joint come to us after thorough operation at the front. This has usually consisted of wide incision, removal of dead tissue and thorough lavage. In the simple penetrating wounds the joints have often been closed tight. Those that stay closed do remarkably well, and it is easy to restore function. This is particularly true in the knees

and wrists. In many of the cases, too, in which much damage has been done, and drainage was necessary, the patients recover with some motion. These facts suggest a doubt as to whether joints are really so nonresistant to infection as we have thought in civil life. Even when drained joints become permanently stiff, they are more useful than an amputated limb. Primary excision of joints at the front may be necessary to save a limb, and sometimes give good results; but so far as we have seen them, they are not so useful as those that have been freely opened and drained. This is because after early excision union does not always occur. Nothing is more difficult to handle than such a flail joint.

STIFF JOINTS

Mobilization of stiff joints, whether the result of sepsis, of fixation, of nerve injury, or injury to muscles and tendons, still presents many problems to be solved. It is a safe general rule that, if there is no true bony ankylosis, and the cartilage is not completely destroyed, some degree of motion can be obtained. If this range of motion is small, it is apt to be continuously painful because of joint strain. If this pain is great, then a permanent arthrodesis in useful position is wise. This is especially true in the knee joint. The vast majority of stiff joints, however, can be brought to a useful range of motion. In obtaining this, our greatest standby is voluntary use of the muscles by the patient in attempts to use and move the joint. Unfortunately, however, because of complete fixation, of weak muscles, or of nerve injury, many joints cannot be voluntarily used. In them certain rules must be observed.

1. The painful, sensitive joint, no matter how old the injury, should not be moved. It should be rested absolutely, and its only treatment should consist in efforts to keep up the circulation and to improve muscle tone. Electricity, light massage, heat, are all useful in this connection.

2. A painless stiff joint should be treated with a minimum of trauma.

3. Gradual progressive force applied over a long period accomplishes more than does sudden, severe manipulation.

4. Stiffness in bad position should always be corrected, so that if we are to have permanent loss of movement, we shall have a useful limb.

The line of treatment adopted depends on the cause of the stiffness. Let us first consider the cases that are due to adhesions within the joint. If these are firm and many, two courses are open to us. First, the continuous application of force through some form of splint, whose action depends on the pull of gravity, the pull of an adjustable cord, or the pull of an elastic band. Examples of these for the knee are the simple inclined splint, bent, on which the thigh and knee rest, while the leg and foot are unsupported; the jointed posterior splint with a turn buckle; the Turner screw and the jointed posterior splint with a strong elastic band connecting the two parts and tending constantly to approximate the leg and thigh. All of these may be reversed to straighten a stiff bent knee. All are useful and require little attention. The second course is that of progressive forcible manipulation under an anesthetic, with fixation in each new position until the pain disappears. This process may require four or five anesthetizations, under no one of which should the movements be continued to a point

at which great force is needed, or a violent reaction is set up. In my hands, this method has been the most successful. It takes time and great care, and must be accompanied by measures to keep up the tone of the muscles that act on the joint.

When adhesions are comparatively weak, and can be easily broken down, then one anesthetization under which the joint is put through its full range of motion only once (a point very wisely insisted on by Jones) may be thoroughly successful. In such cases no splint should be used, massage should be begun the same day, and active and passive motions continued immediately.

When stiffness of joints is due to injury of soft parts outside the joint, or to the formation of dense scar tissue following sepsis, gradual stretching is the only feasible method, unless something can be gained by dissecting out tendons or muscles that are bound down in scar. Fingers are most commonly stiff from this set of causes. Forcible manipulation here is valueless, as it simply tears soft parts and forms more scar tissue. Elastic traction will do wonders in flexing stiff, straight fingers. It can be applied by means of a leather glove, to the fingers of which are fastened elastic bands, which are made fast to a splint or plaster that hold the wrist hyperextended. It is best to attack the phalangeal joints in succession, beginning at the distal, the proximal ones being fixed meanwhile. In this way the successive segments can be pulled down till the fingers are curled up in the palm of the hand. This process must be very slow in order to stretch thoroughly the soft parts involved. If extension instead of flexion is the desideratum, then a flat, anterior splint can be applied to the successive joints as in gaining flexion, the elastic pressure being obtained by straps over the backs of the fingers. All treatment of stiff finger joints should be undertaken with the wrist in hyperextension. It is most important to keep up the power of the forearm muscles during this treatment by means of massage or electrical stimulation. If the stiffness is due to nerve injury and resultant trophic changes, then our efforts must be devoted to prevention of deformities, retention of the joints in good position, and preservation of the muscle power by electrical stimulation until the nerve supply is reestablished.

When stiffness is due to bony deformity or overgrowths, surgical interference to restore normal contours is primarily necessary. Such surgery is difficult, and its results are problematic.

NERVE INJURIES

Connective tissue formation is one of the most serious difficulties with which we have to deal. Almost all the wounds we see are badly scarred because of the sepsis and because of the great destruction of soft tissues. Masses of scar tissue lie in and around joints, in muscles, and around nerves and bone. Their vitality is low and they are extremely vulnerable to infection. In dealing with them, several principles must be observed. First, when scar tissue interferes with motion, it should be excised as widely as possible, and the fresh tissue brought together. Second, one should be sure that there is no latent infection in connective tissue before attempting any operation on bone or nerves, such as a bone graft or a nerve suture. Certain fixed periods of time after the healing of a wound have been laid down as sufficient to assure the disappearance of sepsis in scar

tissue. In nerve cases this is often said to be from six weeks to three months, and in bone cases from six months to a year. Unfortunately, such periods are not always sufficient, and it is impossible to tell by examination when latent sepsis has disappeared. Gas gangrene and virulent sepsis have frequently occurred in patients operated on after a year or more from the time of healing. A useful procedure, and one that I have applied with success, is as follows:

In nerve cases, as soon as the wound is healed and the skin is clean, operation should be performed and the damaged nerve explored. Scar tissue should be excised and the cut ends of the nerve cleared. The wound is closed tight, or with a small drain, and left for ten days. If there is no sepsis, it is easy at the end of that time to do a second operation and suture the nerve. When a bone operation is necessary, such as a bone graft, one should wait till the wound is firmly closed and the scar has been more or less softened and mobilized by massage, perhaps six weeks or two months. Then one may operate and prepare the bone field, excising scar tissue. One should cut the channels for the graft in the bone fragments and do everything except the critical step, such as the fixing of the graft. Then one should close the wound and wait ten days. If there is no flare up, the operation can be safely completed. In either case, if there is a flare up after the first operation, comparatively little harm is done, and the area can be efficiently drained without fear of nullifying the results to the patient. This procedure involves the discomfort of two operations, but is, I am sure, the only safe way.

Peripheral nerve injuries are extremely common in war wounds. They are of all types, complete division with much loss of substance, partial division, or irritation from surrounding scar. They may be single or multiple. Certain nerves, from their exposed position, are more commonly involved. The lesion may be anywhere from the spinal cord to the periphery. Treatment depends on the type of the injury, and this can be determined only by the most accurate and careful diagnosis based on a thorough anatomic knowledge. Electrical examination with the faradic and galvanic current is absolutely essential, and provides the only means in many cases to distinguish between true organic lesions, and functional paralysis. It is essential that the surgeon who comes in contact with these cases shall familiarize himself with the distribution of the nerves, both motor and sensory, to a degree that is rarely done in civil life. A careful review of nerve and muscle anatomy will be of the greatest value to any surgeon who is to treat war wounds. Treatment falls into two classes, the operative and the mechanico-electrical.

Complete lesions of nerves, when due to actual cutting or of scar formation within the nerves, or to constricting bands of fibrous tissue, must be explored, and sutured, resected or cleared. Partial and irritative lesions are usually better left surgically alone, as the tendency to recover spontaneously is very great if any fibers of the nerve trunk are still intact. Recovery in all cases is much aided by electrical treatment, which maintains the tone of the muscles, and by splints and massage, which prevent deformity, and maintain the flexibility of the joints. Nothing is more discouraging than to see the muscles supplied by a recovering nerve begin to regain their power, uselessly, because they have to pull against the resistance of deformed rigid joints.

There are exceptional partial lesions of nerves, in which scar tissue pressure causes severe and continuous pain, that must be operated on. Occasionally it is even necessary to do a section of the nerve above the point of injury and resuture it. These cases of so-called causalgia are among the most trying that we see, and resemble closely the severe cases of trigeminal neuralgia.

The prognosis of nerve suture grows worse in proportion to the length of time after the injury; but nerves will recover if sutured, very long periods after they are cut. After suture, the length of time for recovery varies from six months to two years, the musculospiral usually being the quickest, and the sciatic the slowest.

The technic of nerve suture should be as simple as possible. A long incision in the course of the nerve, isolation of the nerve above and below the wound in normal tissue, and dissection of the nerve from these starting points through the scar tissue to the point of damage. One should never try to find a nerve in scar tissue at the point of injury. The nerve trunk should be handled as little as possible, and it is safer to handle it, when necessary, with the fingers, or with mouse-toothed forceps, which grasp only the areolar tissue of the nerve sheath, than it is to use smooth forceps, which slip and squeeze. When the nerve ends are found, they should be grasped in turn at the tips, and then serial sections made part way through the trunk with a sharp knife until good nerve fibers appear. At that point the section should be completed. This scheme avoids much handling of the nerve. Approximation of the cut ends of the nerve should be obtained by movements of the nearby points, which will often make up for a gap of $1\frac{1}{2}$ or 2 inches. If this is not sufficient to allow the nerve ends to come together without tension, then freeing of the nerve trunk in both directions for long distances may be employed. In some nerves, length may be gained by transposition. Thus the ulnar may be transposed from the back to the front of the arm. Moderate tension at the point of suture does not seem to preclude good results, but it is better, if possible, to have the ends come together without tension. If none of these measures will serve to approximate the ends, then some form of nerve grafting may be employed. How successful this procedure is I do not yet know. Suture is best done by a series of interrupted stitches through the sheath only, around the periphery. As few of these as will serve to form a good joint should be used. Sutures through the nerve trunk should be avoided if possible. Either fine silk or fine catgut are good materials for the suture.

Various methods of wrapping the suture line in fascia or in Cargile membrane or other substance to prevent constriction of new scar are used. These measures sometimes defeat their own object by causing more scar tissue to form. The best plan seems to be to find a fresh muscle groove in which to bury the suture line. I have yet to see implantation of the nerve into another serve a useful purpose.

In general, the results of nerve suture are extremely encouraging, but their success is dependent on two things, early operation and careful mechanical and electrical after-treatment of the tissues supplied.

CONCLUSION

It has been my desire in this article to give physicians in the United States a summary of the sort of

work that will face them all, to a greater or less extent, when our men have gone through some of the actual fighting in the battle front. It is intended to give an idea of how much can be done toward restoration of the war cripples, and of what value reconstructive surgery is. In closing, let me say a word of appreciation of the work that has been done in England toward the rehabilitation of thousands of men, who, before this war, would have been discarded as cripples. Sir Robert Jones has done much to center attention on this reconstructive work, but there is much left to be done. I trust that the Medical Corps of our own Army will be able to take up the good work where he has left it off, and that the application of orthopedic principles, added to those of surgery, will do much to neutralize the effects of the frightful destructive injuries that the war is sure to produce among our men.

TREATMENT OF ECLAMPSIA

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Convulsive toxemia, except in a small minority of instances, is always preventable. There are even those optimists who state that if certain measures of prevention are carried out, eclamptic convulsions will cease to exist.

Be this as it may, the symptoms of a pregnancy toxemia are readily recognizable. Witness the almost entire absence of convulsive toxemia among the antepartum patients of a maternity hospital and among patients in private practice, who are under conscientious medical observation from early pregnancy, and who faithfully follow the directions of their medical attendant. The exceptional cases that "get by," so to speak, are the fulminant cases of hepatic toxemia, with no edema, little change in the composition or output of the urine, and with convulsions following shortly on the onset of the nausea and vomiting, headache or visual disturbances.

The nausea, vomiting, headache, edema, diminished urinary output, constipation, eye symptoms, nervous symptoms, and high blood pressure, aside from the urinary findings of albumin, casts, blood, indican, acetone, and possibly faulty nitrogen metabolism, are usually, if not always, sufficiently plain of the clinical picture of pregnancy toxemia. Physicians, hospital interns, and trained nurses after very little experience recognize the picture, social workers in the tenements have been known to, and even the much maligned midwife, in spite of her at present all too short period of instruction, soon acquires the knowledge that permits the detection of beginning pregnancy toxemia.

We have all had cases of eclampsia in our practice. When such a calamity occurred, it was because we did not watch our cases of pregnancy as carefully as we should, because the patient did not apply for treatment until the toxemia was well advanced, or because the patient neglected or refused to carry out simple preventive or curative measures—would not report for observation, failed to send specimens of urine for analysis, neglected her bowels, or indulged in alcohol or a high nitrogen diet, or both.

If it be only partially true that the early recognition and treatment of pregnancy toxemia will eliminate convulsive toxemia with its high mortality, then surely

the preventive treatment is to be reckoned with and is all important.

PREVENTIVE TREATMENT

For years it has been realized that thousands of pregnant women are practically unobserved, until at or near their date of confinement. For instance, patients of maternity hospitals, midwives and all too often of private practitioners are not even seen until after the onset of labor. In 1917, 141,564 births were reported to the New York Department of Health. Out of this number it is perhaps safe to state that 75,000 women went into labor without any prepartum observation whatever.

Hence a long step forward in the prevention of eclampsia is the attention that in the past few years has been directed to the importance of prenatal care of women, especially of the poorer class, for the purpose of reducing infant and maternal mortality.

One outcome of this agitation is the recent organization of the Maternity Service Association of the City of New York, organized mainly, if not entirely, through the earnest and untiring efforts of Dr. Ralph W. Lobenstein, in conjunction with the New York Department of Health.

One aim, among others, of the nurses of a maternity center is to seek out, among the women of the tenements, those showing signs of pregnancy toxemia, kidney insufficiency if you will, and refer such women to the proper clinic or hospital of the sanitary zone in which they reside.

Most maternity hospitals hold daily, biweekly or tri-weekly prenatal clinics, with indifferent or even deplorable results by reason of the difficulties and cost of a comprehensive "follow up" system. This at least has been our experience at Bellevue and the Manhattan Maternity. It is not unusual for eclampsia to develop among the patients after registering in the prenatal clinics.

Let us glance for a moment at the working of the first maternity center, established at 219 East Seventy-Ninth Street, in the so-called Zone 7, this being the district to which the Manhattan Maternity is now confining its work. Incidentally it is not too much to state that we are entering on a new era in the prevention of eclampsia. During January, 1918, twenty patients suffering from various prenatal and postpartum conditions were referred by the nurses of the maternity center to the Manhattan Maternity. Nine of these women received into the hospital were instances of pregnancy toxemia. Five were primiparas, four multiparas, the blood pressure ranged from normal to 228 mm.; all had albumin in the urine, four had casts, and one had blood; gastric disturbances were present in all and edema in most; eleven convulsions occurred in one woman, and two in another after admission; seven had labor induced by Champetier de Ribes bags; the two convulsive cases went into labor spontaneously. In only one instance were forceps used. In one twin case version and breech extraction was demanded. In a fetus dead from prolapse of the cord, perforation and extraction were performed. All the nine mothers are alive today.

Of the ten children, there being a twin case, one was lost from prolapse of the cord, one was stillborn at term, probably from toxemia, and one, a 3-pound macerated fetus, was delivered. This patient had experienced seven previous stillbirths. She had a negative Wassermann reaction. One can hardly ques-

tion but that the saving of all the mothers and the seven babies out of ten was due to the early recognition and treatment of the preeclamptic state.

CURATIVE TREATMENT

Our time-honored principles of the curative treatment of toxemic convulsions, namely, (1) control of the convulsions; (2) elimination of the toxins, and (3) termination of the pregnancy, still hold good, although recent clinical experience has somewhat modified them.

A certain number of eclamptic patients, from 8 to 10 per cent. for a minimum, will die, no matter what treatment is used or not used, and the majority, 80 or 90 per cent., will recover under a conservative treatment, which does not include shock-producing operations or shock-producing drugs.

A one-time advocate of active surgical and medical treatment, and bitterly opposed to morphin in eclampsia, experience of the past five years has radically changed my views and teaching. Like many another obstetrician, I frankly confess to have been won over to the use of morphin. I stand for a reasonably conservative treatment, neither an ultraradical, with its incisions of the cervix, accouchment forcé, difficult forceps or version, vaginal or abdominal cesarean operations on the one hand, nor an ultraconservative treatment, with its main reliance on morphin and eliminations, on the other. So long as eclampsia is a mystery, a disease of theories, no one treatment is applicable to all cases.

At the same time, in spite of the claims of many, it is very difficult or impossible to individualize one's cases. All eclamptics have toxemia as the underlying causative factor, whatever the clinical variety, liver, kidney or acidosis. In given instances an ultraconservative treatment might cause more harm than an ultraradical treatment. One would, perhaps, unhesitatingly accept the ultraconservative method were it not for the clinical fact, which, as far as I am aware, has never been disproved, namely, that the shorter the time that elapses between the first convulsion and the emptying of the uterus, the better the prognosis for mother and fetus. This apparent fact I referred to in 1913, and clinical observation since that time has strengthened the belief.

Given a case of convulsive toxemia: While the treatment is still empiric, a modified conservative treatment has given me the best results. Chloroform, nitrous oxid, and even ether, should be avoided if possible. The first has been shown to predispose to or cause hepatic necrosis; the second temporarily increases blood pressure and favors cerebral congestion. Ether is the safest. It should be borne in mind that any vapor anesthesia long continued lessens the patient's chances.

A full dose, half a grain of morphin, is administered hypodermically in place of vapor anesthesia. A catheterized specimen of urine is now taken for examination. The stomach is then washed out with a sodium bicarbonate solution, and 2 ounces of magnesium sulphate in solution are placed in the stomach before withdrawal of the stomach tube. Some use castor oil in place of the magnesium sulphate. I sometimes substitute 3 drops of croton oil in sweet oil. Magnesium sulphate seems to act promptly and with very little irritation. A colonic irrigation of several gallons (from 4 to 5) of a 5 per cent. glucose solution is now

given. Some use sodium bicarbonate. I never use sodium chlorid solution.

If possible, the patient is placed in a darkened room, and kept as quiet as possible. In a hospital ward screens are placed about the bed. The importance of free ventilation is to be remembered. The morphin is repeated in smaller doses (from $\frac{1}{6}$ to $\frac{1}{4}$ grain), according to indications, keeping the respirations in the neighborhood of 10 or 12. I do not follow a routine. In patients of marked nervous instability, a full dose of sodium bromid (from 30 to 40 grains) in solution by rectum often assists the morphin in controlling the convulsions. I have entirely abandoned the use of chloral hydrate.

I am still uncertain whether the morphin increases the infant mortality. Possibly it does. Even in high systolic blood pressure (from 175 to 200 mm.) I do not employ phlebotomy as frequently as I formerly did, as I fear the concentration of the toxins and the sudden subsequent fall of blood pressure with even spontaneous labor, as has been observed in the use of veratrum viride.

Multiparas, in the absence of obstructed labor, with their comparatively short period of prospective labor ahead of them, are ideal cases, good risks for the conservative morphin, eliminative, noninterference treatment. Primiparas, on the other hand, with their twenty hours of prospective labor to face and their greater intra-abdominal pressure, are not such good risks. And then unfortunately eclampsia is four times more common in the latter than in the former.

An arrangement of electric lights in a rack is now placed over the patient wrapped in blankets, and a moderate perspiration is kept up for several hours. I find this plan of sweating preferable to the usual hot pack, because the patient is less disturbed by it, there is less danger of chilling of the surface in changing, better control of the degree of sweating is had, and sudden concentration of the toxin is avoided. The danger of oversweating is to be reckoned with. During the sweating, water, if possible, is freely administered.

So much for the control of the convulsions and the eliminative treatment. Aside from the first full dose, and the repeated smaller doses of morphin, most obstetricians are in accord with the foregoing treatment; but whether the termination of the pregnancy or labor shall be spontaneous or artificial has caused endless argument. Eclamptic patients are the worst kind of surgical risks; they are most susceptible to shock—shock of operation, shock from cardiac depressants like veratrum viride, phlebotomy and oversweating.

Opposed to the purely expectant plan regarding delivery stands the clinical fact, already referred to, that the shorter the time that elapses between the first convulsion and the emptying of the uterus, the better the prognosis for mother and child.

The beneficial results obtained from the removal of the fetus and uterine contents is largely, I believe, a matter of pressure relief, not the doing away with the nitrogenous output of the fetus or placenta: relief from pressure on the kidneys and renal vessels, pressure on the intestine, portal circulation and liver. Witness the frequency of eclampsia at or near term, the severity of the attack in hydramnios cases, in twin pregnancy, and on the other hand, the improvement so frequently observed after spontaneous or artificial rupture of the membranes. However, better an expectant attitude, with our main reliance on morphin and

eliminatives, than a shock-producing delivery operation.

A one-time enthusiast in the free employment of veratrum viride in eclampsia, I frankly confess to having changed my views. I fear its shock-producing effect, although I still occasionally use small repeated doses in selected cases. Glyceryl trinitrate must be reckoned with to reduce arterial pressure, and for its diuretic action. Chloral hydrate I have abandoned, and I use sodium bromid in its place. The treatment of the overwhelming of the cardiovascular system by the toxin or toxins, with the accompanying collapse and pulmonary edema, is based on general principles, namely, caffein, epinephrin chlorid, cupping, intravenous infusions, oxygen, and even strychnin.

Stroganoff with the morphin treatment and an ultra-conservative surgical treatment in 360 cases claims a maternal mortality of 6.6 per cent. and a fetal mortality of 21 per cent. Tweedy of the Dublin Rotunda with morphin and a less conservative surgical treatment, in seventy-four patients had a maternal mortality of 8.11 per cent., and a fetal of 30 per cent. Tweedy delivered by forceps after dilation of the cervix; Stroganoff gave large doses of chloral hydrate by rectum.

Two or even three grains of morphin are given in the first twenty-four hours. Others in smaller series of cases have had similar results. Kosmak with morphin elimination, and phlebotomy with a blood pressure over 175 systolic, in thirty-five cases had a maternal mortality of 8.6 per cent., and a stillbirth mortality of 40 per cent.

Difficult forceps operation, forcible dilation of the cervix, incisions of the cervix, and vaginal cesarean section have no place in the modern treatment of eclampsia at term. A single low forceps operation is always in order. Ether is the only anesthetic to be used for any operation.

The same may be said of hydrostatic bags to induce or shorten the labor, as well as the manual dilation of a soft, already partially dilated cervix, to permit of a medium or low forceps operation. My belief is that in the presence of a disease with such a high fetal mortality from any treatment, perforation of the head and a careful extraction of the body should be justified to shorten the interval between the first convulsion and delivery in certain instances.

Until we know more of the causative factors in eclampsia, abdominal cesarean section will always demand a place in the treatment. I believe the indications for the operation are still limited by reason of the remarkable results that have been obtained from the morphin treatment.

Abdominal cesarean section must be considered in a primipara with a long, undilated cervix, to anticipate the twenty hours of spontaneous labor that she would otherwise pass through. A twenty minute abdominal cesarean section, in our present knowledge of eclampsia, would appear preferable to the shock of a difficult version and extraction in a shoulder presentation, or the shock of a prolonged labor in moderately obstructed labor, whether of pelvic or of fetal origin.

I have yet to convince myself that the intensity of the toxemia is an indication for cesarean section. I look on the operation as a substitute for the more shock-producing operations, and to save certain patients from a twenty hour labor and pressure, especially primiparous patients. With the prospect of a short labor, cesarean section does not appeal to me.

It would appear, however, that abdominal cesarean section at term and vaginal cesarean section in the middle third of gestation have their indication in primiparous patients with undilated cervix, and with the familiar clinical picture of profound toxemia, namely, scanty urine, loaded with albumin and casts and especially blood, by catheterization of the bladder in these patients; frequently convulsions, the coma persisting during the whole period of the intervals; retinal changes and hemorrhage, as shown by the ophthalmoscope; and persistence of the cyanosis of the convulsions into the intervals.

A review of the present and prospective obstetric situation causes a recurrence of the reflection that the very poor and the well-to-do are today receiving the best obstetric care, while those of the so-called middle class are the ones, who, all too often, suffer from indifferent prenatal attention.

28 West Fifty-Sixth Street.

THE RELATION OF BLOOD PRESSURE
TO CONVULSIONS*

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CINCINNATI

There is some factor at work in the course of a convulsion that brings it on and again stops it. That the convulsion stops is an argument in itself against the belief that a chemical substance reaches such a concentration as directly to produce the convulsion. If there is in the blood a chemical, the concentration of which increases to a point at which it produces a convulsion, does its decrease in concentration or disappearance permit the convulsion to end? From the following observations we may think of the chemical as only producing an edema of the brain. The chemical continues as an increasing factor, and the balance between the intracranial pressure and the blood pressure, the variable.

It is well known that the blood pressure is a function of the intracranial pressure, rising directly with it. Normally the blood pressure is higher than the intracranial pressure. The height of the blood pressure over that of the intracranial, or the difference between the two, is a margin of safety. As these two approximate, as the margin diminishes toward zero or even to a negative quantity (that is, when the blood pressure is less than the intracranial pressure), less blood is sent to the brain in a direct proportion. As the margin remains at a small positive quantity, the brain must undergo some changes; for example, the vaso-motor center fags. As a consequence, the blood pressure, which has been maintained as high as possible to counteract the high intracranial pressure, drops. The intracranial pressure now becomes greater than that of the blood, the margin a negative quantity; the pupils dilate, and the convulsion comes on. The sharp, tense contractions of the muscles play a vicarious part by forcing the blood from the periphery and raising that in the brain until the margin is again a positive quantity. With its renewed blood supply the centers take up their work again for the time.

OBSERVATIONS

All measurements were made with the Tycos apparatus.

OBSERVATION 1.—A colored man, aged 55, entered while in coma. There was marked edema. The urine was acid (methyl red); it contained albumin, 6 gm. per thousand, and casts of all types in large quantities, but no sugar. The clinical diagnosis was uremia. At the point marked X in Chart 1, immediately after the fourth convulsion, 1/100 grain of nitroglycerin was put on the tongue. It will be noticed

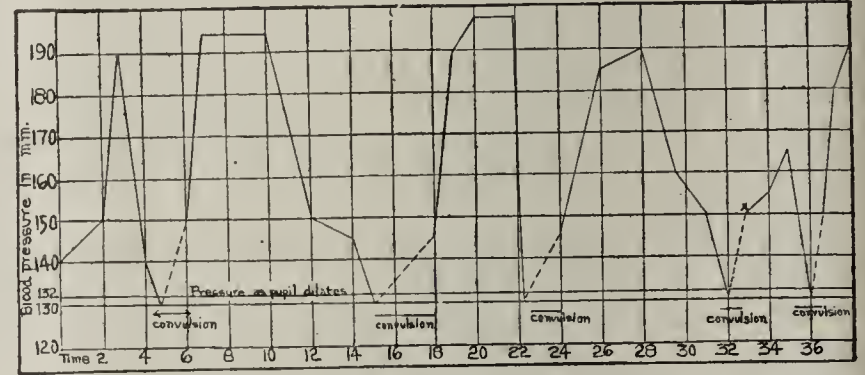


Chart 1.—Blood pressure in Observation 1. In this and the following charts, the ordinate represents the blood pressure in millimeters, and the abscissa, the time in minutes.

that the blood pressure did not rise as usual to 190 or 195, but fell with another convulsion. Only four observations are recorded, but ten were taken with similar rising and falling pressure and convulsions.

TABLE 1.—PROTOCOL OF OBSERVATION 1

Time, A.M.	Blood Pressure	Time, A.M.	Blood Pressure	
5:03	140	5:24:45	133	Pupils dilated
5:05	150	5:25:10	130	Convulsion
5:06	190	5:25:15		Convulsion ended
5:07	140	5:27	145	
5:07:30	132	5:29	185	
5:07:40	130	5:31	190	
5:09	150	5:32	170	
		5:32:30	160	
5:10	190	5:34	150	
		5:34:30	133	Pupils dilated
5:15	150	5:35		Convulsion over;
5:17	145			1/100 gr. nitro-
5:18:1	132	5:37	155	glyc. on tongue
5:18:15	130	5:38	165	
5:21	145	5:38:50		Convulsion
		5:39:30	160	Convulsion
5:22	190	5:40	180	
5:23	197	5:41	190	

OBSERVATION 2.—In a pregnant white woman, aged 23, convulsions came on gradually in afternoon and increased in their rate of occurrence and severity. The urine was acid,

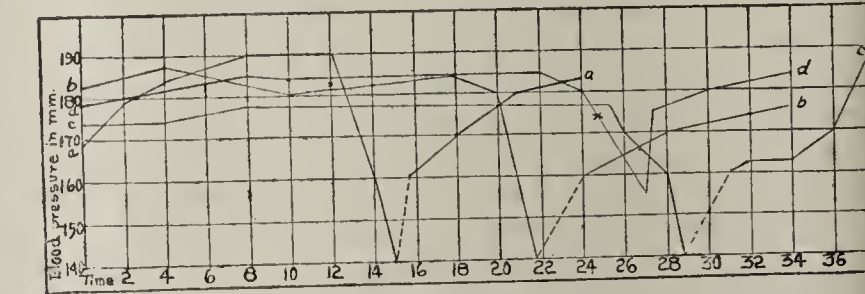


Chart 2.—Blood pressure in Observation 2.

and contained albumin, 7 gm. per thousand, and casts of all types, but no sugar. Four observations of the eight taken are charted; the remaining four gave the same findings.

At point X, Observation D, Chart 2, 15 drops of epinephrin were given. The blood pressure was already on the way down, but was stopped, and the usual convulsion did not take place.

TABLE 2.—PROTOCOL OF OBSERVATION 2*

Time, P.M.	Blood Pressure	Time, P.M.	Blood Pressure	
A.—		11:31:30	140	Convulsion
11:17	170	11:31:45	160	Convulsion ended
11:19	178			
11:21	183	11:35	170	
11:25	190	11:39	182	
11:29	190	B.—		
11:31	160	12:10	180	
11:31:15	146	12:14	188	
				Pupils dilated

* From the Department of Pathology, University of Cincinnati College of Medicine.

TABLE 2.—Concluded

Time, P.M.	Blood Pressure		Time, P.M.	Blood Pressure	
12:20	180		1:17	163	
12:24	183		1:19	163	
12:28	185		1:21	170	
12:30	180		D.—		
12:31	160		1:30	140	
12:31:30	145	Pupils dilated	1:38	185	
12:31:30-32	140	Convulsion	1:40	184	
12:34	160	Convulsion ended	1:42	185	
C.—			1:44	185	
12:45	175		1:46	185	
12:49	175		1:48	185	
12:53	178		1:50	183	
12:59	177		1:52	182	
1:10	178		1:54	180	
1:13	160		1:54:10		Hypo of epinephrin, 15 drops
1:13:15	146	Pupils dilated	1:55	170	
1:13:30	140	Convulsion	1:56	165	
1:16	160	Convulsion ended	1:57	177	and no convulsion

* A, B, C and D represent the conditions on either side of the convulsion.

OBSERVATION 3.—A man, aged 63, with uremia, had had a similar attack three months before. The urine was acid; it contained albumin, 3 gm. per thousand, and casts of all types

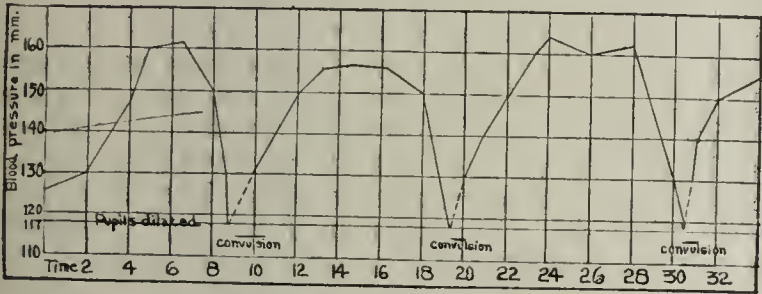


Chart 3.—Blood pressure in Observation 3.

in large quantities, but no sugar. The rise and fall of the blood pressure was similar to Observation 2, save that the entire system was lower.

TABLE 3.—PROTOCOL OF OBSERVATION 3

Time, P.M.	Blood Pressure		Time, P.M.	Blood Pressure	
7:28	128		7:50	150	
7:30	130		7:51	160	
7:32	148		7:52	165	
7:33	160		7:54	160	
7:35	161		7:55	162	
7:36	150		7:58	130	Pupils dilated and a convulsion started before another blood pressure reading could be taken
7:37	120	Pupils dilated			
7:37		Convulsion			
7:38		Convulsion ended			Convulsion ended
7:39	140		7:59	130	
7:40	150		7:60	150	
7:41	155		7:62	155	
7:46	150				
7:47	130				
7:47	120	Pupils dilated			
7:48	130	Convulsion ended			

OBSERVATION 4.—These observations were taken at 2 a. m., when the patient was brought into hospital; the convulsions had started early the morning before. At the beginning the blood pressure very likely rose to 180 or 190, but toward

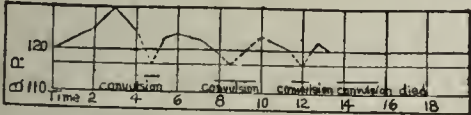


Chart 4.—Blood pressure in Observation 4.

the end the ability to maintain the advantage given by the muscles in convulsions was not possible. In addition, the muscles were fatigued.

TABLE 4.—PROTOCOL OF OBSERVATION 4

Time, A.M.	Blood Pressure		Time, A.M.	Blood Pressure	
2:16	120		2:26	123	Convulsion ended
2:18	125		2:27	121	
2:19	130	Convulsion	2:28	120	Pupils not observed
2:21	123		2:29	122	
2:22	125		2:30		Convulsion
2:22:30	123		2:30:30		Patient died during convulsion
2:23	120	Pupils dilated			
		Convulsion			

SUMMARY AND CONCLUSIONS

Detailed observations on four patients with convulsions show that a convulsion is precipitated in all probability when the blood pressure becomes lower than the intracranial pressure, and that measures taken to raise the peripheral pressure will stop a convulsion, since the blood pressure is a function of the intracranial pressure. It logically follows that measures must be taken to reduce the intracranial pressure in order to accomplish any permanent relief.

A NEW METHOD FOR ESTIMATING TOTAL BLOOD VOLUME IN ANEMIAS

PRELIMINARY REPORT

EDWARD LINDEMAN, M.D.
NEW YORK

The total quantity of blood in the human body is a problem that has baffled men in medical science ever since Harvey's discovery of the circulation of the blood. It is a matter of no small importance in many diseased conditions, and in functional disorders in which no organic disease exists. In recent years, attempts have been made to estimate the quantity of blood; and perhaps a brief review of methods and results will be of interest.

Welcker,¹ in 1854, devised the first method for estimating blood volume. He bled an animal, weighed the quantity of blood obtained, then washed out the blood vessels with water, and estimated the amount of hemoglobin in the washings.

Gréhan,² in 1882, took a specimen of blood and calculated the percentage by volume of oxygen by extraction with a gas pump. The animal was made to breathe carbon monoxid gas for a certain time, and the total amount of carbon monoxid absorbed was determined by analysis. A second specimen was next taken, and the percentage of oxygen by volume was again determined. The difference between the percentage by volume of oxygen before and after the administration of the carbon monoxid gas is the percentage by volume of carbon monoxid in the blood, since the latter gas displaces an equal volume of oxygen in the blood.

If the total volume is indicated by V, and the percentage by volume, that is, the number of cubic centimeters of carbon monoxid to each hundred c.c. of blood, is indicated by v, then the total quantity of blood equals:

$$\frac{V}{v} \times 100.$$

By this method, Gréhan established these percentages by volume: for the dog, 7.7; the rabbit, 5; the cat, 5, and the bird 10 per cent. of blood per body weight.

Bischoff,³ in 1856, applied Welcker's method to two men guillotined, and obtained values of 7.7 and 7.2 per cent., respectively, of body weight.

1. Welcker, H.: Bestimmungen der Menge des Körperblutes und der Blutfärbekraft, sowie Bestimmungen von Zahl, Maass, Oberfläche und Volumen des einzelnen Blutkörperchens beim Thier und beim Menschen, Prager Vrtljschr., 1854, 4, 11; Ztschr. f. rat. Med., 1858, 4, 145.
2. Gréhan and Quinquaud: Measure du volume de sang contenu dans l'organisme d'un mammifère vivant, Compt. rend. Acad. d. sc., 1882, 94, 1450.
3. Bischoff, L. A.: Bestimmungen der Blutmenge bei einem Hingerichteten, Ztschr. f. Wissensch. zool., 1856, 7, 331; Abermalige Bestimmung der Blutmenge bei einem Hingerichteten, ibid., 1858, 9, 65.

Gréhan's method was modified by Haldane and Smith⁴ and applied to man. They obtained values approximating 5 per cent. of body weight.

Zuntz and also Plesch⁵ employed in their determinations the method of Gréhan, as modified by Haldane and Smith.

Keith, Rowntree and Geraghty,⁶ in 1915, injected intravenously a 1.5 per cent. solution of vital red in distilled water. Of this dye, which is disodium disulphonaphthol azotetramethyl triphenal methane, they employed 3 mg. per kilogram. Specimens were drawn before and after the introduction of the dye.

The foregoing methods present serious objections in many cases in which the blood volume is important.

The method of Haldane and Smith has no practical value in anemias, and, furthermore, the estimates by this method are apparently low.

The method of Keith, Rowntree and Geraghty is not free from criticism. They themselves cite three objections to the method:

1. There is at times a hemolysis caused by the injection of the dye. This hemolysis makes readings inaccurate, and in hemolytic anemias, hemolysis should be avoided.
2. When lipemia exists, readings are impossible. In 9 per cent. chilly sensations occurred. In 5 per cent., chills and fever occurred with a rise of temperature to 101.
3. Dyeing of the skin has occurred.

The antitoxin method of von Behring⁷ deserves mention.

Quincke,⁸ in 1877, attempted to estimate the blood volume from the change in the blood counts before and after transfusion with the introduction of a known quantity of blood.

In 1914 I used a method similar to Quincke's and encountered many difficulties. The patients were often far away from the laboratory. The delay in the counts made this method difficult, arduous and unreliable. When such work was deputed to assistants and interns, the percentage of error due to the personal equation rendered such calculations often highly inaccurate. I believe our methods of counting blood corpuscles are less accurate than they are credited with being. Blood counts made for the purpose of cal-

culating blood volume should be made immediately before transfusion.

To overcome these difficulties I have devised the following method:

AUTHOR'S METHOD

The patient and the donor are prepared for blood transfusion. Lindeman cannulas are inserted into the veins. These cannulas are of 20 gage, permitting a free flow of blood. When the cannulas are inserted, a slight compression is made on the veins by a tourniquet so that the blood is not taken from a congested limb, and specimens are then taken. Blood transfusion is then immediately performed by the syringe-cannula system⁹ as devised by myself without recourse to saline or other foreign material, such as citrate or herudin.

The quantity of each syringeful of blood introduced into the patient is accurately recorded. Three minutes after the completion of the transfusion, the vein of the opposite arm is tapped for a third specimen. These specimens are gathered in calibrated centrifuge tubes, each of which contains 0.2 c.c. of saturated solution of potassium oxalate. The specimens are agitated slightly to produce a thorough mixture of the oxalate with the blood in order to prevent coagulation. They are corked immediately to prevent evaporation. About 6 c.c. of blood are gathered in each tube. These specimens are centrifugized at a speed of 3,000 revolutions a minute for a period of twenty minutes, when no further reduction in volume of the sediment occurs. The readings are then made from the scale with the aid of a magnifying glass. The percentage by volume of red and white cells, inclusive, is then recorded, correction being made for the potassium oxalate in the tubes.

If x equals the initial volume of blood in the body, and we know the initial cell percentage by volume, the cell percentage by volume of the blood introduced and the quantity of blood introduced, and also the cell percentage by volume of the patient's blood after the transfusion, it is a simple matter, by the accompanying formula, to calculate the volume of blood.

FORMULA

If

x = initial volume
 a = R. B. C. vol. % of initial volume
 b = volume introduced
 c = R. B. C. vol. % of volume introduced
 l = Final vol. % R. B. C.

Then:

$$\begin{aligned} xa + bc &= l(x + b) \\ xa + bc &= lx + lb \\ xa - lx &= lb - bc \\ x(a - l) &= lb - bc \\ x &= \frac{lb - bc}{a - l} \end{aligned}$$

The cell percentage by volume of the donor remains remarkably constant throughout the transfusion. In a series of observations I have made I find that the cell volume reduction of donors during the transfusion does not exceed 1 per cent. because of the rapidity of operation and the delay in blood dilution. The values, therefore, by this slight change in cell volume are altered too little to effect any appreciable change in the calculations.

This method, where applicable, as in anemia, is practically free from error introduced by the personal equation, and is accurate unless we assume a difference in the cell percentage by volume of the blood taken from the two arms, after allowing a mixing time interval of three minutes, which is outside the realms of probability.

In making these determinations I have encountered no hemolysis in any of the serums after transfusion as determined by inspection. This is also borne out by the fact that no reactions have been observed in the patients after transfusion. Whenever hemolysis occurs, chills and fever follow transfusion. No chills occurred in any of the cases of blood volume studies. In fact, in my syringe cannula method of blood transfusion⁹ I have finally succeeded in eliminating post-

4. Haldane, J., and Smith, J. Lorrain: The Mass and Oxygen Capacity of the Blood in Man, *Jour. Physiol.*, 1899-1900, **25**, 331. Smith, J. Lorrain: Discussion on the Blood in Disease, *Tr. Path. Soc. London*, 1900, **51**, 311.

5. Plesch, J.: Hämodynamische Studien, *Ztschr. f. exper. Path. u. Therap.*, 1909, **6**, 380.

6. Keith, N. M.; Rowntree, L. G., and Geraghty, J. T.: A Method for the Determination of Plasma and Blood Volume, *Arch. Int. Med.*, October, 1915, p. 547. This paper is recommended to those interested in the subject. From the paper, in addition to references already given, the subjoined references are reproduced:

Heidenhain: Ueber die Blutmenge der Säugethiere mit besonderer Rücksicht auf Welcker's Methode der Blutbestimmung, *Arch. f. physiol. Heilk.*, 1857, n. f., **1**, 507.

Cohnstein and Zuntz: Untersuchungen über den Flüssigkeitsaustausch zwischen Blut und Gewebe unter verschiedenen physiologischen und pathologischen Bedingungen, *Arch. f. d. ges. Physiol.* (Pflüger's), 1888, **43**, 303.

Kottmann, K.: Ueber die Bestimmung der Blutmenge beim Menschen und Tier unter Anwendung eines neuen Präzisionshämokriten, *Arch. f. exper. Path. u. Pharmakol.*, 1906, **54**, 356.

Vierordt, K.: Das Abhängigkeitsgesetz der mittleren Kreislaufzeiten von den mittleren Puls-Frequenzen der Tierarten, *Arch. f. physiol. Heilk.*, 1858, n. f., **2**, 527.

Malassez, L.: Nouveaux procédés pour apprécier la masse totale du sang, *Arch. de physiol. norm. et path.*, Series 2, 1874, **6**, 797.

Tarchanoff, J. R.: Die Bestimmung der Blutmenge in lebenden Menschen, *Arch. f. d. ges. Physiol.* (Pflüger's), 1880, **23**, 548; 1881, **24**, 525.

Oerum, H. P. T.: Quantitative Blutuntersuchungen, *Deutsch. Arch. f. klin. Med.*, 1908, **93**, 356.

Kämmerer, H., and Waldmann, A.: Blutmengebestimmungen nach von Behring und andere quantitative Untersuchungen der Blutbestandteile, *Deutsch. Arch. f. klin. Med.*, 1913, **109**, 524.

Fries, H.: Ueber Veränderungen der Blutmenge in Schwangerschaft, Geburt und Wochenbett, *Ztschr. f. Geburtsh. u. Gynäk.*, 1911, **69**, 340.

7. Von Behring, E.: Die Antitoxinmethode zur Blutmenge Bestimmung, *München. med. Wchnschr.*, 1911, **58**, 655.

8. Quincke: Weitere Beobachtungen über perniziöse Anämie, *Deutsch. Arch. f. klin. Med.*, 1877, **20**, 27, referred to by Plesch (Note 5).

9. Lindeman, Edward: Simple Syringe Transfusion with Special Cannulas, *Am. Jour. Dis. Child.*, July, 1913, p. 28.

transfusion chills. In the last 125 consecutive cases not a single chill has occurred.

The time elapsing for the performance of these transfusions was from ten to fourteen minutes.

The results obtained by means of these estimations have been most gratifying and helpful in the management of the cases.

REPORT OF CASE

History.—Miss K., aged 26, 5 feet 4 inches in height, and weighing 130 pounds, referred to me by Drs. W. A. Downs and Walter Bastedo, had suffered with gastro-intestinal disturbances for years—ever since she could remember. At the age of 16 she began to vomit blood, and had been vomiting blood at weekly intervals ever since, sometimes abundantly, and at other times in small amounts. In 1911, Sir Harold Stiles of Edinburgh performed a gastro-enterostomy without relief. The patient did not know the condition found at operation. She had had blood in the stools frequently, and had a very large hemorrhage, Dec. 26, 1917. Since her last hemorrhage she had been growing increasingly paler and weaker.

Physical Examination.—The patient had a drawn, pinched, ashy look about her face. Her friends said that only six months before she had a fairly good, rosy color. Her pulse volume was small. Her voice sounded very weak. Mentally she was very active and fully conscious, and extremely nervous and irritable. There were pulsations of the veins in the neck. Hemic murmurs were noted all over the precordium. There was no air hunger, but respirations were deeper than usual. The patient was not strong enough to raise herself in bed. She had no appetite. The stools were black and tarry. The patient suffered from constipation.

The patient, a writer by occupation, told me that her brain was usually more active, and that her ideas flowed more rapidly, after the hemorrhages. There had been no bleeding other than from the rectum and the stomach. There was no purpura or other evidence of a hemorrhagic diathesis, and no evidence of primary blood disease. The platelet count was normal. The physical examination otherwise was negative.

Transfusion and Operation.—Before the patient was taken to the operating room, she said it was useless; she was discouraged and felt that she could not live. Before transfusion, the red blood cells were 1,300,000, and the hemoglobin, 20 per cent. The blood clot was well formed, large and firm, and the coagulation time, six minutes.

Dr. Downes operated on the patient immediately after I had performed the transfusion. No evidence of a bleeding ulcer could be found. She had a velvety, boggy, congested mucosa with somewhat dilated veins, but no evidence of any bleeding point. Dr. Bastedo thought the ulcer might be of the rare variety in which the base is well hidden and buried deep in the mucosa, and not visible in spite of careful but limited exploration.

The old gastro-enterostomy did not allow a free passage for material, so that a new anastomosis was made between the first portion of the jejunum and the duodenum. There has been no recurrence of bleeding since the operation.

The amount of blood transfused was 1,500 c.c., and the time required was fourteen minutes.

The amount of blood withdrawn for blood tests before transfusion was 70 c.c.

The cell volume before transfusion was 13.7 per cent.

The cell volume after transfusion was 25.5 per cent.

The cell volume of the donor was 40 per cent.

Application of the formula reveals that the patient possessed a blood volume equal to:

$$\frac{40 \times 1,500 - 25.5 \times 1,500}{25.5 - 13.7} = 1,843 \text{ c.c.} + 70 \text{ c.c.} = 1,913 \text{ c.c.}$$

COMMENT

The patient presented a clinical picture of chronic rather than acute bleeding, because of her ability to stand her grave anemia in the presence of a small blood volume.

A very singular happening during the transfusion was her failure to note any improvement in her condition until she had received about 1,000 c.c. of blood. From that moment she noticed improvement symptomatically, and when she had received 1,500 c.c. of blood, she felt like a new person. More could have been obtained from the donor, and the patient could have accepted even more; but it was felt that she had received enough to convert her from an extremely poor surgical risk to a comparatively good one. She accepted the anesthetic very well. The operative period was one hour. On the day following her operation she expressed a desire for food. Her convalescence has been one of steady improvement, with no recurrence of bleeding. There was no chill or reaction after transfusion. She now eats many things she could not eat for many years.

This patient had a blood volume of only 40 per cent. of what she normally should have, and only 25 per cent. of her normal richness. This would give her a combined impoverishment of about 90 per cent. of her full blood strength and normal volume.

This paper is to serve merely as a preliminary report. Further estimations of blood volume in various conditions will be published in later papers.

565 Park Avenue.

TUBERCULOSIS AND SYPHILIS

EDWARD VON ADELUNG, M.D.

OAKLAND, CALIF.

For the purpose of impressing the necessity of applying the Wassermann test to tuberculous patients, and thus avoiding a considerable percentage of common error, a tabulation of the cases seen in the Alameda County Tuberculosis Clinic during the past four years is here presented.

The data were gathered in the course of regular examinations of patients in the Clinic of the Alameda

POSITIVE WASSERMANN TESTS IN TUBERCULOUS PATIENTS

Year	Tuberculous Patients No.	Positive Wassermann Tests	
		No.	Per Cent.
1914	34	8	23.5
1915	52	4	7.6
1916	61	2	3.2
1917	48	3	6.2
Totals	195	17	8.7

County Society for the Study and Prevention of Tuberculosis—a society financed by annual appropriations from the treasuries of Alameda County and Oakland City, supplemented by contributions from private purses. In this work, I have been greatly assisted by Dr. Philip F. Abbott and Dr. V. O. Saphro. The Wassermann tests were made at the California State Hygienic Laboratory, Berkeley, Calif.

In 1914, of thirty-four cases of tuberculosis confirmed by the finding of tubercle bacilli in the sputum, eight yielded positive Wassermann tests. This means that 23.5 per cent. of syphilis was found during 1914 in laboratory-positive tuberculosis. Of these eight cases of double infection, 78 per cent. of the patients were female and 22 per cent. male.

In 1915, of fifty-two cases of positive-sputum tuberculous cases, four, or 7.6 per cent., yielded positive Wassermann tests. Of these four patients, 25 per cent. were female and 75 per cent. male.

In 1916, of sixty-one cases of pulmonary tuberculosis, two, or 3.2 per cent., yielded positive Wassermann tests. Both of the patients were women.

In 1917, of forty-eight positive-sputum cases of tuberculosis, three, or 6.2 per cent., yielded positive Wassermann tests.

Summing them up for four years, it is seen that of 195 cases of pulmonary tuberculosis confirmed by finding the bacilli, seventeen, or 8.7 per cent., yielded a positive Wassermann test. This represents what would be overlooked by the average practitioner, when treating open cases of tuberculosis of the lungs without making the Wassermann test.

1206 Broadway.

ANATOMIC DEFECTS IN THE NEW-BORN DEMANDING SURGICAL OPERATION

REPORT OF A CASE OF UTERINE TUMOR

E. M. PRINCE, M.D.

BIRMINGHAM, ALA.

After a few years of surgical practice, one is impressed with the number of new-born children who have one or more anatomic defects amenable to surgical treatment, which, if not dealt with surgically, will mean the death of the infant.

During my first few years of surgical practice, when confronted with these little sufferers, I was inclined to do nothing, feeling that an infant of only a few hours, or a few days, was sure to lose its life if any major operation was attempted. During later years, however, and after operating on some of these children, I am thoroughly convinced that they are at least as able to withstand the shock of operation as their older brothers and sisters. Of course, much depends on the anesthetic and the anesthetist, when an operation is undertaken. I think that, in the very young, ether is decidedly the anesthetic of choice. Gas-oxygen is far preferable for children of more advanced years, but the extremely young are more prone to die from respiratory failure, and this is the great danger in operations on infants. It is held by some physicians that the new-born may be operated on without any anesthetic whatsoever, as the nervous system at this early age is as yet undeveloped, and they are not capable of feeling pain. I do not believe this, as I have seen every manifestation that the little patient is suffering great pain when permitted to come out from under the anesthetic while the operation is in progress. I have circumcised infants without an anesthetic, and I think any one who observes them during this little operation will be convinced that they suffer. I think an operation performed on these little subjects should be done with dispatch, with the operator taking all the time necessary to do good surgery, but wasting no unnecessary time. Before he starts the operation, he should decide just what he is going to do, and do it with care and with as few movements as possible.

When he has relieved the congenital defects and sees the little patient begin to gain the health and vigor of babyhood, he cannot help thinking he has done something worth while, for he has brought health to the child and joy to the mother.

I think the case that I report of unusual interest, as the patient must be the youngest on record to be operated on for uterine tumor.

REPORT OF CASE

A baby girl, aged 11 hours, sent me by Dr. E. C. Clayton, was a fine-looking baby except that she had a very large hernia. It seemed as if the entire intestine was in this hernia. The intestine was covered only by the peritoneum. One could look into the hernia sac and see the intestine almost as well as if it had been in a glass case. There was a decided lack of development of the left rectus muscle, and under the mass of intestine a large tumor could be felt. This I took for a hydronephrotic kidney.

Under ether anesthesia, the hernial sac was opened. It was found to contain the large intestine and all of the small intestine, the end of the duodenum being pulled down into the sac.

The tumor felt under the hernia proved to be a cystic tumor of the uterus. The uterus was enlarged to the extent that it filled the greater part of the abdominal cavity. The right tube and ovary were missing. A blind tube led from the uterine cornu out into the abdominal cavity for about an inch. An incision was made into this organ, and a large quantity of mucopurulent looking material was evacuated. The uterus then contracted to the size of a large marble, leaving room for replacing the intestine.

An examination of the endometrium through the incision showed it to be normal. The incision in the uterus was then closed, the abdomen was closed, and the child made an uninterrupted recovery.

Fearing the uterus would again become distended with the same fluid after I had closed the abdomen, I pulled the cervix down into view through the vagina. Forceps were inserted through the cervical canal into the organ in order to promote drainage.

1127 South Twelfth Street.

DAKIN'S DICHLORAMIN-T SOLUTION FOR OCULAR INFECTIONS

A. S. GREEN, M.D.

AND

L. D. GREEN, M.D.

SAN FRANCISCO

Until recently the search for an antiseptic that would influence the flora of the conjunctiva without at the same time injuring its epithelium seemed almost hopeless. It is true that many so-called antiseptics are often used with excellent results in treating infections of the cornea and the conjunctiva, but with few of them is the benefit derived due to anything but the mechanical cleansing, the possible exceptions being zinc sulphate for infections with the Morax-Axenfeld bacillus, and ethylhydrocuprein, in pneumococcus infections. This conclusion must inevitably be reached by all who have given the subject of ocular antisepsis careful study.

When the wonderful results of the Carrel-Dakin treatment were first reported from the seat of war regarding its remarkable efficacy in preventing and cleaning up the infections of wounds, it occurred to us that the method might be modified in treating infections of the eyes. Here was an antiseptic solution that was destructive to bacteria, but not to animal tissue—just the very thing ophthalmologists had been endeavoring so long to find. Therefore a 1 per cent. watery solution was used in a number of cases of conjunctivitis, 2 drops being instilled every two or three hours, but it was finally abandoned as it was found that the results were in no way superior to those obtained by the solutions ordinarily used in conjunctival infections. Even the weak solutions used for the test were found to be much more irritating

than the ordinary remedies. Accordingly, the test was dropped. Several months later, when Dakin published his article on the improvement in the method by using an oily solution known as dichloramin-T, the matter was again taken up and tried out in about two dozen cases with exceptionally satisfactory results, case histories of four being given below as examples.

METHOD OF APPLICATION

Although the use of from 10 to 15 per cent. solutions is recommended by Dakin in general surgery, we found that the best results were obtained by a 0.5 per cent. solution, instilled every hour, at least 3 or 4 drops being used each time. While considerable smarting is caused, this lasts only a moment or two, and is easily borne, even by children.

REPORT OF CASES

CASE 1.—T. L., a boy, aged 12, suffering from trachoma of several years' duration, had been given the usual treatment for trachoma, including rolling, grattage, carbon dioxide snow, and copper sulphate, without permanent benefit, for in spite of all the treatment an acute exacerbation would occur from every three to six weeks. His vision was greatly reduced, owing to pannus and corneal opacities, and at no time was he entirely free from a conjunctival discharge. Finally the 0.5 per cent. dichloramin-T solution was given a trial by instillation every hour. On the sixth day there was no discharge, and the lids were not agglutinated in the morning. After three weeks of the treatment the boy was dismissed, and up to the present time, six months later, no recurrence has taken place.

CASE 2.—E. R., a girl, aged 5, had been coming to our service at the San Francisco Polyclinic for several months on account of phlyctenular conjunctivitis. The results of the usual methods of treatment fluctuated, and finally she presented herself with an acute infection superimposed in one eye. It was swollen shut, and there was a purulent discharge due to an unidentified diplococcus. She was immediately placed in hospital and the 0.5 per cent. dichloramin-T solution instilled every hour for the first twenty-four hours, at the end of which time the swelling was greatly reduced. The drops were continued every hour the following day, and every two hours that night. At the end of forty-eight hours the child could open the eye, and very little discharge was present. The treatment was then kept up by instillation of the drops every two hours during the day, but none during the night. After the fourth day the child was dismissed from the hospital, no further treatment being required.

CASE 3.—A Japanese child, aged 4 years, presented the left eye so swollen shut that the cornea could not be seen even by the use of a lid elevator; the skin at the external canthus was badly excoriated, the condition having existed four days. No smear was obtained. The child was placed in hospital and the use of the 0.5 per cent. dichloramin-T solution begun, instillations being made every hour that day and night. The following day the swelling had receded so that the intact cornea could be seen, and at the end of forty-eight hours the eye was open. In one week from the time it was brought to the office the child was dismissed and taken to its home in the country.

CASE 4.—F. B., a boy, aged 3, when first seen had the right eye infected, the lids red and swollen shut, and yellow pus pouring out on the cheek—a typical textbook picture of gonorrheal ophthalmia. Smears revealed numerous gram-negative, intracellular diplococci. The child was placed in hospital and treated with the 0.5 per cent. dichloramin-T solution every two hours and with iced compresses that day and night. The following morning, twelve hours after, there was little, if any, improvement. One drop of 1 per cent. solution of silver nitrate was then instilled, followed by several drops of the dichloramin-T solution every hour, day and night, until at the end of thirty-six hours the swelling had gone down so that the eye was open and only a very slight discharge was present. On the third day a smear from the

conjunctiva was negative for all bacteria, and the child was dismissed on the fifth day with only a very little conjunctival redness remaining.

CONCLUSIONS

Dichloramin-T in solutions of from 0.5 to 1 per cent. can be freely used as a conjunctival antiseptic without danger to the tissues. It may possibly be used in stronger solutions, but this has not been found necessary in our experience, although further trial is advocated to determine the matter. The oil solution is preferable to the aqueous, as it is less irritating and will remain longer in contact with the epithelium. Instillations should be made at frequent intervals, once every hour having been found the most satisfactory.

210 Post Street.

INCOMPLETE OUTWARD DISLOCATION OF THE KNEE

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NEW YORK

Dislocations of the knee comprise only about 1 per cent. of all dislocations.¹ Of these, dislocations outward are exceeded in rarity only by inward dislocations and the dislocations by rotation. Stimson² was able to collect only 114 instances of traumatic dislocation of the knee. The dislocations were: forward, 52; backward, 34; outward, 21; inward, 4, and by rotation, 3.

Dislocation of the knee outward occurs in about 0.2 per cent. of all cases of dislocation. The condition is of interest, therefore, because of its infrequency. The case here reported is also of especial interest because its etiology differs somewhat from cases previously described and because the method of reduction used was somewhat at variance with previously described textbook methods. I have experimented on the cadaver with the method used to reduce the case under consideration, and it appeared to be the most efficient from the standpoint of conservation of the untorn portions of the joint capsule and of the ligaments, and indeed the only method by which reduction can be satisfactorily effected.

REPORT OF CASE

J. H., a German, aged 31, with a negative medical and surgical history, was admitted, Nov. 10, 1917, about 1 a. m., to the service of Dr. C. J. Pflug, St. Mary's Hospital, Jamaica, L. I.

About thirty-five minutes before admission, while the patient was crossing a dark road, he was struck from the right side by an oncoming automobile. The bumper of the car hit the patient on the lateral aspect of the right thigh just above the knee joint while the foot was relatively fixed on the roadway.

On admission the patient complained of slight lacerations about the face and of severe pain in the region of the right knee. The right leg was held in extension and the foot and the leg were rotated outward to about 20 degrees. On removal of the clothing overlying the injured joint, the lower leg was found to be abducted from the knee about 10 degrees from a straight line, rotated outward about 20 degrees, and in complete extension. The internal condyle of the femur was seen to project under the skin on the internal aspect of the knee. The patella occupied a vertical position on the lateral aspect of the external condyle. The external tuberosity of the tibia was displaced outward and backward. The internal tuberosity was occupying a position in line with

1. Stimson, L. A.: *Fractures and Dislocations*, Ed. 7, Philadelphia, Lea and Febiger, 1912, pp. 850-851.

2. Stimson, L. A.: *Fractures and Dislocations*, Ed. 7, p. 851.

the external condyle of the femur, and was displaced slightly in a forward direction. On palpation, the entire internal condyle and the intercondylar groove of the femur could be felt. The patella was absent from its normal position, and could be felt in a vertical plane on the lateral aspect of the external condyle of the femur. The entire external articular surface of the tibia could be palpated, even to the spine separating the two articular surfaces on the head of the tibia. The articular surface of the external condyle of the femur and of the internal articular surface of the tibia exactly coincided. The patient was unable to carry out any voluntary motion of the leg. Passive motion and even light palpation caused exquisite pain.

Chloroform was administered, and the reduction of the dislocation accomplished in the following manner: The leg was completely flexed at the knee and at the hip. The left hand of the operator was held behind the head of the tibia with the thumb on the external edge of the patella. The right hand grasped the leg at the ankle. After flexing, the lower leg was internally rotated, traction was made on the head of the tibia, and the leg was extended. After extension, the patella was easily slipped back to its normal position. No difficulty was encountered during this manipulation. A light splint was applied to keep the leg in extension and to prevent abduction. At the end of four days a light plaster bandage was applied to the knee in order to immobilize the joint. After one week's time the plaster bandage was split into anterior and posterior splints, and the knee massaged three times a day. Six weeks after injury, the patient was back at his accustomed duties, the function of the joint being perfect. It is to be regretted that the patient entered the hospital at a time of day when it was impossible to obtain a roentgenogram of the deformity. The condition of the patient was such that immediate reduction was demanded for the relief of pain; otherwise reduction might have been deferred and a picture taken the next morning. A roentgenogram taken the day following reduction showed no fractures or other injuries to the bones.

ETIOLOGY

The usual textbook cause of incomplete outward dislocations of the knee, according to most writers,³ is abduction of the leg plus outward rotation; or is most commonly due to indirect violence, as in a fall on the abducted foot, and more rarely to a blow received on the lateral aspect of the external condyle of the femur. Cases have resulted from fixation of the thigh, combined with a weight falling on the inside of the lower leg.⁴

In the present case the etiology was probably as follows: As previously stated, the patient was struck directly from the right side by an automobile traveling at a high rate of speed. To the front of the car a broad steel bumper was attached, the lower edge of it corresponding approximately to the lower end of the femur of the patient. Hence, the force acted directly on the lateral aspect of the external condyle of the femur while the leg was in complete extension.

Since the foot was relatively fixed on the ground, the force could act only in the direction of abduction of the leg without rotation. In producing the dislocation on the cadaver by direct abduction without using any rotary force, I found that a similar degree of rotation existed at the end of the traumatism as was seen in the foregoing case. Hence it is probable that the degree of rotation observed in the hospital case was not the result of a rotary type of violence, but due to the resistance of certain joint structures, as is later explained.

REPRODUCTION OF THE INJURY IN THE CADAVER

Knowing the etiology of the present case, I sought to reproduce the injury in the cadaver in order to determine, first, what the pathologic condition was, and secondly, what the method of reduction should be. A well developed cadaver was selected, and only the head, trunk and pelvis were allowed to rest on the table. The leg was held free of the table and fully extended. A small block of wood about 3 inches wide was held on the external condyle of the femur and struck heavily with a large mallet. At the same time the leg was forcibly abducted from the knee. The first attempt only partially produced the degree of injury sought, but on repetition of the force a little more strenuously, the dislocation was effectively produced. The experiment was repeated on three different cadavers. The degree of dislocation was made to correspond with that found in the foregoing case. Examination of the three joints disclosed the fact that the external condyle of the femur and the intercondylar groove could be palpated. The patella invariably lay on the lateral aspect of the external condyle of the femur at right angles to its former plane. The surfaces of the external articular facet of the tibia and the spine which separates the two articular surfaces could be palpated laterally and slightly posteriorly to the external condyle of the femur. In other words, the external condyle of the femur occupied the medial articular facet of the tibia instead of its own lateral articular facet. The injury in the cadaver differed from that in the aforementioned case in that the degree of abduction of the lower leg was about 10 degrees more than that observed in the hospital case. The degree of rotation was practically the same. The rotation outward of the lower leg when the dislocation is produced only by abduction, is to be explained by the action of the posterior crucial ligament, which is untorn in the production of the injury, and tends to limit outward displacement of the tibia by drawing the external tuberosity of the tibia backward.

PATHOLOGY

On dissection of the dislocated joints, the internal lateral ligament, the fascial expansion of the vastus internus, and the internal portion of the joint capsule were found to be torn along a line extending from the lower pole of the patella to the posterior border of the internal condyle of the femur. From the lower pole of the patella the tear extended downward along the internal edge of the ligamentum patellae almost to the tibial tubercle. The anterior crucial ligament was ruptured in each case within one-half inch of its attachment to the femur. The posterior crucial ligament was not torn but was put on the stretch. The attachments of the hamstring muscles and the posterior muscles of the lower leg were not torn. The semilunar cartilages of the knee were undisturbed. The ligaments and the joint capsule on the external and posterior aspects of the knee were uninjured.

METHODS OF REDUCTION

The usual method of reduction⁵ described in textbooks is by traction on the lower leg combined with coaptive pressure at the joint, with the leg in extension. The method will usually suffice in cases in which the degree of dislocation does not absolutely

3. Helferich, H.: *Fractures and Dislocations*, Ed. 5, Philadelphia, W. B. Saunders, 1902, pp. 278-280. Speed, Kellogg: *Fractures and Dislocations*, Philadelphia, Lea and Febiger, 1916, p. 804. Stimson, L. A.: *Fractures and Dislocations*, Ed. 7, pp. 859-860.

4. Speed, Kellogg: *Fractures and Dislocations*, p. 804. Jessup: *New York Med. Jour.*, 1885, 41, 12. Bull: *Ibid.*, 1888, 47, 215.

5. Cotton, F. J.: *Dislocations and Joint Fractures*, New York, Reiman Company, 1910, p. 492. Speed, Kellogg: *Fractures and Dislocations*, p. 804. Helferich, H.: *Fractures and Dislocations*, Ed. 5, pp. 287-288. Stimson, L. A.: *Fractures and Dislocations*, Ed. 7, p. 860.

displace the condyles from all contact with their respective articular surfaces on the tibia; in other words, if the spine between the two surfaces on the head of the tibia does not pass over the crest of the external condyle, such a method will usually be effective. When the displacement is as great as indicated in this case and in the dislocation produced on the cadaver, however, such a method not only fails in its purpose, but may also result in further damage to the ligamentous structures of the joint. Reduction could be obtained by this method in the cadaver, that is, by traction and coaptive pressure; but the rent in the internal ligaments and the joint capsule was enlarged to a considerable degree, and the posterior crucial ligament was further stretched to such an extent that rupture began at its insertion into the femur.

The method of reduction used in the hospital case and repeated on the cadaver was as follows: The leg was flexed at the hip and knee, which action resulted in decreasing the stress on the posterior crucial ligament and on the untorn portions of the ligaments, comprising the external capsule of the joint, the insertions of the hamstring muscles, the quadriceps, and the gastrocnemius and soleus muscles. Then, on inward rotation of the leg, the lateral displacement was corrected. When reduction was attempted by the method just described, it was found that it resulted in a further decrease in tension on the untorn joint ligaments. When the leg was extended and traction exerted behind the head of the tibia, the deformity was entirely corrected and the leg brought into the normal extended position. The patella was then easily slipped back into place.

It will be seen, therefore, that the method of choice in reducing such a dislocation should be one that will not only correct the displacement, but also conserve to the greatest extent all the ligaments and muscular attachments that have not been damaged in the production of the injury. With the displacement as great as here represented, traction with coaptive pressure at the joint does not result in such a conservation, but puts all the untorn ligaments further on the stretch, and will even cause further damage to them.

In a case reported by Jessup,⁶ the degree of dislocation was practically identical with that observed in the present case. His method of reduction was by flexion at the hip and knee, combined with inward rotation and followed by extension. His paper, however, contains no comment on the pathology of the condition, or why such a method of reduction was used. The same patient was reported three years later by Bull⁷ as having a functionally useful knee. He also made no comment on the pathology, but described the method of reduction. In Jessup's case the dislocation was produced by a heavy weight falling on the inside of the leg while the thigh was relatively fixed.

Speed,⁸ quoting Hardoun's experiments on the cadaver states that the vastus internus may be ruptured, as also the crucial ligaments. He (Hardoun) demonstrated that outward dislocation of the knee, complete or incomplete, is impossible without rupture of the anterior crucial ligament. The patella may be displaced laterally and resist attempts at reduction.

CONCLUSIONS

1. Incomplete traumatic dislocation of the knee outward may be produced by abduction at the knee with-

out rotation of the lower leg. Such force produces an oblique tear in the internal lateral ligaments and joint capsule, extending from the posterior border of the internal condyle of the femur to the lower pole of the patella, with rupture of the anterior crucial ligament.

2. The outward rotation of the leg seen in the experiments on the cadaver, when the dislocating force was pure abduction, appears to result from the action of the untorn posterior crucial ligament. This ligament limits outward displacement of the tibia by causing outward rotation of the leg and slight backward displacement of the external articular surface of the tibia.

3. To conserve the posterior crucial ligament and all untorn portions of the joint capsule, ligaments and muscular insertions, the mechanism of reduction should be by flexion of the hip and knee, combined with the necessary amount of inward rotation. This manipulation may then be followed with safety by full extension, in which position the leg should be immobilized.

330 West Twenty-Eighth Street.

VEGETABLE POWDER AS A LARVICIDE IN THE FIGHT AGAINST MOSQUITOES

A PRELIMINARY NOTE

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With the view to finding some larvicide cheaper than crude oil and just as effective, and at the same time available for use in certain places that can be neither oiled nor drained, such as water gardens, outdoor fish pools, rice fields and the like, I have experimented with many substances during the past few years. I have found not the perfect larvicide I sought, but one that meets at least a few of the requirements of perfection, and that I consider well worth a trial by those engaged in the work of exterminating mosquitoes. While not a substitute of oil under all conditions, it is certainly much cheaper than oil, as easy of application and, in most cases, as effective as oil, and it can be used in places where oil would not serve the purpose.

The larvicide in question consists of various vegetable powders, including the familiar pyrethrum or insect powder of the stores. In fact, all my earlier work was done with the pyrethrum powder, which gave excellent results. But it was so expensive that, had it been generally used and recommended for this work, the cost would have become prohibitive within a short time. So I determined to find some similar powder possessing the good qualities of pyrethrum, and at the same time being available to every one, and not subject to the speculative manipulations of the market.

As the larvicidal action of pyrethrum powder is purely mechanical, I considered it possible to produce a powder from the common weeds of the neighborhood that would be just as effective, and, indeed, I have found this to be the case. The weeds and grasses of nearly every species in the neighborhood, when dried and reduced to powder of the proper fineness, gave very good results, and it is not at all necessary to select any particular species in order to produce an effective powder.

A good powder should spread quickly and evenly over the surface of water even if thrown on by the handful, pushing the resulting film to all parts of the surface to be treated.

6. Jessup: New York Med. Jour., 1885, 41, 12.

7. Bull: New York Med. Jour., 1888, 47, 215.

8. Speed, Kellogg: Fractures and Dislocations, p. 804.

It is, however, much more potent when applied in the form of a spray over the entire area of the larger pools. The covering capacity should be from 3,500 to more than 4,000 square feet per pound of powder.

Perhaps the greatest disadvantage in the use of the powder is its short period of effectiveness—probably only a few minutes—but it is so deadly that, once the larvae come in contact with it, they die in a few minutes, even when immediately removed to another receptacle. The powder loses its effectiveness as soon as it is thoroughly wet.

I have found it very effective for killing such well known species as *Anopheles quadrimaculatus*, *Culex quinquefasciatus*, *Culex abominator*, *Aedes cocumbiac* and *Psorophora cyaneus*. Of these the species with short, thick air tubes such as *Anopheles*, *Aedes* and *Psorophora* are easily killed, while the species of *Culex* with very long, slender tubes are more resistant, *Culex abominator* being the most resistant species I have had to deal with.

These studies have been made in connection with the work of this bureau on the relation of mosquitoes and malaria to agriculture, under the general supervision of Dr. W. D. Hunter, with Mr. D. L. VanDine in charge of the field work.

PROGRESSIVE MUSCULAR DYSTROPHY*

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The tendency to enlarge on the functional rather than on the structural aspect of the so-called chronic and incurable diseases, and the tendency to consider them less as anatomic, and more as physiologic problems, as a result of the rapid advance of chemical physiology, has resulted in an auspicious change in point of view regarding the nature of disease, the purpose of diagnosis, and the object of treatment. From the new point of view, a diseased organ is one that is functionally unequal to its tasks. Determination of the structural nature and extent of organic defect is, accordingly, only partial, qualitative, anatomic diagnosis, which must be completed by quantitative, physiologic diagnosis, that is to say, measurement of functional capacity. Guided by such measurements, the therapist diminishes burdens and augments working powers in an endeavor to balance tasks and capacities.

The most striking feature of this physiologic concept of disease is its usefulness. With functional integrity as our goal, unattainable structural integrity is no longer a therapeutic "no thoroughfare."¹ As a concrete example, let us consider progressive muscular dystrophy.²

In progressive muscular dystrophy, we find low blood sugar, and, following treatment which increases the blood sugar, an improvement in muscular strength.³

* From the Robert B. Brigham Hospital.

1. For fuller discussion of the physiologic concept of disease see: McCrudden, F. H.: The Treatment of Chronic Disease as a Problem of Applied Physiology, Boston Med. and Surg. Jour., 1916, 175, 57; The Teaching of Applied Therapeutics as a Branch of Applied Physiology, *ibid.*, p. 93; Scientific Research in Chronic Medicine from the Physiological Point of View, *ibid.*, p. 129.

2. For fuller discussion with original data see: McCrudden, F. H., and Sargent, C. S.: Hypoglycemia and Progressive Muscular Dystrophy, Arch. Int. Med., April, 1916, p. 465; Chemical Changes in the Blood and Urine in Progressive Muscular Dystrophy, Progressive Muscular Atrophy and the Normal, *ibid.*, February, 1918, p. 252.

McCrudden, F. H.: The Nature of the Pathological Process in Progressive Muscular Dystrophy, *ibid.*, February, 1918, 21, 256. Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, *ibid.*, p. 188.

3. Independent evidence of abnormal carbohydrate metabolism in this disease is shown in the low cholesterin content of the blood which rises with clinical improvement, and in the presence of creatinuria, a condition not known to occur in the urine of men except as an accompaniment of some disturbance of carbohydrate metabolism, which diminishes with clinical improvement.

Blood sugar—glucose—is the source of energy for muscular contraction. Active muscle rapidly uses up glucose. As the supply becomes exhausted, muscular strength diminishes and can be restored only by glucose. Agencies such as Addison's disease, diphtheria toxin, and phosphorus and hydrazin poisoning, which reduce the blood sugar, cause profound myasthenia, the severity of which is proportional to the fall in blood sugar. Hypoglycemia, then, sufficiently accounts for the myosthenia, the most striking symptom of progressive muscular dystrophy.

As the glucose of the blood is used up by the muscles, the loss is rapidly and quantitatively made good from the store of glycogen in the liver, the blood sugar being thereby maintained at a fixed level. Hypoglycemia can result only from a failure of replenishment to keep pace with the needs, that is, from a loss of balance between supply and demand.⁴ Greater needs, such as increased utilization of sugar, or loss through the kidneys, can be ruled out in progressive muscular dystrophy. There is no rise in heat formation such as would accompany increased sugar catabolism, and the urine is free from sugar. A rapid fall in blood sugar during the first twenty-four hours of starvation—in health, the normal blood sugar level is maintained during starvation—testifies that in progressive muscular dystrophy, as in all forms of experimental hypoglycemia, there is a decreased rate of replenishment resulting from a diminished reserve of glycogen.

The diminished glycogen reserve in experimental hypoglycemia results from impaired glycogen formation. The carbohydrate ingested is not converted into glycogen, but remains a long time in the blood, after which, judging from the amount of "fatty degeneration" in these cases, and from the increased respiratory quotient, and the lipemia, it is probably changed to fat. This supposition is in accord with the well known antagonism between fat storage and glycogen storage. The deposition of fat in the muscles⁵ points to a similar impairment of glycogenesis in progressive muscular dystrophy.

Impaired glycogenesis may result from damage either to the liver, the organ in which glycogenesis takes place, or to the suprarenals,⁶ the organs that control the process. If the fault is with the suprarenals, administration of epinephrin restores normal glycogenesis. If the fault is with the liver, epinephrin has no effect. A prompt and marked rise in blood sugar following the administration of epinephrin in progressive muscular dystrophy testifies to the efficiency of the liver in this disease and points to a deficiency in epinephrin.⁶

SUMMARY

The myasthenia of progressive muscular dystrophy is due to hypoglycemia, and the hypoglycemia and fat deposition to impaired glycogenesis, the carbohydrate of the food being probably changed largely to fat instead of to glycogen. The impaired glycogenesis is due to suprarenal or other endocrine disease.

Parker Hill Avenue.

4. Or "tasks and capacities." See introductory paragraphs.

5. So marked in some cases that the term pseudohypertrophic is applied.

6. Or other endocrine glands.

Hygienic Sinners.—The employer who does not supply adequate sanitary facilities for his help; the janitor or porter who dry sweeps the floor.—*Public Health.*

THE IMMEDIATE OPERATION FOR
PERINEAL LACERATIONS

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The literature embracing the study of the repair of the lacerated perineum is so extensive that an apology appears necessary for the introduction of a new discussion on such a time-worn subject; and yet, in spite of the attempts at operation immediately following the conclusion of labor, the great number of women who suffer from unrepaired tears bear evidence to the fact that the last word has not been said on the immediate repair of the perineum.

Investigation into this condition, in a service comprising a large number of obstetric cases, convinced me that fully 75 per cent. of those who have undergone the immediate suturing at the vaginal orifice are in need of a secondary operation. In view of the fact that much more than 50 per cent. of all primiparas are lacerated at the time of their confinement, it is safe to say that something is wrong with the technic generally employed. Surely no harm can result from a further study of the causes of such a

organ arise directly or indirectly from the pubes, the ischium, the sacrum or the coccyx, so that when rupture of the perineum occurs, contractions take place in all directions away from the point of insertion, and distortion of the parts is in direct ratio to the extent and various irregularities of the tears. An intact

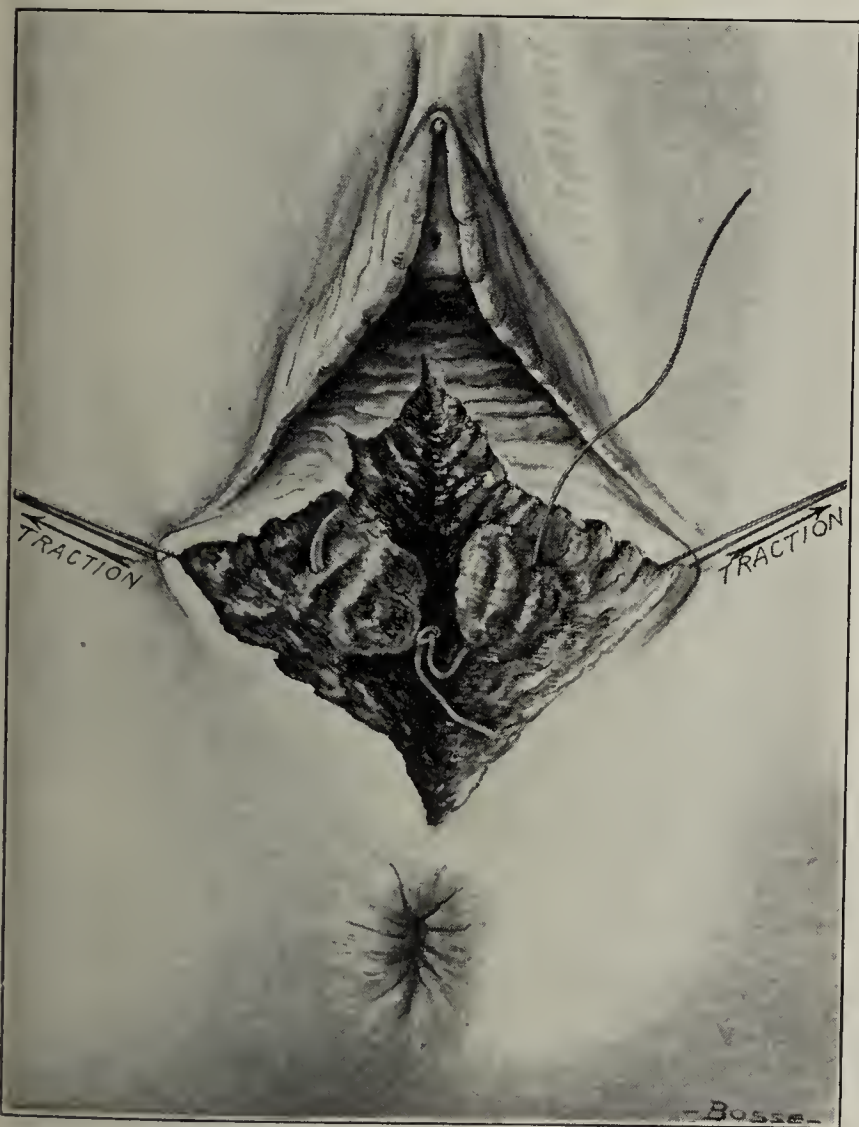


Fig. 1.—Edges of wound held apart by traction sutures, and sutures inserted into torn muscles.

deplorable state of affairs, or an effort to find a remedy for its correction. An unhealed or improperly repaired laceration of any part of the birth canal is always a reflection on the ability of the obstetrician, no matter what the cause.

Dissection of the perineum will show that all muscles that are inserted into the central point of this

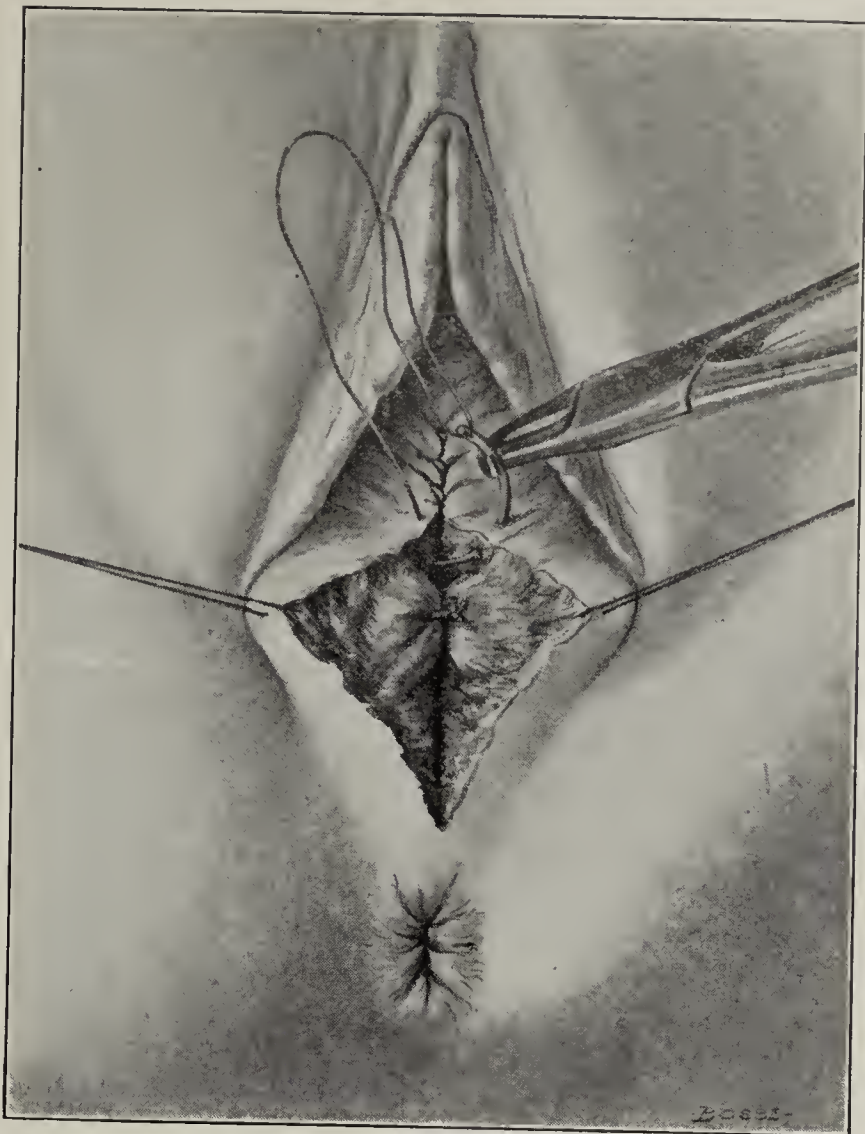


Fig. 2.—Torn ends of muscles joined, and laceration in vaginal mucous membrane partly sutured.

perineum regulates the contractions of the individual muscles attached to it, and controls and equalizes the tension that these muscles may exert on neighboring organs, such as the anus, the rectum, the bladder, the vagina and the uterus. Even the diaphragm may be acted on under certain conditions.

Immediately following labor there always is present some paresis of the perineal muscles, as a result of pressure; and where lacerations have occurred, gaping of the parts begins as soon as the muscles have regained their tone. The gaping accounts for the fact that no lacerated perineum unaided and of its own accord ever can be restored to its original intact condition; and unless the tissues are properly approximated, the distortion is increased rather than diminished.

A review of the literature on this subject reveals that very few authors advise any exact operative procedure; nearly all consider that a few sutures more or less deeply placed from the outer side, so as to include as much as possible of the torn tissues, are sufficient for the purpose. This practice cannot yield a satisfactory result. The torn ends of muscles may be overlapped and are more often not caught up at all, thus leaving a space beneath the surface due to muscular contraction and deficiency, which weakens the natural support and encourages prolapse of other organs.

Again, the surface alone may be approximated, leaving a deep hole in the vagina behind the perineum for the collection of blood and lochial discharges, and making a good culture medium for the generation of infective bacteria. In the majority of cases thus treated that have escaped infection, an examination

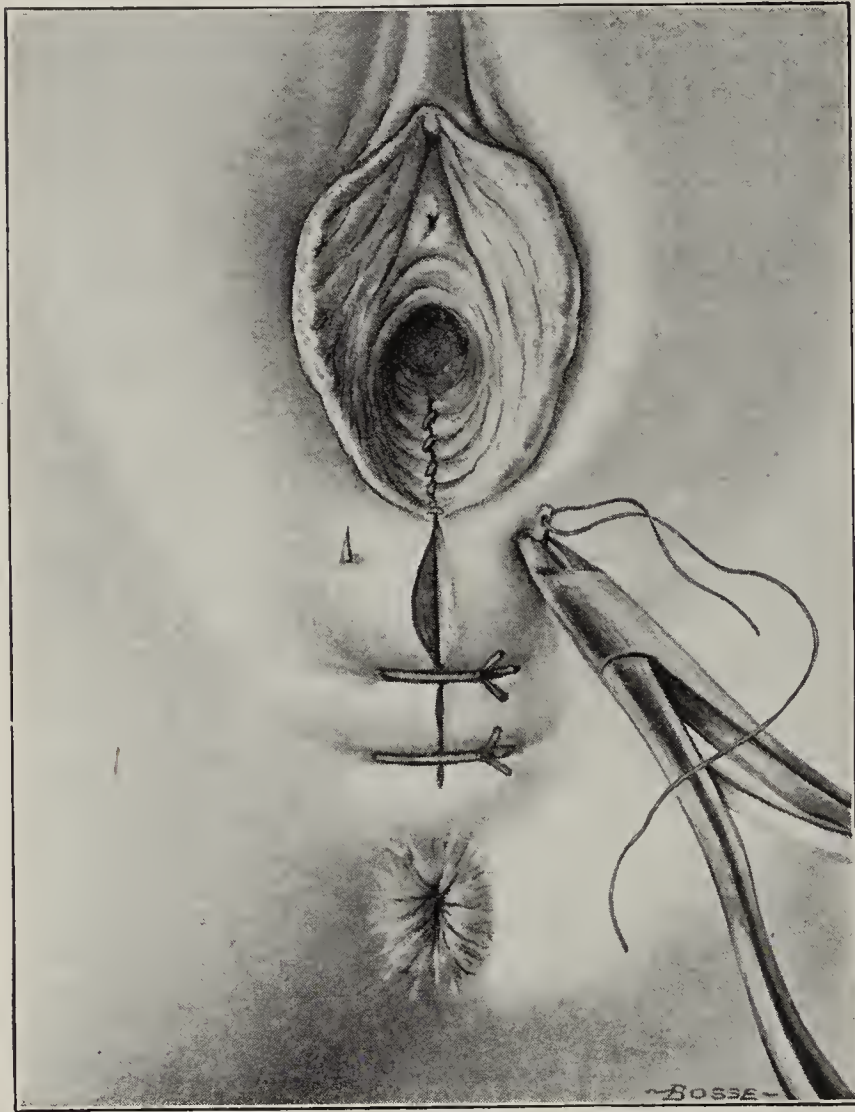


Fig. 3.—Operation completed.

after healing of the wound will reveal a thin layer of skin and mucous membrane taking the place of the perineal body.

In the repair of any ordinary wound, tissues of varying nature are brought together separately, and attempts are made to have as nearly as possible a normal alinement of the cut surfaces. To suture an ordinary wound without any regard to orderly rearrangement would be condemned by the veriest tyro in surgery.

The application of tenacula, to draw the different parts of the tear into correct position before starting, has been the first principle in all operations for secondary repair of the perineum, since the time of Hegar; but why this very important step is always neglected in the primary operation is not apparent.

TECHNIC OF THE OPERATION

The mucocutaneous edge of the wound at each side of the tear, where it enters the vagina, is caught up with a guide and traction suture. The operator or assistant, with regulated tension on these sutures, holds the wound open for inspection. The labia are widely separated, the wound is cleansed, bleeding points are controlled, and the torn edges of the muscles, which are generally represented by depressions in the side walls of the wound, are brought out with tenacula or temporary sutures, and joined with chromic catgut, and the number of interrupted sutures

are made according to the requirements of the case. Before the muscles are brought together, the cervix may be exposed for inspection and repair.

After the muscles have been replaced, if the wound is deep, slack may be taken up in the connective tissue by one or two buried catgut sutures. With the guide sutures held in position for repair, the edges of the vaginal mucous membrane are now joined with a continuous chromic gut suture, and the outer side of the perineum is repaired with three or four silkworm-gut sutures deeply and widely inserted.

In complete tears, the rectal mucous membrane must be approximated first. The torn ends of the sphincter muscle are then brought out of the wound and firmly secured together, and the operation is completed as above.

It is important in complete tears that a rectal tube be inserted about 4 inches into the rectum, and retained there about four days. The bowels should not be moved during this time, and all discharges escaping through the tube should carefully be kept away from the wound, and the perineum should be disturbed as little as is compatible with careful cleanliness.

With the exception of third degree lacerations, I have seldom found it necessary to administer an anesthetic, though it is perfectly permissible to do so, especially if the patient is nervous or hard to control.

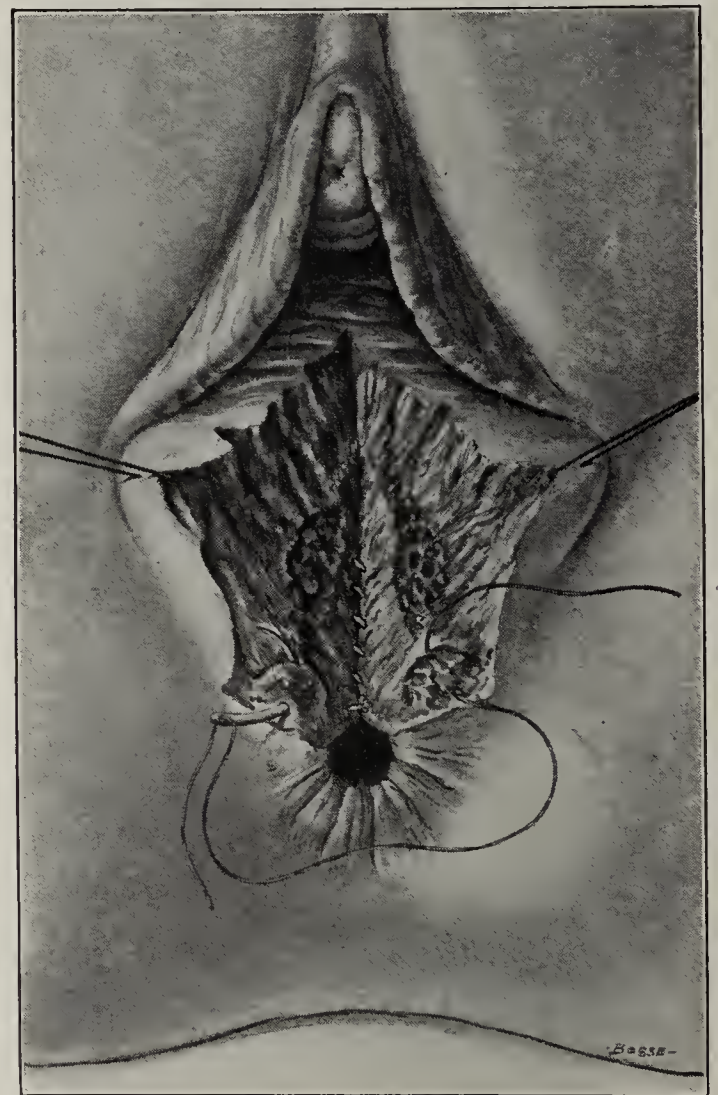


Fig. 4.—Rectal mucous membrane sutured, and suture inserted into torn edges of sphincter ani.

The method needs no special experience, and I believe that its simplicity of application is sufficient to recommend it. I would again call attention to the guide or traction sutures, which control the success of the operation.

139 West One Hundred and Nineteenth Street.

Clinical Notes, Suggestions, and New Instruments

A RAPID MACROSCOPIC AGGLUTINATION TEST FOR BLOOD GROUPS, AND ITS VALUE IN TESTING DONORS FOR TRANSFUSION

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Our knowledge of the four blood groups described by Moss¹ has proved to have a very practical value in blood transfusion. Hemolysis due to isohemolysis does not take place when the bloods of individuals of the same blood group are mixed in vivo or in vitro. It practically never occurs significantly in vivo when the donor belongs to a group whose red cells are not affected by the patient's serum in vitro, though the patient's cells in vitro may be acted on by the donor's serum. When the group has been determined, it is possible to select a donor whose blood is compatible as regards hemolysis with the blood of the recipient. Moss,¹ Minot,² Brem³ and others have described practical microscopic tests for the determination of the blood groups. For the past two years, I have used a macroscopic test which is

RELATION OF THE FOUR BLOOD GROUPS

		SERUM				
Group:		I	II	III	IV	
CORPUSCLES	I	0	+	+	+	I
	II	0	0	+	+	II
	III	0	+	0	+	III
	IV	0	0	0	0	IV
		I	II	III	IV	

simple and rapid and sufficiently accurate for practical purposes. A brief review of some essential points will make clear the method and use of this test.

Every human being belongs to one of four blood groups. This grouping is based on the agglutinating activity of human serum and the susceptibility of red corpuscles of agglutination. The four groups formed on this basis are thus described:

Group I: Serum agglutinates no corpuscles. Corpuscles agglutinated by serums of Groups II, III and IV.

Group II: Serum agglutinates corpuscles of Groups I and III. Corpuscles agglutinated by serums of Groups III and IV.

Group III: Serum agglutinates corpuscles of Groups I and II. Corpuscles agglutinated by serums of Groups II and IV.

Group IV: Serum agglutinates corpuscles of Groups I, II and III. Corpuscles agglutinated by no serum.

There is no agglutination between serum and corpuscles of the same group.

The frequency of the four groups is, approximately: Group I, 5 per cent.; Group II, 40 per cent.; Group III, 10 per cent.; Group IV, 45 per cent.

The accompanying table shows the relation of the four blood groups (+ indicating that agglutination occurs, and 0 that no agglutination occurs).

The four blood groups are based on the agglutination reaction, but they also bear a definite relation to the action of hemolysins. The occurrence and reactions of the agglutinins do not vary. For example, they are always absent in Group I and always present in Group II; and Group II agglutinins always agglutinate corpuscles of Groups I and III.

As to the hemolysins, their reactions are constant in the groups which contain hemolysins, but their presence varies with the individual. For example, they are absent in Group I and may be present in Group III. Group III hemolysins always hemolyze corpuscles of Groups I and II, but Group III serum does not always give this reaction because the hemolysins are not found in the blood of every Group III

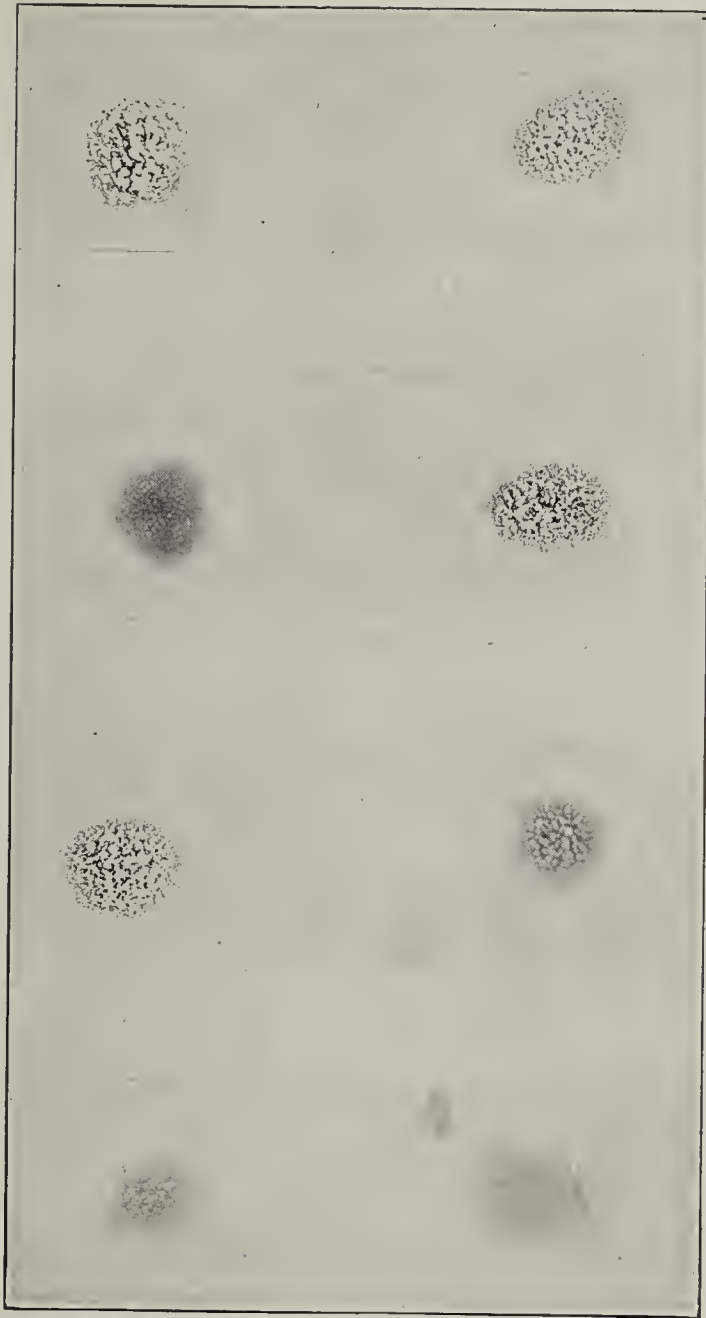


Fig. 1.—Group II serum is on the left-hand part of the glass slides, while Group III serum is on the right. Blood from each of the four different groups has been mixed with both II and III serums. The top slide shows the agglutination of Group I cells by both Group II and Group III serums. The second slide shows agglutination of Group II cells by Group III serum, but not with II serum. The third slide shows agglutination of Group III cells by II serum, but not with III serum. The bottom slide shows no agglutination of Group IV cells with either Group II or Group III serum.

individual. The hemolysins are present in only about 25 per cent. of all individuals. When present, the activity of the hemolysins follows the law that governs the activity of the agglutinins. For this reason the possibility of the presence or absence of the hemolysins may be deduced from the agglutination test.

Moss showed that the blood group to which an individual belonged could be determined by an agglutination test with his red blood corpuscles and the serums from individuals known to belong to groups II and III, or with suspensions of Group II and Group III red blood corpuscles and the

1. Moss, W. L.: Bull. Johns Hopkins Hospital, 1910, 21, 63; 1911, 22, 238; A Simplified Method for Determining the Iso-Agglutinin Group in the Selection of Donors for Blood Transfusion, THE JOURNAL A. M. A., June 23, 1917, p. 1905.
2. Minot, G. R.: Boston Med. and Surg. Jour., 1916, 174, 667.
3. Brem, W. V.: Blood Transfusion, THE JOURNAL A. M. A., July 15, 1916, p. 190.

individual's serum. All tests in use at present are based on this observation.

The macroscopic test described in this paper is made by means of two citrated serums, Serum II and Serum III, obtained from the blood of two individuals belonging to Group II and Group III.

To prepare the serums, 20 c.c. of blood are collected from each individual under sterile conditions. When the blood has coagulated and the clot has contracted, the serum is pipetted off into two sterile flasks, and sufficient sodium citrate is added to obtain a citrated serum 1.5 per cent., and some preservative, as tricresol, 0.25 per cent. The serum is citrated to prevent the coagulation of the small amount of fresh blood mixed with the serum in making the test, which would make it difficult to determine the presence or absence of agglutination. A preservative is used because it is desirable to keep

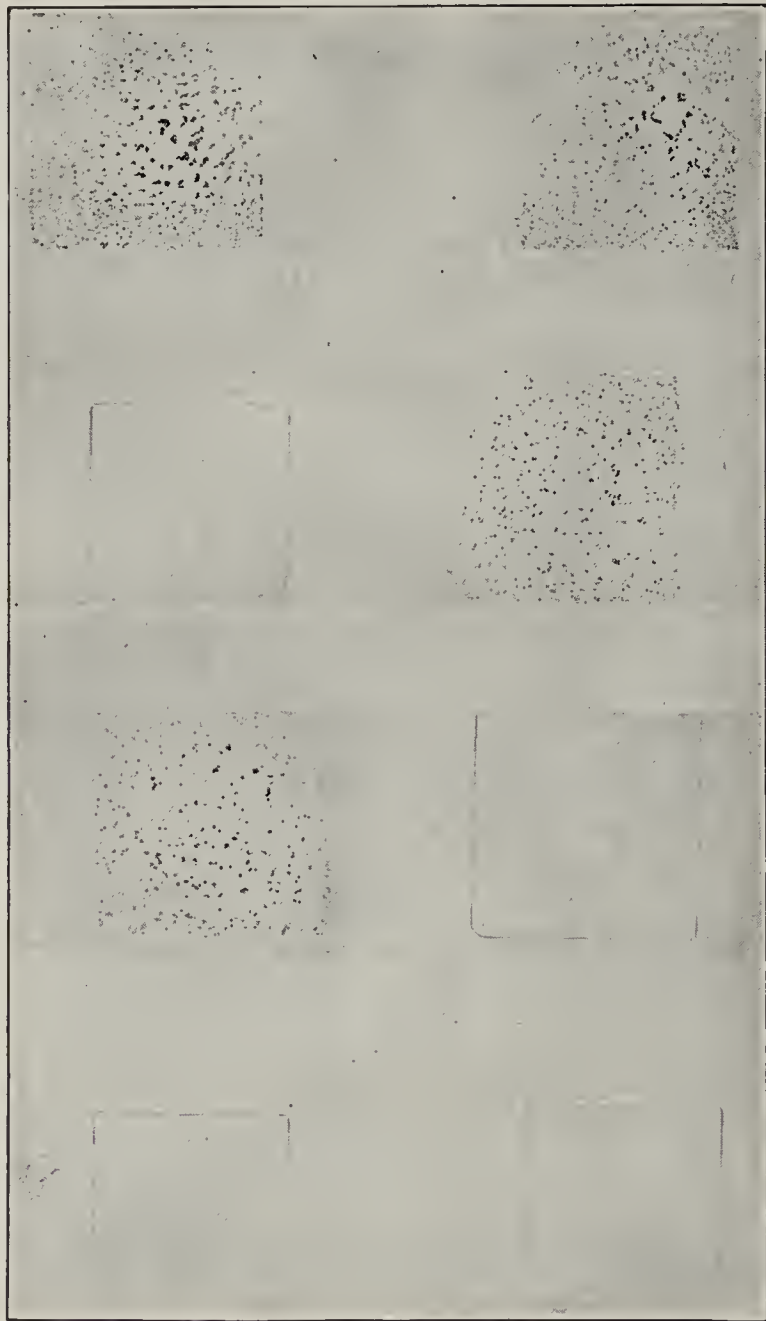


Fig. 2.—This shows the same results as in Figure 1 except that a cover glass has been superimposed on the mixtures of known serums II and III and the blood of the different groups.

the serum sterile, although I have observed, as have others, no apparent diminution in the activity of serum one year old which showed a moderate degree of contamination.

The serums may be kept for use in sealed small glass tubes or in bottles stopped with a combination rubber cork and medicine dropper.

The two prepared serums and a clean dry glass slide are needed to make the test. One or two drops of Serum II is placed on the left half of the slide, and an equal amount of Serum III on the right half of the slide. The ear or finger of the person tested is punctured, and a small drop of blood is transferred on the point of a knife blade to each of the serums in turn. The blood is stirred into the serum. The blood should be transferred before coagulation has commenced, and care should be taken to avoid mixing the two

serums. Agglutination of the corpuscles is accelerated if the serum is agitated by the slide's being tipped from side to side. If the reaction is negative, the corpuscles make a uniform suspension in the serum. If the reaction is positive, the masses of agglutinated cells usually appear in less than a minute and are readily discernible to the naked eye. With certain serums, rouleaux formation of the red corpuscles takes place and is sometimes confusing. Rouleaux formation usually appears more slowly than agglutination, and the rouleaux are broken up if the serum is disturbed, while agglutination is increased by this procedure. In doubtful cases, the reading should be confirmed by microscope examination.

Study of the photographic reproductions shows the method of reading the tests. Figure 1 shows the macroscopic appearance of the known serums mixed with the blood of the different groups (the preparations have dried slightly). Figure 2 shows the same combinations of serums and blood, on which a cover glass has been superimposed after the agglutination of the red cells became evident. If the reaction is negative with both Serum II and Serum III, that is, a persistence of a uniform suspension of corpuscles, it indicates a Group IV blood. If the reaction is positive with both serums, that is, agglutination of the corpuscles, it indicates a Group I blood. If negative with Serum II and positive with Serum III, it indicates a Group II; and if positive with Serum II and negative with Serum III, it indicates a Group III blood.

It will be observed that these four different combinations of reactions conform to the two middle columns (between the heavy lines) in the table. If a slide is superimposed on its proper row in these columns, the group number of the corpuscles at the end of the row corresponds to the blood group of the individual tested.

Except in cases in which the risk of delay is greater than the risk of hemolysis, the compatibility of the blood of donor and recipient should be determined before blood transfusions are performed. While the compatibility of donor and recipient may be ascertained by testing the different serums and corpuscles in each instance against each other, this end is reached much more quickly and more easily if the blood groups of the individuals are known. Hemolysis of the red corpuscles does not take place between members of the same group. Therefore, when possible, it is preferable that donor and recipient should belong to the same group. Recent clinical experience apparently has confirmed the fact that certain definite combinations of different groups can be made without danger of hemolysis. Under certain conditions the red cells are protected by the antihemolysins, the absorption of agglutinins by the red cells and other factors which need not be explained at this time. Suffice it to say that members of Group IV may be used as donors for individuals belonging to Groups I, II and III, and that a Group I recipient may be transfused from individuals belonging to Groups II, III and IV. Members of Group IV, therefore, are termed universal donors, and members of Group I, universal recipients.

The selection of donors by blood groups is made as follows:

A Group I recipient may be transfused from any group. Group II and III recipients may be transfused from the same group or Group IV.

A Group IV recipient requires the same group.

CONCLUSIONS

From the foregoing it is evident that the agglutination tests to determine blood groups have a very practical application in blood transfusion.

The macroscopic test is especially valuable because it is simple, rapid, and sufficiently accurate for practical purposes.

Girls and Khaki.—The social hygiene problem created by this war is not a problem of commercialized prostitution. Segregated districts, disorderly houses and professional women have been very largely removed from the cities and towns near our training camps. It is a problem of the individual soldier and the individual girl—the man cut away from his ordinary amusements and social life, the girl responding to the unusual and romantic glamour of the uniform.—Winthrop D. Lane, the *Survey*.

A MODIFICATION OF THE MOSS METHOD OF DETERMINING ISOHEMAGGLUTINATION GROUPS *

A. H. SANFORD, M.D., ROCHESTER, MINN.

It is well known that the iso-agglutinins in human serum are thermostable, and it occurred to me that agglutinating properties in human serum might be easily preserved by drying. The experiment was made as follows to determine this point: Cover slips were cleaned and dried. On several of these were placed two loopfuls of serum from persons of Group III. In like manner cover slips were prepared, with serum from Group II persons. These droplets of serum were allowed to dry in the air, and were then wrapped in paper and placed in the ice box. After more than two months they still possessed marked agglutinating properties. To demonstrate this, one loopful of corpuscle suspension of a Group II

fusions, it would seem that this method of using dried serum could well be employed in two ways:

1. The group in which a patient belongs might be determined by preparing several cover slips with serum of the person to be tested. These could be sent to a laboratory equipped to make the necessary tests, and by dissolving the dried serum with corpuscle suspension of a known group the patient's group would be readily determined. The technic is to dissolve the serum on one cover slip with one or two loopfuls of suspension of Group II corpuscles made by allowing two or three drops of blood from a Group II person to fall into 1 c.c. of 2 per cent. sodium citrate solution. Another cover slip preparation may be made by dissolving the serum from a loopful of Group III corpuscle suspension. Hanging drop preparations are then made and examined under the microscope. Agglutination of corpuscles on both slides places the unknown serum in Group IV. No agglutination after ten minutes on either slide places the unknown serum in Group I. Agglutination of the Group III corpuscles and no agglutination of the Group II corpuscles places the unknown in Group II, and agglutination of the Group II corpuscles and no agglutination of the Group III corpuscles places the unknown in the reciprocal Group III.

2. This method may be used very well by laboratory workers who desire to start grouping unknown blood and who must have known serum for beginning these tests. The technic is to collect from the unknown person a few drops of

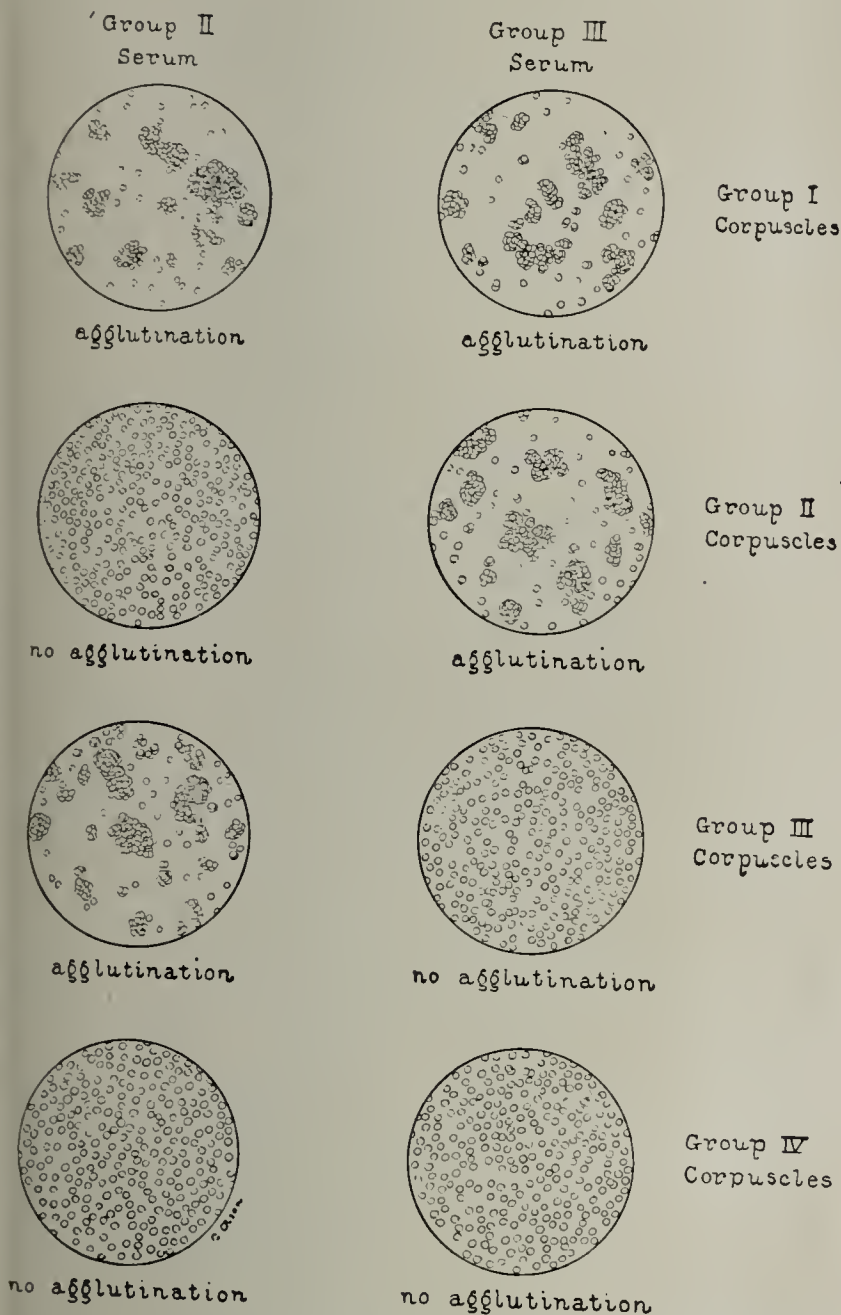


Fig. 1.—Appearance of hanging drop preparations of corpuscle suspensions of four different groups (Moss classification) used to dissolve Group II and Group III serum dried on cover slips.

person was used to dissolve the dried Group III serum on one of the cover slips. When this was inverted over the concavity on a hanging drop slide, it was noted that agglutination of the cells occurred almost immediately, as in the Brem method.¹ When the corpuscle suspension of the same group as the serum was used to dissolve the dried material on the cover slip, no agglutination occurred. Since we are asked from time to time to send known serums to laboratory workers who contemplate using either the Moss² or the Brem method for determining groups in the selection of donors for trans-

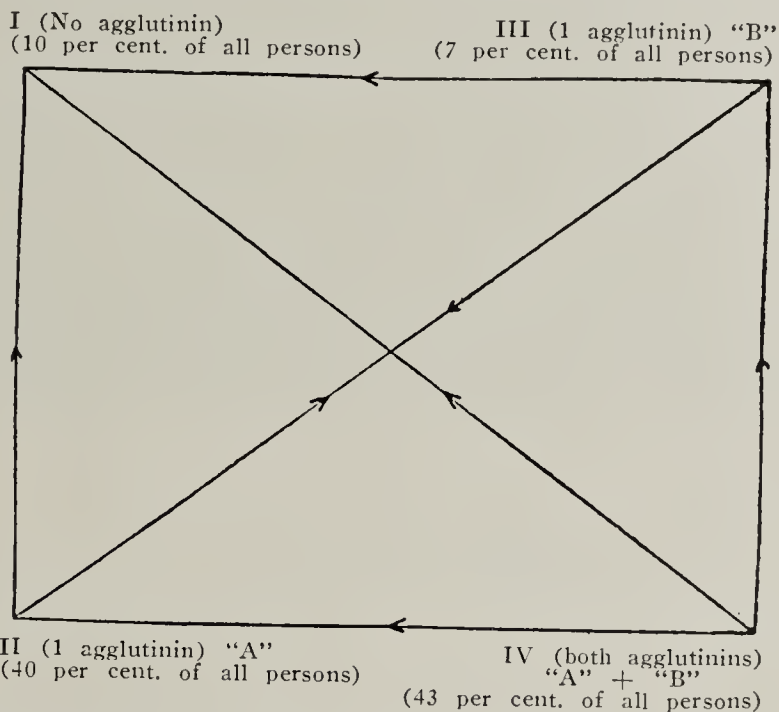


Fig. 2.—Moss agglutination groups: The corpuscles of the various groups are agglutinated by the serums of the groups from which the arrows lead.

fusion, it would seem that this method of using dried serum could well be employed in two ways:

1. The group in which a patient belongs might be determined by preparing several cover slips with serum of the person to be tested. These could be sent to a laboratory equipped to make the necessary tests, and by dissolving the dried serum with corpuscle suspension of a known group the patient's group would be readily determined. The technic is to dissolve the serum on one cover slip with one or two loopfuls of suspension of Group II corpuscles made by allowing two or three drops of blood from a Group II person to fall into 1 c.c. of 2 per cent. sodium citrate solution. Another cover slip preparation may be made by dissolving the serum from a loopful of Group III corpuscle suspension. Hanging drop preparations are then made and examined under the microscope. Agglutination of corpuscles on both slides places the unknown serum in Group IV. No agglutination after ten minutes on either slide places the unknown serum in Group I. Agglutination of the Group III corpuscles and no agglutination of the Group II corpuscles places the unknown in Group II, and agglutination of the Group II corpuscles and no agglutination of the Group III corpuscles places the unknown in the reciprocal Group III.

2. This method may be used very well by laboratory workers who desire to start grouping unknown blood and who must have known serum for beginning these tests. The technic is to collect from the unknown person a few drops of

blood in 1 c.c. of 2 per cent. sodium citrate solution to make a corpuscle suspension similar to the method described by Brem. One or two loopfuls of unknown corpuscle suspension is used to dissolve the Group II serum dried on the cover slip marked known Group II serum. In like manner a drop of the corpuscle suspension is used to dissolve the dried Group III serum. Hanging drop preparations are made and examined in the usual manner. Agglutination on both of the slides will place the unknown blood in Group I. No agglutination on either of the slides after ten minutes will place the person in Group IV. Agglutination of the unknown corpuscles with Group III serum and not with Group II will place the unknown in Group II and vice versa. Group III blood is demonstrated by agglutination with the Group II serum and no agglutination on the other side. Reference to the diagram for the relation of the agglutination groups to each other (Fig. 2) may be helpful in following the technic of this test.

I am prepared to send serums to laboratory workers interested in the determination of iso-agglutination in connection with the selection of donors for transfusion.³

* From the Mayo Clinic.

1. Brem, W. V.: Blood Transfusion, with Special Reference to Group Tests, THE JOURNAL A. M. A., July 15, 1916, pp. 190-193.

2. Moss, W. L.: Studies on Iso-Agglutinins and Iso-Hemolysins, Bull. Johns Hopkins Hosp., 1910, 21, 63-70; A Simplified Method for Determining the Iso-Agglutinin Group in the Selection of Donors for Blood-Transfusion, THE JOURNAL A. M. A., June 23, 1917, pp. 1905-1906.

3. In addition to the references already given, the following will be found of interest:

Sanford, A. H.: Selection of the Donor for Transfusion, Journal-Lancet, 1917, 37, 698-701; Iso-Agglutination Groups: A Diagram Showing Their Interrelation, THE JOURNAL A. M. A., Sept. 9, 1916, pp. 808-809.

PNEUMOPERICARDIUM FOLLOWING PARACENTESIS:
REPORT OF A CASE

CHARLES E. STEWART, M.D., BATTLE CREEK, MICH.

History.—R. J. B., man, aged 39, evangelist, was admitted to the sanatorium, May 2, 1916, complaining of pain in the right side, dyspnea and progressive weakness. His father



Fig. 1.—Condition of chest on patient's arrival.

died at 60 from the grip, his mother at 47 from malaria. One maternal aunt died from pulmonary tuberculosis. His wife and four children were in good health. In early childhood he had intermittent fever, and frequent attacks of colic and diarrhea.

Six years before admission, his health began to fail. At that time he had a persistent cough, and on examination pulmonary tuberculosis was suspected and he went west, where he gradually regained his health. Later he returned to his home in Texas, where he resumed his work. He continued in apparently good health until three years before, when he had an attack of acute appendicitis, and the appendix was removed. At the time of operation, numerous adhesions were found about the intestine.

A few months later he had a severe attack of pain in the right upper abdominal quadrant. This was accompanied by fever and lasted twenty days. After this he was free from pain for several months. During September, 1915, the pain returned again, but was not quite as severe as during the former attack, but had continued ever since.

He complained of tenderness along the margin of the right costal arch and the hepatic area. He described this as being very sore, with a dull ache. He had coughed a great deal during the past four months, and breathing was jerky and difficult. He had expectorated very little, appetite and digestion were good, but eating produced discomfort in the right upper quadrant and greatly increased his dyspnea. He complained of weakness and pronounced dyspnea on slight exertion. During December, 1915, he fainted twice. He had chewed a great deal of tobacco, having used it continuously for thirty years.

Physical Examination.—The temperature was 98.2, the pulse 126, small and weak. The patient's frame was of medium size. Nutrition was subnormal. The musculature was small

and flabby. The skin generally was dark. There was some cyanosis about the face and the fingers. The neck vessels were engorged. There was a scar over McBurney's point. The pupils were wide. The tongue was heavily coated. The chest was small; expansion was limited; respirations were rapid and shallow; there was an expiratory grunt. Breathing was labored and less rapid when the patient was sitting or standing than when lying down. There was dulness over the left apex anteriorly and posteriorly. Crepitant râles were heard over the entire pulmonary area anteriorly and posteriorly, and were most pronounced anteriorly. Bronchial breathing was heard over both sides.

On percussion a large area of cardiac dulness was encountered, extending from the fifth interspace on the left side of the thorax in the anterior axillary line to the midclavicular line in the fifth interspace on the right, gradually diminishing in breadth in an upward direction until the area of the great vessels was reached, where the breadth of dulness was a little wider than normal. The area of dulness was triangular, with the base downward about two thirds to the left and one third to the right of the sternum. When the patient lay on the right side, the area of dulness shifted about 2 cm. to the right. The cardiohepatic angle, instead of being an acute one, as in the normal, was quite obtuse. On auscultation over the precordia, no adventitious sounds were heard; the heart sounds were all quite distinct. Palpation was negative, no cardiac impulse being felt.

The contour of the abdomen was normal except for a slight bulging beneath the right costal arch, over which area there was tenderness most pronounced in the region of the gallbladder. The hepatic dulness extended to within an inch of the umbilicus. During expiratory movements the area of hepatic excursion was limited.

The urinary findings were negative except for the presence of a large quantity of indican. The blood was negative; the



Fig. 2.—Condition after paracentesis, at which time air entered the pericardial sac.

systolic blood pressure was 90, diastolic 64, pulse pressure 26. Examination of the sputum revealed the presence of tubercle bacilli. The electrocardiogram showed a right sided preponderance.

The large area of precordial dulness shifting on change of position, absence of cardiac impulse on palpation, the obtuse cardiohepatic angle, and the presence of extensive pulmonary

changes, together with the presence of tubercle bacilli in the sputum, led to a diagnosis of pericardial effusion of tuberculous origin.

A fluoroscopic examination revealed a tremendous heart, which reached within a thin finger's breadth of the left chest wall. The right border of the heart reached midway between the midline and the right chest wall. The shape of the heart



Fig. 3.—Condition after a second paracentesis, at which time no air entered.

was somewhat suggestive of a pericardial effusion, although the vigor of the pulsations of the cardiac shadow was against fluid. There was a moderate increase in the width of the aortic shadow, the increase being both upward and laterally. The left bronchus was pushed upward by the enlarged heart. The right diaphragm seemed normal. The left costophrenic angle was obliterated, apparently by a small amount of fluid.

In the right lung anteriorly there was degeneration of the subcutaneous tissue to the lower border of the fifth rib in the midclavicular line. Over the same area moist râles were obtained. There was moderate retraction of the apex. Posteriorly there was dulness from the apex to the upper border of the ninth rib close to the spine. There were moist râles as low as the upper border of the sixth rib. From here to the lower border of the eighth rib close to the spine the breathing was decidedly bronchial in character. There were emphysematous changes at the base.

In the left lung anteriorly there was dulness from the apex to the lower border of the second rib, with harsh inspiration and bronchial prolonged expiration. Between the second and third ribs the percussion note was more resonant. Although the râles continued to and around the cardiac dulness. From the third rib extending to the base the percussion note was more flat. The cardiac dulness extended around into the axillary area. There were some pleural crepitations at the base of the lung, where the roentgen ray suggested possible fluid. Posteriorly there was dulness to the lower border of the sixth rib, with bronchial prolonged expiration over the same area. Between the second and fourth ribs the breath sounds were decidedly bronchial in character and accompanied by râles. There were emphysematous changes at the base.

Summary.—There was a very marked enlargement of the heart, with some findings suggestive of pericardial effusion. Some changes throughout the lung could be caused by the

venous congestion due to circulatory disturbances, but apart from this there had been an old tuberculous process in both lungs, which now showed signs of activity in the upper part of each lung, more particularly marked in the right.

Treatment and Course.—May 15, the patient was sent to the hospital for paracentesis of the pericardium. At this time an ordinary aspirating needle was inserted through the fifth interspace an inch to the outer side of the midaxillary line, and 22 ounces of fluid were withdrawn. During this procedure air was accidentally allowed to enter the pericardial sac so that it remained as much distended as it was prior to the removal of the fluid.

Figure 2 gives a beautiful illustration of this, showing the sac containing air and also the level of the remaining fluid. A fluoroscopic examination of the chest at this time revealed a very interesting condition: the distended pericardium with the heart inside of it, and the level of the fluid on the two sides of the heart shadow. The fluid level was in constant agitation, alternately rising and falling on either side of the heart as it changed its position and size during systole and diastole.

For a period of two weeks after the removal of the fluid the patient made rapid improvement. Shortly after this the pericardium rapidly filled with fluid again and the old symptoms of dyspnea, cough, cyanosis and tachycardia returned. June 11, paracentesis was again performed, and 14½ ounces of fluid were removed but did not afford much relief. After a few days the patient rapidly grew worse, and he died about two weeks after the last fluid was withdrawn.

Figure 3, showing the heart after the fluid was removed the second time, shows that the pericardium on the right side was adherent to the diaphragm as far out as the midclavicular line, and this may account for the constant pain the patient experienced in the right upper quadrant.

GONOCOCCUS INFECTION OF THE MUCOUS MEMBRANE OF THE ORAL CAVITY

JOHN MILLS MAYHEW, M.D., LINCOLN, NEB.

History.—N., a student, aged 19, had always been in good health. He denied venereal disease or recent exposure of any kind. Jan. 2, 1918, the day before his departure from his home at Sheridan, Wyo., to attend a college in Massachusetts, he visited a dentist to have his teeth cleaned. He reported that the dentist was so rough that his mouth bled in several places after the treatment. Within twenty-four hours he had a great deal of pain and a burning sensation in the buccal portion of the lips, and within forty-eight



Fig. 1.—Infection of lower lip.

hours his throat was sore. Sixty hours after the treatment his lips were swollen and painful, and vesicles formed at the corners of the mouth. He could not swallow anything but the blandest of liquids, and even warm water hurt his throat severely. I saw him four days after the trouble began—five days from the time of infection. He complained of intense pain in the throat and under the tongue; he could hardly move his lips in speaking, they were so swollen.

Examination.—This was difficult, but inflammation of the entire buccal cavity was observed, hemorrhagic areas over

the right pillars and velum, and a white, clinging exudate over the left velum, cheeks, lower lip, dorsum of the tongue, and oropharynx. On the frenulum of the tongue there was a shallow ulcer with a red base resembling somewhat a mucous patch. The corners of the mouth were cracked and bleeding. The area under the exudate on the lips bled when the membrane was raised. The tongue was swollen, and showed an exudate on the dorsal surface. The whole picture presented a most severe type of mouth infection. The sub-maxillary glands were swollen and tender; the cervical chains were negative. The temperature was 100.2, the pulse, 110. The patient felt and looked very ill. Serum from the ulcer on the frenulum was examined with the dark field illuminator, and by means of India ink smears for the *Spirochacta pallida*, but none were found. Specimens were taken from different parts of the mouth and were examined especially for Vincent's spirochete, the fusiform bacillus, and fungi. Smears made from the pus revealed gram-negative, biscuit-shaped diplococci, both intracellular and extracellular. A large number were crowded in some of the leukocytes, one containing fourteen pairs. This organism grew slowly on ascitic fluid, hydrocele and blood serum-glycerin-glucose-agar, and did not grow on the simple cultural mediums at 37 C. It was agglutinated by serum from a known gonorrheal blood. Complement fixation for gonorrhea was nega-

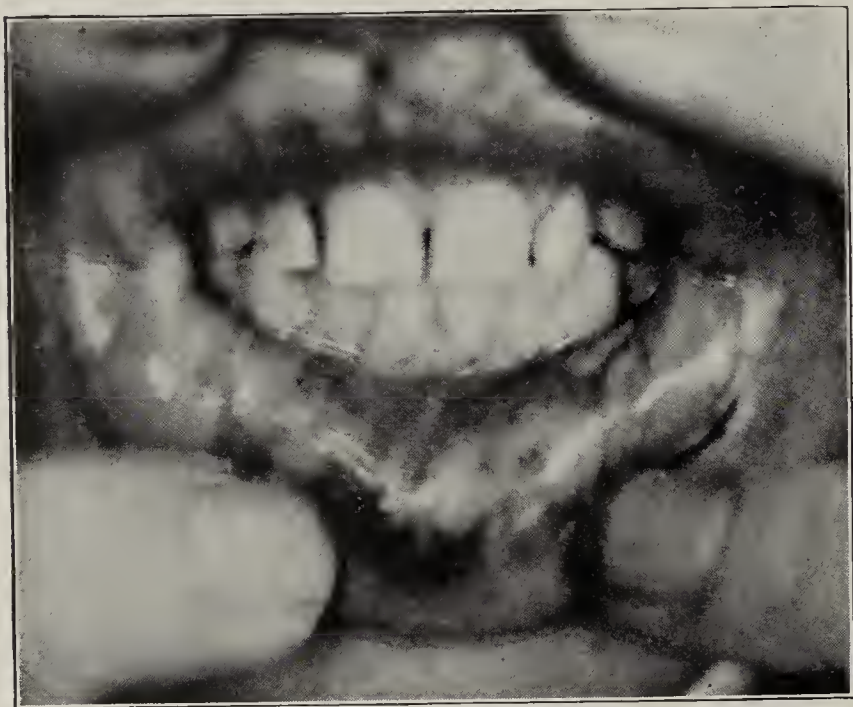


Fig. 2.—Exudate on upper and lower lip.

tive, but since this is usually the case in acute gonorrhea, I did not put much value on this test. It seemed to me, reasonable to believe that this organism was the gonococcus.

Treatment and Course.—The patient was sent to the hospital, isolated, and treated with a mouth wash of a saturated solution of thymol. The mouth and throat were swabbed twice daily with a 2 per cent. silver nitrate solution. The exudate increased rapidly, covering the roof of the mouth and the lips and evading the tonsils, but appearing on the pharynx by the morning of the following day, the eighth after infection. In forty-eight hours after treatment was instituted, the exudate began to disappear, leaving a raw, bleeding surface, the roof of the mouth clearing first, then the pharynx and lip surfaces in order. The ulcer on the frenulum was the last to heal. At no time was there any odor from the mouth or the secretions expectorated. Smears were negative for the intracellular diplococcus on the twelfth day, and none of the organisms described were found in culture; but the mouth was very sore and, in places, raw, and it bled on slight provocation. The parotids were not painful at any period of the disease, the cervical lymphatics were but slightly tender, and the joints were never disturbed. The nasopharynx mucous membrane and nasal cavities were not infected.

It is known that the gonococcus will attack any mucous surface, but it has been found rarely in the mouth. While

this attack followed the supposed infection too closely to be an ordinary gonococcal infection, it seems to me that the only other organisms, the meningococcus and the *Micrococcus catarrhalis*, have been excluded as an etiologic factor.

REMOVAL OF THIRTY DENTICLES FROM ONE BICUSPID SOCKET

BUNDY ALLEN, M.D., IOWA CITY, IOWA

Roentgenologist, University Hospital, State University of Iowa, College of Medicine

May 29, 1917, a woman, aged 23, called my attention to a slight prominence of the gum buccally to the upper right

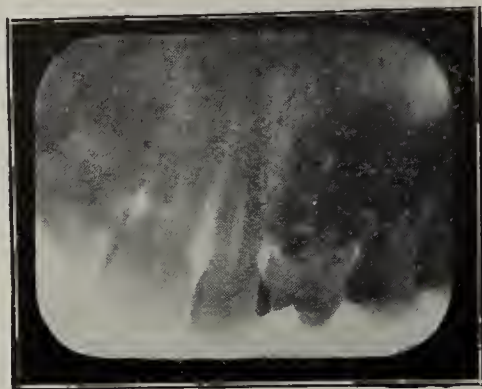


Fig. 1.—Collection of denticles in upper right bicuspid region.

bicuspid region which had not produced any symptoms other than the elevation of the tissue. Figure 1 is a roentgenogram of the upper right bicuspid region showing the presence of a collection of denticles. The patient was referred to Dr. John Voss of Iowa City, Iowa, who extracted thirty denticles from

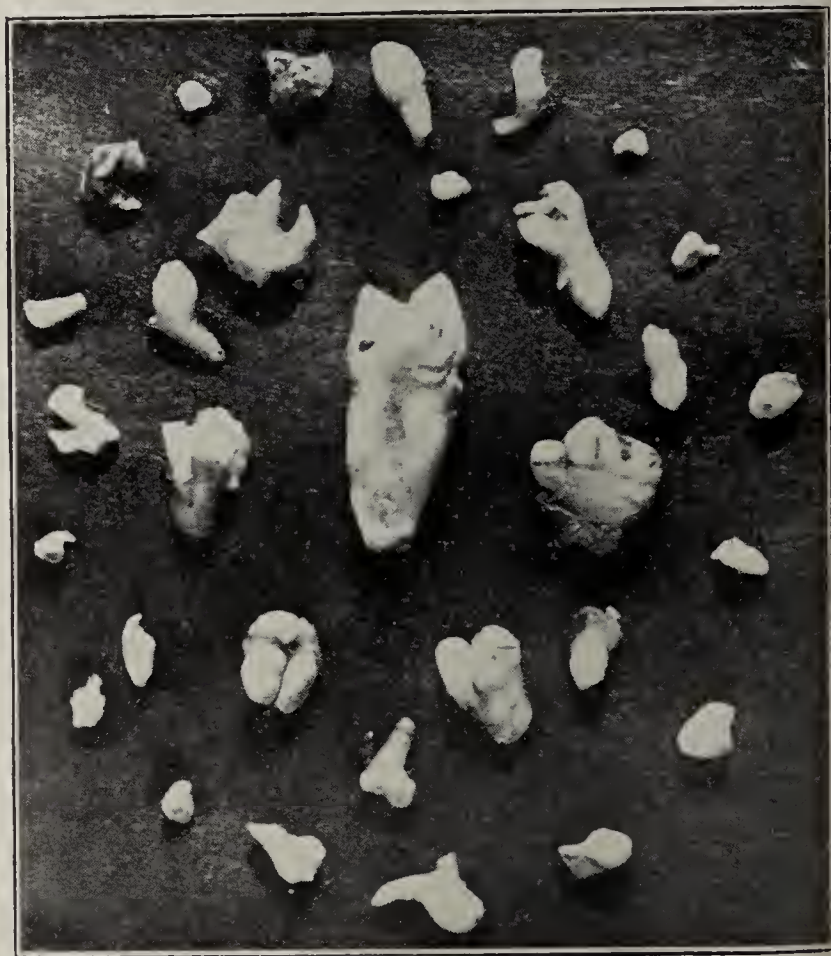


Fig. 2.—The thirty denticles removed from the bicuspid socket.

the first bicuspid socket (Fig. 2). All teeth were present, and occlusion was perfect, excepting for the third molars, which had not erupted.

Child Labor Standards.—To secure ideal standards, national or local, we must presuppose ideal citizens, educated, alert, knowing what they want and organized to demand efficiency of their public servants.—Lindsay, *Child Labor Bulletin*.

HOW TO BREED MICE *

CONRAD HON, NEW YORK

In breeding mice, one should be sure to use strong, healthy animals. If the mice are obtained from an unknown stock, they should be isolated for two weeks, and if any of them become sick during this time they must be discarded. Unless this precaution is taken, an epidemic will devastate one's own stock.

At the time of mating, the female mice should be from 8 to 10 weeks old, and should weigh from 17 to 18 gm. The males should be from 8 to 10 weeks old, and should weigh at least 20 gm. The period of gestation of the mouse is about twenty-one days. The average litter is five, although some females give birth to as many as twelve. It is best not to put more than four females with one male. The males should not be used more than three or four months, while the females should be discarded after they have borne four or five litters.

There are two ways of breeding mice: the family group method and the individual method. In the former method, four females are kept in a box with one male. The advantages of this method are that not only is less labor and space required, but the females have a litter every thirty days. The disadvantage is that one of the females may be vicious and kill not only her own offspring, but all the other young mice in the box. In the individual method, four or five females are also placed with one male, but as the females become pregnant, they are put into separate boxes. The disadvantages of this method are that more time and space are required, and the gestation period is lengthened forty-five days. This method is preferred, as more and healthier mice can be raised.

The temperature of the breeding room should be kept between 68 and 70 F. The mice may be kept in wooden boxes or in glass battery jars with wire tops. A box measuring 11 inches long, 8 inches wide, and 5 inches deep is the most convenient. It is much easier to clean the wooden boxes if their bottom is lined with tin. The battery jars measure 6 inches in diameter and 8 inches in height. The bottom of each box or jar should be covered with sawdust or shavings to the depth of 1 inch. The sawdust or shavings should be changed at least twice a week. Both boxes and jars should be thoroughly cleaned with soap and water twice a week. If an infectious disease breaks out, the boxes and jars should be sterilized. When the mice become pregnant, a handful of fine hay or paper cut into strips is put into the boxes.

The young mice can usually be weaned in three weeks. In large litters, it is better to wean the stronger ones at the end of three weeks, and allow the weaklings to remain another week. As soon as the young are weaned, the females are returned to the males.

Mice should be fed twice a day. The morning meal should consist of moist food, such as bread soaked in skimmed milk. If skimmed milk cannot be obtained, boiled whole milk diluted with an equal quantity of water may be substituted. If milk is unattainable, bread should be soaked in water. An evening meal of grain is given, a mixture of wheat screenings and buckwheat, or buckwheat and oats, or oatmeal is used. Dog biscuit should be fed twice a week. The dog biscuit is not only highly nutritious, but keeps the mice from gnawing at the boxes.

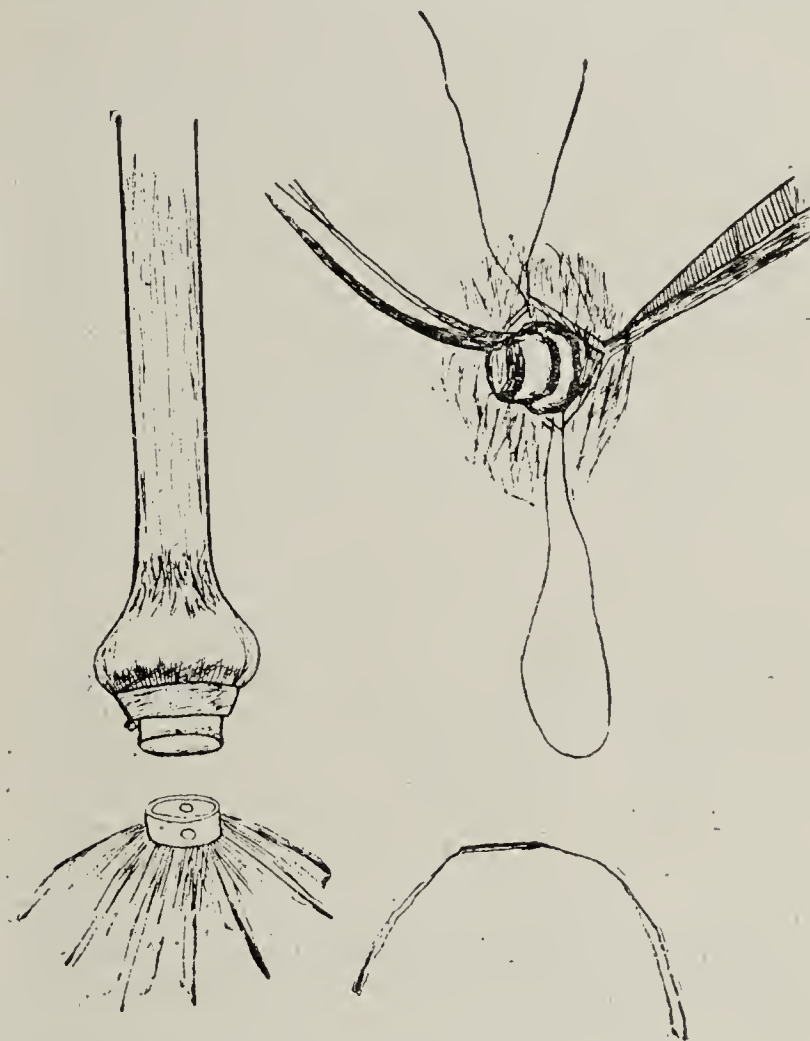
The mice should be inspected daily. If a mouse shows evidence of disease, it should be immediately isolated, and if severely affected, it should be killed at once. There are two highly infectious diseases that affect mice. Mouse typhoid is easily recognized by the diarrhea that is present. The mouse appears sick, the fur is ruffled, the eyes bulge, and a peculiar odor is noticeable. There is another highly contagious condition of unknown origin which causes paralysis and definite swelling of one or more limbs. This condition causes death in about two days.

The three cardinal rules of a successful mouse breeder are cleanliness, close observation, and isolation.

A NEW TECHNIC FOR BLADDER DRAINAGE

HARVEY P. JACK, M.D., HORNELL, N. Y.

This technic is an adaptation of the use of the Murphy button, similar to its use in enterostomy, as suggested by Dr. William D. Johnson of Batavia, N. Y. As will be noted, one half of the Murphy button is inserted into the end of a large rubber tube, the rubber end surrounding the button closely about its shank, just as the end of an intestine would be made to surround it by the purse-string in end-to-end anastomosis. The other half of the button, surrounded down to its shank by a soft rubber ring, if desired, so that it will not cut through too quickly, is placed inside the bladder through a small slit. The bladder tissues are brought firmly about the shank of this half of the button, and the two halves are pushed together as closely as desired. It will be noted at once that we have a perfect joint and that we may use our drain as little or as much as we please. If we are not satisfied that we are perfectly siphoning all of the bladder cavities, of which a strong point is made by Deaver,¹ we may readily introduce another and smaller tube, threading it



Appliance for drainage of bladder.

through the larger one down to the very bottom of the bladder. Forty-eight hours after this operation, which is performed under local anesthesia usually, quinin and urea hydrochlorid four-hour washings of the bladder are begun. If the patient desires to be up and about, an artery clamp is placed on the tube, and he is given the desired permission.

In the last ten cases of prostatectomy we have used this device with the utmost satisfaction. No leakage occurs, and at the end of the preoperative period the suprapubic wound in every case had healed by first intention.

The device has saved much suffering by its prevention of that justly dreaded bugbear of suprapubic wounds, infection of the space of Retzius.

Another advantage this technic presents over any of those recently suggested is that the incision in the bladder may be made of sufficient length to allow search for and removal of stones, which should always be done. At the same time a non-leakable joint is easily secured by a purse-string suture which brings the bladder tissue about the half of the button placed

* From the Rockefeller Institute for Medical Research, New York.

1. Deaver, J. B.: *Ann. Surg.*, 1917, **66**, 371.

in the bladder. This, of course, is the female half of the button.

I have never yet used the rubber ring suggested above. The button has always remained in the tissues without cutting for two weeks. Should it be desired to keep the button in place for a much longer period, the use of the ring is obvious.

Military Medicine and Surgery

TRAINING THE ENLISTED PERSONNEL OF A BASE HOSPITAL

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The scheme for organizing the first fifty base hospitals for the new United States Army by the Red Cross in conjunction with civil hospitals and medical schools, had for its primary object the suitable grouping of specialists. A less obvious result, but another important one, has been the selection for these units of a relatively high percentage of enlisted men with college and other special training. Instead of simplifying the process of training, which at first would appear to be the result of such selection, the problem has really been made more complicated. For, while the courses in nursing, first aid, etc., ordinarily prescribed for sanitary troops are quickly covered by men with these qualifications, such training is inadequate, for the reason that it falls short of preparing them as well as they can be for the special work of a base hospital. Our method of meeting this situation is here outlined.

The first step, which was taken before the mobilization of the unit, was, by means of a questionnaire and a personal interview with each man, to make a survey of the personnel. The result of this was expressed on a large chart, exhibiting, in parallel columns, the names of the men; their education; their previous employment; their previous experience in the Army, in hospitals, in commercial and professional pursuits, etc., and our personal impression of their character.

This survey was used as a basis for the assigning of men for special training. It showed a large percentage with college training, including a number of premedical and first year medical students, graduate students in protozoology, etc., and others with previous military training, mostly in schools.

Several months prior to mobilization, five men were assigned to active duty through request made to the department surgeon. These were selected as prospective noncommissioned officers. Several others volunteered during this time to serve as hospital helpers, and quite a number were able to attend an evening drill class.

Systematic training was not attempted, however, until the men were mobilized and under definite military control. Our organization, under command of Col. Elmer A. Dean, was fortunately situated in San Francisco at a point readily accessible to four large teaching hospitals, the Letterman General, Lane Hospital, the San Francisco Hospital, and the University of California Hospital, in all of which the utmost courtesy and helpfulness was encountered.

The men were at once divided into five detachments, one to remain in camp, which included the necessary camp help, and four to attend hospitals. Each hospital detachment was placed in charge of a medical officer for general oversight and instruction. Special pains were taken in these assignments, first, to limit the number of men in any one place to those who could actually be used as part of the hospital help; and, second, to fit into specially important places men capable of qualifying for them. For the latter purpose the tabulated survey of enlisted personnel was particularly useful. The following will serve as examples: Two medical students who had studied physiology were made apprentices to two different anesthetists, and after a sufficient period of instruction they were allowed to work under supervision and then to work entirely on their own responsibility. Another medical student in the same way has become a competent serologist, able independently to carry out the technic of complement fixation for syphilis, gonorrhea and tuberculosis, to test blood for transfusion, to do the more technical tests on spinal fluids and other similar work. Another group of men with previous experience as microscopists have learned to do the work of a routine clinical laboratory, including examination of the urine, feces, blood sputum, etc. Several have become valuable assistants in bacteriologic and pathologic laboratories. Soldiers also have been adequately developed as assistants in roentgenography, the genito-urinary room, the surgical clinic, the operating room, the sterilizing room, the diet kitchens, etc. In addition, a large number of men were used in medical and surgical wards as orderlies and nurses' helpers. Those assigned to the Letterman General (United States Army) Hospital were taught particularly Army ward management and paper work.

One or two general changes in assignments to hospital wards were made during our three months in camp, so that the majority of the men received more than one type of training; but this did not apply to the "special training" men (anesthetists, laboratory workers, and the like). *An essential part of the plan was to train these men intensively in one subject only.*

With most of the company thus scattered and their time so fully occupied, special measures were necessary to secure the desired proficiency in military drill. The plan adopted worked out even better than our hopes. Noncommissioned officers distributed so that two or three were with each hospital and camp detachment were charged with the responsibility to see that every man learned the drill. Their instruction was controlled and unified by means of weekly conferences. They were required to submit in tabular form the reports of the accomplishments of each man in such fundamentals as the position of the soldier, the facings, ability to maintain the 30 inch step, the half step and the proper marching cadence, and the movements of pivot men and guides.

Of considerable assistance in quickly mastering these movements was a series of full size diagrams painted on some neighboring and little used asphalt streets. These showed by lines the direction of march and by cross marks the steps taken by individuals in such fundamental evolutions as "Detachment Right," "Right Turn," "Fours Right About" and "Right by

Fours." Individuals and groups used these diagrams for practice at such odd hours as they could find until they could be marked proficient. With this foundation the company drill, which was held as a rule but once a week, succeeded in a very short time—much shorter, we believe, than is required by the usual methods of straight detachment drilling. We also believe that the results are better.

An important factor in the success of this drill teaching as well as of the training as a whole was competition for promotion. We were fortunate in having enlisted the men almost without exception as privates; and, while not overlooking educational qualifications, we early announced the policy of making promotions on the basis of demonstrated fitness. Only two or three experienced noncommissioned officers were drawn from the Regular Army. Those who assisted in the drill teaching, although they had had previous military instruction, received at first merely temporary appointments as lance corporals. Evening classes in Army regulations, clerical work, etc., were held for those who wished to attend in preparation for the examinations for noncommissioned officers.

SUMMARY

In training the enlisted personnel of an Army base hospital, the following have been found highly advantageous:

1. Situation of the camp near large teaching hospitals.
2. Initial survey of personnel to discover fitness for special work.
3. Under adequate supervision, assignment of individual men or very small groups to wards, laboratories and other stations for training. In no place in the hospital should more men be placed than can actually be put to work.
4. Nonrotation of men learning technical work.
5. Military drill instruction with expenditure of less time and more individual effort; organization of student teachers, supplemented by conferences, and use of marching diagrams.
6. Stimulation of competition for promotion on basis of fitness shown in work and in examinations.

The Plague of Scabies.—French dermatologists have been recently calling attention to the increasing prevalence of itch, and in his address on assuming office, the new president of the Lisbon Sociedade das Ciencias Medicas, Dr. Z. Falcão, mentioned also the plague of scabies. He stated that in his service last year at the S. José Hospital, 3,234 persons with scabies were given treatment, and the numbers are much higher this year. In one day recently there were forty-six cases, and cases are multiplying in his private practice. In infants, and exceptionally in adults, intercurrent scabies renders eczema or impetigo much graver and complications may prove fatal. Adults with visceral lesions suffer from the insomnia from the "mysterious itching," and serious consequences have been observed from the chilling of the body as it was exposed for scratching. The nervous may develop actual obsessions. Scabies lesions on the penis open the portals to infection, especially to virulent syphilis. Another distressing localization of the itch is in the areola of the mamma; this, he said, has been known to lead to suicide. He also related that the irritation of the skin from extensive scabies and from the various topical measures applied, may damage the kidneys. He has frequently noted edema in persons with itch.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See N. N. R., 1918, p. 343).

The Gilliland Laboratories, Ambler, Pa.

Typhoid Vaccine.—Prepared according to the method of the U. S. Army Medical School Laboratory from the Rawling's strain. Marketed in packages containing three syringes, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; in packages containing three ampules, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; also in ampules containing from 5 to 100 Cc. of the vaccine as ordered.

VACCINE VIRUS (See N. N. R., 1918, p. 323).

The Gilliland Laboratories, Ambler, Pa.

Small-Pox Vaccine.—Marketed in sealed capillary tubes, in packages containing one, five and ten tubes each.

OLD TUBERCULIN (See N. N. R., 1918, p. 326).

The Gilliland Laboratories, Ambler, Pa.

Original Tuberculin, "O. T."—Marketed in 1 Cc. vials.

Tuberculin Ointment in Capsules (For the Moro Percutaneous Diagnostic Test).—An ointment consisting of tuberculin "Old" and anhydrous wool fat equal parts. Marketed in capsules sufficient for one test.

TUBERCULIN DENYS, B. F. (See N. N. R., 1918, p. 329).

The Gilliland Laboratories, Ambler, Pa.

Bouillon Filtrate Tuberculin, "B. F."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent trikresol.

NEW TUBERCULIN, B. E. (See N. N. R., 1918, p. 328).

The Gilliland Laboratories, Ambler, Pa.

Bacillen Emulsion Tuberculin, "B. E."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent trikresol.

NEW TUBERCULIN, T. R. (See N. N. R., 1918, p. 328).

The Gilliland Laboratories, Ambler, Pa.

Tuberculin Residue, "T. R."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent trikresol.

DETRE DIFFERENTIAL TEST (See N. N. R., 1918, p. 330).

The Gilliland Laboratories, Ambler, Pa.

Tuberculin for the Detre Differential Diagnostic Test.—Consisting of one tube each of Original Tuberculin "O. T.", Bouillon Filtrate Tuberculin "B. F." human, and Bouillon Filtrate Tuberculin "B. F." bovine.

CRESOL (See N. N. R., 1918, p. 91).

Cresol-Merck.—A brand of cresol, U. S. P.

Manufactured by Merck and Company, New York.

GUAIACOL CARBONATE (See N. N. R., 1918, p. 87).

Guaiaacol Carbonate-Merck.—A brand of guaiacol carbonate, U. S. P.

Manufactured by Merck and Company, New York.

QUININE DIHYDROCHLORIDE (See N. N. R., 1918, p. 281).

Quinine Dihydrochloride-Merck.—A brand of quinine dihydrochloride, U. S. P.

Manufactured by Merck and Company, New York.

QUININE AND UREA HYDROCHLORIDE (See N. N. R., 1918, p. 282).

Quinine and Urea Hydrochloride-Merck.—A brand of quinine and urea hydrochloride, U. S. P.

Manufactured by Merck and Company, New York.

THYMOL IODIDE (See N. N. R., 1918, p. 166).

Thymol Iodide-Merck.—A brand of thymol iodide, U. S. P.

Manufactured by Merck and Company, New York.

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SATURDAY, APRIL 27, 1918

THE CALL FOR MEDICAL OFFICERS

In THE JOURNAL two weeks ago appeared the announcement of Surgeon-General Gorgas to the AMERICAN MEDICAL ASSOCIATION of the need of five thousand additional officers for the Medical Reserve Corps. Last week THE JOURNAL contained the report of the War Committee of the Association outlining the initial steps in the campaign to secure these five thousand volunteers. Already a most encouraging lot of letters have been received from physicians asking for application blanks and for information relative to the service. Even before any systematic appeal has been made the medical profession is indicating that it stands ready to respond.

A number of physicians have stated their circumstances and have asked THE JOURNAL to aid them in making a decision as to whether it is their duty under such and such circumstances to volunteer. The physician who volunteers for the Medical Reserve Corps at this time does so under different circumstances than did the men who volunteered a year ago when our country entered the war. Constructive legislation in the intervening period has removed many of the difficulties which at that time confronted the physician who faced the question as to whether or not he could volunteer for service. Congress has since provided for the care of dependents, for insurance and compensation, for increased pay on foreign service, for commutation of quarters, heat and light, for a moratorium on debts and leases of officers in the service, and for reconstruction and reeducation of the disabled and injured. Army regulations now provide that officers may purchase equipment directly from the Quartermaster's Department. Physicians who entered the service over a year ago did so without the assurance that this new legislation conveys. They made greater sacrifices than are required now.

The physician who comes into the Medical Reserve Corps today has probably been confronted with cir-

cumstances which prevented him from volunteering earlier. Many have hesitated because of fear as to the care of their dependents, of the inadequacy of the salary of a medical officer, of provision for their dependents in case of unfortunate disaster to themselves. To these men the Medical Department of the Army can now say that there is no longer cause for such fears and doubts.

The medical profession of Great Britain, well-nigh exhausted by the drains on its services, it is confidently stated elsewhere, will volunteer quickly to fill new demands. The American medical profession will do no less nobly. THE TIME HAS COME FOR EVERY MEDICAL MAN UNDER 55 YEARS OF AGE, WHO IS PHYSICALLY QUALIFIED, TO CONSIDER SERIOUSLY FOR HIMSELF THE QUESTION OF HIS DUTY TO HIS GOVERNMENT.¹

THE POSSIBILITIES OF COTTONSEED FLOUR AS FOOD

In the extremely active search for new foods which may help to augment the all too limited supply that confronts the nations now at war, attention has repeatedly been directed to cottonseed as a possible addition to the human dietary. The oil of cottonseed is by no means unknown in dietetics, and it is no exaggeration to say that the best grades of the refined product are thoroughly appreciated. Undoubtedly, cottonseed oil also enters, in hydrogenated and solidified form or in its original more liquid state, into some of the novelties that are coming under a variety of trade names to replace the longer known fats used in cookery. Cottonseed meal has been employed for a long time, as a product rich in protein, in animal feeding. Under the name of cottonseed flour a more refined product, probably representing ground and bolted meal, has been proposed and used to some extent in the foods of man.

Some of the advantages that might be expected from it have been emphasized by the experiments of Richardson and Green² and of Osborne and Mendel.³ The protein constituents are of excellent quality in the sense that they yield all of the amino-acids essential for the nutrition of growth. Laboratory animals have been carried into a second generation on cottonseed products as their sole source of protein. Furthermore, like other seeds, that of the cotton plant has a liberal content of the water-soluble vitamin that is now recognized as so important to well being. Despite certain culinary difficulties which seem to be rated

1. Circular of information and application blank will be sent by THE JOURNAL on request.

2. Richardson, Anna E., and Green, Helen S.: Nutrition Investigations upon Cottonseed Meal, I, Jour. Biol. Chem., 1916, **25**, 307; Nutrition Investigations upon Cottonseed Meal, II, *ibid.*, 1917, **30**, 243; Nutrition Investigations upon Cottonseed Meal, III, Cottonseed Flour: The Nature of Its Growth-Promoting Substance and a Study in Protein Minimum, *ibid.*, 1917, **31**, 379.

3. Osborne, T. B., and Mendel, L. B.: The Use of Cotton Seed as Food, Jour. Biol. Chem., 1917, **29**, 289.

with different significance by various experts in the household arts, cottonseed flour has been used in preparing mixed breads and other bakery products. Perhaps the objections to its use in this respect are by no means insuperable, especially since all classes of our population are becoming more tolerant of dietary novelties that upset all household traditions.

There is, however, another aspect of this problem which demands earnest consideration before cottonseed products can be endorsed for the human dietary. It has long been known that the liberal use of cottonseed meal may be attended with what is called cottonseed injury or toxicity in agricultural practice. Every recent investigator of the subject admits that the feeding of the unaltered seeds brings detrimental results. Withers and Carruth,⁴ of the North Carolina Agricultural Experiment Station, have associated the harmfulness of the seeds with the presence in them of a toxic substance, gossypol, which is present to the extent of about 0.6 per cent. It appears from the work of the various students of the problem that gossypol is easily oxidized to nontoxic derivatives. The explanation of the lessened toxicity of the usually fed meal or flour, in contrast with the original seeds, lies in the fact that the former products are prepared from the residues left after cottonseed oil has been extracted from the seeds. This process is accomplished with the aid of heat. Accordingly, cottonseed meal is much less toxic than raw cottonseed, owing mainly to the oxidation of gossypol during the cooking that is required in the technic of oil manufacture. The toxicity of cottonseed products varies, according to Withers and Carruth, with the conditions under which the raw seed is cooked.

It seems most unfortunate that a food product as highly digestible and nutritive as cottonseed flour should await greater usefulness because the conditions for rendering its use dietetically safe have not yet been adequately controlled. Until this is done, however, an element of danger inevitably attaches to any propaganda in favor of what ought to become a wholesome food. Gossypol can be extracted from cottonseed; it can be rendered inert by heat. Presumably the manufacturing processes and the cooking requisite for the preparation of edible products eliminate the objectionable features. However, until a flour of guaranteed and established freedom from harm is available under properly controlled auspices, the further development of what may be a useful food industry will be impeded. The difficulties presumably can be solved, and assuredly ought to be, in the interest alike of nutrition and of the industries.

THE PHYSICAL QUALITIES OF AVIATORS

In considering the special qualities which aviators should have, Surgeon H. Graeme Anderson of the Royal Navy Service and adviser to the British Air Medical Service¹ suggests that in eliminating the unfit—and man power is an ever increasing problem—special flying schools be instituted where border-line pupils could be instructed in flying under the attention of sympathetic instructors and with a medical officer, especially interested in aviation, carefully recording results. In an address before the Medical Society of London last month, he recapitulated, on the basis of an extensive experience, his view as to the necessary physical qualities of aviators. In addition to a sound constitution free from organic disease, a fairly strong physique, normal hearing, good muscle and equilibration sense, the matter of greatest importance is good eyesight, and next to vision is temperament. For this reason an aptitude for flying was found most common among those used to sport and leading an outdoor life. The yachtsmen and the horsemen made skilful pilots. Until recently, the Germans selected aviators from the cavalry. However, occasionally it has been found that the type with the most splendid physique and apparently unshakable courage was unable to learn to fly, whereas the weedy, pale type learned quickly and became first-rate flyers. Candidates for aviation always should be made to undergo a surgical, medical and a special sense examination, preferably by experts, and then the final selection should be made by an especially selected committee. The best age for flyers is about 24 years, including the period from 18 to 30. Flyers should not be under 5 feet, 2 inches, Anderson believes, as they would have difficulty in reaching the rudder bar or looking over the cockpit of the aeroplane. Any evidence of epilepsy, vertigo, migraine, persistent headache, lack of concentration and easily induced fatigue should disqualify. The significance of disabilities of the extremities should depend on the extent to which these interfere with power to work the controls and to use the machine gun. Most movements in controlling an aeroplane are performed below the level of the shoulder. Alcohol should be strictly forbidden among pupils at a flying school, and there seems little doubt that the action of alcohol is accentuated in the air. Untreated or imperfectly treated syphilis, and recent attacks of malaria should bar the candidate from service. It has also been the experience of Surgeon Anderson that malarial attacks are precipitated by the cold experienced in flying, although other physicians believe little emphasis should be laid on this point.

Of course, the special sense examinations are of primary importance. As we stated last week,² the experience in the Royal Navy as well as that of

4. Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed Meal, *Jour. Agr. Research*, 1915, **5**, 261; Iron as an Antidote to Cottonseed Meal Injury, *Jour. Biol. Chem.*, 1917, **32**, 245. Withers, W. A., and Ray, B. J.: A Method for the Removal of the Toxic Properties from Cottonseed Meal, a Preliminary Report, *Science*, 1912, **36**, 31; Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed, *Jour. Agr. Research*, 1918, **12**, 83.

1. Anderson, H. G.: The Selection of Candidates for the Air Service, *Lancet*, London, 1918, **1**, 395.

2. The Bárány Tests in the Examination of Aviators, editorial, *THE JOURNAL A. M. A.*, April 13, 1918, p. 1096.

American medical officers leads to the view that the aviator should have unaided, normal vision in both eyes and in each eye separately, and also normal color vision. The examination of the organs of the head and neck should be stringent and special attention paid to the presence of clear airway in the nose, as there seems to be definite relation to discomfort in flying and the appearance of severe headache because of lack of sufficient breathing space. The Italian army pays marked attention to this point. Any candidate showing a perforation of the tympanic membrane or cicatrices should be rejected as these men would probably suffer from pain in the ear induced by the incessant noise of the engine and by pressure effects from changing height rapidly. Perfect hearing is very important, especially in starting the aeroplane from the ground in order that the words "contact" and "switch off" given by the mechanic following the swinging of the propeller may certainly be heard and accidents avoided. Surgeon Anderson would also test especially the reaction time with regard to vision, hearing and touch and the emotional reactions according to the tests elaborated by Dr. Nepper. In these tests the aviator has around his chest a pneumograph, in his left hand a trembler and around two fingers of his right hand a pneumatic "doigtier." These are all connected by rubber tubes to stylets writing on a revolving cylinder, and this records the respiratory rhythm, tremor and the peripheral vasomotor control. A revolver shot is fired or a flash-light set off behind the candidate. In the best type of pilot with good nerves, the effects recorded are of very short duration, while in unsuitable ones the respiratory rhythm remains increased for some time, and there is marked tremor and peripheral vasomotor constriction.

In the discussion, Surgeon R. C. Munday, Medical Administrator of the Air Force, approved practically all of Anderson's suggestions and pointed out the great importance of selecting the best men possible without excluding any qualified men. It was his belief that no candidate should be passed within two years of the last manifestation of active syphilis. He is strongly opposed to alcohol being consumed at an aerodrome until the flying is over for the day, and then only in limited quantities. Practically every one of the physicians and officers taking part in the discussion agreed that the factor of vision was of the greatest importance. Mr. Ernest Clark especially said that a simple test with a + glass was insufficient and that cycloplegics should be used.

In this country we have no shortage of man power. Our athletes and our students have come forward by hundreds and even by thousands to enlist in this most hazardous yet fascinating service. Yet we should not be blind to the fact that very special qualities are needed, and the material should be most carefully sorted with a view not only to selecting the most capable men, but also to selecting all the capable men.

THE STABILITY OF VITAMINS

There is a widespread impression that those as yet little understood, but apparently indispensable components of the diet popularly termed vitamins are easily destroyed by heat. Obviously the establishment of the truth in this respect is a matter of great importance. Most of the foods that enter the diet of man beyond the period of infancy are subjected to heat in cooking; and at present the practice of food preservation as a part of the conservation movement involves the application of heat. One need only recall the preparation of canned vegetables, tinned meats and milks, and the sterilization of milk by heating, to appreciate a further aspect of the problem.

The statements as to the instability of vitamins toward heat seem, to a large extent at least, to be an outcome of the widely held belief that heated milk is responsible for infantile scurvy, which, in turn, is conceived to be a deficiency disease. As we have pointed out in the past, the etiology of scorbutus is far from being definitely understood, and the bearing of the milk factor in the genesis of the symptoms is still open to new interpretations. The most promising method of ascertaining the truth would seem to consist in studying the effect of heat on sources of vitamin that can be tested in unmistakable ways. One of these is afforded by the ready production of experimental avian polyneuritis, the analogue of human beriberi, which is easily relieved by suitable vitamin products. The results and their proper interpretation are usually clear. In this way several American investigators have shown that the boiling temperature of water is by no means entirely destructive to the antineuritic vitamin, even though heating under pressure may be destructive in its effects.

At the Lister Institute in London, Chick and Hume¹ have renewed the study of the fate of vitamins on heating, employing the antineuritic properties of the wheat embryo and of yeast as test objects. They found that exposure of wheat embryo to a temperature of about 100 C. (212 F.) for two hours resulted in no significant loss in antineuritic "vitamin." If, therefore, it is included in the flour from which bread or biscuit is made, it can be relied on to retain its antineuritic properties after baking. At temperatures in the neighborhood of 120 C. (248 F.), however, there was a swift destruction of antineuritic properties. This fact has an important bearing where diets are largely composed of preserved and canned foods previously sterilized at temperatures above 100 C.

There is at present a pronounced difference of opinion as to the nature of scurvy. The classic experimental animal for the study of this condition has been the guinea-pig. Holst has found that it will develop

1. Chick, Harriette, and Hume, E. Margaret: The Effect of Exposure to Temperatures at or above 100 C. on the Substance (Vitamin) whose Deficiency in a Diet Causes Polyneuritis in Birds and Beri-Beri in Man, *Proc. Roy. Soc., B.*, 1917, **90**, 60.

the disease in acute form if kept on a diet of cereals with water or sterilized milk. McCollum and his associates are unwilling to admit that scurvy belongs to the deficiency diseases in the sense of being caused by a lack of vitamins in the diet. They associate it rather with the absence of suitable texture or bulk to the food so that the intestinal functions are not appropriately exercised. In the forms of scurvy familiar in human experience, fresh fruits and vegetables are believed to have a pronounced curative virtue. Obviously the facts can be adjusted to a variety of hypotheses. It may be assumed that the curative foods mentioned furnish needed vitamins or that they succeed by altering the alimentary functions in a beneficial way. In any event, Holst reported that the antiscorbutic power of certain fresh foods, notably cabbage, was slightly lessened after exposure to 100 C. for half an hour, but that the deterioration was appreciable after one hour; at from 110 to 120 C. (230 to 248 F.) the destruction was rapid and complete. If such evidence is accepted, it would seem as if neither the antineuritic vitamin nor the antiscorbutic property, whatever the latter may be, can be expected to survive in canned or sterilized foods that have been subjected to temperatures approaching the damaging limits mentioned.

Chick and Hume,² who have studied the distribution among foods, especially those suitable for the rationing of armies, of the substances required for the prevention of beriberi and scurvy, respectively, have come to the conclusion, to quote their own words, that "the antiscorbutic vitamin is present in active living vegetable tissues. It is also present in animal tissue, to a much less degree. Fresh vegetables and fresh fruit juices are the most valuable sources of antiscorbutic vitamin that we possess. All the dried foodstuffs examined, including desiccated vegetables, were more or less deficient in this vitamin." These investigators at the Lister Institute in London have further stated that dry legumes and cereals, though rich in antiberiberi vitamin, are deficient in antiscorbutic vitamin, and afford no protection against scurvy. If these are moistened, however, and allowed to germinate, the antiscorbutic principle is regenerated with the beginnings of active cell life. In view of their own experiments and the existing literature on the subject, Chick and Hume believe that in the case of armies or other populations subsisting largely on canned food, it is imperative to provide an adequate supply of vitamin from outside sources. Their dicta are: To prevent beriberi, the bread or biscuit should be made from whole-meal or germ-containing flour. To prevent scurvy, if a supply of fresh fruit or vegetables is not procurable, germinated legumes should be added to the diet.

We may admit the wisdom of giving due consideration to this carefully planned advice without thereby accepting the hypotheses that have been injected into it. It would be folly, we believe, to proclaim any wholesale condemnation of foods preserved with heat as devoid of antiscorbutic properties until far more evidence is available—evidence obtained without the prejudice of a preconceived theory of etiology. The propaganda for conservation of food by drying must not receive a setback until more conclusive proof of an actual deficiency of any vitamins that they may originally have contained is furnished. Nor must the interesting and valuable vitamin theory be allowed to overshadow completely the fact that calories are necessary for nutrition.

RETROGRESSION IN NEW YORK CITY

Preceded by a "private enquiry," there are now being held public hearings in New York City on the proposal to abolish the various bureaus of the Health Department of the City of New York. The excuse that is said to have been given by Mayor Hylan for this proposal is the excuse common to politicians—cutting down expenses! It would be just as rational to attempt to cut down expense by abolishing the street cleaning department and by discharging half the firemen and policemen in the metropolitan district.

The mayor's contention seems to be that as the city charter—of a half century ago—only specifies by name two bureaus in the Department of Health, the present subdivision into nine bureaus is illegal and should be abolished. This, too, in spite of the fact that the law department of New York City has, on more than one occasion, rendered opinions that the present system conforms with the law.

As now constituted, the directors of the nine bureaus in the Department are under the Civil Service law and cannot be discharged by the mayor unless incompetence or insubordination is definitely proved. Abolishing the bureaus will, of course, abolish the directors. There will then, apparently, be nothing to prevent the mayor from appointing his own "chiefs" to carry on the work of the Health Department.

Such a reorganization would not only give to the new administration a great opportunity for the distribution of political patronage; it would also make it possible to put in the place of those now acting as directors of the various bureaus individuals who would be more solicitous of various big businesses whose activities are opposed to public health. It may be assumed that under a political organization there would be no Bureau of Public Health Education, such as that now headed by Dr. Charles F. Bolduan. This bureau, one of the most important in the Department, has been unremitting in its efforts to give the New York public information regarding the nostrum evil and quackery. Needless to say, it has aroused tremen-

2. Chick, Harriette, and Hume, C. Margaret: The Distribution among Foodstuffs (Especially Those Suitable for the Rationing of Armies) of the Substances Required for the Prevention of (A) Beriberi and (B) Scurvy, *Tr. Soc. Trop. Med. and Hyg.*, 1917, **10**, 141.

dous opposition on the part of the quacks and nostrum venders. While it is probable that not even a Tammanyized administration would dare to abolish altogether the work now done by the Bureau of Food and Drugs under the direction of Lucius P. Brown, it is conceivable that a man could be put in charge of such work who might be counted on to be not too harsh with those who fatten on the sale and manufacture of sophisticated food and drugs. Possibly some of the other bureaus have, in the execution of their duty, offended powerful interests.

There never existed a public health organization worthy of the name that did not bring down on its head the maledictions of those with whose activities it interferes. Whether the war against these various departmental agencies is being prompted by those who have been hurt by the Health Department's activities or whether it represents typical municipal partizan politics makes little difference; the result, if successful, will be the same. It is to be hoped that the best elements of the City of New York will get together and prevent the present highly efficient health administration of New York City being disorganized and put back into a régime that has been abolished by every progressive city in the United States.

Current Comment

COMMUTATION OF QUARTERS FOR OFFICERS

The President has signed the bill for commutation of quarters. The bill provides that "during the present emergency every commissioned officer of the Army of the United States on duty in the field, or on active duty without the territorial jurisdiction of the United States, who maintains a place of abode for a wife, child or dependent parent, shall be furnished at the place where he maintains such place of abode, without regard to personal quarters furnished him elsewhere, the number of rooms prescribed by the Act of March 2, 1907, to be occupied by, and only so long as occupied by, said wife, child or dependent parent; and in case such quarters are not available every such commissioned officer shall be paid commutation thereof, and commutation of heat and light, at the rate authorized by law in cases where public quarters are not available; but nothing in this Act shall be so construed as to reduce the allowances now authorized by law for any person in the Army." This most important legislation is destined to relieve much real distress. Like much other legislation, the verbiage of the law is doubtful on some points and the comptroller has been asked to issue rulings and interpretation of the new legislation for the guidance of disbursing officers. The law was passed in order that officers who are compelled to maintain a residence for their dependents may receive commutation to help meet this drain on their resources. The question has arisen as to whether officers on duty

abroad, who are provided with commutation of quarters, heat and light, for instance, in France, will also receive allowance for a family in this country. According to the *Army and Navy Register*, "It is hoped that the comptroller will decide that an officer may draw double commutation of quarters for the full number of rooms allowed for his grade with commutation of heat and light, for the number of rooms actually occupied abroad by himself, and the number of rooms actually occupied by the members of his family at home." Another question concerns the interpretation of the words "wife, child and dependent parent," and it is suggested that the latter term includes father, mother, grandfather, grandmother, step-father, step-mother, either of the officer or of his wife. For those physicians who do not understand the interpretation of the term "commutation of quarters," we may say that a commissioned officer on duty at a place at which no public quarters are available — such as an Army post — is entitled to commutation of quarters, which amount is added to the pay of the officer by the paymaster each month. The officer is also entitled to commutation for fuel and light, which is also entered on his voucher according to tables published in Army Regulations. The commutation consists of \$36 for first lieutenant, \$48 for captain and \$60 for major. As will also be seen from the text of the law, this commutation of quarters is not paid to unmarried officers unless they maintain a home for a dependent parent.

ABSORPTION THROUGH UNUSUAL SURFACES

The question as to the possibilities of absorption through the exterior surfaces of the body has often been raised, particularly with respect to the permeability of the skin and some of the mucous membranes to drugs and to poisons that might reach these parts of the organism accidentally in industrial processes. It is quite generally regarded as established that the sound skin is impermeable for watery solutions of salts and other substances. Where the integument has been injured by a blister, or its surface has been denuded in some way, the exposed tissue may possibly offer an avenue of entrance for soluble products. This is not, however, a true cutaneous absorption. The possibility of absorption by inunction of substances dissolved in fats or fatlike compounds cannot be denied. It has been emphasized anew by studies, recently reported in *THE JOURNAL*, on the behavior of mercury applied in this way.¹ But as a well known physiologist remarked in a recent textbook, it is difficult to imagine that any appreciable amount of cod liver oil will be available for the nutrition of an infant when this fat is administered by being rubbed on the skin. That moist mucous surfaces, like the conjunctiva, permit of the transport of drugs through them is generally assumed in the daily practice of introducing substances into the conjunctival sac in ophthal-

1. Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. W., and Gavron, J. L.: Experimental Studies of the Mode of Absorption of Mercury when Applied by Inunction, *THE JOURNAL A. M. A.*, Jan. 19, 1918, p. 142. The Absorption and Excretion of Mercury, *Current Comment* Feb. 9, 1918, p. 392.

mologic routine. D. I. Macht,² of the Johns Hopkins laboratories, has demonstrated that in such cases the absorption is due, in part at least, to direct entry into blood and lymph channels, and is not solely the result of an indirect absorption through the nasal ducts. For even when the latter were completely obstructed, sufficient apomorphin to produce vomiting could still be absorbed from the eye into the general system. As apomorphin produces its emetic action by direct stimulation of the vomiting center, the use of this drug in the study of the permeability of unusual surfaces excludes any confusion with reflex effects set up by local irritation. Apomorphin itself must permeate to the blood stream before it can unfold its specific activities. Macht has therefore employed it to demonstrate absorption through the vaginal wall, the urethra, the prepuce, the nasal canal and other structures. In many of these instances the suspicions of experience are supported by the demonstrations of the controlled experiment.

THE SUPREME COURT DECISION ON THE CORPORATE RIGHTS OF THE AMERICAN MEDICAL ASSOCIATION

In 1910 the state's attorney of Cook County (Chicago) was petitioned to institute "quo warranto" proceedings against the American Medical Association on the grounds that the Association's affairs were being conducted illegally in that its officers were elected at annual sessions held outside of the state of Illinois. The state's attorney refused to take action in the matter, and later, the attorney general of the state, who was appealed to, also refused to act. January 5, 1911, mandamus proceedings were begun in the Circuit Court of Cook County, Illinois, to compel the state's attorney to initiate the quo warranto action which he had declined to institute. Until December 20, 1915, the issue was between the parties asking for the "mandamus" and the state's attorney of Cook County, Illinois; the point at issue being the technical one as to whether the state's attorney was compelled to act or had discretionary authority in the matter. The case went through the lower courts and finally was carried to the Supreme Court of Illinois, which in December, 1915, refused to hear arguments on the merits of the cause as it related to the American Medical Association, but ordered the Circuit Court to take up the original quo warranto proceedings designed to raise the question of whether or not Illinois corporations "not for profit" are compelled to hold their elections and conduct their business within the confines of the state. Up to this point the American Medical Association was not technically interested in the controversy; now, however, it became a party in the action. Quo warranto proceedings against the members of the board of Trustees were instituted in the Circuit Court of Cook County, Illinois, which after trial rendered a

decision favorable to the Association. The case was then carried to the Appellate Court of Illinois, which confirmed the decision of the Circuit Court. An appeal was finally made to the Supreme Court of Illinois, which last week (April 16) rendered its decision, settling the question. This decision is entirely satisfactory so far as the Association is concerned. One paragraph of the opinion reads:

It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the State of Illinois, composed of delegates selected by the constituent associations, for the transaction of business of the corporation, it is not unlawful to authorize and provide for the election by said house of delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the association throughout the United States, by delegates selected by the constituent associations from the various States in the Union. Such authority to the house of delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit.

The decision is important not only to the American Medical Association, but also to all organizations incorporated under the law of Illinois — in fact of any state — governing corporations "not for profit."

ANOTHER APPEAL TO THE BRITISH MEDICAL PROFESSION

The *British Medical Journal* for March 30 presents a rather gloomy survey of the situation so far as concerns the Medical Department of the British Army. Even before the drive of the last four weeks, the ranks of the civilian medical profession had been pretty well drained. Our contemporary practically acknowledges that 45,000 prisoners were taken, and that in this total must be included a large number of medical officers. In addition, it is quite probable that many medical men were killed or seriously wounded. "The emergency is so great," it says, "that the Ministry of National Service makes an urgent appeal to members of the medical profession to come forward with offers of voluntary service to meet the existing pressure. The appeal is made — First, to medical men now in this country who have relinquished their commissions and have not rejoined. Their services are immediately and urgently required with the armies in France. Secondly, an appeal is made to medical men under the age of 55 who are physically fit to offer their services either at home or abroad." It goes on to say that the number of men in these categories that can be available is small, and that in many areas the number of civilian practitioners has been reduced to a level which has caused anxiety to the civil authorities. "But the situation which has to be faced is serious, and we are confident that the voluntary spirit of medical men will face it. Every one of them who responds immediately will be performing an act of practical patriotism as well as of individual fortitude."

2. Macht, D. I.: On the Absorption of Apomorphin and Morphin through Unusual Channels, Proc. Soc. Exper. Biol. and Med., 1917, 5, 26.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending April 19, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 843, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 195 majors, 2 captains and 477 lieutenants.

MEDICAL RESERVE CORPS: 18,651, including 1,194 majors, 4,418 captains and 13,039 lieutenants. On active duty: 16,042, including 1,063 majors, 3,949 captains and 11,030 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,207, including 16 lieutenant-colonels, 249 majors, 150 captains and 792 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 111, including 3 brigadier-generals, 11 colonels, 89 lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,207; of whom 1,357 are on active duty; DENTAL CORPS, N. G., 259; VETERINARY CORPS, 18; VETERINARY RESERVE CORPS, 1,432, of whom 823 are on active duty; VETERINARY CORPS, N. G., 51; VETERINARY CORPS, N. A., 374; SANITARY CORPS, 1,028, and AMBULANCE SERVICE, 154, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number			
	M.R.C.	M.C.N.G.	D.C.N.G.	San.C.
Duty completed	1	0	0	0
Physical disability	532	42	7	6
Inaptitude	213	16	0	1
Other branches of service	443	61	7	59
Domestic troubles	52	1	0	1
Resignations	166	45	5	6
Needed by community	36	1	0	0
Deaths	52	3	0	1
Dismissals	3	2	0	0
Good of service	0	1	0	1
	1,598	172	19	75

American Medical Officers Under Fire

Press dispatches call particular attention to the actions of American physicians and nurses in the midst of the great drive now taking place on the Western battle front. They reveal that the medical officers conducted themselves with exceptional bravery and coolness while under fire. As the Germans advanced it became necessary for casualty clearing stations and field hospitals to retire. How difficult a task this was may well be conceived by any one with a knowledge of what it means to transport thousands of wounded and tons of equipment while under fire and along roads jammed with the tremendous paraphernalia of the fighting army. It is reported that when the offensive opened the British had large advance stations which came under immediate pressure. While shells and bombs rained on the hospitals, the physicians and nurses continued to attend the wounded, to pack supplies and to arrange for transportation. The severely wounded were carried back in ambulances, but every man able to walk was forced to transport himself back to his new station. It is reported that the more valuable surgical instruments and supplies were taken in charge by physicians who in many cases personally piled them on wheeled stretchers and pushed them for long distances.

Social Hygiene Division

The War and Navy Departments Commissions on Training Camp Activities have formed a social hygiene division under the head of Major William F. Snow of the Surgeon-General's Office. The work of the division will be entirely educational, and will be divided into three sections with Dr. Katherine B. Davis, William H. Zinsser and Lieut. Walter Clarke as directors. Lieutenant Clarke will continue the educational work that he has been doing in the cantonments with the full cooperation of the War Department and with a large staff of lecturers on social hygiene. The lectures are compulsory with the men in the camps, and exhibits and literature are used in connection with them. The section on men's work under the direction of William H. Zinsser will concern itself with the education of men in civilian communities. This work was formerly under the direction of the Council of National Defense, but is now transferred to the social hygiene division under the Commission on Training Camp Activities. Dr. Katherine B. Davis will direct the section on the education of women and girls. A lecture bureau will be maintained in cooperation with the social morality committee of the war work council of the National Y. W. C. A., the American Social Hygiene Association and similar organizations, which have also previously cooperated with the other sections named. This bureau will supply

lecturers to groups of women and girls and will work in industrial communities as well as in communities adjacent to camps.

Reconstruction and Reeducation of Disabled Soldiers

The Department of Reconstruction and Reeducation of the Surgeon-General's Office has just issued Bulletin No. 3 of its series on this subject, consisting of abstracts, translations and reviews of the recent literature on reconstruction and reeducation of the disabled soldier. The present bulletin, dated April 15, consists of 112 pages, and is Part One of a series to be entitled "The Story of a Crippled Soldier's Progress from Disablement to Placement in Civil Life." It describes the experiences of Great Britain and France. In Bulletin No. 4 it is intended to supplement the history by describing the same evolution in Canada, Italy, Belgium, Austria, Germany, and perhaps in other belligerent countries.

British Military Cross Awarded to American Medical Officer

It is reported that Lieut. Theodore Higgins Sweetser, M. R. C., has been recommended for the British Military Cross for conspicuous gallantry and devotion to duty. The recommendation reads:

He gave valuable assistance to more than forty men suffering from gas, while he, himself, also was suffering from the effects. His two noncommissioned officers had succumbed. He also rendered valuable assistance to a party of tunnelers, the entrance of whose dugout had been struck by a gas shell, waking the men and forcing the tubes of their respirators into their mouths and clips into their noses. But for his prompt attention, a large number of men would have succumbed.

In a letter to Lieutenant Sweetser, General Pershing is reported to have said:

The commander-in-chief desires me to say that he appreciates the splendid conduct shown by you on this occasion.

Control of Venereal Diseases in Massachusetts

The Massachusetts State Department of Health has declared gonorrhea and syphilis "diseases dangerous to public health" and reportable directly to the state department of health. The department feels that the system of venereal disease reporting possessing the greatest potential benefit to the public health and the least objectionable features from the standpoint of the patient and the physician should combine the following features: 1. It should have a definite educational value. 2. It should impress the patient with the seriousness of the disease. 3. It should make the patient understand the possibilities for harm to others because of its infective nature. 4. It should impress on the patient the need of proper medical guidance. 5. It should, as far as it is consistent with the best interests of the public health, respect the patient's instinctive desire for secrecy.

All regulations, reports and circulars have been prepared with these principles in view. The name of the patient becomes reportable only when he will not follow proper medical advice or cease from infecting others. The identity of the reporting physician is not even revealed.

The Massachusetts venereal disease program may be separated into four general divisions: (1) venereal disease reporting; (2) the problem of extension of facilities for diagnosis and early treatment; (3) repressive measures, and (4) educational measures.

The so-called "West Australian" method of reporting is adopted. At the time of the first visit or consultation the physician furnishes the patient with a numbered circular of information and advice. At the same time he fills out the numbered report blank attached to the circular of advice and mails it to the state department of health. If the patient has been under the care of another physician previously, the second physician consulted notifies the first one on a special blank provided for that purpose. If the patient fails to return to the attending physician for a period of six weeks, the physician notifies the state department, which, in turn, notifies the local board of health of the community in which the patient resides.

Adequate provision has also been made for measures of diagnosis and treatment. Laboratory diagnostic facilities are now pretty generally available throughout Massachusetts. Smears are examined and Wassermann tests are made free. The state department contemplates the establishment of some fifteen "state-approved" clinics to be situated in the center

of a district. A "chief" is to be in charge of this clinic to act as agent for the state department in the distribution of arsphenamin. The objects will be thorough diagnosis, better treatment, modern follow-up work, and closer cooperation with the practicing physician.

Under the heading "repressive measures" are grouped a number of antivenereal measures that involve the joint utilization of police power and social agencies. The principal repressive measures contemplated are: (1) suppression of prostitution; (2) venereal control in the penal population; (3) the venereal quack problem, and (4) indirect control through the license power of the state. Legislation has been introduced prohibiting the druggists from prescribing for venereal diseases and prohibiting the sale of venereal remedies except on a physician's prescription.

The most characteristic features of this new program against prostitution are the emphasis placed on prostitution as an epidemiologic rather than as a penal problem, and treating the individual prostitute as a disease carrier instead of officially ignoring her existence. Legislation has been introduced requiring thorough physical examinations of all inmates of penal institutions. A statutory provision exists now under which a prisoner infected with syphilis may be restrained beyond his term of commitment for the purpose of treatment. It is believed, confidently, that with the establishment of free or low-pay clinics throughout the state, where the highest quality of scientific treatment for venereal diseases is made accessible for every one, there will vanish the last excuse for the existence of the advertising venereal quack. The control of license power contemplates control through medical license power, druggist license power, liquor license power and marriage license power.

Educational measures look rather toward the future. The success of all other measures will be greatly increased by the active support of public opinion, founded on knowledge of the facts. The plans worked out for the reporting of the disease are educational. The proposed clinics will serve as educational centers where information may be secured and where approved forms of treatment may be demonstrated. Small framed placards giving information will be posted in public toilets and other suitable places. Pamphlets, lectures, and the instruction of college and normal students will also be means for spreading educational propaganda and knowledge regarding these diseases, and all these, it is believed, will eventually lead to the conduct of a campaign against venereal diseases in newspapers and magazines on the same plane as the discussion of fire dangers, accidents in industry, or any other serious problem that threatens the public welfare.

IN OTHER STATES

Iowa declared venereal diseases reportable in 1913, and also prescribed a penalty for the transmission of these diseases. In California, syphilis and gonorrhea were made reportable diseases, beginning Jan. 1, 1911.

Feb. 20, 1918, the Tennessee State Board of Health issued an order requiring all county and municipal boards of health to report cases of gonorrhea and syphilis regularly on the first day of every month.

Other states in which similar rules are now effective are Ohio, Illinois, New Jersey, Minnesota, Pennsylvania and North Carolina.

Cities also have passed legislation requiring the reporting of venereal diseases. Chicago passed an ordinance, June 29, 1917. The sanitary code of 1915 of New York City provides for reporting venereal diseases. The department of health maintains that all facilities for the diagnosis of infectious preventable diseases properly fall within its province, and conforming thereto it has provided every available means for the ready diagnosis of these diseases, free of cost. It also performs the Wassermann test and the complement fixation test for gonorrhea, examines smears for gonococci and spirochetes, and makes cultural examinations of urinary sediments and urethral discharges.

Part of the New York educational campaign consists in combating quackery by enforcing the regulations of the board of regents and the board of aldermen, and by an effort to divert prospective victims from the quacks through newspaper advertising and the posting of venereal disease signs in suitable locations. Circulars of information and instructions are issued for distribution among patients.

Denver has just joined in the fight against venereal diseases by adopting an ordinance "to protect the public health and to prevent and restrain venereal diseases in the city and county of Denver." Syphilis, gonorrhea and chancroid are declared to be contagious, communicable and infectious diseases and dangerous to the public health, and subject to

quarantine and isolation when deemed a menace. Physicians and druggists must report these diseases whenever they have knowledge of a case. This also applies to hospitals and other institutions. Unfortunately Denver did nothing with reference to advertisements of antivenereal remedies in the newspapers.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 12, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):	
All Troops	1,627.1
National Guard Camps	1,232.2
National Army Camps	1,959.4
Regular Army	1,502.5
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	48.
National Guard Camps	27.8
National Army Camps	55.7
Regular Army	44.8
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):	
All Troops	11.3
National Guard Camps	3.4
National Army Camps	17.9
Regular Army	10.3

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING APRIL 12, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth.....	4	..	..	16	3	..	1	0	846.1	24.6
Hancock.....	4	..	..	32	10	..	2	1	602.0	26.8
McClellan.....	5	..	..	21	1	..	..	0	1,263.8	35.6
Sevier.....	16	..	..	20	9	..	1	5	1,021.4	30.0
Wheeler.....	3	1	..	23	..	..	..	3	1,355.1	55.3
Logan.....	12	..	..	22	14	..	6	0	1,653.0	35.0
Cody.....	26	..	..	11	..	..	..	8	640.7	27.3
Doniphan.....	..	..	..	..	..	..	..	0	1,065.0	14.9
Bowie.....	35	..	..	54	..	..	..	3	2,260.1	54.0
Sheridan.....	6	..	..	20	..	1	2	1	1,204.4	36.1
Shelby.....	..	..	1	13	..	..	..	0	1,470.9	52.5
Beauregard.....	9	..	13	40	..	1	..	0	1,454.7	56.0
Kearny.....	1	..	1	2	..	..	11	1	1,131.8	45.6
Devens.....	38	..	..	50	5	2	7	10	1,623.6	47.0
Upton.....	20	..	..	50	17	1	5	6	827.8	32.0
Dix.....	5	1	..	163	11	1	10	2	1,733.8	41.2
Meade.....	25	..	..	15	5	1	1	7	497.2	31.4
Lee.....	15	..	..	179	14	1	..	6	1,751.2	60.2
Jackson.....	29	..	..	14	24	2	..	5	1,533.5	55.5
Gordon.....	26	..	1	129	38	1	6	3	2,282.7	46.3
Sherman.....	25	1	..	181	9	..	16	19	2,267.0	55.7
Taylor.....	28	..	..	26	57	..	3	15	3,272.9	95.4
Custer.....	72	..	1	77	6	..	12	15	1,403.0	36.2
Grant.....	7	..	..	13	10	1	7	8	842.2	27.4
Pike.....	22	..	3	55	23	2	6	10	2,715.4	71.1
Dodge.....	40	..	..	57	29	..	23	34	2,693.5	120.6
Funston.....	31	..	..	85	19	..	4	11	1,837.0	83.9
Travis.....	21	2	1	41	28	1	..	7	4,839.4	70.4
Lewis.....	27	..	..	87	1	..	17	7	1,882.1	56.3
Northeastern Dept. .	6	..	..	20	9	..	1	5	1,863.0	45.9
Eastern Dept.	10	..	1	67	10	..	..	5	1,329.8	33.0
Southeastern Dept. .	9	..	3	34	13	..	1	7	1,323.8	49.1
Central Dept.	23	1	1	30	17	2	23	8	1,451.6	44.3
Southern Dept.	21	2	2	56	16	..	9	6	1,834.9	55.3
Western Dept.	8	..	1	18	10	..	7	3	1,187.4	27.0
Aviation, S. C.	34	..	2	88	86	1	48	27	1,400.0	40.4
Camp Greene.....	9	..	..	32	9	2	3	3	1,320.3	45.8
Camp Fremont.....	3	..	..	13	19	2	..	1	2,457.8	78.8
El Paso.....	1	..	..	11	1	..	1	0	1,476.3	6.7
Columbus Bks.	3	..	..	10	2	..	..	3	1,471.4	55.6
Jefferson Bks.	5	..	..	62	3	..	10	3	4,247.4	125.1
Fort Logan.....	7	..	..	1	2	..	6	6	2,065.9	86.2
Fort McDowell.....	..	..	1	5	1	1	5	0	1,914.1	64.4
Fort Slocum.....	4	..	..	10	1	..	..	1	1,743.0	50.0
Fort Thomas.....	1	..	..	2	6	..	..	0	1,431.2	67.3
D. B. Alcatraz.....	..	..	..	..	..	..	..	0	.....	.....
D. B. Fort Leavenworth.....	2	..	..	1	..	..	..	2	1,167.0	38.4
A. A. Humphreys.....	..	..	..	..	1	..	..	0	.....	.....
J. E. Johnston.....	2	1	1	44	7	1	1	0	1,472.4	37.3
Camp Merritt.....	20	..	..	112	4	2	14	7	1,412.0	56.6
Camp Stuart.....	19	..	..	141	8	2	1	11	1,545.7	64.8
West Point, N. Y. ....	..	..	..	..	..	..	..	0	451.9	12.4
Edgewood-Aberdeen	1	..	..	2	7	..	1	0	1,398.8	40.1
Provisional Depot for Corps and Army Troops.....	11	..	1	23	20	..	..	1	1,868.7	44.5
Camp Holabird.....	..	..	..	1	..	..	..	0	.....	.....
Camp Raritan.....	..	..	..	1	2	..	..	0	672.4	20.5
Nat'l Guard Depts. .	2	..	..	17	9	..	1	1	.....	.....
Nat'l Army Depts. .	35	..	3	167	81	1	22	9	.....	.....
Total (all troops).	838	9	41	2,485	677	35	294	296	1,627.1	48

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 12, 1918	Regulars in U. S., Week Ending April 12, 1918	National Guard, All Camps, Week Ending April 12, 1918	National Army, All Camps, Week Ending April 12, 1918	Expeditionary Forces, Week Ending April 4, 1918
Pneumonia.....	34.6	25.0	19.9	52.9	35.8
Dysentery.....	0.4	0.5	0.16	0.4	1.0
Malaria.....	1.7	1.6	3.1	0.7	0.0
Venereal.....	102.8	95.5	46.7	134.8	49.2
Paratyphoid.....	0.0	0.0	0.0	0.0	0.1
Typhoid.....	0.04	0.1	0.0	0.0	0.3
Measles.....	28.0	31.9	6.0	32.6	10.3
Meningitis.....	1.4	1.6	1.3	1.4	3.3
Scarlet fever.....	12.1	16.4	3.6	13.0	13.7

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

APRIL 19, 1918.

NEW EPIDEMIC

An epidemic of influenza now prevails in the camp with about 500 cases. It appears that one epidemic follows another like the seven plagues of Egypt. Influenza is not a serious disease, the attacks lasting only a few days; but it swells the sick report, and recalls previous visitations of mumps, measles and pneumonia. One always wonders what is coming next.

A detachment of 200 negroes that recently arrived at the camp, now has mumps to the extent of forty cases. No attempt is made to prevent the spread of this disease.

SANITARY WORK

The extensive swamps in and around Camp Wheeler are being cleared and drained. Those inside are being done by the camp authorities, those outside by the Public Health Service. Captain Green of the Sanitary Corps is making a survey of the inner area and laying out the ditching work. The continued cold weather has prevented any extensive mosquito breeding up to the present time, even had there been no antimosquito work.

Latrine boxes and screens are being repaired in anticipation of the fly season. The present warm weather will hasten their arrival.

PERSONAL

Lieutenant-Colonel McCormack, who has been inspecting the sanitary train, accompanied the division on the recent march.—Major Gaylord, M. C., of Buffalo, has recently arrived from Allentown, Pa., for duty as assistant to the camp surgeon.—Lieutenant-Colonel Duncan has brought his family to Macon, where they will remain until the division leaves for France.—Lieutenant-Colonel Turck has gone to Camp Doniphan, Fort Sill, Okla., for duty as division surgeon of the Thirty-Fifth Division.—Lieutenant-Colonel McCormack is leaving for Camp Lee, after an instructive inspection of the One Hundred and Sixth Sanitary Train.—Major Harrold, One Hundred and Twenty-First Infantry, and Major Taylor, One Hundred and Eighteenth Artillery, attended the medical meeting at Savannah.—A lieutenant of the Medical Reserve Corps is being tried for charging enlisted men for medical services. A dental surgeon was recently convicted on a similar charge.

PRACTICE MARCH

The Thirty-first Division made a five days' march during the last week. The sanitary train was an important part of the column. The whole train marched, although there was transportation for but three ambulance companies and one field hospital. The mule ambulance companies furnished ambulances for the regiments on the march, with one motor company in the rear of the column, for the overflow, it having been demonstrated that motor ambulances cannot be mixed in a column of infantry. Another motor company acted as an evacuation column, carrying patients from the field hospital to the base hospital at Camp Wheeler. About 300 patients were thus evacuated. Sick call was held in the afternoon, and the evacuation carried out in the evening or at night. All ambulances were ready to start clear each morning. It was the general opinion that the sanitary train functioned well; no complaint of neglect was heard. The excessive number of patients was due to the prevailing influenza epidemic.

Lincoln Division (Eighty-Fourth), Camp Zachary Taylor, Louisville, Ky.

APRIL 22, 1918.

LINCOLN DIVISION

The official seal and insignia of the Eighty-Fourth Division at Camp Zachary Taylor has been definitely adopted. It has been approved by the commander Major-General Hale, and will be put into use at once. In designing the emblem the idea of carrying out the name of Lincoln was adhered to. The center of the insignia is a woodchopper's ax, symbolical of the "Railsplitter." Above appears the name of the martyred President and below the number of the division. The national colors are included in the scheme. The circles and head of the ax are red, the lettering and the ax handle blue and the field is white.

PHYSICAL TESTS

The physical tests of medical officers of the camp have begun under the direction of Lieut.-Col. Luther R. Poust, acting camp surgeon. Every afternoon scores of medical officers are ordered to report to the drill field like ordinary soldiers. They are put through the school of the soldier. Many of the officers have never drilled before and plainly show the effects of the three-hours' work. The movement is only to show to the satisfaction of their superior officers that they are fit physically to stand the rigors of the war in France. It is understood that those medical officers who fail to qualify physically for foreign service will not be discharged, but will be left in the army camps of the United States to train the coming new drafted men. Within a few weeks they will be taken on 30-mile rides each day and put through other tests which, when completed, will leave only those medical officers who are fit for foreign service.

SURGICAL OPERATIONS

Men drafted into the National Army who have physical defects that may be remedied by surgical operations and who refuse to submit to the surgeon's knife will be courtmartialed under the Ninety-Sixth Article of War, and are subject to such punishment as the court may direct. This action is set forth in General Orders 167 of the War Department. The first case to arise at Camp Zachary Taylor of an enlisted man refusing to submit to a surgical operation has resulted in Major-Gen. Harry C. Hale, commander of the Eighty-Fourth (Lincoln) Division, appointing a board of medical officers to examine a private in the Quartermaster's Corps, Auxiliary Remount Depot No. 319, to determine if a surgical operation in his case is thought necessary to render him physically fit for service. The members of the board are Lieut.-Col. W. L. Pyles, Major J. H. McHenry, and Capt. Phillip Lewin. The examination will be conducted at the base hospital. Should the officers deem the operation necessary and the man still refuse to submit he will be liable to courtmartial proceedings. Since the opening of the cantonment a number of selects have been found to have ruptures or other ailments which interfered with their activities and duties as soldiers, but which were remedied by operations. Heretofore no complications arose over such situations, as the men willingly agreed to have their defects remedied.

PROPHYLACTIC ORDERS

A circular memorandum, issued from the office of the General Staff, advises every officer and man thus:

In this section of the country much of the war weather sickness is due to diseases transmitted by mosquitoes and flies. The mosquito and fly are both rapid breeders, and the destruction of one mosquito or fly at this time of the year is the prevention of millions by fall.

The following measures will be put into effect at once: Dense vegetation and underbrush will be cleared from the area pertaining to the unit. Mosquito bars will be drawn and held for use. Ditches will be cleared; areas impossible of drainage will be oiled with crude oil; water in fire buckets will be changed weekly.

Besides many other pointers given the command attention is called to fly traps: "requisition will be made for fly traps, and as soon as they are issued they will be used as follows: The large type will be kept just outside the kitchen and mess hall doors, at each table, picket line and corral, at each veterinary hospital, garbage, transfer station, and at other places where flies congregate in large numbers. The small type will be kept inside kitchens, mess halls, bakeries and infirmaries. Fly traps will be baited with molasses and vinegar, sugar, fish or any of the usually good baits. Raw fish is especially attractive to flies."

WHAT "TOTAL DISABILITY" IS

An interesting decision has arrived from the Bureau of War Risk Insurance as to what constitutes "total disability."

It says: "Any impairment of mind or body which renders it impossible for the disabled soldier to follow continuously any substantially gainful occupation shall be deemed to be total disability."

"Total disability shall be deemed to be permanent whenever it is founded on conditions which render it reasonably certain that it will continue throughout the life of the persons suffering from it. Whenever it shall be established that any person to whom any instalment of insurance has been paid as provided in Article 4 on the ground that the insured has become totally and permanently disabled, has recovered the ability to continuously follow any substantially gainful occupation the payments of installments of insurance shall be discontinued forthwith, and no further installments thereof shall be paid so long as such recovered ability shall continue."

PERSONAL

Dr. William O'Neil Sherman of Pittsburgh, who recently spent six months in France visiting the various war hospitals, paid the Three Hundred and Ninth Sanitary Train a visit and entertained and instructed all officers of the organization with a lecture on the treatment of burns and on Carrel-Dakin's treatment of infected wounds—Lieut.-Col. Luther R. Poust, assistant to the division surgeon, Lieut.-Col. John H. Allen, was granted an eight-day leave to go to the bedside of his mother, who is seriously ill at her home at Muncie, Pa.—Major Paul Fletcher has been relieved from duty with the Three Hundred and Ninth Sanitary Train at his own request, and will be assigned to the Medical Corps of the Three Hundred and Twenty-Fifth Field Artillery. He is succeeded by Major Bauker, who will be the director of the ambulance companies.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Birmingham, Ala., and Savannah, Ga., for duty, and on completion to his proper station, Col. CLAUD K. MORGAN.
To Camp Colt, Gettysburg, Pa., Aviation Supply Depot, Middleton, Pa., and Camp Crane, Allentown, Pa., for sanitary inspection, and on completion to his proper station, Lieut.-Col. FRANK W. WEED.
To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut.-Col. JAMES F. HALL; from Camp Fremont, Lieut. FRANCIS FITTS.
To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. EGBERT H. WESSON.
To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Lieut. HAROLD E. CLARK.
To Camp Logan, Houston, Tex., for duty, from Camp Logan, Lieut. RICHARD S. MAGEE.
To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Lieut. ROBERT S. McGEACHY.
To Camp Sherman, Chillicothe, Ohio, Camp Custer, Battle Creek, Mich., and Camp Meade, Annapolis Junction, Md., for inspection, and on completion to his proper station, Lieut.-Col. WALTER E. PARKER.
To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Lieut.-Cols. JOHN H. ALLEN, WILLIAM M. MART.
To Curtis Bay, Md., for sanitary inspection, and on completion to his proper station, Col. WESTON P. CHAMBERLIN.
To Fort McPherson, Ga., for inspection, and on completion to Fort Oglethorpe for inspection, and on completion to their proper stations, Major-Gen. WILLIAM C. GORGAS; Col. EDWARD L. MUNSON.
To Fort Oglethorpe for inspection, and on completion to Camp Jackson, Columbia, S. C., for duty, and on completion to his proper station, Lieut. GEORGE E. BUSHNELL. For instruction, from Camp Beauregard, Capt. HORACE E. RUFF.
To Fort Sam Houston, Tex., as commanding officer of base hospital, from Douglas, Ariz., Major FREDERICK C. A. KELLAM.
To Hoboken, N. J., for special duty, and on completion to Washington, D. C., Col. CHARLES LYNCH.
To New Haven, Conn., for inspection, and on completion to his proper station, Col. GEORGE E. BUSHNELL.
To Newport News, Va., for investigation, and on completion to their proper stations, Col. FREDERICK F. RUSSELL, Lieut.-Col. WARREN T. LONGCOPE. For examining tuberculosis cases, and on completion to his proper station, Lieut.-Col. EARL H. BRUNS.
To New York City for duty, and on completion to his proper station, Lieut.-Col. EDGAR KING.
To Philadelphia, Pa., for orthopedic instruction, and on completion to Hoboken, N. J., for temporary duty, from Camp Logan, Lieut. NORMAN ZOLLS.
To report in person to the commanding general, Southern Department, for duty, from Fort Sam Houston, Major JOHN T. AYDELOTTE.
To San Diego, Calif., Signal Corps Aviation School, for duty, from Battle, Lieut. GEORGE W. BEELER.
To Southern Field, Americus, Ga., Camp Joseph E. Johnston, Jacksonville, Fla., Dorr Field, and Carlstrom Field, Arcadia, Fla., Fort Screven, and Charleston, S. C., for sanitary inspection, and on completion to his proper station, Sr.-Surgeon JOSEPH H. WHITE.
To U. S. Army General Hospital, New Haven, Conn., Waterliet Arsenal, N. Y., Disciplinary Barracks, Fort Jay, N. Y., U. S. Army General Hospital, Williamsbridge, N. J., Picatini Arsenal, N. J., Camp Britan, N. J., Camp Alfred Pail, Little Silver, N. J., and U. S. Army General Hospital, Lakewood, N. J., for sanitary inspection, and on completion to his proper station, Lieut.-Col. FRANK W. WOOD.
To Washington, D. C., for consultation, and on completion to his proper station, Lieut.-Col. ALFRED P. UPSHUR.
Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HUGH A. RODDEN.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. JULIAS W. McCALL, Montgomery.
To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. FLOYD L. ABERNETHY, Flomaton.
To Camp Sevier, Greenville, S. C., base hospital, from St. Louis, Lieut. GILBERT A. RHODES, Troy.
To Camp Sheridan, Montgomery, Ala., Camp McClellan, Anniston, Ala., Camp Gordon, Atlanta, Ga., and Camp Wheeler, Macon, Ga., for inspection, and on completion to his proper station, Major SEALE HARRIS, Birmingham.
To Camp Travis, Fort Sam Houston, Tex., base hospital, from Camp Travis, Lieut. ROBERT H. HOWARD, Tuskegee. For duty, Lieut. ALVIN E. BELDEN, Birmingham.
To Fort Bliss, Tex., for duty, from Camp Lee, Major BURR FERGUSON, Fairfield.
To Fort Oglethorpe for instruction, Lieuts. CLYDE W. GARMON, SIDNEY J. VANN, Birmingham; CHARLES M. PEARCE, Sweetwater.
To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieuts. JAMES H. DAVIS, Jasper; JAMES H. SENTELL, Swain; GEORGE W. HALL, Uniontown.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Beauregard, Lieut. EUGENE THAMES, Mobile.
Resignation of Lieut. HENRY C. RILEY, Coffee Springs, accepted.

Arkansas

To Camp Pike, Little Rock, Ark., base hospital, Lieut. STERLING F. BOND, Little Rock.
To Fort Riley for instruction, Capt. WALTER O. PARRISH, Rector; Lieut. EDWARD W. POLLARD, Hughes.

California

To American Lake, Washington, for duty, Capt. CHARLES H. PARKER, Santa Cruz.
To Army Medical School for instruction, Lieut. MARION R. KING, Sacramento.
To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Winfield Scott, Capt. ARTHUR H. REINSTEIN, San Francisco.
To Camp Fremont, Palo Alto, Calif., base hospital, from Alcatraz, Capt. DANIEL L. HUMFREVILLE, Los Angeles. As orthopedic surgeon, from Los Angeles, Lieut. FRANK J. BRESLIN, Los Angeles.
To Camp Kearny, Linda Vista, Calif., as orthopedic surgeon, from Los Angeles, Lieuts. ARNOLD M. SCHOLZ, Los Angeles; JOHN E. PAULSON, San Quentin. Base hospital, from Los Angeles, Lieut. LOUIS E. COY, San Bernardino.
To Camp Lee, Petersburg, Va., base hospital, from Fort Sam Houston, Major FREDERICK P. GAY, Berkeley.
To Camp Lewis, American Lake, Wash., as orthopedic surgeon, from Los Angeles, Lieut. STUART Z. PEOPLES, Petaluma.
To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Kearny, Lieut. LOWELL C. FROST, Beverley Hills.
To Columbia, S. C., for duty, and on completion to his proper station, Major WILBUR A. SAWYER, Berkeley.
To Fort McDowell, Calif., for duty, from Camp Lewis, Lieut. MARIUS A. FRANCOZ, San Francisco.
To Fort Riley for instruction, Lieuts. BARTHOLOMEW GATTUCCIO, Davenport; LESTER C. SCULLY, San Jose; from Los Angeles, Lieuts. WALTER C. S. KOEBIG, JAMES H. McLAUGHLIN, CHARLES S. YOUNG, Los Angeles; CHARLES A. WARMER, Ontario; JOSEPH W. CRAWFORD, Sacramento; RALPH M. SMITH, San Bernardino; JOSEPH J. KAVANAGH, San Francisco.
To Newport News, Va., for duty, from Fort Sam Houston, Major JAMES G. CUMMING, Berkeley.
To San Diego, Calif., Rockwell Field, Signal Corps Aviation School, from Los Angeles, Lieut. CHARLES G. STIVERS, Los Angeles.
Honorably discharged Lieut. WILLIAM A. TARLETON, Los Angeles.

Colorado

To Fort Riley, base hospital, and on completion to Fort Riley, for temporary duty, from Fort Riley, Capt. VICTOR B. AYERS, Buena Vista. For instruction, Lieut. LANNING E. LIKES, Lamar.
Honorably discharged on account of physical disability incurred in line of duty, Lieut. DANIEL B. RILEY, Ignacio.
Letter directing Capt. CYRUS L. PERSHING, Denver, to Camp Cody from New York City, revoked.

Connecticut

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board from Camp Greene, Lieut. THOMAS P. MURDOCK, Meriden. Base hospital, Lieut. ELMER T. SHARPE, Derby.
To Camp Upton, Long Island, N. Y., base hospital, Lieut. EDWARD J. WHALEN, Hartford.
To Fort Oglethorpe for instruction, Lieuts. THIADDEUS S. SKLADZIEN, Meriden; CARLTON K. HEADY, Milford.
To Hoboken, N. J., for duty, Lieut. EDMUND SPICER, Waterbury.

District of Columbia

To Camp Lee, Petersburg, Va., base hospital, Major JAMES F. MITCHELL, Washington.
To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Major SCOTT D. BRECKINRIDGE, Washington.
To Fort Oglethorpe for instruction, Capt. LOUIS C. ECKER, Lieut. JOSEPH I. WOISARD, Washington.
To Fort Riley, base hospital, from Camp Travis, Major JOSEPH M. HELLER, Washington.
To Hoboken, N. J., for duty, Lieut. EDGAR SNOWDEN, Washington.
To Philadelphia, Pa., for duty, and on completion to his proper station, Major CHARLES W. RICHARDSON, Washington.

Florida

To Camp Gordon, Atlanta, Ga., engineer service battalions, Capt. JOHN S. TURBERVILLE, Century.

To Fort Oglethorpe for instruction, Lieut. JOHN B. BLACK, Jacksonville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. GEORGE E. ATWOOD, Bocagrande.

To Rockefeller Institute for instruction, and on completion to Bellevue Hospital, New York City, for instruction, and on completion to Camp Logan, Houston, Tex., base hospital, from Fort Oglethorpe, Capt. FRANK F. FERRIS, Apalachicola.

Georgia

To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. SIDNEY H. JACOBS, Atlanta.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ROY H. BRYANT, Calhoun; THOMAS J. BLACKSHEAR, JR., Dublin; JAMES M. TRIBBLE, Senoia; from Camp Wadsworth, Lieut. HOMER M. DANIEL, Middleton.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. MYRON H. FARMER, Newman.

To Camp Pike, Little Rock, Ark., for duty, from Fort McPherson, Capt. WILLIAM N. ADKINS, Atlanta; from Fort Oglethorpe, Lieut. GROVER C. GAMBRELL, Rutledge.

To Camp Shelby, Hattiesburg, Miss., for duty, from Camp Sevier, Capt. EDWARD M. COLEMAN, Athens.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieuts. JAMES G. HALL, Atlanta; WILLIAM H. HADAWAY, La Grange.

To Camp Wheeler, Macon, Ga., for duty, from duty as a private at Camp Wheeler, Lieut. EUGENE F. SANFORD, Buchanan.

To Fort Oglethorpe for instruction, Capt. HENRY W. S. HAYES, Lieuts. JAMES E. CORRY, Atlanta; SMITH W. RAY, Jeffersonville; ARTHUR B. PRINCE, Kingsland; JACOB J. ROSS, Mount Berry; PAUL J. PENISTON, Newman; from Camp Hancock, Lieut. FRANCIS C. NESBIT, Waycross.

Idaho

To Fort Riley for instruction, Capt. LOUIS J. PERKINS, Lewiston; Lieuts. JAMES F. MILLER, Inkom; OWEN D. PLATT, St. Maries.

Illinois

To Camp Crane, Allentown, Pa., for temporary duty, Lieuts. HARVEY W. TUPPER, Nokomis; CHARLES L. DAVIS, Robinson.

To Camp Custer, Battle Creek, Mich., to examine the command for mental and nervous diseases, from Fort Riley, Lieut. JOS. C. KACZKOWSKI, Chicago.

To Camp Devens, Ayer, Mass., for duty, Lieut. GEORGE C. STIMPSON, Quincy.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. FRED W. GAARDE, Chicago.

To Camp Gordon, Atlanta, Ga., for duty, from Williamsbridge, Lieut. FRANK S. DI COSOLA, Chicago.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. MARTIN B. JELLIFFE, Chicago.

To Camp Jackson, Columbia, S. C., as member of tuberculosis examining board, from Fort Oglethorpe, Capt. THOMAS A. HOGAN, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, from Austin, Tex., Lieut. GEORGE O. CULLI, Ina.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. EDWARD P. BERG, Jr., Chicago.

To Camp Meade, Annapolis Junction, Md., as member of tuberculosis examining board, from Fort Oglethorpe, Lieut. JOHN F. GRANT, Chicago.

To Camp Pike, Little Rock, Ark., as member of the tuberculosis examining board, from Camp Greene, Lieut. JOSEPH C. BROOKHART, Greenup. Base hospital, from Camp Pike, Lieut. OSCAR HOUSE, De Sota. For duty, Lieut. JOHN E. CLARK, Streator.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Philadelphia, Capt. EDSON B. FOWLER, Chicago; from St. Louis, Lieut. EMOR L. CARTWRIGHT, Chicago; from Fort Oglethorpe, Lieut. REZIN P. JOHNSON, Chicago.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. K. FRANCIS H. GBURCZY, Joliet.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. PAUL BLACK, Greenup.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Zachary Taylor, Capt. WILLIAM R. LARKIN, Chicago.

To Canal Zone, Panama Canal Dept., for duty, from Army Medical School, Capt. FREDERICK LUDWIG, Great Lakes.

To Chicago, Ill., for instruction, in orthopedic surgery, Lieut. EDWARD HANS, Chicago.

To Fort Adams, R. I., Coast Defenses of Narragansett Bay, from Fort Oglethorpe, Capt. ALBERT A. ANKENBRANDT, Mt. Carmel.

To Fort Des Moines, Ia., base hospital, from Fort Oglethorpe, Capt. WILLIAM W. COLEMAN, Lincoln; from Fort Riley, Lieut. JESSE O. BAILIFF, Chicago.

To Fort Oglethorpe for instruction, Capt. ELMER H. BEST, Freepport; Lieuts. CALVIN M. DEBECK, ARTHUR S. SANDLER, Chicago; from Camp Wadsworth, Lieut. ORVAN A. PHIPPS, Toledo. Base hospital and on completion to Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. GEORGE E. ARZT, Chicago.

To Fort Riley for instruction, Capt. DARWIN B. POND, Chicago; Lieuts. JOSEPH A. PINCKARD, Atwood; FRANK DEASON, Bush; EUGENE J. CHESROW, WILLIAM W. DICKEY, HENRY KRUSE, NATHAN D. LEVITON, IRVING A. PORGES, Chicago; GEORGE P. GILL, Rockford. Base hospital and on completion to Camp Bowie, Fort Worth, Tex., base hospital from Fort Riley, Lieut. ALVA E. McREYNOLDS, Peoria.

To Fort Sheridan, Ill., hospital train for duty, from Hoboken, for duty, from Hoboken, Lieut. CORWIN S. MAYES, Illiopolis.

To Harrisburg, Pa., for duty, and on completion to his proper station, Major HARRY E. MOCK, Chicago.

To Hoboken, N. J., for duty, Major CHARLES L. MIX, Chicago. On completion to his proper station, Major PAUL B. MAGNUSON, Chicago.

To Medical and Reserve Officers' Training Camps, Fort Oglethorpe, Army Reorganization Camp, Chickamauga Park, Ga., U. S. Army General Hospital, Fort Oglethorpe, Camp Forrest, Chickamauga Park, Ga., and U. S. Army General Hospital, Fort McPherson, Ga., for conference, and on completion to his proper station, Major SANGER BROWN, Chicago.

To Mineola, Long Island, N. Y., Hazelhurst Field, Capt. FRANK CARY, Chicago.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Gordon, Lieut. FRED McK. MILLER, Chicago.

To Philadelphia, Pa., for instruction in orthopedic surgery, from Camp Gordon, Lieut. PERCY P. HIASLITT, Marshall.

To Pittsburgh, Pa., Carnegie Institute of Technology, for duty, from Army Medical School, Lieut. ERNEST J. WORTHINGTON, Olney.

To Richmond, Va., for duty, and on completion to his proper station, Major JOHN A. HORNSBY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM R. WESENBERG, Mound City.

Resignation of Lieut. NORMAN W. CONNAWAY, Sheridan, accepted.

The following orders have been revoked: To Camp Zachary Taylor, Louisville, Ky., from Camp Custer, Capt. PAUL E. BAIN, Pleasant Plains. To Fort Riley for instruction, Capt. LOUIS A. GREENSFELDER, ROGER T. VAUGHAN, Chicago.

Indiana

To Camp Crane, Allentown, Pa., for temporary duty, Capt. HENRY O. BRUGGEMAN, Fort Wayne.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JAY H. GRIMES, Danville.

To Camp Dodge, Des Moines, Ia., base hospital, Capt. GEORGE H. PENDLETON, Indianapolis.

To Camp Jackson, Columbia, S. C., as a member of a board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES F. VOIGT, New Albany.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. HARVEY H. MARTIN, LaPorte.

To Camp Sherman, Chillicothe, Ohio, as member of the tuberculosis examining board, from Camp Forrest, Lieut. JAMES F. HATFIELD, Walton.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Zachary Taylor, Capt. HAROLD B. COX, Morristown.

To Fort Oglethorpe for instruction, Lieuts. MILES F. PORTER, Jr., Fort Wayne; CHARLES L. AMICK, Wakarusa; from Camp Travis, Capt. MANFORD M. CLAPPER, LaFayette.

To Hoboken, N. J., for duty, Lieut. BRUCE D. HART, South Whitley, from Fort Oglethorpe, Lieut. DUFFIELD D. MACGILLIVRAY, Pine Valley.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CARL L. SOUDERS, Columbia City.

Iowa

To Camp Dodge, Des Moines, Ia., for duty, from Camp Dodge, Lieut. THOMAS N. TOOMEY, Iowa City.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. HARRY F. KIESLING, Dayton.

To Camp Lee, Petersburg, Va., base hospital, from Fort Sam Houston, Lieut. FRANKLIN A. STEVENS, Belmont.

To Camp Travis, Fort Sam Houston, Tex., for duty, Capt. EMIL O. FICKE, Davenport.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from St. Louis, Lieut. CHARLES E. MOORE, Newton.

To Fort Des Moines, Ia., base hospital, for temporary duty, Capt. FRED F. AGNEW, Independence.

To Fort Oglethorpe, base hospital, and on completion to Camp Grant, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. JAMES E. EDGINGTON, Washington. For instruction, from Fort Riley, Lieut. GEORGE S. BAWDEN, Davenport; from Morrison, Va., Lieut. GEORGE A. BEMIS, Garner.

To Fort Riley as assistant to the the division surgeon, from Camp Grant, Capt. JAMES J. DALY, Decorah. Base hospital, and on completion to Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieut. ROY C. JACKSON, Independence. For duty, from Ann Arbor, Lieut. LOVE E. PENNINGTON, Cherokee. For instruction, Lieuts. ROY R. MILLER, Keota; LEONARD J. BOWMAN, Masonville; IRWIN J. SINN, Williamsbridge.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, from Camp Kelly, Lieut. MURDOCH BANNISTER, Ottumwa.

To report by wire to the commanding general, Western Department, for duty, from Camp Kearny, Lieut. CHARLES G. BAIRD, Cedar Rapids.

Kansas

To Buffalo, N. Y., Broadway Auditorium, for duty, from Fort Oglethorpe, Lieut. ROBERT C. DAVIS, Kansas City.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. EDWARD K. LAWRENCE, Great Bend.

To Fort Riley for instruction, Capt. C. FREMONT CHONK, Anthony; Lieuts. EUGENE J. BRIBACH, Atchison; JOHN R. CAMPBELL, Coats.

Honorably discharged, Lieut. THOMAS M. GREENWOOD, Circleville.

Letter directing Lieut. WALTER P. STOLTENBERG, Kinsley, to Camp Bowie, revoked.

Kentucky

To Army Medical School for instruction, Lieut. WILLIAM P. FOREMAN, Corinth.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. MASTIN L. PIPES, Moreland.

To Camp Colt, Gettysburg, Pa., camp hospital, from Camp Colt, Lieut. JAMES M. MORRIS, Chestnutberg.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ISAAC J. HOOVER, Owensboro.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieuts. LEE ROSE, Cedarville; LORENZO O. SMITH, Williamsburg.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. JOHN E. SILER, Lot.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Joseph E. Johnston, Lieut. THOMAS R. COLLIER, Louisville, from Fort Oglethorpe, Lieut. HENRY D. BERRYMAN, Anchorage.

To Camp Grant, Rockford, Ill., base hospital, Major BENJAMIN F. VAN METER, Lexington.

To Camp MacArthur, Waco, Tex., for duty, from Camp MacArthur, Lieut. LEONARD CHAMPION, Cadiz.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. JAMES A. GRIDER, Smiths Grove.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. JOHN B. JAMESON, Louisville; from *Camp Bowie*, Major IRWIN ABELL, Louisville; Capt. JOHN T. PRICE, Harrodsburg; HUGH E. PRATHER, Hickman; AMPLIAS W. DAVIS, Morton's Gap; from *New Orleans*, Lieut. CARL E. ABELL, Louisville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Major GRANVILLE S. HANES, Louisville; from *Camp Zachary Taylor*, Lieut. CLAUDE WILSON, Greenville.

To Edgewood, Md., base hospital, from *Camp Travis*, Major FRANK T. FORT, Louisville.

To Fort Oglethorpe for instruction, Lieut. THOMAS H. NELSON, Covington.

To Fort Riley, base hospital, from *St. Louis*, Lieut. CLAUDE B. NEIDHAMER, Sturgis. On completion to *Camp MacArthur*, Waco, Tex., base hospital, from *Fort Riley*, Lieut. BONAPARTE P. DAVIS, Woodburn. For instruction, Lieut. CLIVE A. MOSS, Williamsburg.

To Hoboken, N. J., for duty, Lieut. JAMES DER. STEWART, Dun-lee; from *Fort Oglethorpe*, Lieut. JOSEPH A. SLEET, Frankfort. Hospital train, Lieut. EDWARD B. WILLINGHAM, Paducah.

To Rochester, N. Y., for duty, from *Fort Oglethorpe*, Lieuts. ISAAC C. WYATT, Buffalo; JOHN E. HAHN, La Center.

Honorably discharged, Lieut. WILLIAM H. SMITH, Louisville. On account of physical disability existing prior to entrance into the service, Lieut. PATTERSON T. FRASER, JR., Cadiz.

Louisiana

To Camp Beauregard, Alexandria, La., base hospital, Capt. ARTHUR WEIL, New Orleans; from *Fort Oglethorpe*, Lieut. PRESSLEY A. SIBBE, Erath.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. GEORGE A. CRONAN, New Orleans.

To Camp Gordon, Atlanta, Ga., as member of the tuberculosis examining board, from *Camp Greene*, Capt. DELANE S. CALHOUN, Ruston. For duty, Lieut. LABASSE J. ROBIN, New Orleans.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. CHARLES J. VERDIER, New Orleans.

To Fort Oglethorpe, base hospital, and on completion to *Camp Greene*, Charlotte, N. C., base hospital, from *Fort Oglethorpe*, Lieut. GEORGE I. UPTON, New Orleans. On completion to *Camp Upton*, Long Island, N. Y., base hospital, from *Fort Oglethorpe*, Lieut. RUFUS H. ISHER, Sulphur. Hospital train, Lieuts. JOSEPH F. CAZAYAUX, New Roads; WILLIAM L. STEWART, Pollock.

The following orders have been revoked: *To Camp MacArthur* from *Fort Oglethorpe*, Lieut. MILTON W. TALBOT, Fullerton; *to Camp Pike* from *Fort Oglethorpe*, Lieut. ISIDORE B. ROUGON, Shreveport.

Maine

To Camp Upton, Long Island, N. Y., for duty, from *Canal Zone*, apt. LESTER B. ADAMS, Bangor.

To Fort Oglethorpe for instruction, Capt. ARTHUR W. WHITE, Portland; Lieut. CHARLES B. SYLVESTER, Harrison.

To Hoboken, N. J., for duty, Capt. CALVIN M. THOMAS, Brewer.

Maryland

To Camp Crane, Allentown, Pa., for temporary duty, Major ARTHUR S. SHIPLEY, Lieut. ADAM W. REIER, Baltimore.

To Camp Devens, Ayer, Mass., for duty, from *Fort Oglethorpe*, Lieut. RANCIS E. JAMESON, Newport.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. MOSES RASIN, Baltimore.

To Camp Jackson, Columbia, S. C., base hospital, from *Fort Oglethorpe*, Lieut. JAY H. STIER, Perryman.

To Camp Lee, Petersburg, Va., for duty, from *Fort Oglethorpe*, Major EWDIGATE M. OWENSBY, Baltimore. Base hospital, from *Fort im Houston*, Lieut. THOMAS M. RIVERS, Baltimore.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. ROY WOLFORD, Baltimore; from *Camp Meade*, Lieut. PURNELL F. APPINGTON, Bel Air.

To Hoboken, N. J., for duty, Lieuts. HENRY F. J. BUETTNER, CLAN D. C. LEWIS, Baltimore.

To Rockefeller Institute for instruction, and on completion to his proper station, from *Fort Slocum*, Capt. ANTON C. SORENSON, Baltimore.

To Washington, D. C., Government Hospital for the Insane, for ensive training, Lieut. FRANK N. OGDEN, Baltimore.

To the inactive list, from *Camp Hancock*, Lieut. VERNON S. WILSON, Aberdeen.

Honorably discharged on account of physical disability existing prior entrance into the service, Lieut. JOHN C. NORTON, Baltimore.

Massachusetts

To Army Medical School for instruction, Lieut. EDWARD W. DUNG, New Bedford.

To Boston, Mass., Howard Graduate School of Medicine, for duty and completion to his proper station, Major ALEXANDER S. BEGG, Cambridge.

To Brooklyn, N. Y., base hospital, from *Camp Meade*, Lieut. BERARD A. GODVIN, Boston.

To Camp Beauregard, Alexandria, La., base hospital, Major GEORGE GRAY, Lynn.

To Camp Crane, Allentown, Pa., base hospital, from *Newport News*, Lieut. JAMES H. GETTINGS, Boston.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. RALPH H. OPKINS, Marlton.

To Camp Greene, Charlotte, N. C., base hospital, from *Boston*, Major SHUA C. HUBBARD, Boston.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JACOB E. NQUER, Boston.

To Camp McClellan, Anniston, Ala., as division psychiatrist, from *Camp McClellan*, Capt. DONALD R. GILFILLAN, Worcester; as hoppedic surgeon, from *Fort Oglethorpe*, Lieut. HARRIS E. POWERS, Boston.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. ARTHUR BALL, Northampton.

To Camp Wheeler, Macon, Ga., base hospital, Major ALEXANDER ACKENBOSS, Boston.

To Camp Zachary Taylor, Louisville, Ky., as division psychiatrist, in *Camp McClellan*, Capt. WALTER J. OTIS, Waverley.

To Fort Oglethorpe for instruction, Capt. BERTRAND H. HOPKINS, Ayer; PEREZ B. HOWARD, Newtonville; Lieuts. WOLFERT

G. WEBBER, Boston; DEODATUS T. CHAGNON, Holyoke; SAMUEL BUTLER, Medway; JULIAN D. LUCAS, Roxbury.

To Hoboken, N. J., for duty, Lieut. FRANCIS M. RACKEMANN, Boston.

To Rockefeller Institute for instruction in bacteriology, and on completion to *Army Medical School* for duty, Capt. ARTHUR M. WORTHINGTON, Dedham. For instruction in laboratory work, and on completion to *Army Medical School*, for duty, Lieut. HAROLD F. BUDINGTON, Springfield.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from *Camp Grant*, Capt. JOHN BRYANT, Boston.

Letter directing Lieut. HARRY R. COBURN, Tewksbury, to *Philadelphia* from *Fort Oglethorpe*, revoked.

Michigan

To Camp Beauregard, Alexandria, La., base hospital, Lieut. ROLLA G. KARSHNER, Ann Arbor.

To Camp Devens, Ayer, Mass., for duty, Lieut. HAROLD F. OHRT, Detroit.

To Camp Dodge, Des Moines, Ia., for duty, from *Camp Doniphan*, Lieut. COLIN C. VARDAN, Detroit.

To Camp Gordon, Atlanta, Ga., for duty, from *Army Medical School*, Lieut. ZINA B. BENNETT, Detroit, from *Williamsbridge*, Lieut. CUTHBERT E. DEMAY, Jackson.

To Camp Pike, Little Rock, Ark., for duty, from *Fort Oglethorpe*, Major SAMUEL E. CRUSE, Iron Mountain.

To Camp Travis, Fort Sam Houston, Tex., for duty, from *Fort Oglethorpe*, Capt. ROBERT B. HARKNESS, Houghton.

To Fort Logan H. Roots, Ark., base hospital, from *Camp Lee*, Major FRANK SUGGS, Detroit.

To Fort Oglethorpe base hospital, and on completion to *Camp Shelby*, Hattiesburg, Miss., base hospital, from *Fort Oglethorpe*, Capt. NELSON MACARTHUR, Detroit. For instructions, Lieuts. WILLIAM J. KANE, Detroit; PERRY C. ROBERTSON, Ionia.

To Fort Riley, base hospital, and on completion to *Camp Logan*, Houston, Tex., base hospital, from *Fort Riley*, Capt. WILLIAM H. DUNHAM, Spaltsburg. For instruction, Lieuts. SETH E. GILKEY, ARTHUR TURNER, Detroit.

To Fort Wayne, Mich., for duty, Major WILLIAM F. ENGLISH, Saginaw; Lieut. CHARLES S. STRAIN, Rochester.

To Hoboken, N. J., for duty, Lieuts. ALBA L. SMITH, LINDLEY H. STOUT, Detroit. Hospital train, Lieut. ROBERT J. WALKER, Saugatuck.

To Rockefeller Institute for instruction, and on completion to *Williamsbridge*, N. Y., for temporary duty, from *Camp Grant*, Capt. WILLARD H. HUTCHINGS, Detroit.

Honorably discharged on account of physical disability incurred in the line of duty, Capt. EARL M. MCCOY, Grandlodge. On account of physical disability existing prior to entrance into the service, Lieut. LEO C. DONNELLY, Detroit.

Resignation of Lieut. JOSEPH A. FLEISCHMANN, Muskegon, accepted.

Minnesota

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ADOLPH M. HANSON, Dawson.

To Camp Fremont, Palo Alto, Calif., for duty, from *Camp Kearny*, Lieut. WILLIAM W. MOIR, Minneapolis.

To Fort Riley for instruction, Capt. JENNER P. CHANCE, International Falls.

To Fort Sheridan, Ill., hospital train, Lieuts. PETER C. BJORNEBY, Bagley; JOHN T. RIESS, Pine City.

To Hoboken, N. J., for temporary duty, from *Fort Sam Houston*, Lieut. FRANCIS G. BLAKE, Minneapolis.

To Minneapolis, Minn., for duty, from *University of Minnesota*, Capt. ALOYSIOUS S. FLEMING, Minneapolis.

To Rockefeller Institute for instruction, and on completion to his proper station, from *Williamsbridge*, Capt. RALPH T. KNIGHT, Minneapolis. On completion to *Camp Upton*, Long Island, N. Y., base hospital, Lieut. EDWARD V. M. MASTIN, Rochester.

To Washington, D. C., for duty in the Surgeon-General's Office, Major WILLIAM J. MAYO, Rochester.

Honorably discharged on account of physical disability existing prior entrance into the service, Lieut. BENJAMIN J. SHALETT, Minneapolis.

The following orders have been revoked: *To Fort Riley*, from *Camp Logan*, Lieut. VIRGIL H. MOATS, Minneapolis. *To Philadelphia, Pa.*, from *Rockefeller Institute*, Capt. FRANK M. MANSON, Worthington.

Mississippi

To Camp Devens, Ayer, Mass., for duty, from *Fort Oglethorpe*, Lieut. VIRGIL N. NICHOLS, Carson.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. FILO B. COATS, Hardy Station.

To Fort Oglethorpe for instruction, Lieuts. JOHN W. McCLAIN, Columbus; SILAS W. PEARSON, Louisville; JAMES A. McDEVITT, Shubuta.

To Rochester, N. Y., for duty, from *Fort Oglethorpe*, Lieut. MARTIN L. HOLLAND, Schlater.

Missouri

To Camp Dodge, Des Moines, Ia., for duty, from *Camp Doniphan*, Lieut. GROVER C. JOHNSON, Belle.

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board, from *Camp Greene*, Capt. FREDERICK B. SPENCER, Hannibal.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from *Fort Oglethorpe*, Lieut. HENRY L. HESS, Kansas City. Base hospital, from *St. Louis*, Lieut. GEORGE W. HEUMAN, St. Louis.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. WALTER R. LIMBAUGH, Hollywood.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from *St. Louis*, Capt. ROBERT G. HALL, Fulton.

To Fort Leavenworth, Kan., for duty, Lieut. HORACE F. CLEVELAND, St. Louis.

To Fort Oglethorpe for instruction, Lieut. JAMES L. DOWNING, Lexington.

To Fort Riley for instruction, Capt. HENRY A. MAY, Washington; Lieuts. WILLIAM T. EUDY, Birch Tree; MARCUS R. DAMRON, DeWitt; CHARLES N. HAHN, Dunnegan; ERNEST MITCHELL, LaMonte; HORACE A. SHEPHERD, Moscow Mills; JAMES K. RESON, Pascola; HENRY T. O'KELLEY Patton; JAMES E. PIERPOINT, Skidmore.

To Kansas City, Mo., Sweeney Auto School, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, the same duty at Rahe Auto and Tractor School, and on completion to the inactive list, Capt. ROGER B. BREWSTER, Kansas City.

To Rockefeller Institute for instruction, and on completion to Bellevue Hospital, New York City, for further instruction, and on completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Riley, Capt. WILLIAM T. ELAN, St. Joseph.

To St. Louis, Mo., for duty, Major HANAU W. LOEB, St. Louis. Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN W. WILLIAMS, Nashville.

Letter directing Lieut. ROY W. JOHNSON, St. Louis, to Hoboken, from Fort Oglethorpe, revoked.

Montana

To Fort Riley for instruction, Capt. AUSTIN L. WARD, Havre; Lieut. JAMES D. HOBSON, Missoula.

To Fort Sam Houston, Tex., for temporary duty, from Fort Riley, Capt. SAMUEL G. ARNOLD, Billings.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CORNELIUS B. BOYLE, Eureka.

Nebraska

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieuts. LESLIE B. CRUMBINE, Lincoln; CHARLES C. WALLINGS-FORD, Ogallala.

To Camp Pike, Little Rock, Ark., for duty, Lieuts. JAMES MAC-WOODWARD, Lincoln; BERNARD V. McDERMOTT, Stuart.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort Riley, Lieut. WARREN M. PHILLIPS, Norfolk.

To Camp Zachary Taylor, Louisville, Ky., as assistant to camp surgeon, from Fort Riley, Lieut. WILLIAM E. M. DEVERS, Cowles.

To Fort Des Moines, Ia., base hospital, Major EDSON L. BRIDGES, Omaha.

To Fort Omaha, Neb., for duty, from Omaha, Capt. ADOLPH B. LINDQUEST, Omaha.

To Fort Riley for instruction, Capt. FRANK D. BURGESS, Cedar Rapids; Lieuts. HENRY B. BOYDEN, Grand Island; JOSEPH B. SCHROCK, Scottsbluff.

Nevada

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CHARLES W. R. VON RADESKY, Carson City.

New Hampshire

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. LAURENCE B. HATCH, E. Jaffrey.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. SAMUEL D. SNOW, North Conway.

To Fort Oglethorpe for instruction, Lieut. GEORGE A. TREDICK, Portsmouth.

New Jersey

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. VANE B. SIGLER, Trenton.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. THOMAS W. PHILLIPS, Camden.

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. ELIAS J. MARSH, Paterson.

To Fort Oglethorpe for instruction, Capt. JOSEPH T. WELCH, Long Branch; Lieuts. ADOLPH A. GURIN, Atlantic City; LOUIS LIP-SHITZ, Bayonne; LAWRENCE M. COLLINS, Greystone Park; WALTER H. WHITON, Neshanic; JOSEPH A. SCHRAMM, Newark; JESSE A. LEVINE, Orange; ALBERT G. JAHN, Passaic; ALEXANDER J. McRAE, Upper Montclair; HENRY KLAUS, West Hoboken.

To Fort Sheridan, Ill., base hospital, from Hoboken, N. J., Lieut. ADFUR E. MAINES, Jersey City.

To Hoboken, N. J., for duty, Capt. CHARLES D. PEDRICK, Glassboro; Lieuts. BENJAMIN F. SLOBODIEN, Perth Amboy; JOHN H. WINSLOW, Vineland.

To Jackson Barracks, La., for duty, from Camp Greene, Lieut. ERNEST S. RAMSDELL, Camden.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, from the Surgeon-General's Office, Major STEWART PATON, Princeton.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. LOUIS C. ROSENBERG, Newark.

New Mexico

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Lieut. SAMUEL H. ECKLES, Silver City.

To Camp Travis, Fort Sam Houston, Tex., field artillery brigade, Lieut. BURRIS B. McGEE, Elida.

To Fort Riley for instruction, from Fort Leavenworth, Lieut. NATHANIEL D. FRAZIN, Tyron.

Letter directing Lieut. WILLIAM G. BASSETT, Des Moines, Ia., to Fort Riley for instruction, revoked.

New York

To Army Medical School for instruction Lieuts. FRANK A. TRIPPE, Fredonia; MARK COHN, MOSES LOBSENZ, New York City.

To Baltimore, Md. Philadelphia, Pa., Trenton, Newark, Paterson and Hoboken, N. J., New York City, Brooklyn, N. Y., Hempstead, Garden City, Mineola and Riverhead, Long Island, N. Y., Patchogue, N. Y., Lowell, Boston and Ayer, Mass., for inspection, and on completion to his proper station, Capt. ALEX N. THOMSON, Brooklyn.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort McPherson, Lieut. JOHN F. HOLDEN, White Plains.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Newport News, Major ARTHUR S. MOORE, Middletown.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. ISADORE M. LEAVY, New York City.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ROSCOE C. WEBB, New York City.

To Camp Devens, Ayer, Mass., base hospital, Lieut. ARTHUR P. STOUT, New York City; from Camp Dix, Lieut. SAUL DANZER, Brooklyn.

To Camp Dix, Wrightstown, N. J., Camp McClellan, Anniston, Ala., Camp Gordon, Atlanta, Ga., and Camp Sevier, Greenville S. C., for temporary duty, and on completion to his proper station, Capt. BERNARD S. OPPENHEIMER, New York City. To Camp Dix to exam-

ine the command for mental and nervous diseases, Lieut. SAMUEL W. MILLER, Jr., New York City.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. ALFRED E. OAKES, Tarrytown; from Army Medical School, Lieut. RALPH J. LEVY, New York City; from Williamsbridge, Lieuts. FRANK KRUSE, CHARLES C. PANZARELLA, Buffalo.

To Camp Greene, Charlotte, N. C., for duty, from Camp Upton, Capt. GEOFFREY C. H. BURNS, Central Islip.

To Camp Hancock, Augusta, Ga., base hospital, from New York City, Lieut. BENJAMIN E. CARMEL, Brooklyn.

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board, from Camp Forrest, Capt. STANMORE L. CASH, New York City; STEPHEN A. MAHADY, Utica. As orthopedic surgeon, from Fort Oglethorpe, Lieut. CHARLES M. GRIFFITH, New York City.

To Camp McClellan, Anniston, Ala., base hospital, from New York City, Lieut. WALTER L. WEEDEN, Clifton Springs.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. FREDERICK W. BANCROFT, New York City; from Fort Oglethorpe, Capt. JOHN J. COTTER, New York City; from New York City, Lieut. HERMAN GOODMAN, New York City. To examine the command for nervous and mental diseases, from Washington, D. C., Capt. GEORGE A. BLAKESLEE, New York City.

To Camp Upton, Long Island, N. Y., base hospital, Major HENRY B. DELATOUR, Brooklyn; from Camp Dix, Capt. WILLIAM J. MEYER, White Plains. Also to Camp Devens, Ayer, Mass., and Camp Sherman, Chillicothe, Ohio, to give instruction and on completion to Washington, D. C., for further instructions, Lieut. MARCUS A. ROTHCHILD, New York City.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Cambridge, Lieut. LEE A. HADLEY, Syracuse.

To Edgewood, Md., for duty, from Baltimore, Major FRANK G. YOUNG, New York City.

To Fort Benjamin Harrison, Ind., for duty, from Camp Forrest, Capt. CHARLES H. ERWAY, Elmira.

To Fort Bliss, Tex., as division psychiatrist, from Camp Shelby, Capt. ROBERT F. ZIMMERMAN, Elmhurst.

To Fort Oglethorpe, for inspection, and on completion to Camp Jackson, Columbia, S. C., for investigation, and on completion to his proper station, Capt. FRANKLIN C. McLEAN, New York City. For instruction, Capt. EMERSON W. AYARS, Alfred; HARRY L. PURDY, New York City; Lieuts. CHARLES G. SWAN, Avon; FRED ROVITTI, Bronx; LOUIS A. BONVINCINO, LEON J. GRANT, PHILIP HORWITZ, ABRAHAM NEMSER, JACOB J. PFEIFER, JOSEPH J. SORKIN, Brooklyn; MICHAEL J. McMAHON, FRANK N. POTTS, CHARLES SIMON, Buffalo; FLOYD H. JONES, Elmira; REX W. BEARD, MONROE B. KUNSTLER, WALTER W. OLIVER, ABE ORENSTEIN, HENRY M. SCHEER, SIDNEY L. SPIEGELBERG, EDWIN A. SPIES, New York City; ALLEN G. FECHTIG, Scrub Oak; ARTHUR W. BENSON, Troy. From Fort McHenry, Lieut. JULIUS E. ALTER, New York City.

To Governors Island, N. Y., for duty, Lieut. NATHAN D. GARNSEY, Kinderhook.

To Hoboken, N. J., for duty, Capt. MARK L. FLEMING, New York City; Lieut. HAROLD E. SHAYER, Sherman; from Fort Oglethorpe, Lieut. HARRY H. GOLDBERG, New York City.

To report by wire to the Commanding General, Eastern Department, for assignment to duty, Lieut. JOHN GIFFEN, Albany.

To Rockefeller Institute for instruction, Capt. CHARLES F. KIVLIN, Troy. On completion to Bellevue Hospital, New York City, for further instruction, and on completion to Camp Wheeler, Macon, Ga., base hospital, Capt. CHARLES F. KIVLIN. On completion at Bellevue Hospital, to Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. FREDERICK L. DETRICK, New York City. On completion at Bellevue Hospital, to Hoboken, N. J., for temporary duty, from Fort Oglethorpe, Lieut. JOSEPH A. NOWICKI, Buffalo. On completion at Rockefeller Institute, to Camp Upton, Long Island, N. Y., base hospital, Lieut. MICHAEL J. LYNCH, New York City. For instruction in the serum therapy of pneumonia, and on completion to his proper station, from Fort Oglethorpe, Lieut. BREWSTER C. DOUST, Syracuse.

To San Juan, Porto Rico, base hospital, Lieut. LEANDRO L. DE LA ROSA, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. JOSEPH HARKAVY, New York City.

To Washington, D. C., gas defense service, for duty, from Camp Meade, Capt. JEAN R. OLIVER, New York City.

To Williamsbridge, N. Y., for duty, from Hoboken, Capt. CARTER S. COLE, New York City. U. S. General Army Hospital, for duty, Lieut. RUEN VAN KLEECK, New York City.

Honorably discharged, Major JOHN ROGERS, New York City. On account of physical disability existing prior to entrance into the service, Lieut. ROBERT T. IRVINE, Ossining.

North Carolina

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. CECIL GARRENTON, Bethel.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ROBERT M. GALANT, Charlotte; JOHN B. LEGWIN, Wilmington.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Meade, Capt. JAMES M. COVINGTON, Wadesboro.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from New York City, Lieut. FRANK R. RUFF, Duke.

To Fort Benjamin Harrison, as member of a board to examine for tuberculosis, from Camp Forrest, Major CHARLES O'H. LAUGHINGHOUSE, Greenville.

To Fort Oglethorpe for instruction, Lieuts. GROVER C. BEARD, Kerr; GEORGE L. PRITCHARD, LaGrange.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. NATHAN H. ANDREWS, Rowland; JAMES A. SISKE, Troy.

North Dakota

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Doniphan, Lieut. BENJAMIN FRANKSON, Rugby.

To Hoboken, N. J., for duty, from Hoboken, Capt. ORVILLE N. MELAND, Grand Forks.

Ohio

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. WILLIAM R. DEEMER, Fremont.

To Camp Abraham Eustis, Lee Hall, Va., as camp surgeon from Fort Oglethorpe, Capt. JAMES M. DAY, Waynesfield.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieuts. LORA J. MARRIOTT, St. Louisville; WILLIAM C. PONTIUS, Warren.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ADAM B. DENISON, BERNARD B. NEUBAUER, Cleveland.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieuts. EARL C. WOOD, Columbus; WILLIAM N. ROGERS, Hamilton.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. CLARENCE G. BOZMAN, Hebron.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. JAMES B. DOUGHERTY, New Berlin. Base hospital, from Camp Zachary Taylor, Lieut. JOEL D. HOLSTON, Massillon.

To Fort McPherson, Ga., for duty, from Fort McPherson, Lieuts. WILLIAM L. LAYPORT, Cincinnati; WILLIAM S. NICHOLS, Cleveland.

To Fort Oglethorpe for instruction, Capt. GEORGE E. GARWOOD, Colton; Lieuts. CHARLES H. PELTON, Bucyrus; EUGENE P. NOITZ, Cleveland; ORAN P. ANDREWS, East Liverpool; EARL D. PEINERT, Grand Rapids; RAYMOND C. MAUGER, Johnstown; HENRY L. SOWASH, Ohio Soldiers and Sailors' Home; HERBERT M. KEIL, Portsmouth; KURT C. BECKER, CHARLES FABER, Toledo; MAX MAROWITZ, Youngstown; from Camp Sherman, Lieut. ALDO V. SIBERT, Lima.

To Fort Riley base hospital, and on completion to Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. OSCAR E. TOWNSEND, Cleveland. For instruction, Lieut. EVERETT C. ROBBINS, Cincinnati.

To Hoboken, N. J., for duty, Lieut. FRANK A. STOVE, Bowling Green.

To Washington, D. C., for duty in the Surgeon-General's Office, and on completion to Fort McHenry, for duty, from New York City, Capt. NATHANIEL M. JONES, Cleveland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THEODORE A. CHRISTEN, Cincinnati.

Oklahoma

To Camp Bowie, Fort Worth, Tex., as orthopedic surgeon, from Camp Doniphan, Lieut. JESSE B. HOLLIS, Hobart.

To Camp Custer, Battle Creek, Mich., base hospital, from St. Louis, Lieut. JOSEPH H. SANFORD, Muskogee.

To Camp Pike, Little Rock, Ark., for duty, Lieut. JOHN W. PENDLETON, Kingfisher; from Fort Oglethorpe, Lieut. GEORGE W. TILLY, Kusa.

To Fort Oglethorpe for instruction, from San Antonio, Capt. HENRY DEW. SHANKLE, Hastings; from Camp Devens, Lieut. ROBERT L. WESTOVER, Okmulgee.

To Fort Riley for instruction, Lieut. WOODARD R. MITCHELL, Verden.

Honorably discharged, Lieut. JOHN L. PLUMLEE, Poteau.

Resignation of Lieut. EDGAR A. JONES, Sayre, accepted.

Oregon

To Army Medical School for instruction, Lieut. EMILE C. JOSEPH, Corvallis.

To Camp Fremont, Palo Alto, Calif., as orthopedic surgeon, from Los Angeles, Lieut. VICTOR L. ROCHO, Woodburn.

To Camp Lewis, American Lake, Wash., as orthopedic surgeon, from Los Angeles, Lieut. CHESTER A. DOWNS, Portland.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. CHARLES C. OSBORN, Portland.

To Fort Riley, base hospital, Capt. JOHN G. ABELE, Portland.

To Hoboken, N. J., for temporary duty, from Rockefeller Institute, Capt. THOMAS N. JOYCE, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEON G. HOLLAND, Portland.

Letter directing Lieut. HENRY W. STEELHAMMER, Silverton, to Hoboken, N. J., from Camp Greene, revoked.

Pennsylvania

To Arcadia, Fla., for duty, from Watervliet, N. Y., Capt. ROBERT H. BOLLING, Philadelphia.

To Camp Crane, Allentown, Pa., for temporary duty, Capt. DAVIS DALE, Bellefonte; Lieuts. GEORGE E. ALLEMAN, Altoona; BURNS S. CHAFFEE, Pittsburgh.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Camp Bowie, Major THOMAS W. JACKSON, Philadelphia. To examine the command for nervous and mental diseases, from Camp Doniphan, Capt. WILLIAM W. RICHARDSON, Mercer. As orthopedic surgeon, from Fort Oglethorpe, Lieut. FRANK P. MCCARTHY, Erie.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. ABRAHAM J. KAISER, Saltsburg.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. THOMAS G. MILLER, Philadelphia.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Dix, Lieut. CHARLES C. GANS, Chambersburg. For duty, Lieut. DAVID BUDIN, Philadelphia; from Fort Oglethorpe, Lieut. EUGENE RUSH, Philadelphia.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Capt. ALEXANDER R. KIDD, Connellsville. Base hospital, from Army Medical School, Lieut. JAMES J. MONAHAN, Fountain Springs.

To Camp Lee, Petersburg, Va., base hospital, from Walter Reed General Hospital, Lieut. CLIFFORD C. HARTMAN, Pittsburgh.

To Camp Logan, Houston, Tex., base hospital, from Camp Logan, Lieut. THEODORE MELNICK, Philadelphia; from Oglethorpe, Lieut. EDWARD PARDOE, South Fork.

To Camp Meade, Annapolis Junction, Md., as member of tuberculosis examining board, from Fort Oglethorpe, Lieut. RALPH L. ENGLE, Philadelphia. Base hospital, Lieut. OLIVER H. P. PEPPER, Philadelphia; from Fort Oglethorpe, Lieut. SETH A. BRUMM, Philadelphia.

To Camp Pike, Little Rock, Ark., as member of the tuberculosis examining board, from Camp Greene, Lieut. HENRY G. GODFREY, Philadelphia.

To Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Capt. WILLIAM L. BATES, Jr., Philadelphia.

To Fort Monroe, Va., for duty, Capt. WILLIAM C. MEANOR, Beaver.

To Fort Oglethorpe for conference, and on completion to his proper station, Major GEORGE C. JOHNSTON, Pittsburgh. Base hospital, and on completion to Camp McClellan, Anniston, Ala., base hospital, from

Fort Oglethorpe, Lieut. DON. C. FOSSELMAN, Whitsett. For instruction, Lieuts. JOHN M. JACKSON, Beaver Falls; GEORGE F. BOAL, Freedom; ALBERT A. REDELIN, Freeland; RAYMOND A. WOLFF, New Kensington; RALPH H. ARMSTRONG, Peckville; JOHN D. J. CURRAN, Philadelphia; MORRIS A. COHEN, Pittsburgh; WALDO E. PRESTON, Ramsaytown; WALTER S. LUCAS, Wynnewood; from Camp Jackson, Lieut. THOMAS L. COLEY, Bethayres.

To Hoboken, N. J., for duty, Lieuts. SAMUEL C. DOWDS, Dunbar; HARRY J. OWENS, Hazelton; GEORGE MANTINGH, Pittsburgh; CHARLES N. BROSIUS, Shamokin Dam; from Newport News, Lieut. MAURICE GOLDBERG, Philadelphia.

To Lakhurst, N. J., for duty, from Fort Oglethorpe, Lieut. JAMES A. MCCracken, Norristown.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. CHAS. J. SMYER, New Wilmington.

To Philadelphia, Pa., for orthopedic instruction, Lieut. ALBERT T. RANSONE, Philadelphia.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Capt. FRANK L. MCCREARY, Sewickley.

To Rockefeller Institute for instruction in laboratory work, Capt. WILLIAM H. BAILEY, Philadelphia. For instruction, and on completion to Bellevue Hospital, New York City, for further instruction, and on completion to Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Capt. RUDOLPH A. CONSTIEN, Ashland. On completion of instruction at Bellevue Hospital, to Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. WILLIAM O. DOUGHERTY, New Bethlehem.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Army Medical School, Lieut. JOHN N. HAYES, Crafton.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Jackson, Lieut. CARL C. YOUNT, Philadelphia.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. EVAN O'N. KANE, Kane.

Resignation of Lieut. ROBERT C. JOHNSTON, Springdale, accepted.

The following orders have been revoked: To Washington, D. C., from Philadelphia, Major ISAAC H. JONES, Philadelphia. To Camp Jackson, from Fort Oglethorpe, Lieut. PATRICK F. McHUGH, Wilkes-Barre. To Fort Riley, for instruction, Lieut. JOHN M. HIGGINS, Sayre.

Rhode Island

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. JOSEPH L. BELLIOTTI, Providence.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOSEPH F. HAWKINS, Providence.

To Fort Oglethorpe for instruction, Capt. REMINGTON P. CAPWELL, Lieut. ERNEST A. BURROWS, Providence.

To Newport News, Va., for temporary duty, Lieut. PHILIP C. MEANS, Apponaug.

South Carolina

To Camp Gordon, Atlanta, Ga., for duty, Lieut. JAMES F. DOBSON, Ridgeway.

To Fort Oglethorpe for instruction, Lieut. FRANCIS G. CAIN, Charleston.

South Dakota

To Fort Riley for instruction, Capt. JOHN W. BRACKETT, Sturgis.

Tennessee

To Army Medical School for instruction, Capt. WILLIAM N. LACKEY, Gallatin.

To Camp Crane, Allentown, Pa., for temporary duty, Capt. CHARLES K. SUMMERS, Memphis.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. CLEVELAND PAYNE, Oakland.

To Camp Gordon, Atlanta, Ga., as member of the tuberculosis examining board, from Camp Greene, Lieut. OWEN S. DEATHRIDGE, Nashville. For duty, Lieut. WALTER W. SALE, Covington.

To Camp Lee, Petersburg, Va., base hospital, Lieut. JAMES P. CRAWFORD, Nashville.

To Camp Pike, Little Rock, Ark., for duty, Lieut. CARL R. CRUTCHFIELD, Nashville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from New York City, Capt. ORVILLE B. CHANDLER, Union City.

To Fort Oglethorpe for duty, from Camp Dix, Capt. OTSY J. PORTER, Columbia.

To Hoboken, N. J., for duty, Capt. GEORGE E. VAUGHAN, Clarks-ville.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. FREDERICK W. LEE, Springfield.

To Rockefeller Institute for instruction, and on completion to Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. CHARLES P. EDWARDS, Kingsport.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. DORSEY T. GOULD, Lawrenceburg.

Texas

To Army Medical School for instruction, Lieut. BASCOMB McI. PUCKETT, Amarillo.

To Camp Bowie, Fort Worth, Tex., base hospital, Lieut. HESTER B. SMITH, Dallas.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. EDWARD B. JONES, Jacksonville.

To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. JOHN C. THOMAS, Taylor.

To Camp Laurel, Md., for duty, from Fort Oglethorpe, Lieut. TILGHMAN O. DARBY, Sour Lake.

To Camp Travis, Fort Sam Houston, Tex., as sanitary inspector, from Camp Travis, Capt. THEODORE H. HARRELL, Gonzales. For duty, Lieuts. WILLIAM D. SPILLER, Galveston; THOMAS T. JACKSON, San Antonio; from Corpus Christi, Capt. THOMAS P. POOLE, Eagle; from duty as a contract surgeon at Camp Travis, Capt. HANSON S. GIFFORD, San Antonio.

To Corpus Christi, Tex., for duty, Capt. CHARLES E. CANTRELL, Greenville.

To Fort Oglethorpe base hospital, and on completion to Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. WILLIAM M. DICKENS, Greenville. For instruction, from Camp MacArthur, Lieut. HAROLD E. NICHOLSON, Mohectie.

To Fort Riley for instruction, Lieut. KINCY J. SCOTT, Temple.

To Philadelphia, Pa., for orthopedic instruction, from Garden City, Lieut. FRANCIS W. CARRUTHERS, Hillsboro.

To *Rockefeller Institute* for instruction, and on completion to *Bellevue Hospital*, New York City, for further instruction, and on completion to *Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. JESSE C. MAY, Fort Worth.

Retained in service and ordered to *Camp Greene*, Charlotte, N. C., base hospital, from Hoboken, Capt. VINNY L. SMITH, Jewett.

Honorably discharged, Lieut. GEORGE B. TABOR, Dallas. On account of physical disability existing prior to entrance into the service, Capt. STANLEY T. LOWRY, San Antonio; Lieut. ROBERT A. GORDON, Lorenn.

Vermont

To *Camp Pike*, Little Rock, Ark., for duty, from Fort Oglethorpe, Capt. EDWARD F. MURRAY, Burlington.

To *Fort Oglethorpe* for instruction, Lieut. JOHN P. KERRIGAN, Ludlow.

To *Lakehurst, N. J.*, for duty, from Fort Oglethorpe, Lieut. LEONARD B. ROWE, Orwell.

Virginia

To *Army Medical School* for duty, from Camp Laurel, Lieut. JAMES W. CLARKSON, Mount Solon.

To *Camp Devens*, Ayer, Mass., for duty, Major CHARLES A. BROWN, Dillwyn; from Fort Oglethorpe, Lieut. LOUIS C. S. HAYNES, Taylor's Stone.

To *Camp Dodge*, Des Moines, Iowa, base hospital, from Camp Wadsworth, Capt. KENNETH D. GRAVES, Richmond.

To *Camp Gordon*, Atlanta, Ga., for duty, Lieut. JAMES A. MERIWETHER, Holcombs Rock.

To *Camp Hancock*, Augusta, Ga., base hospital, from Camp Lee, Major BEVERLY R. KENYON, Norfolk. For duty, from New York City, Capt. RICHARD P. BELL, Staunton.

To *Camp Laurel*, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAMSON C. WELBURN, Ballston.

To *Charleston, S. C.*, for duty, from Fort Caswell, Major WALTER A. NEWMAN, Manassas.

To *Fort Oglethorpe* for instruction, Lieuts. JOHN B. VAIDEN, New Kent; LEWIS B. STATON, Norfolk.

To *Fort Sam Houston, Tex.*, for duty, from Newport News, Major PAUL J. PARKER, Hampton.

To *Hoboken, N. J.*, for duty, Lieut. ANDREW D. PARSON, Stony Creek; from Fort Oglethorpe, Lieut. HARRY R. SMITH, Appalachia.

To *Mincola*, Long Island, N. Y., for duty, from Memphis, Major HERBERT C. MALLORY, Greenbackville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. GRANVILLE EASTHAM, Rappahannock; SAMUEL S. COTTRELL, Richmond.

Washington

To *Camp Dodge*, Des Moines, Ia., as assistant to camp surgeon, from Fort Riley, Capt. HIRAM M. READ, Seattle.

To *Camp Fremont*, Palo Alto, Calif., for temporary duty, from Los Angeles, Capt. EVERETT O. JONES, Seattle.

To *Camp Gordon*, Atlanta, Ga., for inspection, thence on completion of leave to *Camp Doniphan*, Fort Sill, Okla., for inspection, and on completion to *Camp Bowie*, Fort Worth, Tex., *Camp Cody*, Deming, N. M., and *Fort Bliss*, Tex., for inspection, and on completion to *Camp Travis*, Fort Sam Houston, Tex., for temporary duty, from Camp Pike, Capt. EDWARD A. RICH, Tacoma.

To *Camp Lewis*, American Lake, Wash., base hospital, Capt. EDWARD P. FICK, Seattle.

To *Fort Riley* for instruction, Capt. AUGUST E. GERHARDT, Wenatchee.

To report by wire to the Surgeon-General's Office, Western Dept., for assignment to duty, Lieut. ADOLPH J. OSTERMAN, Mt. Vernon.

West Virginia

To *Army Medical School* for instruction, Lieut. JAMES M. SHULER, Welch.

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. FINLY K. VASS, Gassaway.

To *Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JOHN O'BRIEN, Jr., Blandville.

To *Camp Lee*, Petersburg, Va., base hospital, Capt. EUGENE A. HILDRETH, 3d, Wheeling.

To *Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. JOHN S. CAYCE, Ben Bush.

To *Fort Oglethorpe* for instruction, Capt. WILLIAM A. CRACRAFT, Wheeling; Lieuts. CHARLES W. MYERS, Coketon; CHARLES P. BURKE, Follansbee.

To *Fort Sam Houston, Tex.*, for temporary duty, from Fort Oglethorpe, Lieut. DAVID McA. AIKMAN, War.

To *Hoboken, N. J.*, from Fort Oglethorpe, Lieuts. HARRY D. LAW, Conings; JAMES E. HATFIELD, Williamson.

The following orders have been revoked: To *Camp Cody*, from Fort Oglethorpe, Lieut. AUBREY F. LAWSON, Weston. To *Camp Jackson*, from Fort Oglethorpe, Capt. FRED W. BARGER, Hiawatha.

Wisconsin

To *Camp Dodge*, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. CLARKE B. DEVINE, Marshall.

To *Camp MarArthur*, Waco, Tex., base hospital, from St. Louis, Lieut. OLE A. NELSON, Park Falls.

To *Camp Pike*, Little Rock, Ark., for duty, Lieut. RICHARD A. DREYER, Wheeler.

To *Edgewood, Md.*, base hospital, from Camp Pike, Lieut. WILMOT P. MILLER, Milwaukee.

To *Fort Benjamin Harrison, Ind.*, for duty, from Camp Forrest, Capt. HARRY C. MIX, Green Bay.

To *Fort McDowell, Calif.*, for duty, from Fort Riley, Lieut. HAROLD McM. HELM, Beloit.

To *Fort Riley*, base hospital, and on completion to Fort Riley, for temporary duty, from Fort Riley, Lieut. G. FRANK ANDREW, La Crosse. For instruction, Lieuts. EDMOND I. McQUIN, Fairwater; ADOLPH L. KYLLO, Grantsburg; DEAN S. VAN HECKE, Merrill; SAMUEL R. MITCHELL, Milwaukee; ERNEST L. SCHROEDER, Shawano; LAWRENCE H. OLIVER, Siren; GEORGE E. LINDOW, Watertown.

To *Washington, D. C.*, for duty, from Fort Oglethorpe, Lieut. DEXTER H. WITTE, Hartford.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Miscellaneous.—At the meeting of the board of trustees of Howard College, March 13, the proposition of the United States government to establish a reconstruction hospital at Birmingham, using the grounds and buildings of the college for the purpose, was endorsed.—A health survey in Madison County was begun at Huntsville, March 14, under the direction of Dr. Carl A. Grote, county health officer.—Sanitation in the vicinity of Muscle Shoals, where government ammunition plants are to be erected, was begun March 15. Dr. Harry S. Mustard of the Public Health Service has been placed in charge of the work.

Officers Elected.—At the meeting of the Medical Association of the State of Alabama, held in Birmingham from April 16 to 19, the following officers were elected: president, I. L. Watkins, Montgomery; vice president, H. S. Ward, Birmingham (northern division); secretary, H. G. Perry, Montgomery; treasurer, J. U. Ray, Woodstock; censors for five years, Glenn Andrews, Montgomery, and S. G. Gay, Selma; censor for four years, C. A. Thigpen, Montgomery, to fill unexpired term of Dr. W. H. Sanders (deceased); censor for one year, R. S. Hill, Montgomery, to fill unexpired term of Dr. I. L. Watkins (resigned). During the meeting a service flag was unveiled, bearing 432 stars, which represent the number of members of the profession now serving as officers in the Army, Navy and United States Public Health Service.

ARKANSAS

Officers Elected.—At the meeting of the Jackson Medical Association at Newport, the following officers were elected: president, Dr. Oscar E. Jones; vice-president, Dr. Ira H. Erwin; and secretary-treasurer, Dr. Elbert L. Watson.

Miscellaneous.—Preliminary work for the control of malaria in the vicinity of Bigelow was begun, March 16, when Dr. Charles W. Garrison, Little Rock, state health officer, and Dr. Homer A. Taylor, went to that place to plan the campaign.—Dr. J. C. Geiger, epidemiologist of the United States Public Health Service, who has been conducting a sanitary campaign in North Little Rock, has transferred his work to Lonoke, where an aviation camp is being built.—A health survey has been completed at Pine Bluff, and committees have been appointed to carry out the recommendations of the report.

CALIFORNIA

Miscellaneous.—From the *Bulletin* of the state board of health it is learned that Dr. Robert A. Peers, Colfax, has been assigned to the American Branch of the Red Cross in France in the interest of the control of tuberculosis in that country.—Venereal diseases are being reported more satisfactorily. In 1917, 2,873 cases of gonococcus infection were reported, as against 1,091 cases in 1916; cases of syphilis were reported to the number of 1,790 in 1917 as against 1,538 in 1916. Forty-five out of the fifty-eight counties in the state reported these diseases, only the mountain counties with low populations failing to report.—Ferndale, in Humboldt County, has established physical examinations in the schools.—The state board of health has condemned the use of sewage for irrigating vegetable gardens and will prohibit the sale of vegetables grown under such conditions, though such fertilizer may be used on grains and grasses, fodder crops, etc., harvested in the dry state.

ILLINOIS

Chicago

Public Health Meetings.—The Chicago Public Health Association, which was organized in July, 1917, and holds meetings in the various school centers throughout the city, was compelled to suspend its activities during the cold weather on account of scarcity of coal. The bulletin of the health department now announces that the meetings will be

resumed, since no heat will be required, and the first spring meeting is announced for April 25 in a number of the school buildings on the same evening. For the first meetings two papers will be read, one on prevention of blindness and the other on the ten commandments of health. Both will be short and general discussions will follow. These meetings have heretofore proved of great interest.

INDIANA

Disloyalty Charged.—Dr. Frederick W. Krueger, Richmond, it is reported, has been dismissed from the Wayne County conscription board for disloyal remarks. Dr. Krueger has issued a statement denying the charges and asserting his loyalty to the United States.

Tuberculous Conscriptionists.—Arrangements are being completed by the Indiana Society for the Prevention of Tuberculosis whereby it is hoped that every registrant under the draft law and every man in the service who is rejected on account of tuberculosis, may have an opportunity to regain his health under the care of tuberculosis experts. Names and addresses of all tuberculous soldiers will be sent to the National Society for the Prevention of Tuberculosis and that society will send each state society its list of names. All the work is to be of a confidential nature, in order that a maximum amount of good may be done with the least annoyance to the afflicted men or to members of their families.

KANSAS

State Board Reappointments.—Dr. Harry L. Aldrich, Caney; Oliver D. Walker, Salina, and Charles H. Lerrigo, Topeka, have been reappointed members of the state board of health for a term of three years. Dr. Albert S. Ross, Sabetha, has been reappointed a member of the state board of medical examination and registration for a term of four years.

Personal.—Dr. Herbert L. Clark has resigned as health officer and city physician of Topeka.—Dr. Elmer E. Morrison and Edwin C. Button, Great Bend, sustained painful injuries in an automobile accident near Chase, March 22.—Dr. Middleton L. Perry, for fifteen years superintendent of the state hospital for epileptics at Parsons, has been appointed superintendent of the Topeka State Hospital to succeed the late Dr. Thomas C. Biddle.—Dr. Thomas B. H. Anderson, assistant surgeon, U. S. P. H. S., formerly stationed at Ellis Island in the immigration service, has arrived in Leavenworth to take charge of sanitary work in the cantonment zone.

LOUISIANA

American Hay-Fever Prevention Association.—At a meeting of the American Hay-Fever Prevention Association in New Orleans, April 14, Dr. William Scheppegegrell made a report showing that with the cooperation of the city board of health and the mayor in cutting weeds, etc., the hay-fever situation had been improved and there had been favorable comment on the general reduction of weeds. Especially important had been the appointment of a weed cutting day by the mayor in August, 1917. The hay-fever clinic at the charity hospital had demonstrated the practicability of immunization against hay-fever. A department for colored patients has been added to the clinic. All state boards of health in the United States except six are now represented in the association.

MAINE

Epidemic at State Girls' School.—On account of an epidemic of measles and mumps at the state school for girls at Hallowell, the trustees of state juvenile institutions issued an embargo on the sending of more children to these institutions until further notice.

MARYLAND

Measles Almost Epidemic.—Measles is almost epidemic in Baltimore, according to the records of the health department. Five hundred and eight cases have been reported since noon last Friday, the highest weekly record in a year. There has, however, been but one death from the disease so far during the week.

Meeting Postponed.—The meeting of the Medical Library Association in Baltimore has been postponed on account of conditions brought about by the war. The executive committee believes that the energy and money usually put into

the meeting could be used to greater advantage in furthering the cause for which the Allies are fighting.

South Baltimore Hospital.—The South Baltimore General Hospital was formally opened to the public during the past week, and a number of patients were admitted. The building will accommodate fifty patients, and there are special medical and surgical wards. Dr. Emil Novak is surgeon-in-chief and Dr. John G. Onnen, his assistant.

Personal.—Dr. Thomas L. Richardson will enter the United States Public Health Service when the government formally takes over Quarantine Station within the next few days. Quarantine is to be taken over by the government under the terms of a lease authorized by the Baltimore city officials, and as soon as a congressional appropriation becomes available, the city will be paid \$76,000 for the buildings, grounds and equipment. City patients suffering from quarantinable diseases are to be treated by the government at \$1 a day per patient.

Conference on Tuberculosis.—Important subjects were under discussion at the State War Time Tuberculosis Conference held at McCoy Hall, Baltimore, April 18. The conference was divided into two sessions. In the afternoon, the annual meeting of the Maryland Association for the Prevention and Relief of Tuberculosis was held and the following officers elected: Dr. Henry Barton Jacobs, Baltimore, president; Dr. C. Hampson Jones, secretary, and Dr. Joseph S. Ames, treasurer. Dr. Martin F. Sloan, Townson, superintendent of the Eudowood Sanatorium, then spoke on the work of the state hospital and the important cooperative work of the tuberculosis nurses, whose educational propaganda and after-care are adjuncts to sanatorium treatment. At the evening session, Major Joseph A. Chatard, medical officer at the U. S. Army General Hospital No. 2, Fort McHenry, made the principal address on the rehabilitation work at the fort, particularly as it relates to the treatment of tuberculosis patients. Dr. John D. Blake, health commissioner of Baltimore city, and Dr. Allen K. Krause, Saranac Lake, director of the Kenneth Dow Foundation for the Study of Tuberculosis at the Johns Hopkins Hospital also spoke on tuberculosis, its prevention and treatment.

MASSACHUSETTS

Commissioner of Health.—The recalling of Dr. Allan J. McLaughlin to the United States Public Health Service to become Assistant Surgeon-General in charge of the Division of Interstate Quarantine, left a vacancy in the health commissionership, filled by Dr. McLaughlin since November, 1914. The vacancy has been filled by the appointment of Dr. Eugene R. Kelley, who went into office April 1. Dr. Kelley was formerly commissioner of health of Washington, and for three years past has been director of the department of communicable diseases in the Massachusetts organization.

MINNESOTA

Personal.—Dr. Arthur F. Kilbourne, superintendent of the Rochester State Hospital, was stricken with cerebral hemorrhage, March 25.—Dr. D. Edmund Smith, Minneapolis, has left for France to do work among the refugees.—Dr. Homer M. McIntire, Eveleth, connected with the More Hospital, has become interested in a hospital at Ely, Nev.

Five-Day Clinic in Minneapolis.—Under the auspices of the clinical section of the Hennepin County Medical Society, clinics were held in Minneapolis, from April 8 to 12. Clinical facilities were afforded by the fourteen hospitals of the city. A banquet was held at the Radisson, April 8, by the society, and on April 10, the Minnesota Academy of Ophthalmology and Oto-Laryngology entertained the visitors at dinner.

MISSOURI

Personal.—Major Louis P. H. Bahrenburg, surgeon of the United States Public Health Service, Marine Hospital, St. Louis, has been elected medical director of the St. Louis Society for the Control and Prevention of Tuberculosis.—Dr. Dora Greene-Wilson of Kansas City was a guest of honor of the medical women of Chicago at the monthly dinner of the Woman's Medical Club of Chicago, March 31.—Dr. Haynie Rowell of Kearney, a member of Clay County Medical Society, who has served as a member of the school board of the county for the past twenty-one years, has announced that he will not be a candidate for reelection.

Bonds Issued for Hospital.—Audrain County has voted authority to issue bonds to the amount of \$75,000 for the

erection of a general hospital to be located in Mexico. This is the first county in the state to take advantage of the law passed at the last session of the legislature authorizing any county to establish and maintain a public hospital by levying a tax and issuing bonds therefor. The members of the Audrain County Medical Society were very active in helping to carry the election. A training school for nurses will be established in connection with the new hospital. Mexico Hospital, which has been operating for the past four years, will turn over its equipment, estimated to be worth about \$6,000, to the county for use in the new hospital. The success of the Mexico Hospital, which was supported by private subscriptions, was so conspicuous that it served as a stimulus for the passage of the law to issue bonds, the vote being about nine to one in favor of the proposition.

NEW YORK

Course in Neurology and Psychiatry at Neurologic Institute.—Under the direction of Dr. Walter Timme, a course in neurology and psychiatry for medical officers of the Army is being conducted at the Neurologic Institute. The instructors include the entire staff of the institute, and in addition, special courses of instruction at the Mount Sinai Hospital, the Montefiore Home, the Psychiatric Institute at Ward's Island and the insanity wards at Blackwell's Island, are to be given.

New York City

Personal.—Dr. S. S. Goldwater, former health commissioner, has resigned as chairman of the mayor's committee on hospital and medical facilities. He still remains a member of the committee and has suggested plans for its reorganization. Commissioner Coler will assume the duties of chairman.

Training for Nurses Aids.—In view of the increased demand for nurses during the war, the mayor's committee on hospital and medical facilities, in their report of 1917, recommended that the plan for the training of volunteer nurses' aids, now followed in base hospitals under the auspices of the Red Cross nursing service, be accepted and extended to such other hospitals as may be approved by the Red Cross, and that the courses of instruction should conform to this plan and be carried on under its auspices. While the enrolment and training of nurses in the hospitals under the regular plan should be promoted to the greatest possible extent, still it will be found that the numbers will be totally inadequate to take care of the possible 150,000 additional patients it will be necessary to provide for on account of the war, and the training of nurses' aids from among women physically and mentally capable who are desirous of doing patriotic service is the solution of the problem. They will serve under the direction of regularly trained nurses. A course of instruction for these nurses' aids has been prepared by the Red Cross, and the following hospitals have so far undertaken the training of such aids: Bellevue, Brooklyn, German, Mount Sinai, Post Graduate, Presbyterian, Roosevelt, St. Luke's and the Staten Island. Already 411 aids have completed their theoretical and practical training.

OHIO

State News.—The *Ohio Public Health Journal*, the organ of the state department of health, for March is devoted almost entirely to child hygiene and is called the child hygiene number. Its purpose is to promote the saving of the quota of babies assigned to Ohio by the federal Children's Bureau in its baby saving campaign for 1918. Among the articles are state and local programs for child welfare and child saving, and news and statistics of what is being done and what has been done along these lines in the state. There is also an editorial plea for efforts to help attain the low infant mortality rate of New Zealand, which was, in 1912, 5.1 per thousand for children under 1 year of age.—In February twenty cases of smallpox were discovered in a Cleveland parochial school. None of the patients had had medical attention. Four hundred of the pupils were then vaccinated. Nearly 50,000 school children in the city have been vaccinated since last fall, and 104,000 are said to be now protected against smallpox.—At Wellston, where an epidemic of smallpox has been in progress, the board of health has instructed the city solicitor to prosecute the first smallpox victim who, by violation of the quarantine regulations, infected numerous other persons, thus starting the epidemic.

OKLAHOMA

State Hospital Burns.—April 13, the state hospital for insane, Norman, was burned, with a loss of many lives. Three buildings, all frame, were destroyed and the fourth suffered severe damage. Twenty-three bodies have been recovered so far, and four patients are missing. The deaths were all in Ward 14, and the victims were negroes. The patients in the other buildings were removed in safety. The property damage is estimated at \$40,000. The legislature of 1916 passed an appropriation of \$85,000 to construct a modern fireproof building, but the fund has only recently become available.

OREGON

Personal.—Dr. Esther C. Pohl Lovejoy of Portland has returned from France, where she has been the last four months as a special representative of the Red Cross in the department of civil affairs, which is entrusted with the work of giving relief to the civilian population of France and Belgium. She will be attached to the civilian relief service of this country.—Dr. J. E. Anderson, Salem, has filed his declaration as a candidate for nomination for governor.—Dr. Henry J. Kavanaugh has been appointed city physician at Pendleton to succeed Dr. Hillis H. Hattery, who has resigned to enter the Medical Service of the Army.

PENNSYLVANIA

Personal.—Dr. Jane R. Baker of West Chester has been appointed by the government as trustee of the Asylum for the Chronic Insane at Wernersville.

Philadelphia

Personal.—Dr. George Woodward, trustee and chairman of the bureau of municipal research since its organization nine years ago, resigned recently.

Health Day.—Health day will be celebrated in the schools and throughout Philadelphia, May 1. A mass meeting will be held at the academy of music when former President William H. Taft will deliver an address on "Health and Its Value in the Present Crisis." Dr. Alice W. Tallant, who has returned after several years service in France, will also be one of the speakers.

Naval Hospital to be Enlarged.—The United States Naval Hospital at Gray's Ferry Road and the hospital at the Navy Yard will both be enlarged. Additional buildings will be erected at the Gray's Ferry institution and two wards will be added to the building at the Navy Yard to accommodate 800 more beds. At present, the capacity at the former institution is 500 but the addition will total a capacity of 1,400, and \$355,000 has been appropriated for the work there, and \$800,000 has been appropriated for the work at the Navy Yard.

VERMONT

School Medical Inspection.—Burlington and Rutland are the only two cities in the state, it is said, who have school medical inspection. The proposition to establish such inspection in the schools in various towns of the state has always been voted down. In Burlington, during 1917, the cost of this inspection in twenty-two schools was \$1,358.26.

Personal.—Dr. David Marvin of Essex Junction has been named as treasurer of the Vermont State Medical Society to fill the vacancy caused by the death of Dr. Edward H. Martin of Middlebury.—Dr. Fred A. Edmunds, Bethel, is convalescent from an operation for chronic appendicitis.—Dr. Henry J. Potter, Bennington, was fined \$150 for violation of the Harrison Narcotic Law, after pleading guilty.

Health Officers' School.—A school of instruction for health officers of the state will be held at Burlington beginning May 21 and continuing through the morning of May 23. Attendance is compulsory unless the officers are excused by the state board of health. Each health officer will be allowed \$4 per day and actual expenses while in attendance. Programs and announcements are to be distributed later.

Analysis of Butter Substitutes.—The increased use of butter substitutes on the request of the federal food administration led the state authorities to examine various products in the laboratory. Olemargarin was selected and twenty-four different brands found in Burlington and three others obtained at St. Albans were examined in December and January. Six of the twenty-seven brands were the so-called nut margarins, made entirely or largely of vegetable fats. One brand tasted old and rancid; the others had the usual tastes of the dif-

ferent oleomargarins. The *Bulletin* of the Vermont State Board of Health, from which the information is obtained, says that there is no standard for oleomargarin, but the requirements for butter are that it contain not less than 82.5 per cent. of butter fat and not more than 16 per cent. of moisture. The average weight of the 27 "pound" samples was 16.1 ounce; the highest weight was 17 and the lowest, 15.5 ounces. The average moisture content was 10.1; the highest was 19.8, the lowest, 5.9. The average fat content was 82.2; the highest was 90.4, the lowest, 77.7. The average cost of the samples was 33 cents; highest, 38; lowest, 25 cents.

GENERAL

Cod Liver Oil.—According to *Commerce Reports*, 58,140 gallons of cod liver oil valued at \$176,022 was invoiced at Bergen, Norway, for the United States during 1917.

Venereal Clinics.—The American Red Cross, according to the *Social Hygiene Bulletin*, has recently made allotments for the establishment of venereal clinics at Newport News, Va.; Charlotte, N. C.; San Antonio and El Paso, Texas; Louisville, Ky., and Chillicothe, Ohio, under the direction of the sanitary officers of the United States Public Health Service. A social worker will be assigned to each from the United States Army.

Site for Leprosarium.—Surgeon-General Rupert Blue of the Public Health Service has appointed a committee to select a site for the proposed leprosarium for which Congress in 1917 appropriated the sum of \$250,000. The committee consists of Surg. George W. McCoy, director of the Hygienic Laboratory, Dr. William C. Woodward, health officer of the District of Columbia, and Dr. Charles V. Chapin, health commissioner of Providence, R. I.

Coal Mine Fatalities in 1917.—In a preliminary statement of coal mine fatalities in the United States in 1917, compiled by Albert H. Fay of the bureau of mines, it is said that the abnormal conditions under which the coal mines were operated in 1917 are reflected in the accident records by an increase of 21 per cent. in fatalities as compared with 1916. There was an unusual demand for coal but the production increase was less than 10 per cent. It is said that it is impossible to give the number of men employed in the industry, but the number was increased in some states while in others there was a decrease. It is believed, however, that the number is practically the same as was employed in 1916, namely, 720,971. The demand for coal increased the number of working days for the men for the year in mines favorably situated and supplied with cars, and this increased the hazard of injury and fatality to the individual miner, as his risk is proportional to the time he is exposed. In other mines not so favored by the car supply, work was interrupted, and this again increased the hazard from certain dangers such as gas, dust, falls of roof, etc., as an active mine will ordinarily be kept in better condition than one operated only part of the time. The fatalities grouped by principal causes show an increase for falls of roof of 185, or 19.23 per cent., and for mine cars and locomotives underground an increase of 23.59 per cent. Haulage on the surface shows an increase of 52 per cent. Fatalities produced by explosives and electricity show a decrease of 24 per cent., there being 111 deaths for 1917 as against 146 for 1916. The record for 1917 shows that any relaxation in inspection, safety measures, and supervision, or any temporary disorganization of the industry, or any increased demand for coal immediately results in higher accident records.

FOREIGN

Thompson Memorial Lecture.—April 9, Sir Ernest Rutherford delivered the first "Silvanus Thompson Memorial Lecture," in memory of the first president of the Roentgen Society, London.

Antwerp Physicians Penalized by the Germans.—The *Presse Médicale* relates that at the recent court martial Dr. Demets was condemned to be shot and Drs. François, Bremken and van den Wildenberg were sentenced to hard labor for life.

Closer Connection Between Universities.—A conference has been called at London, May 9, of representatives of the various universities to discuss the possibility of closer connection between British universities and those of the allied countries.

The Delanglade Souvenir Medal.—A subscription has been opened to erect a bust of Prof. E. Delanglade at the scene of his labors in the city hospital at Marseilles and distribute souvenir medals to the subscribers. His death at the front was recently mentioned.

Spanish Medical Students to Study Emergency Surgery at the Front.—The government of Spain has appropriated 30,000 pesetas to pay the expenses of a party of medical students to visit an advanced hospital of the French army. One student is to be selected among the most advanced of each of the seven medical colleges of the country, and some eminent surgeon will head the party. To study the progress realized in emergency surgery is the main object of the expedition.

Prizes Awarded by the Spanish Academy.—Seven prizes were distributed at the recent annual meeting of the Academia Nacional de Medicina at Madrid, the cash prizes totaling over 41,000 pesetas, about \$8,200. The themes included vaccine therapy, medical geography and epidemics. One prize goes annually to the professor in the university who has contributed most to the progress of science, and one to a city physician, married and with children, who has sent in the best report on some epidemic.

Deaths in the Profession Abroad.—L. Revilliod, professor of clinical medicine at the University of Geneva. In collaboration with Binet, he published tables showing the damage wrought by alcohol in different organs.—B. H. Stephan, director for twenty-five years of the public hospital at Amsterdam and since then medical inspector for the northern provinces of the Netherlands.—R. S. Trevor, lecturer on pathology and dean of St. George's Medical School at London, aged 46.—G. A. Petrone, lecturer in pathology and pediatrics at the University of Naples, aged 44.—C. Sauvage, professor agrégé of obstetrics at the University of Paris, aged 44.

Rehabilitation of the Maimed.—The federation of those specially interested in the training of wounded soldiers is organizing provisions for the purpose in every province in Italy. Where nothing of the kind has yet been organized, committees of seven members are being appointed to consider ways and means. The committee consists of the medical officer of the province, a representative of the provincial government, two soldiers crippled in the war, one factory inspector, one representative of the hospitals in the region, and one lawyer to be appointed by the bar association. This committee is to appoint subcommittees, so that this welfare work for the war cripples will be extended to the remotest towns.

Organization of the Profession in Spain.—The minister of war has asked the members of the medical military department of the Spanish army and navy to cooperate in making a success of the first national medical congress which is to be held at Madrid, from October 13 to 18 of the current year. Leave of absence is to be granted to all to attend the meeting, when it does not conflict with the service. The navy is also empowered to appoint a committee to organize a special navy exhibit as an auxiliary to the congress. This meeting is organized with the distinct purpose of founding the Spanish Medical Association, under official auspices, to form a permanent organization to hold annual meetings thereafter in different medical centers of the country. Already 800 physicians have sent in their names, and an attendance of 2,000 is anticipated. A scientific and welfare work exhibition, to be kept open a month, is to open with the congress.

CENTRAL AND SOUTH AMERICA

Eighth Brazilian Medical Congress.—The Academia Nacional de Medicina has the preparations well under way for the eighth Brazilian medical congress to convene in September of this year at Rio de Janeiro.

The Arteaga Ward.—One of the wards of the new Garcia Hospital at Havana has been named in honor of Dr. Serapio Arteaga, a leading obstetrician of Havana in his day and professor of gynecology and obstetrics in the university. His portrait was installed with much ceremony in the new ward recently. His son is editor of the *Revista de Medicina y Cirugia*.

CORRECTION

Health Officer of Aberdeen, S. Dak.—In the issue of THE JOURNAL for April 13, under the heading of South Dakota, appeared the following personal item: "Dr. Thomas B. Christian, South Bend, Ind., bacteriologist and pathologist, has been appointed city health officer of Aberdeen." We have since been informed that it was Dr. Louis Holtz, bacteriologist and pathologist of the city hospital of Springfield, Ohio, who was appointed health officer of Aberdeen.

ARGENTINE LETTER

BUENOS AIRES, March 14, 1918.

Mortality from Tuberculosis

The mortality from tuberculosis in the last four decades has dropped from twenty-seven per ten thousand inhabitants to 17.4. The lowest point was reached in 1913, when it was only 16.4, but it has progressively risen since. This increase in the mortality coincides with conditions created by the war.

Official Organ of the State Bacteriologic Institute

This institution, an important department of the national public health service, located at Buenos Aires, has recently started the publication of a quarterly review. The first issue was indexed and reviewed in the foreign literature department of THE JOURNAL, March 16, 1918, p. 819.

Impressions of a Trip to the United States

Dr. R. Finochietto of Buenos Aires has returned from a visit to the principal surgical clinics of the United States, and is publishing in the *Semana Medica* the impressions received. North American surgery has acquired prestige in Argentina, especially among the younger set of surgeons.

Cancer Mortality

According to data published recently, the mortality from cancer during the last thirty years at Buenos Aires has been eighty per hundred thousand inhabitants. The annual number of cases has declined since 1887.

Reduction of Mortality from Infectious Diseases

The statistics in regard to infectious diseases at Buenos Aires, published by Dr. E. R. Coni in the *Semana Medica* for Dec. 13, 1917, show a considerable reduction in recent years. In the decade from 1877 to 1886 the mortality per ten thousand inhabitants was 332; in 1887-1896, it was 354. Then it dropped to 111 in 1897-1906, and finally to 66, in 1907-1916. As already mentioned in THE JOURNAL, page 1045, the mortality from smallpox has reached the vanishing point, the proportional mortality in the decades cited being respectively, 140, 100, 42, 8 and, during 1916, 0, since no deaths from smallpox were reported during that year. This result is due to intensive compulsory vaccination.

Vaccination Against Rabies

The report of the Antirabies Institute at Buenos Aires, embracing the last thirty years, was published recently in the *Semana Medica*, Feb. 14, 1918. Of the total 19,609 persons given treatment, ninety-eight died, that is, 0.049 per cent. Of this number, only sixty-two died later than fifteen days after completing treatment, that is, 0.031 per cent. The injections of medulla tissue are given twice a day, the scale being: 10/9, 8/7, 6/5, 5/4, 4/3, 3/2, 1; 4/3, 2/1; 4/3, 2/1; 3/2, 1; 3/2, 1.

CUBA LETTER

HAVANA, April 10, 1918.

The Cure of Leprosy

A little over a year ago a farm laborer, a native of the Canary Islands and for many years a resident of Cuba, claimed that he had discovered a wonderful cure for leprosy; he said that he himself, who had been a leper, was cured. His method was at first kept a secret, and he began to advertise, saying that he wanted only glory and no money. The newspapers sent their reporters to interview this magician of medical science, and they for some reason or other praised the man and his wonderful discovery. In fact, his medicine is chaulmoogra oil given by mouth suspended in a decoction of some herbs, and he claims that he can administer a thousand drops of the oil without the untoward results noted when the drug is given alone.

The Academy of Sciences, the Society of Clinical Studies, and the Board of Health of Cuba appointed a joint commission to study the procedure for the cure of leprosy discovered by this man, Mr. A. Garcia, who said that he could restore any patient to complete health in three months. He was given eight months to prove his assertion, and several patients from the National Leper Hospital were placed under his treatment; when the eight months had elapsed the commission reported that Hansen bacilli were still present in all cases, that there was very little if any improvement in all the patients, and that Mr. Garcia's treatment, therefore, was not at all curative. Mr. Garcia's friends raised a storm against the commission, saying that the patients were greatly

improved and that the presence of Hansen bacilli in all the cases was of minor importance.

We think that we are facing a case of plain quackery, for we positively know that this man is making money on his supposed discovery for the cure of leprosy, and even more, we know of several cases of lupus vulgaris, syphilis, psoriasis, etc., treated by this man under the diagnosis of leprosy.

New Clinics

Drs. E. Fortun and B. Souza have established a new surgical clinic in Havana.

Dr. L. Huguet has recently opened an obstetric clinic in Vedado, Havana.

The School of Preventive Medicine

At the fourth National Medical Congress, held at Havana, last December, Dr. J. F. Pazos read a paper suggesting the founding of a school of preventive medicine and hygiene, a proposition that has since been seriously considered. The Society of Clinical Studies and the Academy of Sciences support Dr. Pazos' idea. We consider the creation of a school where Cuban physicians may be especially instructed in hygiene and sanitation almost a necessity. Here in the tropics we are forced to fight incessantly many diseases, such as malaria and typhoid fever, and it would be very convenient to have a corps of scientifically trained men for this purpose. At present, those engaged in this work are self-trained men or those who have gone abroad for their studies.

Malaria Appears in Camagüey Province

Dr. F. Villuendas has been commissioned by the Central Board of Health of Cuba to eradicate malaria from Ciego de Avila and suburbs (Camagüey), where many cases of malaria have been reported. Dr. Villuendas is already working with a brigade of sanitarians and several ambulances, and his reports are very satisfactory.

New Hospital for Children

The corner stone of the first hospital for children was recently laid in Pinar del Rio City. This is the first of the six hospitals to be constructed, one in each of the six provinces of Cuba. At present the children of this country have a seaside sanatorium at Cogimar (Havana Province) besides the regular wards in the hospitals.

LONDON LETTER

LONDON, March 26, 1918.

Opening of a New American Hospital in London

In the presence of a distinguished company, which included Admiral Sims of the U. S. Navy, Sir William and Lady Osler, Surg.-Gen. Sir Alfred Keogh and Sir Robert Jones, the American ambassador opened the American Red Cross Hospital No. 24 (the fifth to be opened in this country) at Kensington Palace Gardens. It has been presented and equipped and will be maintained by Mr. and Mrs. A. Chester Beatty of New York. The hospital is auxiliary to the British military orthopedic hospital at Shepherd's Bush. The medical and nursing staffs are entirely American. There are eight wards, and accommodation for thirty-six orthopedic patients. The color scheme of cedar downs and screens is pale blue in some wards, golden brown in others and rose in the remainder, and the walls are oyster white. The wards bear the names of famous Americans—George Washington, Stonewall Jackson, Robert E. Lee, U. S. Grant, Abraham Lincoln, Alexander Hamilton, Thomas Jefferson and Benjamin Franklin. Ambassador Page said that it was a great honor, not only for himself but for his government, to thank Mr. and Mrs. Chester Beatty for the generous service they had done in giving this house for use as a hospital, and in themselves paying the expenses. Until needed for American wounded it would be filled with British and colonial patients, and the donors, like all true Americans, would be as pleased that this use should be made of it as if it were to be used for the healing of their own soldiers. It brought home to them what this terrible conflict meant. "Let us," he continued, "fortify our courage and strengthen our resolve under God not to waver until this grim and righteous business be done with, and let us dedicate ourselves to the noble ideals our armies fight for, and do all we can to further the cause that is at stake in this critical time."

Tetanus in Home Military Hospitals

In a previous letter (THE JOURNAL, Jan. 5, 1918, p. 45) was given an analysis by Sir David Bruce, on behalf of the

Tetanus Committee of the War Office, of the cases of tetanus treated in the home military hospitals and the conclusions to be drawn from them. He has now published an analysis of 100 further cases. The death rate was 29 per cent. as against 19 in the previous analysis, which was by far the lowest of the series. Sir David Bruce thinks that the present mortality is little more than can be expected from the prophylactic and therapeutic use of antitetanic serum, and that it now remains with the surgeons to do the rest. It should not be "beyond the ingenuity of man to devise some form of surgical treatment which will prevent the development of gas gangrene or tetanus in wounds." Eighty of the cases belonged to the generalized type of tetanus; of these, twenty-nine were fatal, while in the twenty localized cases, all the patients recovered. Thirteen cases of tetanus occurred after operative interference with the wound, and nine of them were fatal, a death rate of 72.7. In none of these was a prophylactic inoculation of antitetanic serum given before the operation, although the Tetanus Committee has advised that when operations are performed at the site of wounds, even if they are healed, a prophylactic injection of serum should invariably be given. With our present knowledge, Sir David thinks, it is a question as to whether a surgeon who neglected this prophylactic injection would not render himself liable to an action for malpractice. Notwithstanding the Tetanus Committee's advice in favor of the intrathecal route and of the evidence from animal experiment, the intramuscular route is steadily becoming more popular. This, he thinks, is scarcely to be wondered at, since in the latest edition of a well known textbook on medicine the intramuscular route is strongly recommended; its ease and freedom from danger are doubtless in its favor.

Transmission of Trench Fever by the Louse

In a recent letter (*THE JOURNAL*, Feb. 23, 1918, p. 553) the results of a committee appointed by the War Office to inquire into the nature of trench fever were given. This investigation was made in France and was altogether clinical. Another committee working at home, under the chairmanship of Sir David Bruce, has made a remarkable discovery as to the etiology. In view of the widespread belief that the body louse conveys the disease, experiments were made. Lice bred from "clean stock" were fed on trench fever patients. Two volunteers, men well over the military age, and therefore unable to serve their country in more strenuous ways, came forward from patriotic motives. The lice were fed on them, the shortest interval between this and feeding on the trench fever patient being six hours. This experiment was continued daily for a month at least 500 lice being used every day, but no positive results were obtained. At a meeting of the committee the question was asked, Did these men scratch themselves? It was found that they did not, and, indeed, purposely refrained from doing so. This excluded to a large extent infection by means of excreta or crushed bodies of the lice. Two more volunteers were therefore found. In the case of one an area of skin 1 inch square was scarified, and a small quantity of the dried excreta taken from the boxes of lice that had fed on trench fever patients was dusted on this area and rubbed in. Nine days later the man was suddenly attacked with typical trench fever. On a scarified area of the other man's arm, eleven lice taken from a trench fever patient were crushed. Eleven days later he was attacked with trench fever. The fever which these men developed was indistinguishable from that produced in other volunteers by injection of whole blood from trench fever patients. In view of the importance of this discovery, the experiment was repeated on three other men with positive results. The chain of evidence was completed by the fact that a small quantity of blood taken from one of these and inoculated into another volunteer produced trench fever. In every case the fever, though mild, was yet typical of trench fever—sudden onset, temperature of 103 F., pain in the head and limbs, and over the spleen, the initial attack of fever lasting two or three days, and followed in practically every case by a relapse or relapses at an interval of usually seven days; the fever in the relapse being lower and more transient, with a recurrence of the symptoms associated with the initial attack. This observation is of great importance in view of the prevention of the disease, and would explain cases of trench fever arising in wounded men who may have had no lice on them for some weeks, as the dried excreta, if blown on a raw surface, would readily give rise to the disease. Some further experiments on the migration of lice are also of great interest. It has been shown that if two men are available, one with a normal temperature and the other with fever, the lice will leave the fever patient and pass quickly to the man with

the normal temperature. Experiments are now in progress with the excreta of normal lice, as it is possible that the disease is not necessarily carried from man to man by lice but simply from louse to man.

The Smallpox Outbreak in London

The number of cases of the smallpox outbreak in the East-End of London now amounts to twenty-seven. The greatest care has been taken in tracing "contacts." It was thought until a few days ago that they were all under observation and that therefore no further serious spread would occur. It was then ascertained that a person suffering from smallpox in its earliest stages spent several hours in an air-raided shelter. As not all the contacts with this person can be found, further extension of smallpox is not unlikely. Every person living in or near localities in which cases of smallpox have occurred, who has not been successfully vaccinated since childhood, is enjoined to secure this protection.

PARIS LETTER

PARIS, March 21, 1918.

Operative Treatment of War Fractures

Dr. Dupuy de Frenelle, surgeon at the hospital Péan, recently discussed the operative treatment of war fractures before the Society of Surgeons of Paris, and dwelt particularly on the coaptation of the fragments. From the very first, the surgeon should aim to bring the bone ends together with the largest contact surface possible in order to maintain the permanence of their contact. The degree of perfection of the coaptation will be proportional to the degree of operative disinfection of the coaptated surfaces. Nothing is so dangerous as to join hermetically surfaces which are still infected. For the coaptation, cut the ends of the fragments on a long and broad bevel; a notch may render the coaptation more solid. Coaptation with a transverse section is more difficult to maintain. Frenelle avoids sawing off the jagged edges, preferring to employ the rongeur or gouge. The employment of the plaque is equally indicated. Coaptation by reciprocal impaction is excellent, but the disinfection must be complete. Coaptation by the implantation of a beveled stump in the medullary canal of the stump by a transverse section will be the more solid the longer the pointed fragment. It must be certain before having recourse to this procedure that the disinfection of the implanted fragments is perfect. If there is any doubt, open widely the marrow canal over the inserted fragment. A V-shaped suture, or, in certain cases, tying a wire around, will render the implantation more solid. In the coaptation of fractures in three fragments, the chief object of the surgeon must be to preserve an intermediate fragment; but Frenelle said that frequently in war surgery the surgeon must do the best he can. He is often obliged in the course of his intervention to modify the plane of the freshening of the bone ends, and the direction of the cut that he had proposed to make, basing his action on a careful study of the stereo-roentgenogram and a thorough clinical examination.

The Oil Boils of Shell Turners

At the last meeting of the Academy of Medicine, Dr. George Thibierge called attention to a lesion now frequently seen and known by the name of "oil button" (*bouton d'huile*), an affection characterized in its more advanced stages by rounded pustules from 2 to 8 mm. in diameter, slightly raised, with resistant walls and containing a thick pus. The pustules after being opened leave for a week or two a gaping opening surrounded by a light inflammatory areola which disappears slowly. These lesions are found on the hands, the forearms, the face and places directly exposed to contact with lubricants, and also on parts of the body in contact with oil soaked clothing, especially the anterior surfaces of the thighs. The present necessity in industry of using as lubricants various oils of inferior quality having irritant properties, and which because of their scarcity must be reused without proper purification, favors the production of the "oil button." This lesion has a slow development, and is preceded by the progressive obliteration of the gland mouth, and must be considered, according to Thibierge, as an occupational malady and not as an industrial accident.

Air Raids and the American Red Cross

During the last air raids on Paris, the different services of the American Red Cross particularly distinguished themselves. In these instances their ambulances arrived first at the points of fall of the bombs. In addition, the managers

have informed the chief of police that they are prepared to care for victims, who, without being wounded, find themselves without shelter and in need. Furthermore, an emergency station for victims of bombs containing *gas asphyxiants* has been organized by the American Red Cross on the Place de la Concorde in Paris.

Medical Aid in Case of Air Raids

M. Mourier, under secretary of state for the army medical department, in conjunction with the director of the Service de Santé of the military government of Paris, has taken the following measures to secure medical aid to the population of Paris in case of bombardment: A permanent military medical day and night service in the twenty-four barracks and central stations of the fire department, having for its object the rapid transport of the wounded to a first-aid post or to a surgical center. All sanitary formations of the military government of Paris will constitute first aid stations. Surgical service will be provided, besides, in the public hospitals. All the wounded whose condition shall necessitate surgical intervention will be transported by ambulance to a surgical center. The Service de Santé of the military government of Paris will have in reserve supplementary surgical teams of nurses to be sent by automobiles to the point where their services are required.

Franco-Anglo-American League Against Cancer

There has been formed under the presidency of Justin Godart, formerly undersecretary of state for the military Service de Santé, a Franco-Anglo-American league against cancer, having for its object the establishment of centers for the treatment of cancer patients and to pursue scientific researches in cancer, to propagate among the public elementary knowledge concerning this malady, and to create centers of teaching. Three centers are being now organized: at Montpellier, under the direction of Professor Forgues; at Lyon, under the direction of Professor Bérard and of Auguste Lumière; at Bordeaux under the direction of Professor Chavannaz.

The "House of the Little Ones"

There has been inaugurated at Paris a hospital for infants of early age called the "Maison des Petits." This new hospital of twenty-five beds has been founded by two Americans, Mrs. W. B. Elkins and Mrs. Laws, under the auspices of the New York Committee of the French Heroes' Fund. It is intended for infants suffering from maladies of nutrition. The infants will be cared for by American nurses under the direction of Miss Neilsen, of Bellevue Hospital, New York, with whom French nurses have promised to join. It is also proposed to care for infants at their homes when conditions are sufficiently favorable to assure their recovery at home.

Suppression of Alcoholism

The commission of propaganda through the press of the National League Against Alcoholism came together recently under the presidency of M. Chailley, formerly deputy. Frédéric Riémann, secretary general of the league, has solicited the aid of the press for the campaign of prohibition. After an exchange of observations, the commission decided, in case the prohibition of alcohol is not voted by the governments, to support all amendments having for their object the effecting of a diminution in the consumption of alcohol.

Personal

At the last session of the Academy of Medicine, an election was held to fill the places of Dr. Duguet and Professor Reclus in the section of internal pathology and external pathology, respectively. To the former Dr. Pierre Teissier was elected by 55 out of 62 votes, and to the latter, Dr. Felix de Lapersonne was elected by 49 out of 61 votes.

Unilateral Arthrotomy with Primary Total Suture of Wounds of the Knee Joint

At a recent meeting of the Paris Société de chirurgie, Dr. H. Barnsby reported twenty cases of unilateral arthrotomy along a lateral margin of the patella with primary suture, including seven cases with included fragments and gross lesions of the femoral epiphysis (unicondylar), and two cases of comminuted fracture of one lateral half of the patella.

After having been long an ardent partisan of extensive arthrotomy with a U-shaped incision, Barnsby now reserves that incision (horseshoe shaped) for the following cases: (1) severe lesions of the upper articular surface of the tibia; (2) lesions of both condyles; (3) complete comminuted fracture of the patella, and (4) embedded projectiles, difficult or

impossible of removal through a lateral opening. In all other cases, especially severe fractures of one condyle or of a lateral half of the patella, one can and should be content to make the single incision along one of the lateral borders of the patella. This procedure causes less trauma of the architecture of the joint, and a return of normal function is obtained more rapidly. The lateral incision is made at least 1 cm. behind the border of the patella, and should be short, if it is a question of removing a free foreign body or one driven into the synovia or the cartilage, and large if it is a question of an osseous lesion.

If it is a patellar lesion, the leg should be placed in extension; if it is a condylar lesion, the leg should be placed in a flexed position during the operative intervention. The loss of bone tissue may or may not be supplied by fragments of cartilage; the functional result is equally good. The ether bath should be applied in both instances. The primary suture should be complete without drainage.

EXERCISING THE KNEE.

Barnsby immobilizes the knee for nine days in a simple splint. The day following the removal of the sutures, active mobilization or motion is begun, the patient being recumbent. With the assistance of a simple stirrup of adhesive plaster and a cord passing through a pulley and supporting a weight of from 2 to 6 kg., the patient commences to flex the knee joint as far as possible. This exercise is done twice daily, morning and evening, for ten minutes each time. If properly instructed, the patient soon will be able to do this for one hour, morning and evening, and even three times daily. When the extreme limit of flexion is attained, a specially made cushion maintains this position for fifteen or twenty minutes. Right angle flexion was obtained, without any complications, within twenty days in nine of the ten cases. He has never seen any case of effusion requiring many punctures. This active mobilization, which makes the patient "walk in his bed," is the method of choice in the advanced centers where operations are done on joints only when there are several wounds, such patients being often in shock, and bed rest being compulsory.

Association News

THE CHICAGO SESSION

Clinics for Visiting Physicians

The chairman of the subcommittee on clinics, Dr. Charles E. Humiston, reports that satisfactory progress is being made in the work of arranging for the clinics for the Fellows of the Association on June 6 to 11. Forty of the hospitals of Chicago are cooperating with the committee. In addition to the usual clinical demonstration of diseases and surgical procedure at the hospitals, there will be demonstrations and exhibits of laboratory and other diagnostic measures at the medical schools as well. The committee is also perfecting arrangements which will permit visitors to attend the autopsies held daily at the Cook County Hospital. A detailed schedule of these clinics is being arranged which the committee expect to make available to interested Fellows in a short time.

Marriages

LIEUT. FRANK GARM NORBURY, M. R. C., U. S. Army, Boston, on duty at Camp Devens, Mass., to Miss Mary Elson Barnes of Jacksonville, Ill., at Jacksonville, April 11.

LIEUT. HERBERT SETH ANDERSON, M. R. C., U. S. Army, Burlingame, Calif., on duty at Camp Kearny, Linda Vista, Calif., to Miss Linda Jessop of San Diego, April 6.

LIEUT. ROBERT DU RANT HARDEN, M. R. C., U. S. Army, San Francisco, to Miss Hermina Gardner Lathrop of Palo Alto, Calif., at Alta Vista, Calif., April 4.

HUNTER S. WOODBERRY, University, Va., to Miss Ruby Fontaine Davis of Enon, Va., at University, Va., April 7.

LEWIS STOCKTON WALTON, Altoona, Pa., to Miss Edith Christie Baldrige of Hollidaysburg, Pa., April 6.

LIEUT. HOWARD HOGE WARNER, M. R. C., U. S. Army, to Miss Ruth Stone, both of Baltimore, April 10.

Deaths

Erving Allison Watson, Concord, N. H.; University of Vermont, College of Medicine, Burlington, 1871; aged 66; a Fellow of the American Medical Association; president of the New Hampshire Medical Society in 1903; secretary and executive officer of the state board of health since its organization in 1881; formerly secretary of the American Public Health Association; president of the International Conference of State and Providential Boards of Health, in 1903; assistant secretary general of the first Pan-American Medical Congress, and an honorary member of many American and foreign scientific bodies; author of many papers on medical and sanitary subjects; died at his home, April 4.

Pyrrus B. King, Pittsburgh, Pa.; Jefferson Medical College, Philadelphia, 1862; aged 78; a member of the Medical Society of the State of Pennsylvania; formerly emeritus professor of principles of surgery and clinical surgery in the University of Pittsburgh; formerly superintendent of the West Pennsylvania Hospital, and the Pittsburgh Soldiers



Died in the Service

IN FRANCE

LIEUT. PERRY S. GASTON, M. R. C.,
U. S. ARMY, 1889-1918

for many years a member of the staff of the Allegheny Hospital, and the Children's Memorial Hospital; formerly consulting surgeon at the McKeesport Hospital; died at his home, April 9, from paralysis.

Bennett Graves Henning, Memphis, Tenn.; Bellevue Hospital Medical College, New York City, 1870; aged 68; former Fellow of the American Medical Association; formerly professor of principles and practice of medicine, and clinical professor of diseases of the rectum at the Memphis Hospital, and a member of the board of directors of the Metropolitan Home Hospital, Memphis; died at Florence, Ala., March 30.

Frederick Neel Henderson, M. R. C., U. S. Army, Baltimore, Md.; University of Pennsylvania, School of Medicine, Philadelphia, 1903; aged 37; a Fellow of the American Medical Association; formerly president, and up to the time of his death, secretary and treasurer of the Montgomery Medical Society; on duty at Fort Oglethorpe, Ga.; died in a base hospital, April 8, from cerebrospinal meningitis.

Lieut. Perry S. Gaston, M. R. C., U. S. Army, Newcastle, Pa.; Jefferson Medical College, 1912; aged 28; a Fellow of the American Medical Association. Dr. Gaston was killed in action, April 7. He enlisted in June, and was called to duty in August, being sent immediately to England and attached to the British Medical Service. It is reported that he was with the British forces about Amiens when he was killed.

Martin Krotoszyner, San Francisco; University of Leipzig, Germany, 1887; aged 56; a Fellow of the American Medical Association; vice president of the Section on Genito-Urinary Diseases of the American Medical Association; a member of the American Urological Association; formerly urologist to the German Hospital, San Francisco; was shot and killed in his office, April 20, by one of his patients.



Lieut. Julian Neal Dow, M. R. C., U. S. Army, Arcola, Ill.; Bennett Medical College, Chicago, 1915; aged 24; on duty with the British Field Hospital Service; was killed while on duty in France, March 27.

Andrew J. Rodman, Delavan, Wis.; Rush Medical College, Chicago, 1865; aged 87; formerly a member of the State Medical Society of Wisconsin; died suddenly at the home of his daughter, about April 1, from diabetes.

Died in the Service
AT CAMP UPTON, N. Y.
LIEUT. GUSTAF LEWIS NOR-
STEDT, M. R. C., U. S.
ARMY, 1892-1918

(See The Journal, April 6, p. 1023)



Died in the Service
AT FORT OGLETHORPE, GA.

LIEUT. FREDERICK NEEL HENDERSON, M. R. C.,
U. S. ARMY, 1881-1918

William B. Scott, Cumberland City, Tenn. (license, Tennessee, 1889); aged 70; president of the Cumberland City Bank; died at his home, about March 28, from heart disease.

Thomas B. Fernald, Norwich, N. Y.; University of Buffalo, 1889; aged 54; a member of the Medical Society of the State of New York; formerly a coroner and village health officer for several years; died at his home, March 26, from cancer.

Thomas Smith Shouse, Mount Eden, Ky.; Hospital College of Medicine, Central University, Louisville, 1892; aged 50;



Died in the Service
IN FRANCE

LIEUT. EDWARD LELAND MOONEY, JR., M. R. C.,
U. S. ARMY, 1892-1918

(See *The Journal*, April 20, p. 1182.)

formerly a Fellow of the American Medical Association; died at his home, about March 31, from diabetes.

James Edward Buckley, Chicago; College of Physicians and Surgeons, University of Illinois, 1905; formerly a Fellow of the American Medical Association; died in Washington, D. C., April 2, from wounds, self-inflicted.



Died in the Service
AT CAMP LEWIS, WASH.

CAPT. MALCOLM J. DENNEY, M. R. C.,
U. S. ARMY, 1872-1918

S. Army, Portland, Ore.; University of Oregon School of Medicine, Portland, 1897; aged 46; died, March 27, at Camp Lewis, American Lake, Wash., from pneumonia.

Marius Emmet Robinson, Goldsboro, N. C.; Washington University School of Medicine, Baltimore, 1870; aged 70; a member of the Medical Society of the State of North Carolina; died at his home, March 24.

Frederick Perley Jones, Mill Village, N. H.; New York University Medical College, 1878; aged 64; a member of the New Hampshire Medical Society; died at his home, January 18, from cerebral hemorrhage.

Capt. Malcolm J. Denney, M. R. C., U.

R. H. Payne, Richland, Iowa; College of Physicians and Surgeons, Keokuk, 1863; aged 81; formerly a member of Iowa State Medical Society; died at his home, February from arteriosclerosis.

Valter P. Stevens, Poulan, Ga.; University of Louisville Medical Department, 1891; aged 46; formerly a member of the Medical Association of Georgia; died at his home, April 2, from pneumonia.

Alfred Herbert Tanner, Brooklyn, Conn.; Bellevue Hospital Medical College, New York City, 1874; aged 65; member of the Connecticut State Medical Society; died suddenly, March 29.

Joseph Dodson Lomax, Troy, N. Y.; College of Physicians and Surgeons, New York City, 1862; for many years superintendent of the Marshall Infirmary of Troy; died about March 23.

Sutherland Douglas Twining, Springfield, Mass.; Yale University Medical Department, New Haven, Conn.; 1880; died in the Buffalo State Hospital, February 8, following fracture.

James Thurston Martin, Sacramento, Calif.; University of Michigan, Homeopathic School, Ann Arbor, 1883; aged 60; died at his home, March 29, from heart disease.



Died in the Service
IN FRANCE

LIEUT. JULIAN NEAL DOW, M. R. C.,
U. S. ARMY, 1894-1918

James H. Noyes, Ogden, Iowa; Columbia University, College of Physicians and Surgeons, 1861; aged 81; died at home, January 31, from senile debility.

Frank Mortimer Gier, Hillsdale, Mich.; University of Michigan Medical School, Ann Arbor, 1884; aged 59; died at home, March 28, from uremia.

Asa F. Goodrich, St. Paul; Hahnemann Medical College and Hospital, Philadelphia, 1889; aged 52; died at his home, March 29, from pneumonia.

John E. Meadors, Mahon, La.; Medical College of Georgia, Augusta, 1857; aged 82; died at the home of his daughter in Homer, La., March 25.

Thomas S. Parker, Cohoes, N. Y. (license, New York, years of practice); aged 80; died at Cohoes (N. Y.) Hospital, March 19.

William Henry Hills, Chelmsford, Mass.; Harvard University Medical School, Boston, 1869; aged 77; died in Florida, March 30.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticized

[FOREWORD.—The article that follows is the ninth¹ of a series written for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures advertised to physicians. Although the preparations taken up in this series have been dealt with in previous reports, the fact that they are still widely advertised and prescribed indicates the need of further publicity. The writer of the series is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[ARTICLE IX]

NEUROSINE AND THE ORIGINAL PACKAGE EVIL

By S. Q. Lapius, M.D.

We called attention recently to the skill which the nostrum vender displays in avoiding the particular thorn that pricks him, and his development of the art of impressively saying "Nothing in General," as exemplified in the advertisements of "Fellows' Syrup." Nostrum sellers are more canny than original and when once an idea finds lodgment with one of them, it is made to serve many masters. Formerly exploiters of either vicious or worthless nostrums were wont to boast that their preparations were exploited in a "strictly ethical manner." Recent perusal of as choice a lot of advertisements as can be found in the most degraded of medical journals failed to disclose this claim in a single instance, although the claim that a preparation is "advertised only to physicians" is still common.

The advertisement of "Neurosine," which we reproduce, is the first one which came to our attention when we searched through some medical journals for one that would illustrate a discussion of the "original package" evil. This is the only reason for selecting Neurosine rather than another. Each half-page advertisement and others of similar size in various medical journals cost a good deal of money and they presuppose that the Dios Chemical Company is interested in saving original bottles of Neurosine dispensed every time that a nostrum is prescribed.

Why should the firm have any such deep interest in seeing that an original bottle gets to the patient? Why should it be necessary to do anything more than see that the genuine mixture reaches the patient? Does it seem within the bounds of reason that substitution is so commonly practiced by pharmacists that this firm must go to large expense to prevent the substitution of spurious mixtures for its product? Is dishonesty the rule among pharmacists? Common sense rejects the plea as placing too great a strain on one's credulity.

Obviously, then, the advertisement does not tell the whole truth, though it does indeed tell exactly what the nostrum maker wishes to have done, that is, to have only original bottles dispensed when physicians prescribe that nostrum. The fact we have; the reason is not far to seek.

When the pharmacist puts up an ordinary, nonproprietary prescription, the patient gets no clue from the package as to

the nature of the prescription employed. But when an original bottle of Neurosine is dispensed, even though the pharmacist puts his own prescription label on it, the patient sees the difference at once and knows just why the usual prescription bottle was not employed. He also knows that he can get the medicine with its original wrapper or label by merely showing the bottle to the druggist, for the words "Neurosine" and "Dios Chemical Co.," are blown in the glass. Here, then, may be a plausible reason for desiring that only original bottles be dispensed.

You may ask: "What difference does it make if the patient does learn the name of the nostrum, he must go to his physician for advice concerning its use?" Having learned the name of the remedy that has been prescribed for sleeplessness, let us say, he proceeds to use it whenever he imagines that he needs it, and that need, real or imaginary, has a way of increasing in frequency. As a result, the patient takes far more Neurosine than the physician would think of permitting if the matter had not passed entirely beyond his control.

Not only has the patient acquired a dangerous habit of self-prescribing, but he takes especial delight in recommending his favorite remedy to friends whose symptoms, real and imaginary, seem to resemble his own. This offers him an opportunity to prescribe with an air of authority. It was prescribed for him by Dr. Blank, and it gave relief, *ergo* it may be depended on to give relief to others! Thus is the basis laid for its general use by the laity, when this process

WESTERN MEDICAL TIMES

SUBSTITUTION

The evils which may and do arise from the practice of substitution warrant physicians in adopting every precautionary measure. Your patients are entitled to receive exactly what your prescriptions specify. They represent your best judgment as to the medication indicated and no one has the right or the ability to substitute something just as good. As an aid in preventing substitution

NEUROSINE

The Safe Soporific

is marketed in three sizes—2 oz., 4 oz., and 8 oz., which retail for 25c, 50c and \$1.00 respectively. Physicians using Neurosine should bear these sizes in mind and prescribe in 2 oz., 4 oz., and 8 oz. quantities, specifying the original package. It is the one sure way to avoid substitution.

Dios Chemical Co. St. Louis, Mo.

is multiplied sufficiently. The statement is susceptible of easy proof by any one who cares to investigate the matter for himself. There is probably no physician worthy of the name who will attempt to deny that the promiscuous use of hypnotics and narcotics is dangerous, and certainly no careful physician will deliberately place a narcotic in the hands of patients to be used freely and without control.

Since we have selected Neurosine at random, so far as this particular discussion is concerned, it is worth while to inquire into its composition, the claims that have been made for it and the evidence, if any exists, for or against its therapeutic value. Even the most active of hypnotics are worse than useless if they are inferior to other readily available hypnotics, or if they have undesired side-actions that outweigh any advantages that they might otherwise have.

The Council on Pharmacy and Chemistry investigated the literature relating to Neurosine and published its report in THE JOURNAL, Jan. 9, 1915, p. 165. According to this report the manufacturers of Neurosine claimed that each fluidounce contained:

Bromid of potassium, C. P.	40	grains
Bromid of sodium, C. P.	40	grains
Bromid of ammonium, C. P.	40	grains
Bromid of zinc	1	grain
Extract lupulin	32	grains
Cascara sagrada, fl. ex.	40	minims
Extract henbane	0.075	grain
Extract belladonna	0.075	grain
Extract cannabis indica	0.60	grain
Oil bitter almonds	0.60	grain
Aromatic elixir		

¹ The previous articles of the series are "Bell-ans," THE JOURNAL, Dec. 24, 1917; "Anasarcin and Anedemin," Dec. 8, 1917; "Peptogagan," Dec. 29, 1917; "Cactina Pillets," Jan. 19, 1918; "Ammonol Phenalgin," Feb. 2, 1918; "Fellows' Syrup and Other Preparations of the Hypophosphites," Feb. 16, 1918; "Shotgun Nostrums," March 9, 1918; "Tyree's Antiseptic and Aseptinol," March 30, 1918.

This chemical blunderbuss was recommended for use in insomnia, hysteria, neurasthenia, migraine, neuralgia, delirium tremens, epilepsy and many other conditions. Also it was called an ideal calmative for children suffering from chorea, the exploiters claiming that "All authorities recommend the bromids, hyoscyamus and cannabis indica in this disease." Oliver T. Osborne, Professor of Therapeutics in Yale Medical School, does not mention one of these three drugs in his discussion of the Medicinal Treatment of Chorea, in the "Handbook of Therapy," though he quotes several authorities in this article. Indeed he does not mention one of the ten drugs included in the above formula of Neurosine in connection with the treatment of this disease. It is a curious fact that Osborne gives the greatest prominence to the use of that drug which is claimed to be wanting in the formula of Neurosine, viz., hydrated chloral.

Perhaps you may have seen temporary relief follow the administration of Neurosine in chorea, and may argue that theorizing is of little value in the face of personal experience. We shall not deny that some may have had that experience, for Osborne calls attention to the fact that the success of any medicinal treatment must be judged in the light of the fact that chorea is self-limited, and the intensity of the symptoms will abate in from two to four weeks. In view of this we would hardly dispute the claim that one may administer narcotics, such as those contained in Neurosine, and the symptoms of chorea may abate in spite of such mistreatment. In all the years that Neurosine has been exploited to physicians with such remarkable claims, we have never seen a report of a careful clinical study in which the product has been used under the conditions which scientific investigation demands. Would you prescribe any nonproprietary preparation which had never been studied clinically, if a horse-shoer or grocer's boy told you it would cure epilepsy or malaria?

According to an editorial note appended to the report of the Council on Neurosine the Dios Chemical Company consisted at that time (1915) of J. H. Chambers, his wife and two sons. It appeared that Chambers never claimed to have any special knowledge of chemistry, pharmacy or medicine, yet we find that he arrogated to himself or to his employees the right to offer therapeutic advice to the medical profession, and even to direct them how they should prescribe a given mixture.

We sometimes fail to see the forest because of the trees. It may help us to obtain a better perspective, in a problem that concerns us intimately, by resorting to a hypothetical case, if a close analogy is maintained. In order that we may see ourselves as others see us in such a situation let us consider the following imaginary case: You become involved in a lawsuit in which an effort is made to deprive you of your property and your liberty. You seek what you had reason to believe was competent legal advice but nevertheless you lose your case and find yourself deprived of your property and your liberty. Now let us suppose further that you discover, when too late to permit you to correct your mistake, that your legal adviser (we can hardly call such a man a lawyer) had been acting all along under the guidance of a plumber who made no pretense of knowing anything about law. How would you feel regarding that pretended lawyer? Would you feel that you had been treated fairly? Would you feel disposed to speak with all charity of him, to recommend him to those in need of legal advice?

You would probably feel toward such a lawyer as patients must feel toward physicians who prescribe proprietary nostrums based on information and advice offered by those who, though without any special knowledge of chemistry, pharmacy or medicine, will be benefited financially if their information and advice are accepted and acted on.

Plague.—There were thirty epidemics of bubonic plague between the eleventh and fifteenth centuries. The worst one in Europe was in the fourteenth century. The population of Europe was about 105,000,000 in 1334; the "Black Death" started from China. It killed nearly 24 per cent. of the people in Europe—that is, almost every fourth person was doomed. It is said to have killed half the population of Italy.

Correspondence

A METHOD OF FACILITATING THE SERUM DIAGNOSIS OF SYPHILIS UNDER WAR CONDITIONS

To the Editor:—Supplementary to the paper with this title, published last week, p. 1157, permit me to add the following suggestion: According to Rhamy (THE JOURNAL, Nov. 17, 1917, p. 1728), guinea-pig complement can be preserved in a mixture consisting of 1 part of the fresh guinea-pig serum and 1.5 parts of a 10 per cent. sodium acetate solution in 0.9 per cent. saline for a considerable length of time at room temperature, and the acetate does not interfere with the fixation reaction. The writer has confirmed Rhamy's statement and can add that the same is true of human complement. By mixing fresh serum with the acetate saline solution in equal parts the complement remains perfectly active at room temperature for at least five days, and the results of the tests made with the acetated serums are no different from those obtained with the same specimens in fresh state without the acetate. It is advisable, therefore, to preserve a specimen intended for transportation for some distance in a sodium acetate saline solution while the specimen is perfectly fresh. Thus, the serum may be mixed with an equal part of the 10 per cent. sodium acetate saline solution and 0.2 to 0.4 c.c. of the mixture used for the test, this amount representing 0.1 to 0.2 c.c. of the pure serum.

Sodium acetate may also be added directly to the blood while the patient is being bled for the test. A sterile stock solution containing 50 per cent. sodium acetate and 0.9 per cent. sodium chlorid is prepared, and when bleeding the patient, 0.5 c.c. of the solution is mixed with 4.5 c.c. of the blood in a graduated tube (or any plain tube with a mark for 5 c.c.). The separation of serum is slow and may be hastened by gently breaking up the clot. For the test 0.1 to 0.2 c.c. of the serum is used.

Another important point is the fact that the test can be carried out at any temperature between 21 C. (70 F.) and 37 C. (98.6 F.), provided that the mixture be allowed to stand for two hours at 21 to 25 C. (70 to 77 F.) and one hour at 30 C. (86 F.). During the warm seasons or in subtropical or tropical countries, therefore, no special incubator is required, although an incubator is absolutely necessary when the temperature in the laboratory falls below 21 C. It may be mentioned that a strongly positive serum completes the fixation of complement within twenty minutes at the temperature of 21 C., or that of the ordinary laboratory room. It is for weaker reactions that the time of standing for two hours is being allowed. As stated above only one hour is sufficient when the temperature is about 30 C. Fluctuation in temperature within the minimal and the optimal points during the incubation is of no consequence.

HIDEYO NOGUCHI, M.D., New York.

THE OWEN-DYER BILLS FOR INCREASED RANK OF MEDICAL OFFICERS

To the Editor:—The bills now pending before Congress for increased rank and authority for the medical officers of our Army are of as grave importance as any measures that have been presented since the American nation entered the present war, for on their adoption or rejection may depend the final issues of the conflict, especially if the war is greatly prolonged. When it is remembered that the Medical Department of the Army has to combat a foe that in all the great wars of history, excepting the Russo-Japanese, has caused 80 per cent. of the entire mortality—never less than four times, and often twenty times, as many as the artillery, infantry, shells and all other methods of physical destruction combined—then the responsibility and importance of the medical officer in war will be appreciated.

The department that he represents has never had the necessary authority to enable it to reduce this frightful 80 per cent. mortality to a minimum, and without in any way interfering with the strategy or military operations of the war.

The Medical Department of our Army is founded on the traditions of the British medical department of 1776, when preventive medicine was an unknown science and when the duty of the medical officer was to cure disease, instead of preventing it—of locking the stable after the theft has been committed.

Our medical officers have never had the necessary rank and authority to prevent the development of epidemics and other diseases that have caused the frightful mortality incident to war. Witness the records of the Spanish-American War in Cuba and Porto Rico and in the Philippines, which practically amplify the conditions that existed in the Boer War in South Africa, in our own Civil War of 1861-1864, in the Russo-Turkish War, and in the British campaign in the Crimea.

The Porto-Rican expedition in the opera bouffe performance known as the Spanish War may be taken as an example, for nowhere in history is there found a more illuminating instance, a graver lesson, or a more terrible warning than is here portrayed. For our country, it is the Mene, Mene, Mekl Upharsin, the handwriting on the wall, so easily decipherable that he who runs may read; and yet, in the glory of victory and the enjoyment of prosperity, its lesson is passed unheeded.

The story of the expedition is brief. About 20,000 American troops landed in Porto Rico, while the Spanish on the island numbered about 17,000. Several skirmishes occurred, which, according to the Surgeon-General's report, three men were lost from the casualties of war. The object of the war, the breaking of the chains of Spanish despotism and domination, which for centuries had held a race in shameful moral serfdom, was soon accomplished, and the war—from a strictly military standpoint—was over. From our first arrival, the natives of the island welcomed our battalions with vivas of applause, strewing our advancing march with flowers, and their masses were prepared joyfully to second our efforts for their complete emancipation.

That is the beautiful story history presents. Lest we forget as a nation, and lie supine in the easy content of this picture, let me invite attention for a moment to a further study of the report of the Surgeon-General for that war. It states that although only three men fell from the casualties in battle during that entire campaign, 262, or nearly 100 times as many, died from preventable causes. It fails, however, to state that the number of hospital admissions nearly equaled the entire strength of the invading army, and that the camps of the army from one end of the island to the other, were pestiferous hotbeds of disease before they had been occupied a month, so that, had the bugle sounded for action, only a small percentage of the units would have been in a condition to respond to the call. Nor was this state of affairs confined to Porto Rico. In the invading armies of the Philippines and Cuba the same conditions prevailed.

The official figures, as shown on the following table, were furnished me by the Surgeon-General of the Army, Oct. 10, 1898, and cover the vital statistics of the United States military expeditions for the year 1898:

	Deaths from Battle Casualties	Deaths from Disease
the Philippine Islands	17	203
Porto Rico	3	262
Cuba	273	567
the U. S. home camps, etc .....	...	2,649
Total deaths	293	3,681

About one from casualties to thirteen from disease.

The report further shows that, while the average mean length of the army enlisted for the Spanish War was about 100,000, the total number of admissions to the hospitals, Sept. 1898, was more than 158,000, or 90 per cent. This in a war of less than three months' duration, and in which more than three fourths of its soldiers never left the camps of their native land.

The Japanese army for the same period had about 4 per cent. hospital admissions, or one twenty-second as many.

The vast difference in favor of the Japanese figures illustrates the value of a medical and sanitary department properly equipped to enforce practical sanitation, dietary and other preventive measures.

The greatest tragedy of war lies, not in the battle field, but in the failure of a government to protect its guardians from preventable disease, thereby immeasurably increasing the suffering and mortality incident to it. This can be largely prevented by giving the medical officer authority to enforce sanitation and supervisory control over the ration of the troops.

Every death from preventable disease is an insult to the intelligence of the age. If it occurs in the army, it becomes a governmental crime. The state deprives the soldier of his liberty, prescribes his hours of rest, his exercise, equipment, dress, diet and the locality in which he shall reside, and in the hour of danger expects him, if necessary, to lay down his life in defense of its honor. It should, therefore, give him the best sanitation and the best medical supervision the science of the age can devise, be it Japanese or Patagonian—a fact of which Congress will do well to take cognizance at the earliest moment. For, just as surely as the engineer who disregards the signals, or the train dispatcher who gives wrong orders, is legally responsible for the loss of human life in the wreck that follows, so Congress, or the wretched medical system of our Army, is responsible for the thousands of soldiers' lives needlessly, criminally sacrificed—not on the glorious field of battle, but in diseased camps—from preventable causes.

Herbert Spencer, in his "Synthetic Philosophy," refers to "the ill treatment accorded the medical officers of the English army as a late survival of the days of feudalism, and contempt for the purely scientific."

If wars are inevitable, and the slaughter of men must go on (and I believe wars are inevitable and that most of them are ultimately beneficial), then let our men be killed legitimately, on the field, fighting for the stake at issue, not dropped by the wayside from preventable disease as we did in the Spanish-American War—1,300 for every hundred that died in action. It is for the 1,300 brave fellows that are needlessly sacrificed, never for the hundred that fall gallantly fighting, that I offer my prayer.

I believe that if our Medical Department, in the Spanish-American War, had been systematized, with sufficient numbers, with supervisory control over the ration, and with power to enforce sanitary and hygienic relations, the units of our Army would have returned to their homes at the close of the campaign in better physical condition than when they entered it, improved by their summer outing.

An army might be suffering from diarrhea or slight intestinal catarrh, due to change of water, of ration or of climate (and I have seen 90 per cent. of an entire command in this condition at one time), compelled to live on a diet of pork and beans and fermented canned foods that in six weeks prostrated 50 per cent. of its number with intestinal diseases and sent 3,000 to their everlasting homes, to say nothing of the enormous number invalidated, and the 75,000 pension claims that followed as the result. Until the men were admitted to hospital wards, the medical officer had no authority even to order a rice diet, which would have prevented the men from becoming invalidated. This was one of the principal causes that brought our Army of 170,000 men in the Spanish War almost to its knees in three months, and sent the survivors home in the shrunken and shriveled condition that many of us still remember.

In all the wars in which the United States has engaged, disease has been responsible for more than 70 per cent. of the mortality, more than half of which could have easily been prevented, had the Medical Department been properly empowered to meet its obligations. Preventable disease, more than wounds, swells the pension list. Statistics of the Pension Office prove that if this unnecessary loss had been avoided, the saving in pensions alone, in every war in which America has participated, would have paid the cost of the resulting war every twenty-five years. Aside from the sorrow of the homes made desolate, consider the economic value of

the 70 per cent. of lives needlessly sacrificed, that might be saved as breadwinners in industrial pursuits.

In an address delivered before the International Congress of Military Surgeons in 1904, after my return from the Russo-Japanese War, I said: "Perhaps the day is not distant when another summons will come to join the Army of the Republic, when the first call may be, not as in the Civil War for 75,000 men, nor as in the Spanish War for 250,000, but when, more likely it will be for a round half million, to be followed possibly by another of equal number. And the question will be asked by the young patriot of that day, not *who* the enemy is he is to meet—No, the American boy is *not* built that way—but he will demand to know what measures have been taken to insure him against the silent enemy who kills the 80 per cent. And when he learns the same prehistoric regulations as to sanitation and protection against this foe are in force as they were in 1904, will he respond to his country's call? Yes, he will, for that is the way the American boy is built. And he will follow, as did his forebears, in their footsteps, and he will fall by the wayside as they did before. And history will record another crime."

We see by the light of thousands of years,
And the knowledge of millions of men,
The lessons they learned through blood and in tears
Are ours for the reading, and then
We sneer at their errors and follies and dreams,
Their frail idols of mind and of stone,
And call ourselves wiser, forgetting, it seems,
That the future may laugh at our own.

Let Congress give the medical officer rank and authority in all matters appertaining to sanitation and preventable disease and supervision over the ration, when such authority will not interfere with the strategy of the commanding officer of the line, and then, if serious epidemics or other preventable diseases occur, have him courtmartialed and cashiered from the Army, as though he were a traitor and a spy.

LOUIS LIVINGSTON SEAMAN, M.D., LL.B., F.R.G.S.,
New York.

Late Surgeon-Major, U. S. Volunteer Engineers.

"BREVITY IS THE SOUL OF WIT"

To the Editor:—I have now been a reader of your valuable paper for more than a year, and do not see how I can possibly do without my weekly copy. The thing that kills the British medical journals is the length of their articles. It almost seems that every writer makes it his business to make his articles as long as he possibly can instead of the reverse. I trust, therefore, that you will not allow that vice to creep into THE JOURNAL. A busy man has no time to be bored with such long articles. I thought the article on "The Treatment of Hookworm Infection," published in THE JOURNAL, February 23, was rather long, and contained tables that might have been eliminated with a summary.

W. H. HAUPT, M.D., Caterham, Surrey, England.

TOXICITY OF ARSPHENAMIN (SALVARSAN): REPORT OF CASES

To the Editor:—Having read a report by Dr. James C. Sargent of Milwaukee on five cases of unusual toxicity resulting from administration of the new American made salvarsan, I am constrained to report three cases, believing that this information should be given to the medical profession.

A man, aged 38, suffering from the secondary stage of syphilis, who had had three weekly 0.6 gm. doses of diarsenol with no toxic reactions following, reported for his fourth treatment. The first obtainable American made salvarsan had just reached us, and a dose of this was given after being mixed in the following manner: First the ampule was dissolved in 90 c.c. of hot sterile freshly distilled water, and sufficient cool freshly distilled water was added to bring the amount up to a 200 c.c. bulk. Freshly prepared 15 per cent.

sodium hydroxid was added drop by drop, the solution being stirred constantly, until the precipitate was redissolved. The solution was given by the single tube gravity apparatus method into a vein at the bend of the elbow, this method having been used by us more than 400 times without a single bad result. Before one half of this solution had been given, the patient began to complain of severe pains in various parts of his body. He became prostrated, his pulse rapid and weak, and cold perspiration stood out over him. The patient became nauseated but did not vomit. The solution was discontinued, and blankets and hot water bottles were applied. After about three hours the patient felt almost normal but during this period he complained of more or less pain and showed signs of shock.

The second case was that of a man, aged 36, with an old long standing case of syphilis who was undergoing a series of arsphenamin treatments. He had had three weekly doses of diarsenol without any reaction. He was given a 0.6 gm. dose of American made salvarsan made up as in the preceding case. Just prior to the discontinuance of the injection of the full dose this patient began to complain of pains in various parts of his body, his face and eyes became intensely injected, and his face was slightly swollen. He was decidedly nauseated, but did not vomit. After about an hour he felt able to go home.

The third case was that of a boy, aged 17, who was being treated in the secondary stage of syphilis and had had two weekly 0.5 gm. doses of diarsenol with no reaction following. He was given a 0.5 gm. dose of the American made salvarsan one week following his second dose of diarsenol. Throughout the injection of the solution the patient felt well. About one minute after the discontinuance of the injection and while the patient was yet on the treatment table, his face flushed suddenly, and the eyelids, lips and tongue swelled to huge proportions. The tongue was so thick that he could scarcely protrude it. The eyes were injected, and he vomited freely. He complained of intense pain in various parts of the body, especially through the abdomen. The pulse was very rapid and weak. Immediately a 15 minim dose of epinephrin solution was given hypodermically. This dose was repeated in fifteen minutes. He was put to bed in the hospital and external heat applied. The swelling of the tongue, eyelids and face gradually subsided, and after about four hours had practically disappeared. The patient was able to leave the hospital in about six hours.

These three doses of American made salvarsan were the first doses that had been used in this hospital and, because of these reactions following their administration, we decided not to give the fourth dose, so returned the remainder of the shipment to the Farbwerke-Hoechst Company. They have acknowledged receipt of the returned shipment and have written us that they expect to make further investigations of the lot in an effort to determine where the difficulty is. They report that both biologic and chemical controls were perfectly satisfactory before releasing the salvarsan.

J. D. WILLIS, M.D.,
Lewis-Gale Hospital, Roanoke, Va.

[COMMENT.—The publication of the report by Dr. Sargent stimulated a number of physicians to write to THE JOURNAL on this subject. Mr. Metz, the manufacturer of the salvarsan brand of arsphenamin, in protesting against its publication said that "the lot from which Dr. Sargent's ampules were taken met every requirement of the standard set for salvarsan," and intimated further that the reactions were "due to faulty technic, unsatisfactory conditions of ingredients used in preparing the salvarsan solution, or condition of his subjects." Such experiences as those of Drs. Sargent and Willis are not unusual, but should be reported. It is, of course, well known that untoward results followed the use of the old salvarsan—that made in Germany. With the old preparation as well as with the new, reactions occurred and were probably due to various causes: sometimes to faulty preparations sometimes to the deterioration of certain ampules of a batch sometimes to idiosyncrasy of the patient, and sometimes to faulty technic of preparation or injection. There is no reason to believe that the arsphenamin made in this country is more toxic or less satisfactory than that formerly imported from

abroad. The present provisions for the control and testing of the output of arsphenamin in this country appear to be quite satisfactory: The manufacturer is required, not only to test his product himself, but also to submit a certain percentage of each batch to the Hygienic Laboratory of the Public Health Service for a second test. Physicians may use the product with confidence, but if untoward results occur with any ampule of any preparation, the results should be reported in order that knowledge of the possibilities, improvements in technic or in handling a preparation of the drug may result. Let it be remembered that injection into a vein, no matter what the substance injected, is a serious procedure. When arsphenamin is the substance used, it involves not only the hazards of intravenous therapy but also the hazard of a potent drug. However, we repeat, when used with a complete knowledge of the method and the possibilities, there should be no lack of confidence in any of the federal licensed products.—Ed.]

RADIUM TREATMENT OF CANCER OF THE LIP

To the Editor:—In the article by Dr. Henry H. Janeway on the treatment of cancer of the lip by radium (*THE JOURNAL*, April 13, p. 1051), he describes the method of treating cancer of the lip by emanation of radium in glass tubes instead of radium element in flat applicators and after reporting his splendid results states: "The superior adaptability of radium emanation for the treatment of cancer makes the use of the element itself obsolete, and for the vast majority of cases it is inefficient." I believe the use of radium element of the required strength scattered over a flat applicator 1 c.c. square is much more accurate and scientific than the use of emanation in glass tubes in treating lip cancer, as the flat applicator gives evenly over the region on the lip. It gives off a uniform quantity of rays and dose from different applicators so that results can be duplicated in other cases and by other persons. This can not be said of emanation used in glass tubes because even if a certain strength in millicuries is in the tube at the time of testing, the tube deteriorates rapidly and loses its strength. In a few hours, after a tube is tested the physician does not know the strength he is using. Moreover, the glass of different tubes varies greatly in thickness and further complicates the administration of a definite dose.

J. N. SCOTT, M.D., Kansas City, Mo.

HERPES ZOSTER AND CHICKENPOX

To the Editor:—The report of cases showing the relation between herpes zoster and chickenpox made by Drs. Golding and Francis in the April 13 number of *THE JOURNAL* called to my mind an experience I recently had which showed such a relation. On Feb. 15, 1918, a young lady came to my office with a typical case of herpes zoster following the course of the superficial nerves of the cervical plexus. March 3, I was called to see the patient's younger brother and found a well developed case of chickenpox. During February there were only fourteen cases of chickenpox reported in the city. Thirteen of these were in the extreme outer end of town and one was about four blocks distant from a patient, and the child in that case went to another school. I am not able to find that my patient was ever exposed to chickenpox.

A. G. HOUGH, M.D., Madison, Wis.

"TONICS AND SEDATIVES"

To the Editor:—I wonder if any of your feminine readers have thought of cutting out "Tonics and Sedatives," binding them in loose leaf form and sending them to the Army Hospitals. I have been doing this for two years, and they tell me the soldiers enjoy them; the heading is so appreciative. I hope that others of your readers will follow this suggestion.

HELEN BATES, Summit, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ENLISTMENT IN M. R. C.—COMMUTATION FOR OFFICERS

To the Editor:—1. I am anxious to do my full part in this war. I note the call for 5,000 doctors. I am one of two shop surgeons looking after some 1,500 men. The other is under draft age, though claiming exemption on financial grounds. What is my duty as appears to one who has a view of the whole situation? 2. Is the enlistment period in the Naval Reserve three years, or for the length of the war? 3. What amount will be added to the salary of a first lieutenant if the maintenance bill is passed?

M. D., Omaha.

ANSWER.—1. The Surgeon-General has asked each physician to determine for himself the question as to whether or not it is his duty to enlist. In paragraph 5 of his call to the American Medical Association he says:

It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.

2. The physician who enlists in the Naval Reserve obligates himself, and may be immediately ordered, to service in the Navy throughout the war or during the existence of a national emergency declared by the President, should either arise during his term of enlistment. A member enrolls or reenrolls for a term of four years. In time of peace, and when no national emergency exists, a member may be discharged on his own request.

3. An item on this subject appears under Current Comment, this issue, p. 1232.

THE ACCEPTANCE OF COMMISSIONS

To the Editor:—In Current Comment (*THE JOURNAL*, April 13, 1918, p. 1098) I noticed a statement that there are approximately 18,300 members in the Medical Corps and about 1,500 men who have been offered commissions but have not yet accepted. Will you kindly tell me what I may imply by this statement, "commissions offered, but not yet accepted"? I would appreciate very much if you will communicate with me at your earliest convenience. I am contemplating going into the service, and want to get as much information about this matter as possible.

WILLIAM S. KELLER, M.D., Cincinnati.

ANSWER.—Before a commission is in effect it must be accepted in writing, and an oath of allegiance taken. Many have not done this, some not realizing its necessity, others through neglect, or because they want to back out of their contract. It is needless to say that such action is not creditable. If a man makes application for a commission in the Medical Reserve Corps and goes through all the preliminaries, including examination, he to all intents and purposes makes a contract to accept the commission if it is awarded him.

NO NATIONAL LICENSURE FOR RESERVE OFFICERS

To the Editor:—Does a physician, after being discharged from serving in the Medical Reserve Corps, have the privilege of practicing in any state in the Union?

W. H. H.

ANSWER—No.

To Send Serum by Mail for Wassermann Test.—R. Tsuneoka and T. Yotsumiya relate that a safe and certain means for sending serum to a laboratory for testing is to soak up the serum into blotting paper and allow the paper to dry in a dark room at a temperature of from 80 to 86 F. Serum thus dried into the blotting paper can be kept without deterioration for five or six days. When the test is to be applied the serum is dissolved out of the paper by soaking in sterile saline and squeezing the paper. An abstract of their article is given in the *China Medical Journal*, which publishes regularly, in pamphlet form, English abstracts of the leading articles in the current Japanese medical periodicals (Presbyterian Mission Press, Shanghai).

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular Board, Little Rock, May 14-15. Sec., Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

Indiana January Examination

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Jan. 10-12, 1918. The examination covered 16 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 4, including 1 osteopath, passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Indiana Medical College (Purdue University)	(1906)	83.5
Indiana University	(1917)	88.2; (1918)*

College	FAILED	Year Grad.	Per Cent.
Louisville National Medical College	(1909)	84.7†
Meharry Medical College	(1916)	71.4, 81.2†
National University, Athens	(1912)	‡

* Diploma and license withheld until June, 1918, to complete time credits.

† Fell below 75 per cent. in three subjects.

‡ This candidate's papers were not graded because he "was detected in flagrantly violating rules governing conduct of examination."

New Mexico January Examination

Dr. R. K. McClanahan, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fe, Jan. 14-15, 1918. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. Seven candidates were licensed on credentials, and 1 candidate was licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University	(1916)	75
Leonard Medical School	(1903)	75

College	LICENSED ON CREDENTIALS	Year Grad.	Total No. Licensed
George Washington University	(1907)	1
Rush Medical College	(1885)	1
Medical School of Maine	(1892)	1
College of Physicians and Surgeons, Baltimore	(1880)	1
Detroit College of Medicine and Surgery	(1917)	1
Memphis Hospital Medical College	(1913)	1
Vanderbilt University	(1913)	1

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Oklahoma	(1914)	Oklahoma

New York Report

Mr. George M. Wiley, director, Examinations and Inspections Division, reports that 10 candidates were licensed by reciprocity from Jan. 7 to Feb. 27, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University	(1911)	Delaware
University of Maryland	(1906)	New Jersey
Hamline University	(1907)	Minnesota
Columbia University	(1909)	Pennsylvania
N. Y. Homeo. Med. Coll. and Flower Hosp.	(1913)	(1914)
Jefferson Medical College	(1902)	New Jersey
University of Pennsylvania	(1901)	Penna.

North Dakota January Examination

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 1-4, 1918. The examination covered 13 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 4 passed and 2 failed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College	(1916)	82
Keokuk Medical College, Coll. of Phys. and Surg.	(1905)	*
Johns Hopkins University	(1916)	85.3
University of Michigan Medical School	(1904)	*

College	FAILED	Year Grad.	Per Cent.
Bennett Medical College	(1908)	68
Chicago College of Medicine and Surgery	(1908)	70

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Baltimore Medical College	(1906)	Illinois
Hamline University	(1903)	Minnesota
John A. Creighton Medical College	(1905)	Nebraska

* No grade given.

Ohio Reciprocity Report

Dr. Herbert M. Platter, secretary of the Ohio State Medical Board, reports that 13 candidates were licensed through reciprocity at the meeting held Jan. 2, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Howard University	(1903)	Alabama
Bennett College of Eclectic Med. and Surg.	(1906)	Penna.
College of Physicians and Surgeons, Chicago	(1903)	Illinois
Hahnemann Med. Coll. and Hosp. of Chicago	(1873)	Illinois
Drake University	(1907)	Iowa
College of Phys. and Surgs., Baltimore	(1901)	W. Virginia
Johns Hopkins University	(1914)	Maryland
University of Michigan Medical School	(1908)	Michigan
University of Buffalo	(1911)	New York
Medical College of Ohio	(1892)	Kentucky
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1912)	Indian
University of Pittsburgh	(1914)	New York

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, Jan. 8-10, 1918. The examination covered 15 subjects and included 125 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1900)	78.8
Northwestern University	(1915)	88.6, 89.2
Keokuk Medical College, Coll. of Phys. and Surgs.	(1907)	85.0
St. Louis College of Physicians and Surgeons	(1915)	79.0
Hahnemann Medical College of Philadelphia	(1876)	83.0
Jefferson Medical College	(1917)	86.0

Utah January Report

Dr. G. F. Harding, corresponding secretary of the Utah State Board of Medical Examiners, reports that at the meeting held at Salt Lake City, Jan. 7-8, 1918, four candidates were licensed through reciprocity. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Denver and Gross College of Medicine	(1905)	Colorado
Hahnemann Medical College and Hospital of Chicago	(1914)	Illinois
University of Illinois	(1916)	Illinois
Michigan College of Medicine and Surgery	(1904)	Michigan

Wisconsin February Report

Dr. J. M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports that 3 candidates were licensed through reciprocity at the meeting held at Chicago, Feb. 4, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1906)	Illinois
University of Illinois	(1914)	Illinois
Fordham University	(1915)	New York

Social Medicine, Medical Economics and Miscellany

Undernutrition Among Schoolchildren

As a result of the report of the bureau of child hygiene to the effect that between 12 and 15 per cent. of the school-children of the city are underfed, Frank A. Manny undertook a detailed and intimate study of health and nutrition conditions among two schools in the Grammercy district. The children were classified on the basis of the Dumferline scale, which places each child in one of four nutrition grades: (1) superior condition; (2) passable condition; (3) requiring supervision; (4) requiring medical treatment. Of 2,535 children examined, one third of the total were in each of the first two grades, and the remaining third was divided between the other two. There were found three distinct height and weight measurements corresponding to the three larger nutrition grades, Grades 3 and 4 being taken together and containing one third of the whole. The average of the low nutrition cases fell below the passable group to about the same extent as the latter group fell below those of the superior group. The height and weight for the medium group was practically the same as the figures of the Boas-Burk tables of height and weight for American children. The heights and weights for the children of the superior grade followed closely the average figures for more than 30,000 children in private schools in New York City and Chicago, tabulated by Professor Baldwin. The conclusions are that, in this average industrial district, a third approximate closely the average of children whose parents can afford to pay tuition rates; a second third represents the average of American children, and the remaining third is seriously underdeveloped, being in many cases several years under the measurements proper to their ages under a reasonable standard of living. It has been shown that under conditions of abundant nutrition, exercise, air and sleep, stunted children in summer camps in the majority of cases improve rapidly up to the required average. The answer is that better parental incomes are necessary to prevent this undernutrition and substandard development.

Parenteral Injection of Milk

At a recent meeting of the Swedish Medical Association, G. Uddgren reported parenteral injection of human milk in about fifty cases of eye disease. Müller and Thanner reported fine results in their twenty eye cases a year ago, including four with parenchymatous keratitis. They even compared the results of this paraspecific treatment to the benefit from iridectomy in acute glaucoma, and Kühne insists it is one's duty to apply it, but Uddgren is not so enthusiastic. She declares that unquestionably there is something in this paraspecific therapy; applied with due caution it may give gratifying results. The benefit seems to be due to the focal reaction. In her work with it, the milk was derived from healthy wetnurses, and was boiled for five or ten minutes. The injection was repeated two months later, giving first a small preliminary injection, according to Besredka's technic. On account of the danger of milk embolus, the injection must be made very cautiously not to injure a blood vessel and thus let the milk get into the vein. In a few cases she used goat milk, and the results seemed equally good. The temperature rises a little in fifteen or twenty minutes but subsides in half an hour. At the end of the third, fifth and sixth hour it usually runs up again, reaching the maximum between the eighth and eleventh hour and then dropping as in crisis—all within the first twenty-four hours. There may or may not be pains; in some cases they resembled those of influenza. The pulse kept regular throughout, and the leukocytosis induced was not proportional to the temperature. It might be the same in the same person whether 0.5 or 2 c.c. of blood had been injected. As a rule, Uddgren applied this

treatment only after failure of other measures. Most of the patients gave a positive Wassermann reaction. A. Steiger is said to have reported in the *Deutsche medizinische Wochenschrift* of recent date that parenteral injection of 10 c.c. of milk did not display the slightest efficacy in his experience with anthrax, furuncles and enlarged lymph glands.

Medicolegal

Providing for Treatment at Special Institutions of Tuberculous Paupers

(*Inhabitants of Machias v. Inhabitants of East Machias (Me.)*,
102 Atl. R. 181)

The Supreme Judicial Court of Maine holds that the plaintiffs were entitled to recover payment for pauper supplies furnished a minor son of a family alleged to have a settlement in the defendant town, where the items consisted of "board, services and medical attendance" at Bangor Anti-Tuberculosis Camp, at Eastern Maine General Hospital, and at the Fairfield Sanitarium for Tuberculosis, a total expenditure of \$476.11, covering a period of ninety-two weeks, or practically \$5 per week. The court says that it was contended that as a matter of law these charges could not be recovered as pauper supplies; but the court finds itself unable to accede to that view. The statute provides that "overseers shall relieve persons destitute, found in their towns and having no settlement therein," and the expenses so incurred may be recovered of the town chargeable with the support of the pauper. The statute does not prescribe the manner in which, or the extent to which, the relief shall be administered. That must depend on the facts and conditions connected with each call for assistance. The governing rule is that the relief shall be reasonable and proper. It must be suited to the particular needs of the destitute person, whether they be food or clothing or shelter or medical or surgical assistance, or all together. So, too, the situation of the sick admits of such infinite variety that no arbitrary rule for their treatment can be laid down. While the right of reimbursement is purely statutory, being conferred by positive provisions of law, and is not based on any equitable considerations, yet it is the right and duty of the court to view the nature and extent of the relief in the light of present day conditions.

Nursing and medical services have always been deemed included in pauper supplies. The necessity of such services in the case at bar was admitted. Had they been rendered at the patient's home, perhaps no complaint would have arisen. The fact that they were rendered at an institution within the state specially equipped for the treatment of tuberculosis should not of itself place such services outside the pale of the statute. Such beneficial institutions were unknown a generation ago, but their worth is now universally conceded. The test in all cases must be the reasonableness and propriety of the relief provided, and it must certainly be admitted that nowhere can this particular disease, infectious in its nature, be more properly treated than in institutions such as these. Not only can relief be afforded, and the danger of infection avoided, but the patient may be restored to permanent health and a life saved to the community.

The expense incurred here, an average of \$5 per week, including board, nursing and medical attendance, was not extravagant, and the misfortune of a father's pauperism ought not to deprive a sick child, in these enlightened days, of the reasonable means of treatment and care. Any other doctrine affronts the dictates of humanity. It was admitted that the overseers of the plaintiff town acted on the advice of a physician after his examination and treatment of the afflicted patient and on the recommendation of a visiting nurse. They evidently met the problem as they found it, and solved it with sound discretion.

Then it was contended that as the pauper was suffering from tuberculosis, which is declared by the Revised Statutes of 1916, Chapter 19, Section 9, an infectious and communi-

cable disease, this case should have fallen under the control of the local board of health, which under Section 69 of that chapter might place the patient in quarantine and charge to the town all supplies for food and medicines. But that contention was without force. Chapter 19 relates to the public health and the prevention of contagious diseases. It affects the affluent as well as the destitute. It had no application in this case.

Itemization Required of Physicians' Accounts

(*Willett Bros. v. Western Naval Stores Co. (Tex.)*, 198 S. W. R. 352)

The Court of Civil Appeals of Texas reverses a judgment of dismissal, and remands for a new trial this case, wherein it was held that the accounts for medical services and medicines set out in the plaintiffs' petition were not sufficiently itemized, judgment being rendered on the pleadings, without testimony. One paragraph of the petition stated that at the special instance and request of the defendant, by and through its certain named agent, manager of its Camp No. 1, in Newton County, Texas, the plaintiffs did render medical service for and sell to the defendant medicine for Camp No. 1, as follows: "July 22, 1912. For Arthur Johnson, examination and medicine, \$1.50." . . . "Oct. 12, 1912. For Auther Sapp, 1 visit and medicine, 8.75." The only just criticism that could be made of this paragraph, the court says, was the failure of the pleadings to state the amount charged for examination and the amount charged for medicine to the various parties, or the amount charged for the visit and the charge for medicine. These should have been separately charged, and, subject only to this criticism, this would be a proper averment.

Another paragraph, beginning similarly, but for Camp No. 2, contained, among other items, these: "June 28, 1912. For G. Green, examination, prescription, medicine, \$10.15." "June 28, 1912. For Homer Ree, 5 visits, circumcision, medicine, 22.30." The court says that the items in this paragraph were subject to the criticism made on the preceding paragraph. In other words, the charge should be made for the visit, for the examination, for the prescription, and medicine, and the item of June 28, 1912, should have stated so much for circumcision, and so much for medicine. Except for this alleged vice, this paragraph would not be open to objection. In other words, the court means to say that it is not necessary to itemize the medicine, or the kind of medicine, but only the amount charged for the medicine, the amount charged for the examination, and the amount charged for the visit, and the amount charged for the prescription, and for the circumcision. No further itemization of the account would have been necessary or called for.

Likewise, the alleged vice in still another paragraph was that a charge should have been specified, stating what was made for the examination, and what was made for the medicine, and what charge was made for visits. In no further particular was it necessary for the items to be set out in the plaintiffs' pleadings. So far as pretending to itemize the services rendered, except that it was medical service, and the nature thereof, except that a visit was had, or circumcision had, no further particularity was needed with reference to the medicines and services, except the charges that were made therefor.

The court does not believe that the grouping of the facts, in the item, that the persons named were visited and medicine given, should be considered, save when so much was charged for medicine, and so much for a visit. But as the time had been given at which the charges were made, and as the plaintiff evidently knew how much he charged for a visit, he therefore was able, by a mathematical demonstration, to show how much was for a visit, and therefore how much remained in the charge for medicine. In the opinion of this court, therefore, there will be and can be no definite reason why the plaintiff cannot, even in the absence of any written memoranda, be able to state how much he charged for a visit, and how much for examination, and therefore how much he charged for medicine, at the various dates mentioned in the various accounts.

In the form as presented to this court, the exception was a general exception. It was error on the part of the lower court, some of the items being correctly pleaded, to dismiss the entire account and refuse to hear testimony with reference to the justice of it. This court believes that, on another trial of the cause, no trouble will be experienced with reference to the proper pleading, and that therefore the parties may be able, without real trouble, either before the court or before a jury, to have justice meted out to them in this cause.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.
Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Neurological Association, Atlantic City, May 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Texas State Medical Association, San Antonio, May 14-16.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Diagnosis, New York

October, 1917, 10, No. 4

- 1 Diagnostic Value of Duodenal Tube and Roentgen Ray Findings in Ulcer of Stomach and Duodenum. C. Beck, Chicago.—p. 307.
- 2 Differential Diagnosis of Chronic Duodenal and Gallbladder Disease. J. Gutman, Brooklyn.—p. 309.
- 3 Syndrome of Conus Medullaris and Cauda Equina Apropos of Case of Hemileision. A. Gordon, Philadelphia.—p. 319.
- 4 Prognosis of Heart Disease in Childhood. F. L. Wachenheim, New York.—p. 327.
- 5 Direct and Differential Diagnosis of Some of Commoner Syphilides. B. B. Beeson, Chicago.—p. 331.
- 6 Exophthalmic Goiter. I. Bram, Philadelphia.—p. 343.
- 7 Abnormal Uterine Hemorrhage in Young Women. A. McDonald, Duluth, Minn.—p. 361.
- 8 Diagnosis of Traumatic Neurosis in Relation to Litigation and Compensation. T. A. Williams, Washington, D. C.—p. 371.
- 9 Methods of Charting Physical Findings in Lung Diseases. E. Zueblin, Cincinnati.—p. 374.
- 10 Topographic Percussion of Chest Compared with Postmortem Findings. E. Zueblin, Cincinnati.—p. 380.
- 11 Prognosis in Pulmonary Tuberculosis. E. O. Otis, Boston.—p. 394.
- 12 Use of Tuberculin in Diagnosis of Eye Lesions. C. A. Clapp, Baltimore.—p. 399.

Archives of Pediatrics, New York

March, 1918, 35, No. 3

- 13 *Some Problems in Starch Digestion in Infancy and Childhood. E. C. Fleischner and A. E. Meyers, San Francisco.—p. 129.
- 14 Acute Intussusception of Infants; Treatment Based on Modification of Hirschsprung Hydrostatic Method. L. Porter, San Francisco.—p. 142.
- 15 Case of Acute Lymphatic Leukemia with Necropsy. F. M. Holsclaw, San Francisco.—p. 151.
- 16 Juvenile Paresis; Report of Three Cases. R. L. Ash, San Francisco.—p. 156.
- 17 Clinical Opportunities in Juvenile Court Work with Girls. E. M. Watters, San Francisco.—p. 162.
- 18 Some Special Problems in Abnormal Adolescent Psychology. O. L. Bridgman, San Francisco.—p. 172.

13. **Starch Digestion in Infancy and Childhood.**—With a view of gathering data on the questions of starch intolerance and making observations on the capacity of young children to handle various forms of starch, Fleischner and Meyers made some food and feeding studies. Six children were selected about 4 years of age, on whom daily stool examinations were made for a period of about two weeks. They were all apparently normal children and their digestive capacity was likewise what might be expected in an average child. No directions were given as to the diets that the children should receive. They were kept on the usual food given to the children of their age. At the end of this time they were given potato twice daily to determine their tolerance for this type of starch. It was noted that the children were being fed a number of calories far in excess of their requirements for age and weight. However, they were apparently taking care of it and the percentage of carbohydrate was not excessively high. When the potatoes were started twice daily, the other starches were diminished and it is striking that their total carbohydrate intake was definitely less in spite of which they excreted much more starch in their stools. Several facts are emphasized by Fleischner and Meyers: (1) Incapacity to properly handle starches and celluloses is a very common disturbance of the digestive tract of young children. (2) A correct diagnosis can only be made by eliciting a careful history, ruling out other organic diseases by careful physical examination and finally by painstaking stool analyses. (3) The treatment of this condition is essentially confined to an adjustment of diet and institution of proper hygiene. (4) It is high time that pediatricists who have devoted so much attention to a careful supervision of the diet of the first years of life should realize that it is quite as important to carefully regulate the diet between the first and sixth years of life, not only qualitatively, but quantitatively, as the most potent prophylactic means of eradicating a very common form of malnutrition of childhood.

Boston Medical and Surgical Journal

April 4, 1918, 178, No. 14

- 19 *Serum Conserved Dressing for Industrial Wounds. F. R. Williams, Worcester.—p. 452.
- 20 Health in War Industries. T. F. Harrington, Boston.—p. 453.
- 21 Some Relations of Exercise to Nutrition. G. Van Ness Dearborn, Cambridge.—p. 458.
- 22 Venereal Problem—Army Viewpoint. E. M. McKee, Ayer.—p. 467.

19. **Serum Conserved Dressing for Industrial Wounds.**—Williams has found that lacerated wounds heal more rapidly and with less trouble when treated as follows: When the wound is first seen the surrounding uninjured skin is cleaned with gasoline, and painted with tincture iodine full strength. No iodine is allowed to come in contact with the wounded surface. Wax is immediately applied. These wounds are dressed daily for the first few days, especially if there is much tissue destruction, but at these redressings the wound proper is not touched, consequently the so-called cleansing of its surface is omitted. An electric blower is applied as a drier, which has the advantage also of preventing the skin from becoming too blanched or parboiled. Burns will heal as rapidly under adhesive as under wax, but it is less easily applied and more expensive. Williams calls this procedure the serum retaining dressing. He says that the serum retained dressing is a rapid healer. Redressings are painless, hence without trauma. This is again conducive to

rapid repair. In wounds treated as above outlined, excessive granulations are never seen. Sluggish wounds are also absent.

Georgia Medical Association Journal, Augusta

March, 1918, 7, No. 11

- 23 Direct Method for Removal of Foreign Bodies from Air Passages. J. T. Maxwell, Savannah.—p. 233.
- 24 Pelvic Pathology as Causing Factor of Hysteria in Female. M. T. Benson, Atlanta.—p. 236.
- 25 Novocain in Surgery. W. A. Selman, Atlanta.—p. 238.
- 26 Benefits, Limitations and Dangers of Artificial Pneumothorax. E. C. Thrash, Atlanta.—p. 240.
- 27 Case of Epithelioma of Posterior Pharyngeal Wall, Cured by Electrocautery. D. Roy, Atlanta.—p. 242.
- 28 Late Syphilis, Diagnosis and Treatment. E. S. Osborne, Savannah.—p. 246.
- 29 Cirrhosis of Liver; Operative Technic; Report of Three Cases. L. S. Hardin, Atlanta.—p. 247.
- 30 Treatment of Constipation in Infancy and Childhood. W. L. Funkhouser, Atlanta.—p. 249.

Journal of Experimental Medicine, Baltimore

April, 1918, 27, No. 4

- 31 *Nitrogen Metabolism and Acidosis After Transplantation of Ureter into Duodenum in Dogs. K. Goto, Philadelphia.—p. 449.
- 32 Method for Intravenous Injection of Guinea-Pigs. P. Rous, New York.—p. 459.
- 33 *Antiseptic Properties of Certain Organic Compounds. I. J. Kligler, New York.—p. 463.
- 34 *Elimination of Iron and Its Distribution in Liver and Spleen in Experimental Anemia. H. Dubin and R. M. Pearce, Philadelphia.—p. 479.
- 35 *Study of Blood Pressure by Method of Gaertner, Especially in Fibrillation of Auricles. A. E. Cohn and C. Lundsgaard, New York.—p. 487.
- 36 *Peripheral Blood Pressure in Fibrillation of Auricles. A. E. Cohn and C. Lundsgaard, New York.—p. 505.
- 37 Free Antigen and Antibody Circulating Together in Large Amounts (Hemagglutinin and Agglutinin in Blood of Transfused Rabbits). P. Rous and O. H. Robertson, New York.—p. 509.
- 38 *Acute Mercuric Chlorid Intoxications in Dog with Special Reference to Kidney Injury. W. deB. MacNider, Chapel Hill, N. C.—p. 519.

31. **Nitrogen Metabolism and Acidosis After Transplantation of Ureter.**—This work was undertaken by Goto to study the metabolism in the dog after a ureter intestinal transplantation. Four dogs were originally operated on: Two showed kidney infection; the other two were not infected, and in these the metabolism was studied; one of the latter showed a marked hydronephrosis and hydro-ureter. The operative results were as follows: Both after the transplantation of the right ureter into the intestine and the ligation of the right ureter, there is generally a moderately increased output of nitrogen in the urine and, in the former instance especially, a retention of nitrogen in the blood, but no change in carbon dioxide content in the blood, probably an evidence of increased tissue catabolism. After removal of the left kidney subsequent to transplantation of the right ureter into the duodenum, renal insufficiency and resulting retention developed. The nonprotein and urea nitrogen in the blood steadily increased and the carbon dioxide content of the blood diminished to the level characteristic of a moderate acidosis. No ketones were found in the blood. The dogs died five to ten days after the nephrectomy under conditions characteristic of suspended renal activity—deep respiration, unconsciousness and sopor.

33. **Antiseptic Properties of Organic Compounds.**—A study of the inhibitive effect of aniline and some of its derivatives and of the triphenylmethane dyes on certain bacteria leads Kligler to conclude that the germicidal action of the compounds is a function of the benzene nucleus, the added elements or radicals, their number, and in the case of the dyes, probably the quinoid structure of the nucleus. So far as tested, the increase in the number of alkyl radicals increases the antiseptic power. Methyl green is an interesting exception to this rule, for the change of one of the nitrogens to the quaternary salt is accompanied by an almost complete loss in inhibitive action. The antiseptic power is enhanced to a greater extent by an ethyl than a methyl group, and the second alkyl produces a proportionately greater increase than the first. It appears that the relative position of the introduced group may be a factor in determining the relative

improvement in the effectiveness of the compound. The introduction of a methyl group in the nucleus consistently enhances the inhibitive action of the compound and its alkyl derivatives. This is evident from a comparison of the action of anilin and its derivatives with that of toluidin and its corresponding derivatives. The simple anilin derivatives, as well as the dyes, are more toxic for the gram-positive than the gram-negative bacteria. Of the former, *B. subtilis* is more sensitive to the dyes than *S. aureus*, while the reverse is true in the case of the anilin compounds. The most marked selective effect is manifested by the triphenylmethane dyes. *B. aerogenes* and *B. typhosus* possess a higher resistance to these substances than *B. coli* or *B. dysenteriae*. The last is exceedingly sensitive. This partial specificity is apparently a function of the molecule as a whole.

34. Elimination of Iron and Distribution in Liver in Experimental Anemia.—In the continuous blood destruction, essentially a chronic experimental anemia, caused by infecting the dog with *Trypanosoma equiperdum*, no increased elimination of iron was observed in the feces by Dubin and Pearce. The storage of iron in the liver and spleen under these experimental conditions is somewhat greater in amount, but of the same general character as in transient experimental anemia. Splenectomy before or after infection, that is, the development of anemia, influences neither the elimination of iron in the feces nor its storage in the liver. The retardation of the course of the trypanosome infection and thus the production of a more chronic anemia by treatment with a trypanocide, arsenobenzol, likewise does not affect iron storage. These experiments therefore have failed to reproduce the changes in iron metabolism seen in certain of the chronic hemolytic anemias of man.

35. Blood Pressure in Auricular Fibrillation.—The technic of Gaertner is shown by Cohn and Lundsgaard to be especially applicable to the study of the blood pressure in fibrillation of the auricles. The use of this technic has brought out a defect in the so-called fractional method of taking the pressure in this condition; the brachial and digital curves cross. Taking pressure of both brachial and digital arteries has shown that certain different types exist; first, that in which both central and peripheral pressures are stable; second, that in which the more central pressure is stable and the peripheral pressure fluctuates; and third, that in which both pressures fluctuate together.

36. Peripheral Blood Pressure.—Experiments on dogs showed that whereas the pulse pressure in the larger arteries (femoral) varies extensively, it varies within narrow limits only in the small ones (dorsal artery of the foot). These results supply an experimental explanation for the fact that in man uniform pressure readings were obtained by Gaertner's method at the digital artery. The experiments show likewise that in certain instances the level of pressure is maintained when fibrillation of the auricles sets in. It is therefore clear that when the mechanism of the heart beat in man changes to fibrillation of the auricles, a change, that is a fall, in pressure need not necessarily develop.

38. Mercuric Chlorid Intoxications.—In the acute mercuric chlorid intoxications which have been induced in dogs by MacNider death has been due either to the shock associated with the severe mercury enteritis or to a delayed kidney injury. The injury to the kidney has been constantly associated with the development of an acid intoxication. The delayed kidney injury is not due to the action of the mercury as such during its elimination by this organ. The manner in which mercuric chlorid induces an acid intoxication is under investigation.

Journal of Infectious Diseases, Chicago

April, 1918, 22, No. 4

- 39 *Etiology of Epidemic Poliomyelitis. E. C. Rosenow and G. W. Wheeler, Rochester, Minn.—p. 281.
40 *Elective Localization of Streptococci from Epidemic Poliomyelitis. E. C. Rosenow, E. B. Towne and C. L. v. Hess, Rochester, Minn.—p. 313.
41 *Agglutination of Pleomorphic Streptococcus Isolated from Epidemic Poliomyelitis by Immune Serum. E. C. Rosenow and H. Gray, Rochester, Minn.—p. 345.

42 *Treatment of Fifty-Eight Cases of Epidemic Poliomyelitis with Immune Horse Serum. E. C. Rosenow, Rochester, Minn.—p. 379.

39. Etiology of Epidemic Poliomyelitis.—A pleomorphic coccus has been isolated from and demonstrated in affected tissues in all the cases examined of poliomyelitis that occurred in different epidemics and in widely separated parts of the country. Pure cultures of this organism have been isolated many times and it has been demonstrated in films and sections of brain and cord many months after they were placed in 50 per cent. glycerol. The authors hold that in view of these results the presence of this organism in the diseased tissues cannot be considered an accidental contamination. On injections of cultures into young rabbits and guinea-pigs it localizes specifically in the nervous system and produces flaccid paralysis and changes in brain and cord which resemble those in poliomyelitis in man. From the brain and cord of these animals the organism can be isolated and the disease again produced. The organism has been rendered filtrable. By means of the same methods the identical organism has been isolated constantly from the brain and cord of monkeys paralyzed with fresh, glycerolated and filtered virus. The serums of persons and of monkeys, having recovered from poliomyelitis, agglutinate specifically the more sensitive strains both from human and monkey poliomyelitis. Injections of the recently isolated aerobic cultures into monkeys renders them refractory to virus. The aerobic form of the organism from human and monkey poliomyelitis produces antibodies in the serum of horses, in a large amount common for both, cross-agglutinating these strains specifically in high dilution. The serum of a horse immunized with freshly isolated strains from monkeys protected monkeys relatively against intracerebral inoculation of virus and had pronounced curative effects in the treatment of human poliomyelitis. Early intravenous injections were followed by almost immediate cessation of symptoms in a large series of cases.

40. Localization of Streptococci from Poliomyelitis.—A thorough bacteriologic study of twenty-two cases, has shown that the streptococcus found so constantly in poliomyelitis tends to localize electively in the central nervous system in young guinea-pigs, rabbits, puppies and kittens, and less often in adult animals of these species and in adult monkeys. The symptoms and lesions produced resemble those found in poliomyelitis in man. Cultivation on artificial media, especially under aerobic conditions, usually destroys promptly the elective localizing power, as does successive animal passage. The results obtained indicate strongly that the streptococcus under consideration is not merely a secondary invader, but that it has etiologic significance in poliomyelitis.

41. Agglutination of Cocci from Poliomyelitis.—The results of this study further support the view that the elective localizing power of the pleomorphic streptococcus as first demonstrated by Rosenow, Towne and Wheeler, has significance and that it in some way bears etiologic relationship to epidemic poliomyelitis.

42. Treatment of Poliomyelitis with Immune Horse Serum.—Rosenow reports in detail the results obtained from the serum treatment of fifty-eight cases of poliomyelitis which occurred in Davenport, Iowa, and the surrounding locality during the latter part of the summer and in the autumn of 1917. Intravenous injections were made to the exclusion of intraspinal injections for the following reasons: 1. The best results were obtained by this method in the protection of monkeys against virus. The serum was activated for the same reason. 2. Invasion of the nervous system in poliomyelitis is only a part of a more or less generalized systemic infection (Flexner and his co-workers). This was particularly true in this epidemic. Infection of the tonsils, the cervical and mesenteric lymph glands and the gastrointestinal tract was often marked. 3. The spinal fluid in poliomyelitis is known not to contain the virus. The disease process is situated chiefly in the depths of the cord which can best be reached through the circulation, particularly if lymph drainage toward the spinal canal is promoted by the

withdrawal of spinal fluid. 4. Intraspinal injections of immune serum, human and horse, are known to be irritating and at times dangerous.

Altogether, 94 intravenous injections were made. In no instance was there a primary toxic action noticeable, and in only six (10 per cent.) was there later evidence of serum disease. If the temperature was normal no rise occurred, if above normal, an immediate drop without an initial rise was the rule, especially early in the disease. The low incidence of serum disease in this series, 10 per cent., as compared with the incidence of 33 per cent. in Nuzum and Willy's series, and apparently a more immediate beneficial effect, Rosenow suggests, may be due (aside from an apparently more powerful serum, the agglutinating power being much higher, smaller doses being necessary to be effective) to the fact that intravenous injections only were given. Altogether fifty-eight patients with poliomyelitis, irrespective of the severity or type of the disease, were treated. Of these, ten died, a total mortality rate of 17 per cent. Excluding seven of the fatal cases in which the patients were practically moribund at the time of the serum treatment, there were three deaths, a mortality of 6 per cent., in fifty-one cases in which the serum had a fair chance. This is in marked contrast to the twenty-three untreated patients, of whom nine died, a mortality of 35 per cent. Including the moribund patients as untreated, there were sixteen deaths in thirty, or a mortality of 53 per cent. Paralysis did not develop in a single instance when treatment was begun before its onset, and all recovered. No extension occurred following the giving of serum in the patients who recovered and in whom paralysis was marked at the time of the serum treatment. In only three or possibly four patients, or 8 per cent., receiving the serum will there be permanent impairment of function, and in all but one this will be slight.

Journal of Parasitology, Urbana, Ill.

March, 1918, 4, No. 3

- 43 Studies on Illinois Cercariae. E. C. Faust, Urbana.—p. 93.
44 Studies on Screw Worm Fly, *Chrysomya Macellaria* Fabricius in Panama. L. H. Dunn, Ancon, C. Z.—p. 111.
45 Methods of Asexual and Parthenogenetic Reproduction in Cestodes. T. Southwell and B. Prasad.—p. 122.
46 Excretory System of *Agamodistomum Marcianae* (La Rue), Agamodistome Stage of Forked-Tailed Cercaria. W. W. Cort, San Francisco.—p. 130.
47 *Natural Occurrence of Eosinophilias. S. Hadwen.—p. 135.
48 Three Unusual Cases of Parasitism (Slug, Myriapod and Cockroaches) Reported in Man. C. W. Stiles.—p. 138.

47. Natural Occurrence of Eosinophilias.—When the juices obtained from *Hypoderma* larvae, either diluted or otherwise, are injected under the skin of a susceptible animal, the first effect noticed will be local. At the point of injection a blisterlike spot will be seen, and a necrotic area will occur. In twenty minutes to half an hour, swelling will be noted. The necrotic spot in the center will be depressed. Smears made from the swelling some hours later reveal the presence of an eosinophilia, and if the material which was injected contained bacteria, phagocytosis by the eosinophils. This observation of phagocytosis by the eosinophils was made by Hadwen and certified by Dr. B. H. Ransom at Washington, D. C. The reason for the eosinophils assuming the rôle which is usually assigned to the neutrophils, is apparently because the bacteria are rendered attractive by their being bathed in the verminous juices. It is a well-known fact that, as a rule, in verminous anemias the percentage of eosinophils is high, but in some instances they may be very scarce. Weinberg and Séguin noted this in their experiments and suggest that the few eosinophils which were in the circulation had been attracted to the parts affected in order to repel a verminous invasion. Experiments are contemplated to determine what curative effects the injection of worm juices may have on such cases.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1918, 11, No. 2

- 49 *Digitalis in Auricular Fibrillation. A. R. Cushny, London.—p. 103.

50 *Action of Tartrates, Citrates and Oxalates. Study in Tolerance, Cumulation and Effect of Diet. W. Salant and A. M. Swanson, Washington, D. C.—p. 133.

51 *Poisonous Action of "Asetake." K. Muto, Tokyo, Japan.—p. 147.

52 *Comparative Absorbability of Local Anesthetics from Urethra. T. Sollmann, Cleveland.—p. 159.

49. Digitalis in Auricular Fibrillation.—Two different types of effects were seen by Cushny in the mammalian heart under the action of the digitalis series. A. In the normal heart digitalis causes slowing through stimulation of the inhibitory center in the medulla, and if this is eliminated, the dominant feature is an increase in the excitability which leads to the inception of independent rhythm in the auricle and ventricle, and later to discharge from different points of the same chamber, which culminate in fibrillation. B. In the excised mammalian heart exhausted by prolonged perfusion with Ringer's solution, digitalis causes slowing and block which closely simulates that induced by inhibition in the normal heart, but which is not prevented by atropin and therefore arises from direct action on the heart. The pacemaker emits fewer impulses and these are still further reduced owing to impaired conduction to the auricle from the Keith-Flack node and to the ventricle from the auricle. The auriculoventricular block becomes further developed, the ventricular beats become slower and finally the chamber ceases in more or less complete systole without fibrillation. In auricular fibrillation in man, digitalis slows the pulse and this is independent of the inhibitory mechanism, for it is not prevented by atropin. In the mammalian heart in situ when auricular fibrillation is induced, strophanthin finally arrests the irregularity of the ventricle, by impairing conduction, but the pulse is not slowed owing to the accelerated idioventricular rhythm induced by the drug. In auricular fibrillation induced in the perfused heart, strophanthin renders the ventricle regular through impaired auriculoventricular conduction and at the same time slows its rate. The Type A, inhibitory slowing, occurs in man and animals with normal cardiac rhythm. The Type B, slowing through direct cardiac action, occurs in most cases of auricular fibrillation in man, in rare cases of normal rhythm in man, in the perfused mammalian heart, whether the normal rhythm is preserved or the auricle is fibrillating, and in the frog. The primary cause of the Type B in man and animals is the malnutrition of the heart; the auricular fibrillation merely favors its appearance by accentuating the fundamental cardiac malnutrition.

50. Action of Tartrates, Citrates and Oxalates.—The different behavior of tartrate, citrate and oxalate as regards tolerance and cumulation is held by Salant and Swanson to be unfavorable to the theory which assumes that the physiologic effects of their acids, and soluble salts, are due to calcium precipitation or to the transformation of ionic calcium into nonionized calcium in the cell.

51. Poisonous Action of "Asetake."—The experiments and observations made by Muto show that the poisonous action of "Asetake" (sweat fungus) agrees exactly with that of muscarin.

52. Absorbability of Anesthetics from Urethra.—The experiments reported on by Sollmann were made on male dogs, anesthetized with morphin and ether. The urinary bladder was exposed through a suprapubic incision. An opening was made near the neck of the bladder. Through this an elbow cannula of small lumen and thick walls was introduced into the posterior urethra, and tied in position. The exterior end of the cannula was connected with a small stop-cock, through which the injections were made. Another elbow cannula was tied into the urethral meatus and used for the collection of the urethral fluid. The anesthetics were used in the form of the hydrochlorids. Different animals vary rather widely in their absorbing power. To permit their comparison, an average of absorption was established for each series of observations, by averaging the percentage of absorption of the six drugs used. The relative absorbability of each drug is as a percentage of this "average of absorption." The absorbability of the hydrochlorids of the local anesthetics from the dog's urethra is in the ratio of: apothecin and beta-eucain = 86.6;

novocain = 97.6; cocain = 100; tropacocain = 105.0; alypin = 111.3. The rate of absorption increases with the dose and concentration; not only absolutely but also per cent. For instance, increasing the dose and concentration three and one-third times increases the absorption four and one-fourth times. The absorption is most rapid in the first ten minutes, but continues quite markedly even after this time. The absorption is not materially hastened by rendering the anesthetics alkaline.

Kansas Medical Society Journal, Topeka

March, 1918, 18, No. 3

- 53 Consideration of Chronic Degenerative Myocardial Changes. F. A. Carmichael, Osawatomie.—p. 55.
- 54 Trachoma. F. L. McDaniel.—p. 61.
- 55 Toxemias of Pregnancy. E. G. Coyle, Coffeyville.—p. 63.

Medical Record, New York

April 6, 1918, 93, No. 14

- 56 Manifest Pulmonary Tuberculosis. G. E. Bushnell, Washington, D. C.—p. 575.
- 57 Methods of Prevention and Control of Disease in War Industries. J. W. Schereschewsky, Washington, D. C.—p. 585.
- 58 Aid from Medical Profession in Prevention of Disease in War Industries. A. Stengel, Philadelphia.—p. 587.
- 59 Chronic Pneumonia; Report of Case. S. L. Wang, New York.—p. 590.
- 60 Physician Before the Law in Some European Countries. F. Robins, New York.—p. 592.

Michigan State Medical Society Journal, Grand Rapids

April, 1918, 17, No. 4

- 61 Dermatologic Malingering. H. R. Varney, Detroit.—p. 121.
- 62 Intestinal Obstruction. I. N. Brainerd, Alma.—p. 129.
- 63 Indications for Roentgenotherapy. J. T. Case, Battle Creek.—p. 133.
- 64 The Smith-Indian Intracapsular Operation for Cataract. F. Allport, Chicago.—p. 137.
- 65 Case of Renal Calculus. R. H. Baker, Ann Arbor.—p. 140.
- 66 Treatment of Chronic Constipation with Psychotherapy. M. Marshall, Ann Arbor.—p. 141.
- 67 Two Cases of Thyro-Adenoma of Posterior Pharynx and Nose. A. C. Furstenberg, Ann Arbor.—p. 146.

Minnesota Medicine, St. Paul

April, 1918, 1, No. 4

- 68 Congenital Idiopathic Dilatation of Colon. A. E. Sohmer, Mankato.—p. 119.
- 69 Clinical Pharmacology of Digitalis. R. E. Morris, Fort Riley, Kan.—p. 125.
- 70 Stronger Public Health Departments. G. T. Palmer, Springfield, Ill.—p. 129.
- 71 Bursae. G. Earl, St. Paul.—p. 131.
- 72 Traumatic Anomalies of Ocular Lens. C. D. Wright, Minneapolis.—p. 135.
- 73 Sarcoma of Lung; Report of Case. H. L. Taylor, St. Paul and C. E. Caine, Morris.—p. 141.
- 74 Tonsillectomy in Arthritis. E. L. Warren, St. Paul.—p. 142.

Missouri State Medical Association Journal, St. Louis

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- 75 Intracranial Localization. G. W. Robinson, Kansas City.—p. 111.
- 76 Acetone Treatment of Uterine Cancer. R. E. Wobus, St. Louis.—p. 116.
- 77 Physician's Duty of Hour. E. S. Smith, St. Louis.—p. 118.
- 78 Indications for Radical Mastoid Operation in Chronic Suppurative Otitis. W. D. Black, St. Louis.—p. 121.
- 79 Chronic Indurative Pancreatitis. W. B. Burns, Memphis, Tenn.—p. 122.
- 80 Preparation and Use of Carrel-Dakin Antiseptic Solution. M. Smith, Oklahoma City.—p. 125.
- 81 Elephantiasis Arabum; Report of Case. O. A. Hartwig, St. Louis.—p. 127.
- 82 Fifteen Days' Colon Contents Coated. E. H. Kessler, St. Louis.—p. 130.

Nebraska State Medical Journal, Norfolk

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- 83 Convulsions in Children. W. O. Colburn, Lincoln.—p. 73.
- 84 Red Cross and Antivivisectionists. W. W. Keen Philadelphia.—p. 76.
- 85 Early Recognition of Cancer of Breast. J. S. Welch, Lincoln.—p. 81.
- 86 Laboratory Diagnosis of Early Tuberculosis. M. J. Breuer, Lincoln.—p. 83.
- 87 Flatfoot. J. E. M. Thumson, Lincoln.—p. 87.
- 88 Fracture of Os Calcis. J. W. Duncan, Omaha.—p. 89.
- 89 Rapid Methods in Tissue Diagnosis. M. J. Breuer, Lincoln.—p. 94.

New Orleans Medical and Surgical Journal

April, 1918, 70, No. 10

- 90 Double Recurrent and Bilateral Tubal Pregnancies. A. P. Heinck, Chicago.—p. 761.
- 91 Some Recent Literature on Shock. F. W. Parham, New Orleans.—p. 773.
- 92 Treatment of Pelvic Infections Should Be Standardized. S. M. D. Clark, New Orleans.—p. 783.
- 93 Moral Aspect of Criminal Abortion. J. D. Foulkes, New Orleans.—p. 795.
- 94 Report of Committee on Criminal Abortion. N. F. Thiberge, New Orleans.—p. 801.

New York Medical Journal

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- 95 Syphilis and War. W. P. Cunningham, New York.—p. 625.
- 96 Earache and Its Management. R. B. Scarlett, Trenton, N. J.—p. 631.
- 97 Surgical Treatment in Thyroid Conditions. A. S. Brinkley, Richmond, Va.—p. 634.
- 98 Chronic Diarrhea. R. Upham, New York.—p. 636.
- 99 Uterine Subinvolution. F. Herb, Chicago.—p. 639.
- 100 Roentgen Ray Findings in Gastro-Intestinal Tract. L. J. Friedman, New York.—p. 642.
- 101 Place of Pharmacist in Army. J. M. Taylor, Philadelphia.—p. 644.

Ohio State Medical Journal, Columbus

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- 103 Spontaneous Perforations of Abdominal Viscera. G. Goodhue, Dayton.—p. 216.
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Pennsylvania Medical Journal, Athens

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- 107 From Point of View of Mining Surgeon. S. P. Mengel, Wilkes-Barre.—p. 347.
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- 109 From Point of View of Surgeon in Chemical Industry. J. W. Schereschewsky, Pittsburgh.—p. 355.
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- 111 Preliminary Report on Dust Studies in Various Industries. H. F. Smyth and T. G. Miller, Philadelphia.—p. 364.
- 112 Reconstruction and Rehabilitation of Disabled Soldier. H. E. Mock, Washington, D. C.—p. 369.
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- 115 Id. W. E. Lee and W. H. Furness, Philadelphia.—p. 383.
- 116 War Crisis and Industrial Surgeon. W. A. Evans, Chicago.—p. 386.
- 117 Medical Preparedness and Medical and Surgical Problems in this War. J. C. Bloodgood, Baltimore.—p. 389.

Philippine Journal of Science, Manila

March, 1918, 13, Sec. B, No. 3

- 118 Bone and Joint Lesions of Yaws with Roentgen Findings in Twenty Cases. H. G. Maul, Manila.—p. 63.
- 119 *Infections with Coccidium and Isospora in Animals in Philippine Islands and Their Possible Clinical Significance. F. G. Haughwout, Manila.—p. 79.
- 120 Experiments on Treatment of Rinderpest with Various Drugs. W. H. Boynton, Manila.—p. 95.

119. Infections with Coccidium.—Thirty-four well authenticated cases of human coccidiosis of recent occurrence were observed by Haughwout in Manila.

Public Health Journal, Toronto

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- 121 Work of Psychiatric Clinic of Toronto General Hospital. C. K. Clarke, Toronto.—p. 97.
- 122 Problem of Feeble-minded. M. Keys, Toronto.—p. 99.
- 123 Mentally Deficient Children. C. M. Hincks, Toronto.—p. 102.
- 124 Psychology and Public Health. W. G. Smith, Toronto.—p. 106.
- 125 Mentally Deficient Recruits for Army Service. O. C. J. Withrow.—p. 109.
- 126 Hamilton Branch of Provincial Association for Care of Feeble-minded. T. H. Wills.—p. 112.
- 127 Red Cross and Antivivisectionists. W. W. Keen.—p. 119.
- 128 Social Unit Plan and Public Health. M. J. Clarke.—p. 123.
- 129 Physician as Factor in Social Efficiency. F. N. Stapleford.—p. 131.

Rhode Island Medical Journal, Providence

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- 130 Early Signs in Diseases of Upper Abdomen. J. B. McKenna, East Providence.—p. 51.
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132 Epidemic Cerebrospinal Meningitis. W. H. Jordan, Providence.—p. 54.

Vermont Medicine, Rutland

March, 1918, 3, No. 3

- 133 Medical Reserve Corps. H. D. Jump, Washington, D. C.—p. 55.
134 Early Diagnosis of Poliomyelitis. W. H. Lane, Brattleboro.—p. 59.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

November, 1917, 40, Parts 2 and 3

- 1 Innervation of Bladder and Urethra. E. G. Fearnside.—p. 149.
2 Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions, in Gross Injuries of Spinal Cord. H. Head and G. Riddoch.—p. 188.
3 Reflex Functions of Completely Divided Spinal Cord in Man, Compared with Those Associated with Less Severe Lesions. G. Riddoch.—p. 264.
4 Studies on Different Reactions (Lymphocytosis, Bisgaard, Ross and Jones and Wassermann) in Cerebrospinal Fluid in Cases of Syphilis. C. With.—p. 403.

British Medical Journal, London

March 16, 1918, 1, No. 2985

- 5 Surgery at Saloniki. T. C. English and R. E. Kelly.—p. 305.
6 *Infected Wounds of Knee Joint. K. W. Monsarrat.—p. 311.
7 Prevention of Spread of Epidemic Disease at Schools. H. M. Fletcher.—p. 313.

6. **Infected Wounds of Knee Joint.**—Thirty-eight cases are reviewed by Monsarrat. Of 25 patients treated within four days of the receipt of the wound, 18 recovered without amputation; 4 recovered after amputation and 3 died. This shows a recovery of 72 per cent. without amputation. Of the 13 admitted on the fifth day or later, 4 recovered without amputation; 3 recovered after amputation and 6 died. This shows a recovery of 30 per cent. without amputation. Another point of importance showing the influence of early treatment is the recovery of function in the joint. Of the 22 patients surviving without amputation, 13 left the hospital with recovery of function in the joint—that is to say, with a greater or less range of voluntary movement. Of these 13 patients, 3 were admitted the day following the wound; 4 were admitted on the second day following the wound; 5 were admitted on the third day following the wound and 1 was admitted on the seventh day following the wound. It was in by no means always the least complicated case that there was a good functional recovery. These groups of figures indicate the urgency of operative treatment in infected knee joint wounds, and the fair results which may be expected in cases so treated.

Punctured, penetrating wounds of the joint with effusion are not included in this paper. All that is required in such cases is fixation. This should be both absolute and prolonged. In early infections—that is to say, in cases in which the infection is not so established as to have disorganized the joint—the details of the operative treatment endorsed by Monsarrat are as follows: (a) excision of the wound, or wounds, including the capsular and synovial membrane wounds; (b) evacuation of effusion; (c) removal of foreign bodies and of detached bone fragments; (d) transverse incision into the joint a fingerbreadth above the patella 4 inches in length; (e) either (and usually) no sutures or catgut suture of the excised wounds passing through synovial membrane only. No drainage material passed into the joint; (f) fixation on splint, with fixed extension and elevation of the limb to an angle of 45 degrees at the hip joint. It is usually necessary to maintain the patency of the transverse incision into the joint by passing a pair of dressing forceps at the daily dressing for three or four days. The results

shown in the cases of which details are given here appear to demonstrate the value of this method of operative treatment in cases in which infection is not advanced. When the joint wound is complicated by fracture the question of a primary resection of the joint may be entertained if the stability of the joint is otherwise doubtful. When cases submitted to arthrotomy continue to exhibit signs of active infection on the days following operation a secondary amputation should be done; no lesser procedure is likely to be successful. Delay in amputating in such cases beyond the third day after arthrotomy is likely to be dangerous.

Amputation is advisable if infection of the joint is complicated by a serious bone injury. Amputation is further indicated if the joint wound is complicated by injury to the femoral or popliteal artery or by section of internal or external popliteal nerves. In the treatment of patients transferred from other units and admitted in the sub-acute stage, in which the joint is more or less infiltrated with septic granulation tissue and there are various operation wounds more or less providing drainage in Monsarrat's opinion the choice of procedure lies between: (a) leaving them alone carefully splinted and only operating if some secondary collection in the thigh or leg presents itself; (b) amputation. This should be chosen when signs of general infection and septic intoxication persist; when secondary collections or tracks are present in the popliteal space; when it is obvious from the extent of the bone destruction that a weight-carrying limb cannot be anticipated. A large proportion of the cases with posterior collections and tracks end in secondary hemorrhage. Bone loss, which will leave crippling, deformity and joint disorganization, which has resulted in falling back of the tibia from the femoral condyles, will always lead to a decision to amputate.

Dublin Journal of Medical Science

March, 1918, 145, No. 555

- 8 Sporotrichosis; Report of Case. W. Beatty.—p. 129.
9 Use of Dakin's Solution in Treatment of Empyema. R. A. Stoney.—p. 135.
10 Acute Troubles of Bones. J. S. McArdle.—p. 146.
11 Epistaxis in Pregnancy. Albuminuria of Pregnancy. B. Solomons.—p. 150.
12 Why Are Cerebral Motor and Sensory Cortical Areas Arranged in Inverted Order? A. F. Dixon.—p. 154.
13 General Law and Individualism. E. Wootton.—p. 160. To be continued.

Lancet, London

Jan. 26, 1918, 1, No. 4926

- 14 *War Psychoneurosis. F. W. Mott.—p. 127.
15 *Study of Emigration and of Bactericidal Effects Exerted in Wound by Leukocytes. A. E. Wright.—p. 129.
16 Method of Splinting Gunshot Fractures. W. H. Johnston and J. S. Buchanan.—p. 133.
17 Cause and Prevention of Myopia. F. W. Edridge-Green.—p. 137.
18 Portuguese Surgery During First Three Months on Western Front. J. Monjardino.—p. 138.
19 Stovain Combined with Twilight Sleep in Gynecology. F. L. Provis.—p. 152.

14. **War Psychoneurosis.**—While admitting that from commotion or prolonged stress of war, a stable nervous organization may develop an acquired emotivity, Mott says, that it seems that the psychogenic or autosuggestive factor, acting on a prewar emotive brain is the chief determining cause of war psychoneurosis, and the neurotic patient's protest of anxiety lest he be boarded out of the service, or not allowed to go to the front, is really in many cases an indication of an exhausting conflict which has been going on continually in his mind between the self-conservative instinct and the moral obligation of duty and patriotism, which has its roots in the social herd instinct.

15. **Effects of Leukocytes on Wounds.**—Attention is drawn by Wright to an all important principle. When the surgeon seeks information from the bacteriologist as to whether the wound is making progress in sterilization, and whether secondary suture may or may not be undertaken, the bacteriologist is wont to take the pus and plant it out in such a manner as to secure the survival of the microbes and the destruction of the leukocytes. In other words, the bacteriologist is wont to

make what Wright calls a "necropyoculture." And then the surgeon, when he undertakes the secondary suture, very often obtains a result much more favorable than the findings of the bacteriologist would appear to warrant. If he wants to be a help to the surgeon, the bacteriologist should change his procedure. Instead of making films and neuropyocultures, and reporting the number of microbes seen or rescued alive from the pus, he should make biopyocultures, that is, provide in his cultures conditions favorable to phagocytosis, and should then report whether the leukocytes on the wound surface—assuming that the surgeon gives them a fair chance by effacing dead spaces and surface desiccation—are competent to get the better of the remaining bacterial infection.

Quarterly Journal of Medicine, Oxford

January, 1918, 11, No. 42

- 20 *Study of Series of Cases of Injury to Chest, Seen at Base. C. Dean.—p. 59.
 21 *Sulphemoglobinemia. W. C. Long and E. I. Spriggs.—p. 102.
 22 *Clinical and Pathologic Notes on Trench Nephritis. W. H. Tytler and J. A. Ryle.—p. 112.
 23 *Six Cases of Paroxysmal Tachycardia. W. E. Hume.—p. 131.
 24 Abscess of Brain. W. B. Warrington.—p. 141.

20. **Injury to Chest.**—The following are some of the main points brought out by Dean's experience with these cases: If a hemothorax has been produced by a bullet wound it is very improbable that sepsis will occur. Of those produced by shell wounds about half are infected. Many patients with penetrating wounds, both bullet and shell, when seen at the end of a week, show no signs of lung injury. Pain and, more important, tenderness and hyperesthesia of the skin in a case of hemothorax should make one strongly suspect that there is infection. Cyanosis and dyspnea generally mean that there is infection of a hemothorax unless the latter is a very large one, but of all the early symptoms of infection, sleeplessness is perhaps the most valuable. The loss of weight occasioned by a septic hemothorax is a striking feature and in excess of and more rapid than that produced by sepsis in other situations. Lobar pneumonia complicating a hemothorax is not as serious as might have been expected. Contrary to expectation, abscess of the lung is a rarity. Bronchial breathing is often heard over a hemothorax. The most valuable signs for the differential diagnosis between a hemothorax and pneumonia are the degree of impairment of the percussion note and the presence or absence of râles. The roentgen rays are essential for the diagnosis and treatment of hemothorax.

After shock has subsided, pallor is not seen in patients suffering from even a large hemothorax, if it is sterile. A hemothorax, if of moderate size, should be aspirated after six or seven days, and no harm will result if this is done as a routine for every hemothorax. Clotting to a degree sufficient to prevent efficient aspiration of a hemothorax is rare. Secondary hemorrhages after the first few days do not occur in sterile cases. The position of the diaphragm is often abnormally high in cases of hemothorax, and this fact is to be remembered when aspiration or resection is performed. It is rare for organisms to be found by culture in a hemothorax fluid if they cannot be seen in a stained film prepared from the fluid. Resection is not indicated for every case of infected hemothorax. The bacteriology, general condition of the patient and the size of the hemothorax must all be taken into account in coming to a conclusion as to whether resection or aspiration should be done. The advantages of preliminary aspiration when it is certain that resection will be necessary are overbalanced by the loss of valuable time entailed by this procedure. When a hemothorax is infected solely by pneumococci, a better result will probably be obtained by aspiration than by resection.

The Carrel-Dakin method applied to the treatment of septic hemothorax after resection will prove to be of the very highest importance and value, since by its means secondary infection, which is one of the chief dangers of this class of case, can be almost completely eliminated. For resection a light chloroform anesthesia is generally safer than, and preferable to, a local one. Cases in which there is a gaping wound into the pleural cavity carry a very bad prognosis. The virulence of

the infection rather than the time before drainage is established determines the density of the walls of the empyema cavity and the amount of collapse of the lung in cases of septic hemothorax. It is of great importance to get patients for whom resection has been done out of bed for a few hours at the earliest possible date, when the general condition and the pulse rate allows. The displacement of the mediastinum may take considerable time to right itself, even after operation, so that care must be taken not to mistake the abnormal position of the apex beat as evidence of a dilated heart. Bronchial breathing, râles, and an impaired resonance at the left base may be the only signs of even a large pericardial effusion. The rarity of subdiaphragmatic abscess is somewhat surprising. By far the commonest cause of death in cases of chest wound which reach the base is sepsis occurring in a hemothorax. A lower mortality in infected cases is to be gained by earlier diagnosis and more efficient treatment of sepsis, rather than by early prophylactic operations undertaken as a routine.

21. **Sulphemoglobinemia.**—A case of sulphemoglobinemia is described by Long and Spriggs showing the usual features of cyanosis—constipation, debility, and headaches. The band of sulphemoglobin was demonstrated in the blood and could be seen through the lobe of the ear. The patient complained of much abdominal pain, for which two operations had been performed without any sufficient cause for the pain having been found. There was a large element of neurosis. Improvement followed a diet consisting mainly of carbohydrate foods, the use of purges and antiseptic medicines, and the removal of carious teeth; but the patient is still the subject of the complaint. Attempts to confirm the findings, described in some other cases, of a nitrite producing bacillus in the saliva and of a substance in the blood serum which strongly reduces oxyhemoglobin solutions were unsuccessful in this patient.

22. See THE JOURNAL, April 6, 1918, p. 998.

23. **Cases of Paroxysmal Tachycardia.**—Six cases of paroxysmal tachycardia in soldiers in France are described by Hume. Three of the patients had suffered from attacks of paroxysmal tachycardia before enlistment. In no case was there any evidence of valvular disease of the heart, nor could any infection be traced as the cause of any pathologic change in the heart except in one case; in this case diphtheria had undoubtedly caused a pathologic change in the heart muscle which brought about the liability to attacks of paroxysmal tachycardia. In four of the cases attacks could be readily induced by comparatively slight exertion, and it is noteworthy how little general embarrassment the attacks caused. In view of the fact that there was no gross valvular or muscular disease of the heart, it appeared possible to Hume that the attacks might easily be induced by stimulation or depression of the controlling nerves of the heart. Prompted by this consideration, the inhibitory action of the vagus was removed by the injection of atropin sulphate and the sympathetic nerve was stimulated by the injection of epinephrin chlorid. In no case did these methods of altering the nervous control of the heart bring about a paroxysmal attack. On each occasion the response was such as is known to occur normally. Nor did alterations in pressure or in the volume of the peripheral circulatory system produce attacks: thus the response to inhalations of amyl nitrite was perfectly normal.

Endeavors were made to increase the venous filling of the right side of the heart by pressure on the abdomen and alterations in posture. On one occasion in one case a momentary stoppage of the paroxysm seemed to be caused by firm pressure on the abdomen. Two of the patients had discovered that flexion of the thighs on the abdomen with the head downward, together with a squeezing of the abdomen by the thighs, would on occasions bring a proxysm to an end. Inhalations of oxygen and carbon dioxid merely caused slight alterations in pulse rate. The six venous pulses have very similar characteristics; in each there are either one or two waves which fall within the period of ventricular systole, and in none can a separate A wave, evidence of auricular contraction, be detected. A consideration of the venous pulses and the electrocardiographic records suggests that these were cases of tachycardia of ventricular origin. This theory is

supported by the appearance of frequent extrasystole in one case during the nonparoxysmal periods.

Bulletin de l'Académie de Médecine, Paris

March 5, 1918, 79, No. 9

- 25 *Coxa Vara and Obesity. E. Kirmisson.—p. 183.
26 *Lost Tendon Reflexes with Skull Wounds. Souques.—p. 194.
27 *Buried Drainage for Elephantiasis. C. Walther.—p. 195.
28 *Chemical Tests of Drinking Water. L. C. Maillard.—p. 198.
29 *Work of Army Medical Department. Sieur.—p. 201.

25. **Coxa Vara and Obesity.**—Kirmisson has been impressed by the frequent development of coxa vara in adolescents along with a general tendency to obesity. This occurs too often for it to be merely a coincidence, especially as a familial tendency is also evident. In one family described, three children have had coxa vara since the period of puberty and the mother also had coxa vara as a girl, and all four show pronounced obesity. In another family one girl of 11 had double coxa vara develop and the tendency to obesity is marked. The parents and the five other children are healthy but two are inclined to obesity. Several members of a third family show obesity and in one girl of 12 the upper epiphysis of the femur became separated, which he regards as practically the equivalent for the coxa vara in the other cases. Abortive coxalgia is another tendency in the same line. The obesity seems to be the connecting link between them all, and certain features of it, particularly the puffiness of the face, recall myxedema and suggest a possible thyroid origin. Radioscopy in two of his cases failed to show anything abnormal in the pituitary region.

26. **Loss of Tendon Reflexes After Wounds of the Skull.**—Souques warns that the traumatic meningitis after a war wound of the skull is liable to abolish the tendon reflexes permanently. This must not be mistaken for tabes, etc., later.

27. **Buried Drainage for Elephantiasis.**—Walther reports the outcome in cases of elephantiasis of the leg in which he diverted the edema fluid in the legs into the abdominal cavity by means of a rubber tube tunneling under the skin. A No. 10 or No. 12 nonperforated rubber tube is passed through the deep layer of the fascia superficialis from the incision in the anterior internal aspect of the thigh to the abdominal incision, the ends of the tube fastened with one stitch to one lip of the incision in the aponeurosis. One opening in the side of the upper end of the tube is made to insure the evacuation of the superficial lymphatics. The success surpassed all anticipations in the three cases reported here. In two the elephantiasis of one leg was of four years' standing; in one the cure is complete to date, twenty months since the operation. In the other case the elephantiasis has subsided but the skin has not yet regained its normal aspect.

28. **Chemical Tests of Drinking Water.**—Maillard regards the determination of the chlorids in the water as a reliable test of its purity. When this test was negative, the bacteriologic tests were always negative also, and vice versa. When the chemical test demonstrated that the water was good, the bacteriologic findings never showed that it was frankly bad. He always found the sodium chlorid content between 8 and 7 mg. in the pure waters while 15, 20 or 35 mg. betrayed manifest pollution. It is indispensable to know the average chlorid content of the pure waters in the region. This can be determined in a few hours by analysis of a certain number of the sources of the water. This establishes the normal chlorid content of the basin, so that any variation from this attracts attention at once. In one valley into which the troops came, he rapidly determined that the standard for the pure water in the valley was 15 mg. sodium chlorid; 0.5 mg. oxygen consumed by organic matters; the hydrotimetric degree, 31. Of the eleven springs in the valley, nine showed this standard; one showed 20 mg. sodium chlorid, suggesting contamination, and one showed 12 mg. with hydrotimetric degree 27, suggesting flushing with inadequately filtered rain water. These springs were not allowed to be used, and the bacteriologic findings showed at least 1,000 colon bacilli in each of these two springs while in the others they ranged from zero to 20, and only in three reached 100.

29. See Paris Letter, p. 1180.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 11, 1918, 42, No. 1

- 30 Hematemesis with Liver Syphilis. P. Carnot.—p. 7.
31 Alum to Supplement Quinin in Malaria. H. Dufour.—p. 13.
32 Proteins in the Spinal Fluid with Syphilis of the Nervous System. L. Babonneix and Javillier.—p. 15.
33 Autochthonous Malaria. F. Trémolières and G. Faroy.—p. 22.
34 Dyspepsia with the Sympathetic Syndrome. F. Ramond, A. Carrié and A. Petit.—p. 27.
35 *Laboratory Diagnosis of Spirochete Jaundice. P. Pagniez, A. Cayrel, P. P. Lévy and J. de Léobardy.—p. 31.
36 *Gastric Hemorrhage after Vaccination. P. L. Marie.—p. 36.
37 Pneumococcus Meningitis after Contusion of the Skull. W. Oettinger.—p. 39.
38 *Autogenous Vaccine in Enterococcus Sepsis. L. Langeron.—p. 43.
39 Severe Nephritis; Consecutive Nephralgia Cured by Decapsulation. H. Dufour.—p. 47.

35. **Laboratory Diagnosis of Spirochete Jaundice.**—Pagniez and his co-workers found in 102 men with infective jaundice that the spirochetes were present in the urine in largest numbers between the fifteenth and the twentieth day, although in the severer cases the urine contained spirochetes during the jaundice phase. They persist long in the urine; some few were found as late as the thirty-fifth and forty-fourth days. The spirochetes are very fragile and disappear from the urine as it ferments. By adding to the urine in the vessel in which it is collected 5 per cent. of a 40 per cent. solution of formaldehyd the urine is prevented from fermenting while the spirochetes are fixed at the same time. By this means the spirochetes are kept intact and show up in urine from eight to twenty-two days old. Centrifugation can be dispensed with by using the ligroin method to collect the spirochetes in the upper part of a test tube. For this, 3 or 5 c.c. of alcohol (95 per cent.) are added to 40 or 50 c.c. of urine (with 5 per cent. formaldehyd as above) in a large test tube (22 by 22). When well mixed, ligroin is poured in to a height of 2 or 3 mm. Plug with a cork and agitate violently for a minute; then set aside, propped upright, for half an hour or more. With a pipet on a rubber tube, take up the supernatant fluid and deposit three drops on a slide. Mix with them 2 drops of alcohol and spread out in a very thin layer; dry in the incubator and treat as usual. The preferable staining technic seems to be with silver preceded with tannin, followed by thorough rinsing, with care not to allow boiling on the slide—the usual Fontana and Tribondeau technic. They never found the spirochete in the blood by direct examination, but in three of seven cases this revealed it in the cerebrospinal fluid. In the sputum of eight patients with the typical jaundice they found swarms of spirochetes, but do not venture to say whether they were the specific spirochetes as no tests of them were made on animals. Besides the spirochete that seemed to be the specific one, Vincent's spirillum was numerous.

36. **Hematemesis After Vaccination Against Typhoid.**—The man of 30 had had vague and transient stomach disturbances at times, and after a severe reaction to injection of a mixed vaccine, he had three successive hemorrhages from the stomach and melena for several days but no pain in the stomach. The case warns that known lesions in the stomach should impose extra caution in the use of anti-typhoid vaccination.

38. **Serotherapy in Enterococcus Sepsis.**—Langeron reports a case of enterococcus sepsis in a man of 30 in which prompt improvement followed injection of a warmed autogenous vaccine a week after the first symptoms. A fixation abscess first started up to secrete after the injection of the vaccine.

Journal de Médecine de Bordeaux

February, 1918, 89, No. 2

- 40 Tuberculosis in the Army. Meslier.—p. 31.
41 *Surgery of Peripheral Nerves. A. Hesnard.—p. 33.
42 *Injury of Eyes in the Gassed. M. Teulières.—p. 37.
43 *Bacteriology of Wounds under Hot Air. C. B. Lafaye.—p. 39.
44 Rupture of Both Kidney and Spleen. H. L. Rocher.—p. 41.

41. **Surgery of Peripheral Nerves After War Wounds.**—Hesnard warns that the patient's statements as to the site of the sensations of paresthesias can seldom be relied on to

locate a lesion of a peripheral nerve. Pinching the trunk nerve is more instructive, but the findings cannot be accepted as indicating repair unless known to have been previously negative. He warns further that there should not be the least delay before operating when symptoms indicate compression of the nerve. When causalgia was improved by heat, it has proved to be of reflex origin in his cases. The effect of heat also serves to differentiate certain reflex disturbances from those due to obliteration of an artery.

42. Eye Lesions in the Gassed.—Teulières gives an illustrated description of a typical case of severe injury from the gas recently used by the Germans (*sulfure d'éthyle bichloré*). Among 1,500 gassed men in one advanced service, in only twenty-three were the eye lesions severe, including three cases of ulceration of the cornea and one panophthalmia. Some of Teulières' cases have proved very tenacious; one man is still under treatment since last September. The conjunctivitis, photophobia and lacrimation are still intense, and the conjunctiva looks like porcelain, but the corneal lesions are healing and the leukomas are marginal, so that vision is not much impaired.

43. Hot Air Treatment of Wounds.—Lafaye receives in his service for hot air treatment torpid wounds which refuse to heal under other measures. The bacteria in the wounds do not seem to be modified by the jet of superheated air that is played on the wounds, but he emphasizes that no anaerobes were found in the wounds examined. The combination found most resistant was the staphylococcus plus the enterococcus. The staphylococcus was found in thirty-eight of the forty most torpid wounds, which suggests that antistaphylococcus serum might be useful for local application in these wounds with tendency to atony.

Paris Médical

Feb. 23, 1918, 8, No. 8

- 45 *Primary Suture of War Wounds. G. Gross.—p. 145.
- 46 *Serotherapy and Lymphotherapy. Dezwarte.—p. 148.
- 47 Lip Reading. Lagarde.—p. 151.
- 48 Bacteriologic Control of War Wounds. G. Rosenthal.—p. 153.
- 49 Treatment of Cardiac Insufficiency. M. Leconte.—p. 155.

45. Primary Suture of War Wounds.—Gross describes the technic in minutest detail. He declares that the primary suture of war wounds was placed on a safe basis for the first time by Tissier's announcement that the only contra-indication to primary suture is the presence of the streptococcus in the wound. Every war wound free from the streptococcus should be sutured. Cultivation of the germs is the only safe guide. Fulminating putrid infection is always the work of anaerobes plus the streptococcus. It proliferates rapidly only in fluid mediums. At 37 C. its cultures are characteristic in five or six hours. The swabs should be taken from all parts of the wound, between the fourteenth and eighteenth hours, and ordinary bouillon slants of gelose with lactose litmus, and Veillon gelose should be inoculated. Streptococci have been found in only 10 or 15 per cent. of war wounds, and associated with anaerobics only in 6 or 8 per cent. The general mortality at the advanced post No. 12 has dropped from 14 to 10 per cent. since the wounds have been systematically sutured when the streptococcus is not present and the loss of substance is not too great. The suffering is very much less after the suture, and the danger of secondary infections is warded off. By the time the unsutured wounds reach the hospitals in the home zone, fully 80 per cent. contain streptococci. Besides the advantages for the wounded, the primary suture saves time and effort for the hospital force, and is a great economy in the matter of dressings, while the service gains by the men being ready to leave the hospital by the twentieth day. The fractures leave the ambulance with the wound closed and often the fracture is consolidated. The men have to be kept until healing is complete, usually for fifteen days.

He describes the excision of the wounds *en bloc* or *en cône* or exposing the entire path of a seton wound. All blind exploration is repudiated; everything should be open. With lesions of bones, it is only necessary to remove the free

sequesters; all operations on the bones should be very economical. No antiseptic should be used except possibly ether and iodoformed ether for bone lesions. Perfect hemostasis and good coaptation of the tissues are indispensable. It is sometimes advantageous to make a deep suture with wire, using three or four stout bronze wires. The skin is sutured with horsehair; a large roll of gauze is applied above, and the ends of the wires are tied over the roll. By this means hemostasis is insured and no dead space is left. The roll is left until the horsehair is removed, if not soiled with oozing. The sutures are not removed until the tenth or twelfth day, war wounds taking longer to heal than the wounds of peace.

46. Serotherapy and Lymphotherapy.—For nine years Dezwarte has been studying whether lymph is not better than serum for what we call serotherapy. He argues that the organism presents a defensive reaction on the part of the lymph glands to each and every disease that happens along, almost without exception. From tonsillitis to tuberculosis and cancer, the lymph glands react first and foremost, and it seems only logical to take advantage of the cellular elements involved in the defensive reaction in the lymph glands. Serotherapy should be supplanted by lymphotherapy. A beginning has been made in this line with autoserotherapy and Wright's vaccines. He suggests that repeated lymphatic reactions might prove useful in sensitizing living bacilli, passing them through series of animals and using the animals' lymph for the vaccine. Or the bacilli could be sensitized by mixing with lymph in the test tube. Besredka's technic sensitizes living bacilli with antibodies. Utilizing, instead of this, the lymphatic reaction would be much more like the natural methods of defense on the part of the organism.

Presse Médicale, Paris

Feb. 18, 1918, 26, No. 10

- 50 *Fracture of Joints. R. Leriche.—p. 85.
- 51 Mechanism of Muscle Tonus. H. Piéron.—p. 88.
- 52 *Orthostatic Tachycardia. G. Leven.—p. 91.

Feb. 21, 1918, 26, No. 11

- 53 *War Wounds of Laryngotracheal Region. Guisez.—p. 97.
- 54 Heliotherapy, Phototherapy and Fresh Air in Tuberculosis and for War Wounds. R. Brunon.—p. 100.

50. Resection for Fracture of Joint.—Leriche refers to primary subcapsular periosteal resection when the joint has been entered by a fragment of shell. In a hospital, 12 kilometers back of the front line, resection was done in 48 per cent. of ninety cases of severe war wounds of the knee; arthrotomy in 54 per cent., and in 5 per cent. the limb had to be amputated. The resection was a success in all but one case, and he advocates it as a routine measure which would much reduce the number of amputations otherwise necessary and the number of cases of fatal shock. This view is contrary to the conclusions adopted at the last meeting of the Interallies Surgical Conference which affirmed that primary resection now is only exceptionally indicated, and that, in any event, primary resection for the purpose of obtaining a better functional outcome, should be abandoned. Leriche presents an array of arguments to combat both these assumptions.

52. Orthostatic Tachycardia.—Leven insists that a number of orthostatic phenomena which have been ascribed to toxic action are in reality merely reflex manifestations. Those connected with dilatation of the stomach, especially orthostatic tachycardia, can often be cured at one stroke by lifting up the stomach. He reports a typical instance of the instantaneous relief of tachycardia by gastropexy in a soldier of 27. Standing, his pulse had been 120; reclining, or standing with the stomach pushed up into place, the pulse was 60. His attacks of pain in the region of the solar plexus, pallor, temperature of 40 C. and weak pulse of 60 formed the syndrome common with extreme sagging of the dilated stomach. After reducing the size of the stomach by taking folds in the posterior aspect with ten silk sutures, and fastening the stomach to the abdominal wall, the pulse gradually returned to approximately normal figures. Orthostatic tachycardia

should suggest dilatation and ptosis of the stomach, as also orthostatic reduction in the blood pressure, orthostatic pallor and lassitude, orthostatic hyperesthesia of the solar plexus, orthostatic albuminuria and orthostatic dilation of the pupils.

53. War Wounds of Laryngotracheal Region.—Guisez reviews the long difficult treatment required daily for months with wounds involving the larynx or trachea. A number of typical cases are described with the measures applied. Laryngotracheostomy has given the best results. He makes a point of refraining from tamponing the laryngostomy wound until the fifth day. This obviates the necrosis of the cartilage liable with early tamponing.

Revue Médicale de la Suisse Romande, Geneva

February, 1918, **38**, No. 2

55 *Obliteration of Superior Vena Cava. R. Favre.—p. 97.

56 *Amebic Dysentery. P. Calame.—p. 125.

55. Obliteration of Superior Vena Cava.—Favre describes the clinical picture as observed in four cases of obliteration of the superior vena cava and compared with five on record. His patients were two men of 40 and 55 and two unmarried women of 50 and 56. One of the women had long been insane. All four presented an identical set of symptoms. One case, he thinks, is the first that has been published in which the occlusion of the superior vena cava was secondary to a syphilitic osteitis of the sternum, with ulceration in the esophagus. In the other cases syphilitic phlebitis was manifest. The symptoms are those inevitable from the disturbance in the circulation, the venous stasis in the upper part of the body. The prognosis depends on development of collaterals. Treatment should be begun at the first signs of syphilitic mediastinitis with symptoms on the part of the superior vena cava. The physical and roentgen examination and history of the case, with the serologic findings, confirm the diagnosis when a patient presents cyanosis of face and hands and an elaborate subcutaneous network of veins.

56. Amebic Dysentery.—Great improvement was realized under rectal injections of emetin and silver nitrate. With incipient amebic dysentery, emetin attacks and routs out the amebas, but after they have been long in the tissues and are ensconced in the chronic ulcerations, emetin injected subcutaneously cannot reach the amebas. When this stage is reached, local measures are preferable, and he found neosalvarsan in rectal injections extremely effectual in a rebellious, chronic case. The blood disappeared from the stools after the first injection and by the third the dysentery seemed to be conquered. The stools have been constantly normal since after years of discomfort and weakness from the amebic dysentery. The man had been brought on a cot to the hospital with twenty-five dysenteric stools a day, and hemoglobin percentage under 28. The disease was of about three years' standing. It is possible that the neosalvarsan or its equivalent might prove still more effectual if the bowel were flushed through an appendicostomy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 2, 1918, **48**, No. 9

57 *Results of Goiter Operations. Lommel.—p. 273.

58 Diphtheria at Basel. R. Massini.—p. 279.

59 Salvarsan in Amebic Dysentery. F. Heim.—p. 282.

60 Success of Laparotomy plus Tincture of Iodin for Tuberculous Peritonitis. S. Stocker, Jr.—p. 293.

57. Goiter Operations by de Quervain's Technic.—Lommel relates that this technic has been applied constantly at the Bern hospital since early in 1914 and with constantly increasing satisfaction. Time has proved that no untoward by-effects have followed in any instance. In more than 50 per cent. of the 190 cases the operation was bilateral, and yet early paralysis of the recurrent nerve occurred in only 0.5 per cent., and in this case proved transient. In three other cases, recurrent paralysis developed several weeks after the operation and proved permanent. On the whole, this de Quervain method of preventive extrafascial ligation of the arteries is styled an essential progress in the technic of strumectomy.

Annali d'Igiene, Rome

Feb. 28, 1918, **28**, No. 2

61 *Tuberculosis and Blastomycosis. F. Sanfelice.—p. 41.

62 *Glanders in Felines. M. Carpano.—p. 68.

63 *Color Test of Flour. E. Calendoli.—p. 76.

61. Tuberculosis and Blastomycosis.—Sanfelice states that the lungs of tuberculous cattle constantly contain blastomycetes and other fungi. Among the blastomycetes are some species pathogenic for laboratory animals and fowls, and in shape and cultures not distinguishable from the *Saccharomyces neoformans*. Associated with tubercle bacilli, animals inoculated died more rapidly than the controls inoculated with the tubercle bacilli alone, and the tissues show both diffuse tuberculosis and blastomycosis.

62. Glanders in Felines.—Carpano found signs of acute glanders in the lungs of a tiger dying in captivity at Rome, and others have reported similar findings in lions and cats. The zoological gardens at Rome recently had an epizootic of acute glanders among the lions and tigers but the other animals escaped. Twelve of the large felines were affected and a number died. Cats inoculated from them developed the same set of symptoms in from three to five days, while other cats infected naturally from these cats showed an incubation period of six or seven days. The temperature, however, ran up the end of the fourth day.

63. Color Test of Flour.—Calendoli adds a pinch of wheat flour to a little concentrated hydrochloric acid. The color of the fluid changes to violet in proportion to the freedom from bran particles and of flour from other grains. The change of tint is complete in one or two hours and persists unmodified for twenty-four hours. Other flours and bran change the tint to brown.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 13, 1918, **39**, No. 4

64 *Hemorrhagic Purpura after Quinin. N. Samaja.—p. 35.

Jan. 20, 1918, **39**, No. 6

65 The Organ of Hearing in Aviators. Tanturri.—p. 55.

Jan. 27, 1918, **39**, No. 8

66 Shrapnel Ball in Right Heart. G. Pisano.—p. 75.

64. Purpura from Quinin.—Samaja says that malaria is the one disease encountered most frequently now in the Italian military hospitals. Among 417 patients in his service at Bologna, 244 had malaria. Among the symptoms of intolerance of quinin, occasionally noted, hemorrhagic purpura was not exceptional, but the dose of quinin usually was large when this by-effect was observed. In one case, however, the severe purpura developed after doses of only 1 mg. per kg. of body weight. The attacks of hemorrhagic purpura followed whether the quinin was given by the mouth or subcutaneously, and in constantly smaller doses down to 0.10 gm. but the intensity of the purpura was less pronounced with the smaller doses.

Riforma Medica, Naples

Feb. 9, 1918, **34**, No. 6

67 *Paralysis from Shell Air Shock. L. Gatti.—p. 102.

68 *Precipitation Reaction in Syphilis. G. Bastogi and L. Corridi.—p. 107.

Feb. 16, 1918, **34**, No. 7

69 *Functional Disability after War Wounds. R. Falcone.—p. 122.

70 *Infectious Jaundice. E. Salvaneschi.—p. 126.

71 The Trigeminal Syndrome. E. Aievoli.—p. 128.

67. Paralysis from Air Concussion.—Gatti reports a case of extremely acute paralysis with atrophy following close on explosion of a large bomb without actual contact. The tetraplegia was of the type of anterior poliomyelitis, and Gatti assumes that the anterior portion of the spinal cord had been injured by the air concussion. He knows of only one similar case on record. The paralysis and the atrophy gradually invaded all the musculature except in the head and neck, but there were no sensory disturbances and the sphincters behaved normally. Instances of traumatic anterior poliomyelitis are on record. Some injury of the blood vessels in the bulbar region is evidently responsible for the whole set of symptoms.

68. **Bruck's Precipitation Test for Syphilis.**—Bastogi and Corridi applied Bruck's nitric acid test to serum from 113 syphilitic or suspects and to fifty-five nonsyphilitic patients or healthy persons. Positive findings were obtained nearly as often in the nonsyphilitic as in the syphilitic, while a negative response was common with known syphilis. This unfavorable verdict corroborates Stillians' (THE JOURNAL, Dec. 15, 1917, p. 2014).

69. **Functional Disability After War Wounds.**—Falcone discusses in turn the proper treatment when the war wound leaves vicious consolidation, ankylosis, pseudarthrosis, paralysis, retraction of muscles or tendons or chronic edema. He insists that all these are avoidable, and that, once established, physical measures are destined to fail to cure unless they are applied or reenforced with zeal and energy by the patient himself. But this cooperation on the part of the patient cannot be secured with the wounded soldiers; they are apathetic if not directly hostile to measures to cure them up quickly. Hence Falcone urges that physical measures should be applied from the first, while the man is still in the hospital and under medical control. It does no harm to flex the fingers or massage the soft parts or apply electricity, even if the bone below is not entirely healed. The crippling deformities can often be traced to lack of care during the healing—physical measures cannot be ordered like so much quinin, but must be adapted to the individual case and constantly supervised, and be applied during the tractable phase before the parts grow stiff and rebellious. He advocates legal authority for correction of deformity by some insignificant operation, such as tenotomy to cure talipes equinus. The men now refuse to permit such interventions as they prefer the crippling to a return to the front line. He suggests that surgical centers might be equipped each for some special intervention in this line by specialist surgeons, to which the men could be referred before their deformity becomes irreparable and throws them a burden on society for life.

70. **Infectious Jaundice.**—Salvaneschi analyzes the clinical findings in 276 cases of spirochete jaundice in the troops of the advanced line. The gallbladder was always enlarged and tender and the liver was usually much enlarged from the very first. The spirochetes seem to be found constantly in the urine, and hence the close quarters in the trenches favor transmission of the infection in food and water. The spirochetes may also find their way into the body through erosions.

Rivista di Clinica Pediatrica, Florence

February, 1918, 16, No. 2

72 *Visceral Syphilis in Young Infants. G. Menabuoni.—p. 57. Commenced in No. 1, p. 1.

72. **Visceral Syphilis in Infants.**—Menabuoni reports the clinical history of twenty-two cases of inherited syphilis localizing in the viscera in children less than a year old, with the necropsy findings in a number. The spleen and liver were enlarged in all. In seven of the eight whose blood was examined, the leukocytes ranged from 1,400 to 24,000. He compares the findings in the various organs with those on record. All show that the lesions vary according to the period of fetal existence when they began, but they are all of two types, either a hyperplasia of the tissues of mesodermic origin, starting from the vessels and entailing sclerosis and atrophy, or a reaction and changes in the noble elements of the organ arrested in its development, entailing cystic formations and foci of necrosis. The vessels are always damaged, the spirochetes injuring them first and spreading from them to the surrounding tissues. The infants born dead or dying soon after birth show the various steps of this spirochete septicemia.

Anales de la Facultad de Medicina, Montevideo

December, 1917, 2, No. 11-12

73 *Alternate Traumatic Paralysis. A. de Castro.—p. 697.
74 *Diabetes Insipidus and the Pituitary. P. Lereboullet.—p. 712.
75 Study of Arterial Blood Pressure. A. Martinet.—p. 742.
76 *Relations between Dietetics and Urology. L. Lematte.—p. 757.
77 *Liver Disease with Gastric Ulcer. A. Navarro.—p. 773.

78 *The Cholesterol Index. L. A. Surraco.—p. 778.

79 *Amputation of Uterine Cervix. M. B. de Bengoa.—p. 819.

80 *Gastric Fistula. C. Nario.—p. 823.

73. **Traumatic Alternate Paralysis.**—De Castro gives an illustrated description of two cases of what he calls the Millard-Gubler syndrome, the arm, leg and face on one side being paralyzed as also the external oculomotor muscles of the eye on the other side. The bullet or spike had injured the pons and he describes the mechanism, citing further Nodet's case in which the prong of a pitchfork had entered the chin and pierced through to the skull, back of the vertex. Notwithstanding the long path of the prong, no symptoms were observed from it except the alternate paralysis of the Millard-Gubler type, resulting merely from the injury of the pons on its way.

74. **Diabetes Insipidus and the Pituitary Body.**—Lereboullet has long proclaimed the advantages of pituitary treatment in cases of diabetes insipidus. The pituitary lesion may act directly or by compression of nerve tissue in the vicinity, or changes in the nerve tissue may secondarily affect the pituitary. He gives the ultimate outcome of a case previously published in which the man of 24 had seemed to stop developing at 14 and presented eunuchoid infantilism with permanent polyuria, falling out of the teeth, and eruptions suggesting that besides the diabetes insipidus there were certain elements of diabetes mellitus. Alimentary glycosuria followed even 50 gm. of glucose. The output of urine was from 6 to 10 liters in the twenty-four hours and pituitary treatment by the mouth did not modify it, but subcutaneous injection of 0.05 gm. pituitary extract, corresponding to half of the posterior lobe of a beef pituitary body, caused the urine to drop to 1 or 2 liters; appetite and sleep returned and the young man felt better, but this effect never lasted over twenty hours. He finally made the injections himself and kept them up for months. If they were suspended for twenty-four hours the polyuria returned. After two years of this he had gained 3 cm. in height, the hair on his body had grown somewhat, and the testicles had descended, and there were erections and ejaculations—phenomena never known before, but old tuberculous lesions in the lungs and around the anus had continued to progress, and proved fatal a year or so later. In these and similar cases of *infantilisme reversif*, the thyroid seems to be involved but to a less extent than the pituitary. Syphilis is evidently a factor in certain cases. Sourdél has reported a case in which, twenty years after syphilis had been contracted at 25, the man developed atrophy and infantilism of the genital organs plus extreme polyuria. Other cases are cited to sustain this relative frequency of diabetes insipidus with reversible infantilism, and the frequency of syphilis as the main factor in the disturbance in pituitary functioning responsible for the phenomena indicating dystrophy. Diabetes insipidus is also encountered at times with the adiposogenital syndrome, but less often than with congenital or reversible infantilism. Still more conclusive in this line is the development of polyuria in the course of cancer of the breast and occasionally elsewhere, explained by metastasis in the posterior lobe, found at necropsy. The most convincing argument, however, is the efficacy of pituitary treatment. Although the action lasts only for twenty-two hours, even this gives great relief, whether its action is specific or merely symptomatic.

76. **Mineral Metabolism.**—Lematte discusses the ratios between the intake of minerals in food and the elimination in the urine, and the action of the different segments of the digestive tract on the combinations of minerals. It seems to be settled that the reciprocal saturations of oxids and acids occur according to the laws of thermochemistry. He states that the phosphate or biphosphate content of the urine depends on the quantity of hydrochloric acid liberated by the gastric secretion. The phosphate content of the urine is thus an index of the chlorhydria of the stomach. The liberation and oxidation of sulphur occur in the intestines parallel to the liberation of the amino-acids. Other things being equal, the proportion between the sulphur of the sulphates and that of the sulphoconjugates of the urine is determined by the pancreatic and intestinal digestion.

77. **Liver Abscess with Ulcer of the Stomach.**—In Navarro's two cases the liver disorder dominated the clinical picture, and after opening an abscess in the liver or after repeated punctures releasing blackish blood without pus, the ulcer in the anterior aspect of the stomach healed spontaneously, that is, under the influence alone of the exposure to light and air during the laparotomy. In neither of the cases was the gastric ulcer suspected before the operation, and it was not found until necropsy in one case. In the other the gastric ulcer region was solidly adherent to the inflamed liver but no abscess had formed as yet.

78. **Cholesterol Index.**—For the last year, Surraco has been determining the cholesterol content of the blood in all cases of stenosis of the urethra or enlarged prostate. This cholesterolemic index reflects the state of the organic defences, and when determined in series throws light on the prognosis. A cholesterol content below 1.2 gm. indicates something wrong, showing extreme weakness of the organic defences. Above 2 gm., it indicates chronic slow infection or more or less pronounced uremia. Below 1 gm. the prognosis is very grave. Cases are described which confirm these statements. The normal range is apparently from 1.2 to 1.9 gm.

79. **Amputation of Uterine Cervix.**—De Bengoa has modified Bonney's technic for amputation of the cervix so that no raw surface is left exposed while the shape of the cervix is normal. The result was a complete success in the six cases in which he has applied this technic to date. After the amputation he runs a stout catgut suture around below the mucosa, like a garter, the ends brought out at one side. Then he two suture threads of Bonney's technic are passed through the tissues, at some distance back, enclosing the raw margin on each side. The garter suture is drawn up and tied; this restores the natural shape and size of the cervix opening. Then pulling on the two Bonney threads draws this raw edge inward for some distance, and when the Bonney threads are tied the cervix is left like the mouth of a muff, nothing showing but sound tissue.

80. **Gastric Fistulas.**—Nario advocates continuous aspirating siphonage action through the skin stomach fistula. In the two cases described, the fistula left after gastrectomy or cholecystectomy began to heal almost at once when this was done.

Brazil-Medico, Rio de Janeiro

Jan. 12, 1918, 32, No. 2

81 *Case of Mutilating Leishmaniosis. R. Machado and A. Aleixo.—p. 9.

82 *Cancer of the Liver with Gallstones. J. Amaral.—p. 11.

Jan. 26, 1918, 32, No. 4

83 Flagellate Helminths in Brazil. VI. O. O. R. da Fonseca.—p. 25.

84 Double Congenital Hand without Radius. (Mão radio-palmar.) A. F. de Magalhães.—p. 25.

85 *Massage of Lacrimal Sac. N. da Rocha.—p. 26.

81. **Mutilating Leishmaniosis.**—The upper lip and palate had been destroyed and the adjoining soft tissues had hypertrophied and hung down like broad tusks to below the chin. Under antimony treatment the extensive lesions healed and plastic operation gave good results. The treatment was begun with intravenous injections of 0.01 gm. of tartar emetic 1 c.c. of distilled water, and the lesions were laved with the same. After thirteen daily injections the dose was increased to 0.05 gm. and ten injections were given at three day intervals. The dose was gradually increased to 0.07 and 0.08 at two or four days interval, and the tolerance was apparently complete, but a violent reaction followed a single dose of 0.10 c.c. By this time healing was complete.

82. **Cancer of the Liver in Youth.**—The boy of 14 had three healthy brothers and sisters and the father is healthy; the other died from hemorrhage at his birth. After an attack of pneumonia at 14, the boy suffered from severe gallstone colics and some ascites developed. He passed two gallstones but the pains in the liver kept up and the much enlarged liver felt hard but uniform. There was no fever at any time. The laparotomy revealed cancer of the liver and the boy died before the week was over, about forty days after the first symptoms. There was nothing to suggest syphilis in the boy or family. Cholelithiasis frequently precedes can-

cer of the liver; ascites does not accompany gallstones, as a rule. Fever is regarded as an important sign of cancer of the liver but it was not present in this case. The diuresis had kept up well.

85. **Massage of Lacrimal Sac.**—Da Rocha insists on teaching the patient to massage the region several times a day, always back of the crest of the bone. The massage restores elasticity to the stretched walls of the lacrimal sac, and the rubbing of the walls together clears the passage of accumulations. If catheterization is necessary, a few days of preliminary massage facilitate it and enhance the effect.

Cronica Medica, Lima

February, 1918, 35, No. 656

86 Alkaline Treatment of Eclampsia. J. A. Maldonado.—p. 33.

87 Nephritis with Chloridemia, High Blood Pressure and Sclerosis of the Aorta, of Alcoholic Origin. E. Odriozola.—p. 39.

88 Psychoanalysis. H. F. Delgado.—p. 45.

Prensa Medica Argentina, Buenos Aires

Feb. 20, 1918, 4, No. 26

89 Gangrene in Syphilitic Pulmonary Process. M. R. Castex and J. Queirel.—p. 355.

90 Internal Ear Lesions from Neosalvarsan Cured by Neosalvarsan. M. Gaidos.—p. 358.

91 Treatment of Anthrax with Normal Beef Serum. J. Penna, J. B. Cuenca and R. Kraus.—p. 363. Continuation.

Revista de Medicina y Cirugia, Havana

March 10, 1918, 23, No. 5

92 *Typhoid in Cuba. M. G. Lebrede.—p. 119.

93 *Metastasis from Hypernephroma. D. G. Marmol.—p. 128.

94 The Simultaneous Publication of Original Articles. J. F. Arteaga.—p. 135.

95 Advertisements in the Medical Press. G. F. Arreu.—p. 137.

96 The Physician as a Civic Leader. A. Galarreta.—p. 140.

92. **Typhoid in Cuba.**—Lebrede remarks that while Cuba has conquered yellow fever, smallpox and bubonic plague, yet it keeps on paying a high tribute to typhoid. In 1917 there were many cases in different provinces throughout the island. He insists that every typhoid case should be taken to a hospital as the only means to insure adequate prophylaxis. In fact, every pyrexia of long duration or with infectious gastro-intestinal symptoms should be removed to the hospital, or the Public Health Service should take the prophylaxis in the home into its own hands.

93. **Hypernephroma.**—The man of 50 had had pains and hematuria for seven months when the right kidney was removed on the assumption of hypernephroma. The tumor weighed 420 gm. Two months later pains in the left shoulder attracted attention and a metastatic tumor was found at the head of the humerus. After disarticulation there were no further symptoms for a few months. Then metastasis in the femur compelled amputation in the upper third. There were no further symptoms during the following two years, but the man then succumbed to the effects of morphin addiction. Metastasis of this form of cancer generally locates in the lung, liver or long bones, and many cases of supposed primary sarcomas in these regions were rightfully metastasis from undiagnosed hypernephromas. Hochenegg has reported metastasis ten years after nephrectomy for the primary tumor. In the case described, the metastasis in the shoulder was evidently installed before the primary tumor had been discovered and removed. The second metastasis developed at a point where the femur had just been fractured.

Revista Medica Cubana, Havana

March, 1918, 29, No. 3

97 *The Medical Press. Juan Santos Fernandez.—p. 117.

98 *Different Forms of Ileus. E. Yaniz.—p. 122.

99 *Practice of Medicine in Cuba. D. T. Lainé.—p. 131.

100 *Intoxication from Eating Fish. H. Seiglie.—p. 141.

97. **The Latin-American Medical Press.**—Fernandez says it is a capital defect of Latin races to shrink from writing for publication, and consequently the fruits of their experience perish with them. He warns the medical students of the day to beware of the *habito latino del mutismo*.

98. **Different Forms of Ileus.**—Yaniz reports merely some unusual forms which he has encountered, calling attention to the necessity for differentiating ileus from paralysis of the bowel. This latter requires merely medical measures. After operations on the bowel he often gives pituitary extract to promote peristalsis, and advocates it also in the medical cases, with massage of the abdominal wall.

99. **Practice of Medicine in Cuba.**—Lainé relates his impressions when he returned to Cuba twenty years ago to practice medicine after studying in the United States and practicing several years in Philadelphia. At that time the practice of medicine in Cuba was modeled on the European, and scarcely anything was known of American medical and surgical methods, but now, he says, the majority of Cuban physicians are in close touch with physicians and surgeons of the United States. They are familiar with American medical literature, and they use American drugs. In the United States, he adds, a physician called in consultation will never allow the family to transfer the patient to his care, but this has been done in Cuba. In regard to drugs, he remarks that no country in the world uses such an enormous quantity of proprietaries in proportion to size and population as Cuba. This is due either to ignorance of fundamental therapeutics or to heedless indifference. Another peculiarity of practice in Cuba is the large doses of calomel used. It is not uncommon to see doses of 0.10 or 0.20 gm. of calomel prescribed for small children. Strychnin, on the other hand, is given very cautiously; few venture to order more than 1 mg.

The climate of Cuba is decidedly enervating for persons from the North, for women especially. After one or two years' residence in Cuba the majority of persons from the United States have to return to a cooler climate to recuperate. The Cuban diet contains an unusually large proportion of meat, and fresh vegetables are very scarce—this cooperates with the climate and the lack of exercise in undermining the health. He estimates that instead of the usual 10 per cent. of proteins in a diet of 2,500 calories, the Cubans have 60 per cent. proteins, and mostly served fried. The special features of the morbidity of Cuba that have impressed him are the rarity of acute lobar pneumonia and of acute articular rheumatism, and the mildness of the children's diseases, whooping cough, measles and scarlet fever. Dengue is extremely common, and it can be diagnosed from the first by the spontaneous pain in the eyeballs and the pain on pressure. The pains increase as the eyeballs are rolled up or down. The rash is manifest the third or fourth day, especially in the face, but it may have to be sought for in a good light.

In conclusion he urges the profession to overcome the extreme conservatism of the Latin-American, to cultivate the spirit of union in the profession, and overcome the tendency to distrust each other. He relates that for years he was the only surgeon in Cuba that used gloves in operating, and it is only about three years since they have come into general use. For six years he has been giving antityphoid vaccine to his family and patients but its use has not become general in Cuba. He adds that for more than a year he has been using nitrous oxid for the anesthetic in surgery and obstetrics, but no one else is adopting it. His thirty years of the practice of medicine, he declares, have been a constant struggle to keep not too far behind the progress of medicine and surgery; in other words, his life as a medical student has never stopped a moment. Many years ago he became convinced that no one man can master all the medical sciences, and he never hesitated to call on specialist aid as needed in the individual case. "Our profession cannot get along without mutual aid. We must be honest with ourselves, and, recognizing our limitations, learn to know when to depend on others."

100. **Poisoning from Fish.**—Seigle describes the set of symptoms known as *ciguatera*, caused by eating fish. Some fishes are naturally poisonous, others only when they reach a certain size or age. He lists them all and comments on the uncontrollable vomiting, the colics, tenesmus and dysenteric or choleric passages, with or without nervous disturbances. Scotoma, diplopia and sometimes transient blindness and contraction or dilation of the iris are common, and

ptosis of the eyelids. The pulse is small and irregular, the tension and temperature subnormal. There is almost always a rash, with desquamation, and sometimes the hair and nails drop out. Lavage of the stomach, effervescent mineral waters, scraps of ice and champagne may be indicated, with morphin if there is much agitation. The antitoxic action of the liver should be stimulated and the bowels disinfected, with salol, sodium salicylate, etc., and the emunctories stimulated with copious ingestion of water with 5 per cent. lactose, or infusions.

Semana Medica, Buenos Aires

January 10, 1918, 25, No. 2

- 101 Hemogrenarina in Blood of Frogs. S. E. Parodi.—p. 37.
- 102 *Tuberculosis in Spaniards. E. R. Coni.—p. 40.
- 103 Operative Case of Bezold's Mastoiditis. L. A. Huerta.—p. 41.
- 104 *Chronic Arsenic Poisoning. S. M. Zayas.—p. 43.
- 105 Vocational Training at Buenos Aires. E. R. Coni.—p. 46.
- 106 Hypnotism, Idealism and Materialism. F. de Courmelles.—p. 54.

102. **Tuberculosis in Spaniards.**—Coni was impressed with the large percentage of native Spaniards in his medical service at Buenos Aires although the Italians in the general population far outnumber the Spaniards. He noted also the large percentage of young married women born in Argentina of Spanish parents. He cites some international figures which place Spain at the head of the list of tuberculosis mortality. His table shows 5,000 deaths from tuberculosis in Spain per million inhabitants; France comes next with 3,900; then Portugal, 3,800; Austria, 2,700; Germany, 2,200; Argentina, 2,000; Italy, 1,800, and England, 1,300. In Argentina the Italians generally drift to outdoor occupations while the Spaniards are employed more in hotels, restaurants and stores.

104. **Chronic Arsenic Poisoning.**—The man of 39 has presented for three months symptoms of pseudotabes from peripheral polyneuritis. Zayas ascribes the syndrome to poisoning from the arsenic with which the drinking water in the Bell Ville region is known to be impregnated, as recently mentioned in these columns. This case developed about twenty miles from Bell Ville, showing that the dangerous water affects a larger area than hitherto assumed.

Siglo Medico, Madrid

Jan. 19, 1918, 65, No. 3345

- 107 *Endemic Goiter in Spain. J. Goyanes.—p. 43.
- 108 Case of Splenomegaly with Polycythemia. F. J. Asua.—p. 47.

Jan. 26, 1918, 65, No. 3346

- 109 *To Ward Off Recurrence of Cancer. D. A. Morales.—p. 62.
- 110 Shape and Movements in vitro of the Blood Cells. F. Mas y Magro.—p. 64.
- 111 Patriotism and Heroism. J. G. Ocaña.—p. 67.

107. **Endemic Goiter in Spain.**—In the high mountain valleys in the province of Avila goiter is endemic in man but the trout caught in large numbers in the streams for the market seem to be free from it. Goyanes' studies of these endemic foci have convinced him that an infectious factor is certainly involved. Improved hygiene seems to be reducing the prevalence of goiter and cretinism in these old foci. The thyroiditis responsible for the goiter develops in phases, with intermissions.

109. **Prophylaxis of Recurrence of Cancer.**—Morales in commenting on a few cases of cancer of the penis says that recurrence is almost certain when the penis alone is amputated. On the other hand, recurrence is almost unknown when the entire external genital organs are removed. With complete castration, nothing is left to keep up dangerous stimulation or irritation which otherwise is liable from the testicles.

Russkiy Vrach, Petrograd

Oct. 28-Nov. 25, 1917, 16, No. 43-47

- 112 *Mammary Tumor from Shell Air Shock. N. A. Velyaminoff.—p. 545.
- 113 Exhibitions of So-Called Mind Reading. V. M. Bekhtereff.—p. 549.
- 114 Hernia through the Diaphragm after War Wounds. I. E. Hagen-Torn.—p. 554. To be concluded.
- 115 Action of Alkaline Metal Salts on the Vessels of Internal and Peripheral Organs. M. I. Gramenitzky.—p. 558. Continuation.

- 116 Sanitary Conditions in Prisoners' Camps in Germany and Austria. D. P. Nikolsky.—p. 562. Continuation.
- 117 *Changes in the Blood Picture in Trench Fever. P. N. Triudin.—p. 566.
- 118 The Ferments in Infectious Diseases. A. S. Solovtsova.—p. 569. To be concluded.
- 119 Tropical Ulcer in the Troops. B. A. Volter.—p. 571. Continuation.

112. **Tumor in the Breast from Shell Air Shock.**—Velyam-noff's case was in his own person, and he relates how the first year or two of the war had passed without any special disturbance. He was accustomed to artillery fire, but then came a period when he was stationed in a small, one story building where orders were issued, the men paid, plans drawn and reports presented while all the time the place was being bombed by aeroplanes. The bombs caused such explosions that the walls shook and the plaster dropped off as if in an earthquake, and this kept up not for minutes but for hours at a time and often in the night. Some days the aeroplanes dropped as many as 120 bombs in the morning and 60 in the afternoon. As the walls of the house rocked, he found that his chest wall shook too, as he confirmed by the flame of a candle. Sometimes the explosions were so powerful that the men in the small shelter with him were knocked down by the air concussion and he was knocked off the bench on which he was sitting. He is a man of 62, and he noticed a disagreeable sensation in his left chest as these explosions occurred. The nipple grew very tender and felt as if there was an extensive burn in the region, and the left breast developed a tumor. He attributes all this to the repeated air contusions. The aspect of the mammary tumor was exactly like that of the so-called hysteric tumors, but his general condition precluded the assumption of hysteria. The left arm felt numb, or paresthesias, at the same time, and these phenomena and the size of the tumor varied in intensity from time to time and parallel, during the six weeks he was subjected to this aerial bombardment. During the whole period he felt a little depressed but this was more from responsibility and overfatigue than from a sense of personal danger. It was very annoying to have to be interrupted so constantly in one's work and be forced to seek shelter, wasting precious time. He theorizes to explain the mechanism of the disturbances, ascribing them to the shaking up of the nervous system and of the glands with an internal secretion, the result being equivalent to a chemical trauma."

117. **Ameba Found in Trench Fever.**—Triudin is convinced that the infectious disease he describes, known as "trench fever," is a disease *sui generis*. Also that the ameba he found in the blood stands in some causal relation to it. He found the protozoon in 75 per cent. of his twenty-four cases, but exclusively during the first three days of the disease. The blood showed the characteristics of a severe blood disease. Coagulation was retarded; in some it began at the tenth minute, in others not until the twenty-third. The average was eighteen minutes.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Feb. 9, 1918, 1, No. 6

- 120 *Acclimatization. C. D. de Langen and J. Schut.—p. 336.
- 121 Standardization of Lobelia. C. de L. Van Wijngaarden.—p. 347.
- 122 *Medical Cure of Anal Fistula. G. H. J. Peter.—p. 352.

120. **Practical Aspects of Acclimatization in the Tropics.**—De Langen and Schut practice in the tropical islands of the Dutch East Indies, and they call attention to their constant finding of characteristic changes in the blood of persons coming to the tropics to live. They insist that the intensity of the light, the content in chemical rays, are no greater in the tropics than in Europe, so this cannot be responsible for the modified physiologic chemistry in the tropics. They found that the average sugar content of the blood of natives of Java was 0.15 per cent. and of Europeans residing in Java, 0.16 per cent. In corresponding research on Europeans in Europe they had found 0.093 per cent. as the average of the reducing substances in the blood, with the Bang micro test, which are regarded as representing the sugar content. The content in the blood of rabbits, guinea-pigs and hens in Europe averaged respectively 0.10, 0.11, and 0.15 per cent.,

while in Batavia these averages were 0.16, 0.15 and 0.26 per cent. McCay has also published findings of blood sugar in the natives of Bengal 50 per cent. higher than the average in Europe. He did not investigate the sugar content in Europeans residing in Bengal, and ascribed the high findings in the natives merely to their predominantly carbohydrate diet, and not to the tropical climate. The cholesterol content of the blood, on the other hand, is abnormally low. In the natives the cholesterol content averages only half of the average in Europeans in Europe; in twenty natives the average was 0.88 gm. per liter of blood serum while the average in Europe is said to be 1.5 to 1.75. European immigrants in Batavia also show a low cholesterol content. De Langen and Schut did not investigate the calcium content of the blood, but they suggest that as this is always found abnormally low when there is hyperglycemia, we can almost take it for granted that there is a deficit in calcium. A number of facts sustain this assumption, as they relate; among them the tendency of tuberculosis in the tropics to be exclusively of the exudative type, without calcium shadows in the lungs, and calcium deposits in arteriosclerotic vessels are rarely found in cadavers.

The primal cause for these differences between the blood condition in Europe and in the tropics, they ascribe to the heat. The humidity may also be a factor. The hypothesis is advanced that the heat exaggerates the tonus of the sympathetic nervous system. If we can accept this, all the phenomena are explained as the logical and inevitable sequence of high sympathicotony, acting on the suprarenals, etc. The writers' research on animals, artificially stimulating the sympathetic nervous system, reproduced the whole sequence: the glycogen in the liver was mobilized, the sugar content of the blood ran up high, and the organism sought to throw off the excess of sugar in the circulating blood. This it can accomplish by eliminating it through the kidneys or by burning it up. They found that when there was not pronounced glycosuria, the animals developed fever. The "low fever" of the tropics may have a similar origin. This suggested that in infectious diseases the bacterial toxins may first irritate the sympathetic system. This entails hyperglycemia, and the fever follows on the hyperglycemia. They found this sequence marked in malarial patients; first the increase in the sugar content of the blood, and then, not until an hour or two later, the fever of the malarial attack. In one case the sugar content ran up on a day when the attack was not expected, but the fever followed the hyperglycemia. On the other hand when, under quinin, the blood sugar kept within normal range, the expected attack failed to develop. Among the other data cited is that the high sugar content of the blood declines when the persons change from the lowlands to the cooler mountain climate in the islands. Also that the hyperglycemia is evident in persons coming to the tropics even in less than a week after their arrival, an argument in favor of its nervous origin.

Persons inclined to sympathicotony, to diabetes, to renal glycosuria and to tuberculosis should be advised against life in the tropics, at least in the lowlands. On the other hand, a healed apical catarrh, or other tuberculous pulmonary lesions need not deter from residence in the tropics if the constitution is of a pronounced vagotonic type. The possibility of benefit from treatment with calcium to regulate the unstable sympathetic nervous system is also suggested. Neuritis and polyneuritis are common in Java, and the hyperglycemia may predispose thereto. The tubercle bacillus in the tropics thus finds high sugar content in the blood, low calcium content and low cholesterol content—all three are factors which directly favor its proliferation and a rapid course of the disease. Chronic tuberculosis is rare in the Dutch East Indies outside of the mountain districts.

122. **Treatment of Fistula of the Anus.**—Peter filled the rectum with 500 c.c. of a solution of boric acid. Then he injected into the fistula 0.3 c.c. of tincture of iodine. This was repeated three times in five weeks, followed each time with bismuth, opium and fasting. The long rebellious, suppurating fistula began to heal at once, and the cure was soon complete. The preliminary filling of the rectum with

fluid allowed the strong tincture of iodine to act on the fistula lining but diluted it at once as it entered the rectum, so that there was not the slightest irritation of the mucosa.

Hospitalstidende, Copenhagen

Feb. 13, 1918, 61, No. 7

- 123 Electric Light Baths in Rhinology. O. Strandberg.—p. 193.
124 *Swine Plague in Man; Three Cases. L. Thomsen.—p. 203.

124. **Swine Plague in Man.**—Thomsen has encountered three cases of a lesion on the hand, resembling erysipelas, with lymphangitis running up the arm, nausea and fever. The first patient was a veterinarian and the diagnosis of swine plague was followed by injection of 10 c.c. of the antiserum. In less than an hour the malaise had subsided and in four days recovery was complete except for a little stiffness in the arm. The man had been giving the antiserum to a sick hog four days before his own sickness. The farmer's wife who had helped to hold the hog during the injection got some blood on her hand and a small lesion developed. After failure of other measures, injection of 10 c.c. of the antiserum cured the lesion in three days. In another family a hog taken suddenly sick was slaughtered, and the farmer's wife developed the same clinical picture as in the first two cases. It dragged along untreated for two months and then subsided. One meal was made from the pork but all eating it were taken with severe diarrhea and the rest of the carcass was buried.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1918, 79, No. 3

- 125 *Goiter in Norwegian Province. S. Kjølstad.—p. 265.
126 *Idiosyncrasy to Mercury. H. Gjessing.—p. 283.
127 *Miostagmin Reaction with Cancer. H. Salvesen.—p. 293.
128 Ileus in Parturient. A. Sunde.—p. 303.
129 Tuberculosis in Children. T. Frølich.—p. 311.
130 *Economic Importance of Cancer. F. G. Gade.—p. 325.

125. **Goiter in Norway.**—Kjølstad relates that goiter is extremely prevalent in the Telemarken district in southern Norway, southwest of Christiania. In one school at Lunde 80 per cent. of the children have goiter. Most of the goiters are of the atoxic type, and they nearly always subsided under iodine. He never noted any symptoms of intolerance in children, but several adults developed symptoms of thyrotoxic action, and one girl of 15 seemed to have had her simple goiter transformed by the iodine into exophthalmic goiter, although the medication had been moderate and the intermissions long. The iodine seems to act on the hyperplasia of the parenchyma; colloidal nodules and cysts are comparatively little affected by it. The patients must be warned that iodine treatment of goiter takes a long time; too vigorous treatment he regards as dangerous. The dosage he prefers with colloidal goiters is 0.10 gm. potassium iodide every other day for two weeks, and then suspension for three weeks and resumption for two weeks, and so on. With merely parenchymatous goiters, he follows the Kocher method of anointing the goiter with an iodine-potassium iodide salve, using from 1 to 3 gm. daily for two weeks at a time, then suspension for three week periods. Salve is better than the tincture, as it spares the skin. No other drugs or other treatment have proved effectual in his experience. Roentgen treatment is liable to injure the still intact portions of the gland. With symptoms of exophthalmic goiter or other signs of excessive functioning of the thyroid, sodium phosphate in a 5 per cent. solution seems to give good results—a tablespoonful four times a day, in milk. The basis for this treatment is the antagonism between iodine and phosphorus in the action of the thyroid gland (A. Kocher). He has often seen the goiter subside under this treatment, especially when the patients gave up work and went to the hospital. When all else fails, surgical measures should be advised before parenchymatous degeneration appears.

126. **Idiosyncrasy to Mercury.**—Gjessing's patient was a quadripara who exhibited a violent reaction to injection into the nose, to act on the lacrimal sac, of 1 c.c. of a 1 per 10,000 solution of mercuric chloride containing a little epi-

nephren. Possibly her recent conception may have increased the susceptibility, but the case teaches that before using mercury it is well to bear in mind the possibility of an idiosyncrasy, particularly in persons known to develop urticaria on slight excuse.

127. **Miostagmin Reaction with Cancer.**—Salvesen has been giving the miostagmin reaction a trial and found it disappointing. All the cancer patients gave a positive response, but so did all but five of seventeen other patients free from malignant disease. Among twenty-four serums tested from patients with different diseases or healthy controls, all but five gave a positive response. It cannot be said to have much differential value, therefore, although O. Wissing has recently been lauding it as a simple and dependable test for revealing cancer, especially cancer of the digestive tract. He uses a Traube stalagmometer with Izar's antigen, a solution of 2 gm. each of linolic acid and ricinolic acid in 100 c.c. of absolute alcohol.

130. **Cancer as an Economic Loss.**—Gade relates that in a recent ten year period, men formed 48.9 per cent. of the total cancer mortality in Norway, while the men represent only 45.6 per cent. of the total population at the age of 35 and over. Cancer therefore seems to be somewhat more prevalent in men than among women in Norway. He calculates the economic loss to the country of the average loss of 1,080.6 men each year from cancer, and the loss from tuberculosis, pointing out that the tuberculosis mortality includes mostly men at their highest working capacity while cancer is more of a biologic phenomenon, associated with old age, as human beings have got to die of something.

Ugeskrift for Læger, Copenhagen

Jan. 31, 1918, 80, No. 5

- 131 *Wanderlust in Degenerates. H. Helweg.—p. 161. Concluded in No. 6, p. 201.
132 General Anesthesia for Drawing all the Teeth. H. T. Jensen.—p. 176.
133 Chloroform Internally for Gallstone Colic and Subcutaneously for Sciatica. H. R. Magnus.—p. 178.

131. **Pathologic Wanderlust.**—Helweg says that the morbid impulse to go away, without special motive that others can see for the change, is a common feature of epilepsy, but is not confined to this disease. The French regard this *automatisme ambulatoire* as a manifestation of hysteria. In Danish literature Helweg has found records of only four cases, and nowhere has he been able to find records of this morbid tendency in degenerates other than epileptics and the hysterical. He describes six cases in detail in which degenerates displayed at times this morbid wanderlust although conscious of what they were doing. In five of the cases there was a history of a fall on the head and in a number of cases on record there is casual reference to trauma of the head. One patient was a young woman of a well-to-do family with some inherited mental taint. She seemed normal as a child but met with two accidents injuring the head and not long after the second one began to wander away from home. Later she left home again and again, living at hotels in the town, pawning her belongings and sometimes stealing to get the money. On some of her wanderings she was accompanied by a man, a chance acquaintance, but there did not seem to be any erotic tendencies, and occasionally she had no clear remembrance of the times she was away from home. Placed in an institution for mental disease, nothing abnormal otherwise could be detected in her.

The psychopathic degeneration responsible in Helweg's cases for the wanderlust is about as common in women as in men, but in women it is not fanned into a flame by abuse of alcohol, and it usually manifests itself in them in other ways than in this tendency to vagabondage. Usually some quarrel or other unpleasantness brings the impulse to run away. In one of the cases the man was in military service and repeatedly ran away to visit his wife. The pathologic wanderlust is practically the same thing whether it is result of epilepsy or hysteria or of dementia praecox or psychopathic degeneracy. There is no need to invent special names for it like Donath's "poriomania" and Joffroy's "dromomania."

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THE PRECIPITIN TEST FOR BLOOD*

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The study of immunity as manifested by the reactions of the animal body to microbes, toxins and protein materials in general has given us many tests of great value. The phenomena of agglutination, of complement fixation, of altered reactivity, of opsonification and of serum precipitation have all been put to practical use in tests, some of which are used every day throughout the civilized world. Speaking generally, the only way now known to trace protein substances back to their source, that is, to the species from which they come, is by means of their immune reactions; and in the case of blood and other animal products, practically the only method for purposes of biologic differentiation is the precipitin test. Because the determination of the ultimate source of blood spots and stains often is vital to the administration of justice, the precipitin test is of special forensic value and interest, and it is primarily from the medicolegal point of view that I wish to discuss the test at this time. The test has been used in this country for the identification of blood for forensic purposes since it was introduced, although probably not so widely as it should or might have been; but it does not appear that any standard method of procedure even with respect to certain essential points as yet has become established, and there are hardly any adequate detailed descriptions of the test.¹

The precipitin test rests on the fact that when a suitable animal is injected with foreign protein, its serum, when mixed with a solution of the foreign protein, will form a precipitate. This reaction is due to the accumulation in the blood of the injected animal of newly produced substances, which are called precipitins. By foreign protein is meant protein from some other source than the species to which the animal injected belongs. Thus serum for the identification of blood is obtained by injecting

rabbits (the animal nearly always used for this purpose) with the blood or serum of an animal of a different species, the exact species in each case depending on the kind of blood one intends to test for with the resulting precipitin serum; for the action of precipitin serum is limited to proteins of the same kind as those that were injected; indeed, the precipitin test owes its practical value to this fact.

THE PRODUCTION OF PRECIPITIN SERUM

At present we know of only two animals that are good and suitable precipitin producers for practical purposes, the rabbit and the domestic fowl. Hitherto the rabbit has been used almost altogether, Sutherland² in India being the only one to use the fowl on a large scale. Of the two the fowl seems to be the more ready and reliable producer, but fowl serum must be handled with special care because of the tendency under certain conditions to give nonspecific reactions. So long as rabbits are plentiful, it would seem best, at least in this country, not to change to the fowl except for special purposes, as when it is necessary to test directly for rabbit blood. In any case young, healthy, previously unused animals should be selected; they should be kept under hygienic conditions and given enough of good food. It is always advisable to inject several rabbits at the same time, especially when antihuman precipitin is to be produced, because in some rabbits the response to the injection may be rather insignificant.

Either whole blood, defibrinated or citrated, or serum may be injected; in my experience the results have been about the same. As we deal with whole blood in the identification of blood spots, there may be advantage in using antiserum produced by whole blood; this may be counterbalanced, however, by the fact that serum is somewhat richer in proteins. Blood should not be injected intravenously because of the danger of sudden death. To produce antihuman precipitins, albuminous urine and various transudates have been injected also; but the best results are secured from blood or serum, and in these days when patients are bled so frequently from the veins for diagnostic tests, there is no difficulty in obtaining the required human blood or serum, which need not be absolutely fresh provided it is free from bacteria. The injection of rabbits with washed human corpuscles, now so often practiced in order to produce hemolytic amboceptor for the Wassermann test, not infrequently gives as a by-product in sufficient concentration for practical use specific precipitins for the proteins in human blood.

In the immunization of rabbits, good results may be obtained with various methods that differ more or

* From the Memorial Institute for Infectious Diseases.

1. The literature up to about 1908 on precipitins and their medicolegal use is indexed fully in Volume 13 of the Second Series of the Index Catalogue of the Library of the Surgeon-General's Office, U. S. Army, Washington, D. C. Reference is made also to Nuttall: Blood Immunity and Blood Relationship, 1904. Graham-Smith and Sanger: The Biological or Precipitin Test for Blood Considered Mainly from Its Medicolegal Aspect, Jour. Hyg., 1903, 3, 258. Graham-Smith: The Biological or Precipitin Test for Blood, Considered Mainly from Its Medicolegal Aspect, II, *ibid.*, 1903, 3, 354. Sutherland: Blood Stains, Their Detection, and the Determination of Their Source, 1907. Bordet: Studies in Immunity, collected and translated by F. P. Gay, 1909. Uhlenhuth and Steffenhagen: Die biologische Eiweiss-Differenzierung mittels der Präzipitation unter besonderer Berücksichtigung der Technik, Kolle and Wassermann Handbuch, 1913, 3, 256. Hunt and Mills: Some Experience Bearing on the Medicolegal Value of the Precipitin Test for Human Blood, Boston Med. and Surg. Jour., 1917, 176, 48. Stokes and Loner: The Use of the Precipitin Test for the Detection of Human Blood in Criminal Trials, Boston Med. and Surg. Jour., 1917, 177, 65.

2. Sutherland, W. D., Note on 2,643 Medicolegal Cases, in which 6,566 Articles, Suspected to be Blood-Stained, were Examined, Indian Jour. Med. Research, 1915, 3, 205.

less in minor details. The tendency is to inject smaller quantities of blood or serum than formerly. Several rabbits should be injected at the same time because, as stated, there is great individual variation in the power to produce precipitins, especially antihuman. A good way is to inject from 1 to 2 c.c. of serum intravenously, repeat in six days or so, and then after six or eight days to inject 4 or 5 c.c. intraperitoneally. Or from 5 to 6 c.c. of blood or serum may be injected intraperitoneally four or five times at intervals of six days or so. In either case the serum should be tested about nine to twelve days after the last injection, because about this time the precipitin content reaches its high point; as it remains at this point only a few days, the tests must be made promptly so that if the serum is found to be potent, goodly quantities may be collected while the precipitin still runs high. It has been found that the danger of death from anaphylactic reactions when the last injections are given may be avoided by first giving a small so-called desensitizing injection, 1 or 0.5 c.c., intravenously or intraperitoneally.

A more rapid method of immunization consists in giving intraperitoneal injections of increasing quantities—5, 10, 15 c.c.—on three successive days. The same total quantity of antigen injected at one time may also give good results. As a rule the precipitin in either case reaches its acme about the twelfth day or thereabouts. If serum is used, the injections may be made intravenously. In my experience,³ this so-called rapid method yields more reliable results with beef, sheep, horse, swine, cat and chicken blood or serum than with human, and it is probable that in the last case the desired result will be obtained oftener by repeated injections at longer intervals.

In the case of the fowl a single intraperitoneal injection of 20 c.c. of blood or serum usually in ten or twelve days yields a precipitating serum of sufficient strength for practical purposes.⁴

It is not necessary now to describe the details of injections, bleeding, and collection of serum. At every step scrupulous effort must be made to prevent contamination; contaminated serum is useless because it may give misleading reactions. Sterile serum may be kept for months in the cold without much loss of potency. It is best to store serum in small bottles or tubes, each of 1 or 2 c.c., so that there need be no danger of contaminating a large quantity each time a little is to be used. A small amount of chloroform may be added as preservative.

Occasionally rabbit serum is opalescent; such serum is useless because when put in test mixtures one cannot tell for sure whether precipitates are formed or not. In order to avoid opalescence of the serum, it is recommended to let the animal fast for eighteen hours or so before it is bled. In the case of the fowl, only roosters should be used, as the serum of hens often cannot be used on account of its fat content.

TESTS OF PRECIPITIN SERUM

To identify blood or other protein substances it is necessary to use precipitin serum of some degree of potency and of a strictly limited range of action.

Test for Strength.—Various methods have been practiced to determine the strength of a precipitin serum, but I shall mention only the simple method of finding the highest dilution in salt solution of the antigen—the serum or blood of the species used in the injection—with which the precipitin serum forms a precipitate within a few minutes at ordinary room temperature.

Small, perfectly clean and perfectly clear glass tubes are best, the lumen being about 0.5 cm. in diameter. In each of a series of such tubes in a small rack is placed 0.5 c.c. of antigen dilution, the first tube receiving the lowest dilution, the next the next higher, etc. (for example, 1:500, 1:1,000, 1:1,500, 1:2,000, etc.); there is now introduced by means of a capillary pipet 0.1 c.c. of antiserum at the bottom of each tube, special care being taken to get a precise line of contact between the two fluids. The antiserum also can be run in slowly at the side of the tube; being heavier than the diluted antigen it will go to the bottom of the tube, but the line of contact will not be quite so sharp as when it is introduced at the bottom with a pipet. The tubes, which are kept at room temperature, are now watched for the formation of a grayish-white precipitate at the plane of contact between the fluids.

If a precipitate forms almost at once in the antigen dilution of 1:1,000, the antiserum is strong enough to be used for blood tests for forensic purposes. An antiserum that forms a precipitate almost at once in thousandfold dilution of the antigen usually gives reactions in much higher dilutions—1:20,000 or higher after a longer time, say twenty minutes. The strength or titer of antiserum may be designated by the dilution of antigen with which it forms a definite precipitate within a given time, at room temperature. For instance, if an antihuman serum gives a precipitate within twenty minutes in a dilution of human serum or blood of 1:20,000, its strength or titer may be said to be 1:20,000 at twenty minutes.

The precipitin reaction is observed best by holding the tubes near a black, flat object (book cover, ruler) held directly in the path of the light; the precipitate, at first composed of fine particles, and sharply defined, may become more flocculent and sink to the bottom.

To make tests with dilutions of the whole blood, the corpuscles are laked by means of water; the normal salt content is restored by adding the required amount of 1.8 per cent. salt solution (double the strength of physiologic sodium chlorid solution), and further dilutions are made with salt solution of the usual strength. When fowl antiserum is used, the salt content of all dilutions should be 1.8 per cent., as then there is less danger of nonspecific reactions.⁴ When fowl antiserum is taken out of the ice box it should be left at the room temperature for an hour or two before it is used.

In place of the contact or ring method, some observers simply mix the antiserum with the antigen;



Fig. 1.—Foam Test. Persistence of bubbles about ten minutes after blowing through the fluids in Tube 1, which contained a thousandfold dilution of human blood, and in Tube 2, which contained extract of a blood spot of about the same strength. Collapse of all bubbles in Tube 3, which contained pure salt solution.

3. Hektoen, Ludvig: On the Production of Precipitins, Jour. Infect. Dis., 1914, 14, 403.

4. Hektoen, Ludvig: The Production of Precipitins by the Fowl, Jour. Infect. Dis., to be published.

a positive reaction now appears in the form of a diffuse cloudiness of the whole mixture. This method is not as precise and sensitive as the contact method, and is not recommended for practical blood tests.

Tests for Specificity.—On account of the relationships of species, almost every strong precipitin serum may form precipitates with proteins, at least in low dilutions, of species related to that species, the blood proteins of which were used for the production of the serum. Indeed, any strong antimammalian serum may react in low dilutions—1:10 or so—of mammalian serums generally. This is the mammalian reaction of Nuttall.⁵ In the case of kindred species, the precipitin affinities often are more marked; for instance, an anti-goat serum may react in high dilutions of sheep and beef as well as of goat serum or blood. Further examples of closely related groups are the horse, ass and mule; the dog, wolf and fox; the domestic fowl, turkey, goose, duck and pigeon; the hare and the rabbit, each with more or less pronounced common precipitin reactions. Man and monkey, from the highest down, constitute another group with special precipitin interreactions between the members. How it nevertheless may be possible by the precipitin test to identify the blood of the individual species is discussed later. As each antiserum may vary in the number and strength of its group and other precipitins, and as it must be known to be free from nonspecific reactions before it is used, it is necessary, besides fixing its potency, to determine the exact range of its action. The test for specificity is carried out in the same manner in general as the test for potency; that is to say, tubes are prepared in the same way with dilutions of as many other serums or bloods beside that used in the production of the serum as seem necessary to afford a thorough test, certainly not less than two, the antiserum added as before, and the results noted. At the same time the antiserum is tested with salt solution only to determine whether any precipitate then forms.

A usable antiserum must be perfectly clear; it must have a certain minimum specific precipitin strength, and it must not give any misleading nonspecific reactions.

TABLE 1.—SPECIFICNESS OF PRECIPITIN IN SERUM OF RABBIT INJECTED WITH HUMAN BLOOD		
Blood	Highest Dilution Giving Precipitate with Anti-human Serum after Twenty Minutes at Room Temperature	
Fish	1:10	
Chicken	1:10	
Rabbit	0	
Guinea-pig	1:10	
Rat	1:10	
Cat	1:10	
Dog	1:10	
Swine	1:10	
Sheep	1:10	
Beef	1:10	
Horse	1:10	
Goat	1:10	
Monkey (Macacus rhesus)	1:100	
Human	1:5,000	

To illustrate: If an antihuman serum is perfectly clear; if it forms a precipitate practically at once in a 1:1,000 or higher dilution of human blood or serum; and if with that of any other species, then in very low dilutions only, say from 1:10 to 1:100, and much more slowly, save possibly in the case of the monkey (group reaction); and if it does not form any precipitate with salt solution, then it may be used for tests for human blood for forensic purposes (Table 1).

PREPARATION OF MATERIAL FOR PRECIPITIN TEST
Materials submitted for blood tests usually are stains and spots on any of the great variety of objects on which blood may fall or be smeared (Table 2). The first question to decide is whether the suspicious spots and stains consist of blood, and for this purpose well known chemical, microscopic and spectroscopic methods are available which need not be described now.⁶ It is necessary to determine whether spots and stains are

TABLE 2.—PRECIPITIN TESTS FOR BLOOD

Material	Kind of Blood Present	Remarks
Blood on hat, coat, vest, shirts and trousers	Human	The accused claimed the spots were caused partly by fish, partly by calf blood
Blood on blade and inside handle of knife	Human	
Blood on miner's shirt..	Human	In this case, efforts had been made to wash away the blood, but deep in the texture of the shirt the threads were still incrustated with blood
Blood on handle of pickax	Human	
Crust of blood on ax....	Human	Ax found in ruins of house burned down after triple murder
Blood on dollar bill.....	Human	
Blood on coat and trousers	Human	Antirabbit chicken serum used
Blood on bedclothes.....	Human	
Blood on old newspaper	Rabbit	Antirabbit chicken serum used
Smears of blood on neck of bottle	Human	
Blood on shirt	Human	Antirabbit chicken serum used
Blood on shavings.....	Human	
Blood on hair, wall paper, floor	Human	Antirabbit chicken serum used
Blood on shoestring.....	Human	
Blood on trousers.....	Not human	Antirabbit chicken serum used
Blood on paper.....	Human	
Blood on shoes.....	Rabbit	

made by blood, not only because blood may be simulated by paint, fruit juices and in other ways, but also because spots and stains made by protein materials other than blood may react in the same way as blood to the precipitin test. For instance, antihuman serum alone will not distinguish spots by human blood from spots by other human protein-containing material such as albuminous urine, seminal fluid, purulent spurtum, exudates and transudates. All the antihuman serum can tell us is that the spots are made by human proteins, and whether they are made by blood must be determined by the general tests for blood.

All glassware and other articles used in the precipitin test must be absolutely clean and sterile. It is best in all final tests to use tubes that are practically new, because tubes that have been boiled and sterilized many times may be no longer clear. A good supply of fresh, sterile pipets should be on hand.

Salt solution (0.9 per cent.) is the best general solvent for extracting proteins from material to be tested. If practicable, crusted material may be scraped off, ground up carefully and mixed with a small quantity of salt solution; or it may be necessary to place small pieces of cloth, paper or other substances, including some or all of a suspected spot, directly into the solution. Whenever possible, extracts should be made also of unspotted parts of the substratum for purposes of control tests.

How long to continue the extraction depends on the quantity and solubility of the protein in question; if it

5. Nuttall: Blood Immunity and Blood Relationship, 1904.

6. Wood, E. S.: Medicolegal Examination of Blood and Blood Stains: A Text Book of Legal Medicine and Toxicology, edited by Frederick Peterson and Walter S. Haines, 1904, 2, 722.

is to be kept up for more than an hour or two, it is better to put the mixture in the ice box and to add a little chloroform to restrain the growth of bacteria. The passage of protein into solution is indicated if bubbles made by blowing through the fluid with a pipet tend to persist (foam test); also if cloudiness develops on application of the nitric acid heat test. As only a dilute solution—1:1,000—is wanted for the precipitin test, extracts of blood usually have to be diluted with salt solution. When the nitric acid heat test barely causes a faint opalescence in a blood dilution, its strength is regarded as about 1:1,000. Comparative foam tests, known blood dilutions being used as the standard, also help to fix the strength of an extract (Fig. 1). A 1:1,000 dilution of blood is practically colorless by transmitted light. The extracts should be clear as water; turbid extracts must be cleared by filtration or centrifugation. The reaction must be neither strongly acid nor alkaline to litmus; for neutralization, 0.1 per cent. sodium hydroxid or hydrochloric acid solution should be used; dilutions of blood at 1:1,000 rarely need to have the reaction corrected, but extracts of wood, bark and leather may contain acids that cause cloudiness in rabbit serum.

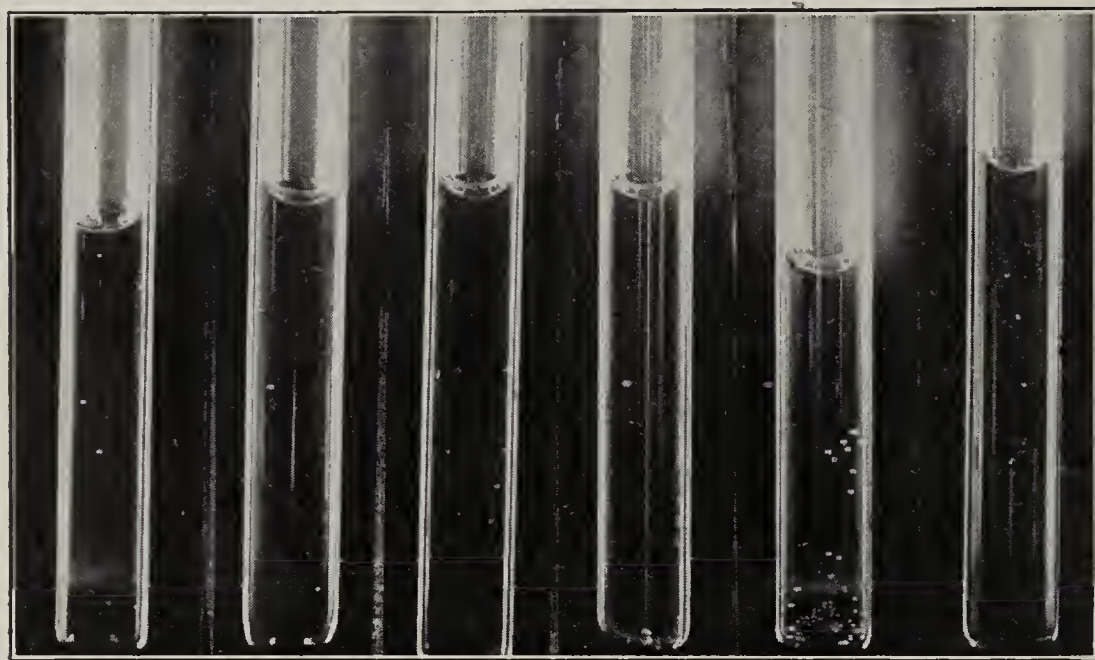


Fig. 2.—Precipitin Test for Human Blood: Tube 1, extract of blood on shirt of estimated dilution 1:1,000 + antihuman rabbit serum; Tube 2, extract of blood on shirt of estimated dilution 1:1,000 + normal rabbit serum; Tube 3, extract of bloodless part of shirt + antihuman rabbit serum; Tube 4, salt solution + antihuman rabbit serum; Tube 5, dilution of human blood 1:1,000 + antihuman rabbit serum; Tube 6, dilution of sheep blood 1:1,000 + antihuman rabbit serum. The precipitates in Tubes 1 and 5 formed almost at once; photograph was taken from five to eight minutes after introduction of the antiserum.

Stains that do not extract well with salt solution may give better results if treated with a 1 per cent. solution of potassium cyanid; the alkalinity should be corrected with tartaric acid (Sutherland).

In case of cloth with suspicious stains that yield no information on being scraped or soaked, it is a good plan to cut out small pieces from the stains and tease them apart. The single threads running in the depth of the stained part may be found incrustated with blood, that is, covered with small crusts which contain red blood corpuscles or in which the blood is demonstrable in other ways. Even when the cloth has been washed recently, incrustations may be found in the depth, especially, of course, if the cloth is of a heavier sort.

THE ACTUAL TEST AND CONTROLS

The precipitin test requires a number of careful controls to guard against error; the antiserum must be tested with salt solution, with the blood against which it is known to act, and with other bloods in order to

make sure that it gives a specific reaction only. Samples of various kinds of blood should be kept on hand for control tests. For this purpose blood may be dried in drops on filter paper or linen, each drop being made by a definite quantity (0.1 or 0.05 c.c.); or the blood may be kept in the cold, diluted as described, say 1:100 in salt solution. As the reactive power of blood kept in solution is said to weaken gradually, too long intervals must be avoided before new solutions are prepared. To avoid still other chances of error, the extract of the unknown blood must be tested with normal rabbit serum or, if fowl antiserum is used, with normal fowl serum, and extract of blood-free parts of the substratum on which the unknown blood was situated is to be tested with antiserum. These precautions have to be observed in connection with every forensic precipitin test—nothing may be taken for granted. Assuming now that spots on a shirt that have been shown to consist of blood are to be tested for human blood, the precipitin test may be conducted in accord with the scheme presented in Table 3, it being understood that the quantity of extract or control solution in each tube is 0.5 c.c. and of antihuman rabbit serum or normal rabbit serum, 0.1 c.c. These quantities may be reduced if desired in order to save material; indeed, the test may be made in capillary tubes if necessary.

If a typical precipitate (Fig. 2) develops within a minute or two in Tubes 1 and 5 while no precipitate forms in any of the other tubes after standing for twenty minutes, all at the room temperature, then the conclusion is warranted that the blood on the shirt is human blood. Some observers would add, provided monkey blood can be excluded (see final section).

Having obtained a positive reaction with the extract under the aforesaid conditions, I always determine next the highest approximate dilution of the extract that reacts with the antiserum after twenty minutes at room temperature, thus still further verifying the specificness of the reaction.

Usually the only questions asked are whether certain spots and stains are due to blood, and if so, to human blood; but sometimes it becomes necessary to determine if possible the exact species of blood that is not human. The scheme for human blood is applicable

TABLE 3.—SCHEME FOR PRECIPITIN TEST (FIG. 2)

Tubes	
1	Extract of blood on shirt + antiserum
2	Extract of blood on shirt + normal serum (estimated dilution of blood in Tubes 1 and 2, 1:1,000)
3	Extract of bloodless part of shirt + antiserum
4	Salt solution + antiserum
5	Human blood or serum 1:1,000 + antiserum
6	Blood or serum other than human 1:1,000 + antiserum
7, 8, etc.	Same as Tube 6, but with different bloods.

in general with, of course, such changes as to antisera and controls as are indicated in the given case from the facts at hand. If the blood corpuscles are preserved, it may be possible to determine from the

absence or presence of nuclei whether or not one is dealing with mammalian blood. Often tests with various antisera may be made before a positive reaction occurs, and it must not be forgotten that absence of reaction may be due not only to failure to hit on the right antiserum, but also to changes in the unknown blood whereby it has lost its power to react.

The question whether more than just one kind of blood is present in material to be examined may be raised. It has been found that in mixtures each kind of blood present can be identified by the precipitin test; in such cases, antisera of as high potency as possible should be used, as it may be difficult otherwise to detect proteins present in small amounts.

FACTORS THAT MAY INTERFERE WITH THE REACTION

The power of blood to react with precipitin may be reduced or completely destroyed by alcohol, by formaldehyd, cresol and other germicides, by acids and alkalis and other chemicals, by peptic digestion, by decomposition, and by heat. Badly decomposed blood may react, but it is hard to get clear extracts. Fluid blood is said to lose power to react on being heated at from 60 to 90 C., but dried blood may resist heating at 150 C. Rust also is said to change blood so that it reacts less readily. Blood in spots from 15 to 60 years old has been identified successfully, but certain statements that materials from thousand year old mummies may give the precipitin reaction have been contradicted.

Dried blood resists harmful influences much better than fluid, and if blood found in the fluid state is to be kept for tests later on, it is better to dry samples on filter paper than to keep it in fluid form in which it may decompose. Under no circumstances should blood or bloody material for the precipitin test be put in alcohol, because alcohol causes changes that interfere with the test.

OTHER USES OF THE PRECIPITIN TEST

The precipitin test may be of value also in the identification of bone and other tissue the origin of which is in doubt, as perhaps only fragments and scraps are at hand. When dissolved, the proteins in and of the tissues give the same general response to the precipitin test as the proteins of the blood of the species concerned. The only exception to this rule is furnished by the crystalline lens, which is unique, as it reacts only to serum produced by injections of lens substance, and that without regard to species. Bone should be reduced to powder, washed thoroughly with ether or benzin to remove the fat, dried, and then extracted with salt solution. Tissue of other nature may be treated according to the same principles. Such extracts are tested in the same general way as blood extracts.

Putting white of egg in urine to simulate albuminuria, and spattering nonhuman blood on clothing and bedding to feign spitting of blood, have been detected by the precipitin test. The test has been used extensively in certain European countries to detect adulterations of meat products and other foods, as flour and honey; it has been found of value, too, in the administration of game laws.⁷ Finally, it may be mentioned that under certain circumstances the precipitin test may

prove of service in the study of occult blood in the feces; but these are all matters that may not be discussed at this time.

SPECIAL METHODS FOR THE DIFFERENTIATION OF BLOOD OF CLOSELY RELATED ANIMALS

Examples of related animals with more or less common precipitin reactions have been given. In thousandfold dilution a blood may react so much more promptly with its own antiserum than even lower dilutions of related blood that commonly no difficulty arises, provided the limits as to dilution and time are followed exactly as prescribed and the necessary controls included in the test. Nuttall's experiments, to which I have referred, were made according to a totally different plan, the blood dilution being several times lower than 1:1,000, and the mixtures allowed to stand for several hours. To repeat: A reaction between an antihuman serum and a thousandfold blood dilution is diagnostic of human blood, provided it becomes evident within a few moments and that within twenty minutes at room temperature no reaction occurs between the same antiserum and like dilutions of the blood selected for the control tests. Sutherland⁸ made a special study of stains by the blood of many varieties of monkeys, his tests being made with the dilutions and time limit just set forth, and in no instance, not even in the case of the orang, did he get a positive result with antihuman serum; consequently, special methods do not seem necessary to distinguish human from monkey blood. These observations should be repeated so that if possible final standards may be fixed. In this country the question whether ape or monkey blood may be present is not likely to arise, because the circumstances, as a rule, preclude all chance that such blood can be present.

That differentiation may be difficult is illustrated by the ruminant group. Antibeef serum, for instance, may react in high dilution of beef, sheep, goat and perhaps also other ruminant blood. Indeed, any anti-ruminant serum may react with any ruminant blood in considerable dilution, although not with equal promptness in all cases. Several expedients have been recommended in this and similar cases:

1. *Specific Absorption* (Weichardt).—This is based on the principle that by mixing, let us say, antibeef serum with goat serum and then removing the resulting precipitate, the special antig goat precipitin will be removed. The method is circumstantial and is not regarded as of practical value.

2. *Cross Immunization* (Uhlenhuth).—This consists in obtaining precipitin serum from one animal for the proteins of a related animal. Injecting certain Old World monkeys with human serum, Uhlenhuth obtained antihuman precipitins, but this result seems to be quite exceptional, as neither Sutherland⁸ nor Berkeley⁹ were able to confirm it. Uhlenhuth was able to demonstrate hare blood on a cane by means of antihare precipitins developed in the rabbit, antihare fowl serum reacting equally well with hare and rabbit blood; he also found that the fowl produces antipigeon precipitin and the pigeon antifowl, but cross immunization failed in the case of the horse-ass, and goat-sheep.

8. Sutherland: The Applicability to Medicolegal Practice in India of the Biochemical Tests for the Origin of Blood-Stains, Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, 1910, p. 39.

9. Berkeley: The Impossibility of Differentiation Between Monkey Blood and Human Blood by Means of Antisera Derived from Monkeys, Univ. of California Publications in Pathology, 1913, 2, 105.

7. Gay: A Contribution to the Forensic Value of the Musculoprecipitin Test, Jour. Med. Research, 1908, 19, 219. Clarke: Forensic Value of the Precipitin Test in the Enforcement of Game Laws in California, Univ. of California Publications in Pathology, 1914, 2, 131.

3. *Dilution of the Antiserum and of the Suspected Blood.*—Dilution of an antiserum may so weaken certain confusing group precipitins as to cause their practical elimination and still leave the main precipitins strong enough to give a specifically diagnostic reaction under the conditions prescribed for forensic practice. For diluent, Sutherland and Mitra¹⁰ recommend normal serum of the same kind as the antiserum.

It is, of course, in the low blood dilutions that antisera of high potency give the most marked group reactions. As the dilutions of the bloods of a group are increased, the reaction narrows down more and more, and in high dilutions there may be no question as to its specificity. Hence, determination of the highest dilution in which a suspected blood reacts with a given antiserum, if properly controlled, may solve the problem.

4. *Special Study of Rapidity and Measure of Reaction.*—Hamburger¹¹ recommends that in the case of a stain that reacts with antiruminant serum, for instance, separate parts of the extract be tested with antigoat, antishoop and anti-bovine serum in the usual way, and the results carefully noted. The antiserum that gives the most rapid and profuse precipitate supplies the clue.

Systematic detailed studies should be made on the blood of closely related animals in order to determine more fully to what extent differentiation can be made by these and possibly other methods.

Suggestions to the contrary¹² notwithstanding, it is not possible to distinguish between different human races, and far less between individuals, by means of the precipitin test.

10. Sutherland and Mitra: Misleading Reactions Obtained with Precipitating Antisera, and How to Avoid Them, *Indian Med. Jour.*, 1914, 1, 707.

11. Hamburger: *Gerechtig onderzoek van bloed en anders lichaamsvochten*, *Tijdschr. v. strafrecht*, 1904, 17, 82. *Zur Differenzierung des Blutes (Eiweiss) biologische verwandter Tierspecies: eine Erweiterung der üblichen serodiagnostischen Methode*, *Deutsch. med. Wchnschr.*, 1905, 31, 212. Here it may be noted that Welsh and Chapman have pointed out that the weight of the precipitate under certain conditions serves to distinguish between related proteins. Welsh and Chapman: On the differentiation of proteins of closely related species by precipitin reaction, *Jour. of Hygiene*, 1910, 10, 177.

12. Mallet: The Serum Precipitation Test for the Identification of Blood Stains, *Virginia Med. Semimonth.*, 1903-1904, p. 285; *Tr. Med. Soc. Virginia*, 1903, 1904, p. 49. Bruck: Die biologische Differenzierung von Affenarten und der menschlichen Rassen durch spezifische Blutreaktion, *Berl. Klin. Wchnschr.*, 1907, 44, 798.

Epidemics and the Doctor.—It might take a long time for doctors to rid a city of an epidemic, but it would not take a city long to rid itself of a doctor found promoting an epidemic.—*Public Health*.

TRAUMATIC CEREBRAL EDEMA CAUSING LATE SIGNS OF FOCAL CORTICAL IRRITATION

REPORT OF CASE

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History.—A boy, aged 7 years, was brought to the hospital by ambulance, after being struck and rendered unconscious by an automobile while playing in a snow pile, in the evening of Dec. 23, 1917; he was admitted to the service of Prof. William Sharpe.

From the meager history of the accident that could be obtained, the child was unconscious when picked up, frothing at the mouth, and bleeding from the right ear and the nostrils.

Examination.—At the hospital, within an hour after the accident, he was drowsy; although his eyes were open and

he would answer rationally when spoken to, he was lying quietly and unconcerned, occasionally moving the extremities. There was a small amount of dry clotted blood in both nares and also in the right external auditory meatus. A hematoma, the size of a half dollar, with a slight superficial laceration in the center, was present over the right parietal eminence without evidence of underlying bone depression. The pupils were moderately dilated and reacted equally to light. There were no evident paralyses of either side of the face or the extremities. The abdominal reflexes were abolished. Patellar reflexes were moderately exaggerated on both sides. No Babinski or Oppenheim reflexes could be elicited. No impairment of sensation could be ascertained. An

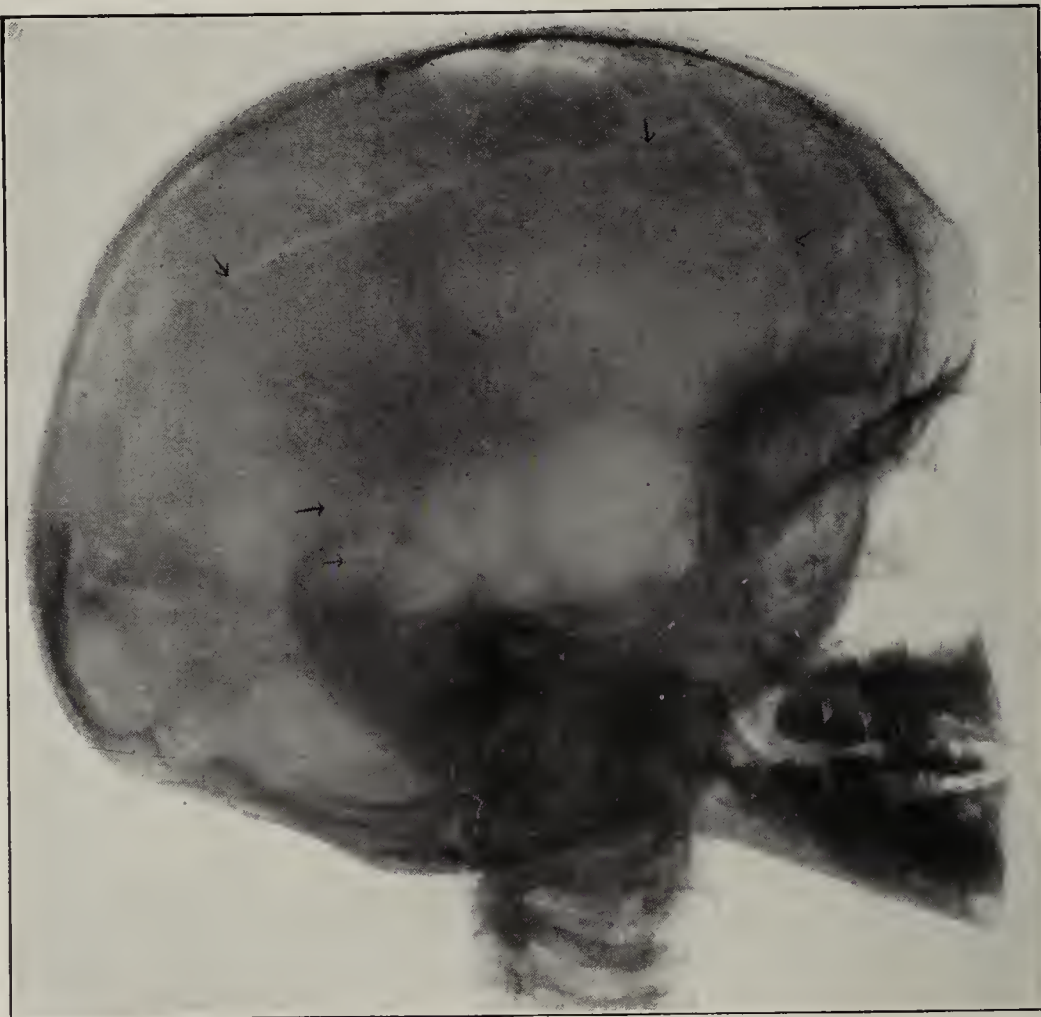


Fig. 1.—Extensive linear fractures of the right parietal and frontal bones. There is also a linear fracture radiating through the squamous portion of the right temporal into the petrous portion.

ophthalmoscopic examination of the eye grounds revealed a moderate dilatation of the retinal vessels without any apparent blurring of the details of the optic disks or their margins. A spinal puncture revealed clear cerebrospinal fluid, the spinal mercurial manometer registering a pressure of 10 mm. (the normal is from 8 to 10); the rectal temperature was 97.8; the pulse, 84; respirations, 20. The patient was then removed to the ward, and the routine expectant palliative treatment instituted.

Bedside Notes.—December 24, the patient had slept quietly last night, except once when he appeared restless and tried to get out of bed, but soon fell asleep again. The temperature remained at 100 until 5 p. m.; the pulse, 96; respirations, 24. The temperature gradually ascended to 104.6 during the next twenty-four hours. Throughout the day, the patient could be aroused and would answer when called by name, but went to sleep again. He refused nourishment.

Ophthalmoscopic examination by Dr. J. A. Kearney revealed slight general edematous changes blurring both disks equally.

Roentgen examination by Dr. G. W. Welton revealed extensive linear fractures of the right parietal and frontal bones. There was also a linear fracture radiating through the squamous portion of the right temporal into the petrous portion.

December 25, the patient had had a fairly good night with occasional periods of restlessness, but at times he was awake and quiet; he seemed rational. The temperature in the afternoon was 104.6; the pulse, 142; respirations, 30. He was very restless all day.

December 26, the patient had had a very good night. The temperature was 102; the pulse, 104; respirations, 24. He took nourishment very well. He complained of his neck being sore; he was very quiet all day; he called for his mother; he liked the ice bag at the neck. The patellar reflexes were sluggish. The fundi oculi showed no added haziness of the optic disks.

December 27, the patient had had a very comfortable night; he took nourishment as well as on the preceding day; he took a cup of milk in his hand and drank it; once he sat up in bed and played with the electric light; he was rational, and answered all questions. The temperature was 99; the pulse, 96; respirations, 20.

December 28, he had slept well all night. He took nourishment well. He had an orange in the morning, and enjoyed it. He complained of frontal headache in the afternoon. The temperature, pulse and respirations were the same as the day before.

December 29, he had had a very good night. At 7:30 a. m. he had milk with bread; he enjoyed a bath; he was very quiet afterward. The temperature was 99; the pulse, 84; respirations, 20. At 8:30 a. m., one hour later, the patient was reported as having severe spasmodic contractions of the left side of the face, with marked dyspnea and cyanosis. The temperature was 99; the pulse was 144; the respirations were 30.

An examination disclosed besides clonic spasmodic contractions of the left half of face and neck coming on in quick succession, and lasting several minutes, a complete flaccid paralysis of the left arm and leg, fixed eyes wide open, dilated pupils, and complete unconsciousness. It was thought advisable, therefore, to perform an exploratory decompression and drainage over the right cerebral cortex.

Operation and Results.—A right subtemporal decompression and drainage were performed. A vertical incision $3\frac{1}{2}$ inches long was made from the temporal attachment at the parietal crest to the root of the zygoma, one-half inch anterior to the external auditory meatus. The temporal fascia was incised and the muscle retracted in the direction of its fibers. The temporal bone revealed no line of fracture. The periosteum was removed and the cranial cavity opened with the Doyen perforator and burr, after which the opening was enlarged with a rongeur. The dura appeared under normal tension, dusky-red, nontransparent, thickened, and difficult to incise. Only a few drops of cerebrospinal fluid escaped through a nick in the dura, showing that there was no general increase in the intracranial pressure, but rather a focalized cortical edema, possibly due to the cortical contusion.

Radiating incisions were made through the dura toward the edges of the bone gap, no subdural clots being encountered. The cortex was edematous and grayish, the cortical vessels were dilated and tortuous. The dura was left open, and two rubber tissue drains were inserted under each angle of the incision and over the cortex. The wound was closed with catgut and fine silk suture.

The patient had slight twitchings of the left side of face, four hours after operation, which soon subsided. The patient

became wide awake and conscious. He had full control of the left arm and leg. The reflexes were apparently normal. The temperature, pulse and respirations remained normal throughout convalescence. The patient was discharged well, on the twelfth day after operation.

The child has made weekly visits to the clinic for the past two months. He appears normal in every way, and has gained several pounds in weight.

COMMENT

This case illustrates two important points in the care of patients having brain injuries with or without a cranial fracture. First, as to the diagnosis of the extent of brain injury at the time of the accident, and second, as to the mode of treatment to be pursued after a diagnosis has been reached.

From the foregoing report, it is obvious that the late signs of paralysis and convulsions coming on after a traumatism of the head could have been produced by the same causes, irrespective of the presence of fracture. Therefore, in any head injury, with tem-

porary unconsciousness, even if the patient, after recovering from the initial shock, progresses toward a recovery, the surgeon should be most vigilant lest such signs should develop at a later date, which would warrant immediate surgical measures; the prognosis, in the meantime, is always uncertain. All these injuries should be considered as serious, whether or not the skull is fractured, because considerable damage probably may have been produced to the brain substance or to its membranes. Also, the more remote signs of inflammation of the cerebral tissues should be watched for. Many patients who recover from the immediate effects of an injury to the brain may later develop epilepsy, a changed personality and even dementia itself, whereas in other cases, there is complaint for a long time of headaches, and depressed and excitable conditions.

The latter post-traumatic complications may in a large measure be obviated by the more precise methods of diagnosis now at our command, such as are the measurement of the intracranial pressure at lumbar puncture, and the ophthalmoscopic examination of the fundi of the eyes.

In this particular patient we can infer almost at a glance the probable occurrence of a fracture, most likely including the petrous portion of the right temporal bone, as indicated by the clotted blood at the auditory meatus; also, the possibility of a fracture of the anterior fossa from the presence of the dry blood in the nostrils, although both of these conditions may have been due to local bleeding in these regions. The history leads one to the conclusion that the condition we had to deal with was fracture of the skull, as the patient was said to have been picked up in an unconscious condition, frothing at the mouth, and bleeding from the right ear and nostrils.

The physical examination revealed that the patient had recovered within an hour from the initial unconsciousness, leaving him in a quiet, somewhat drowsy

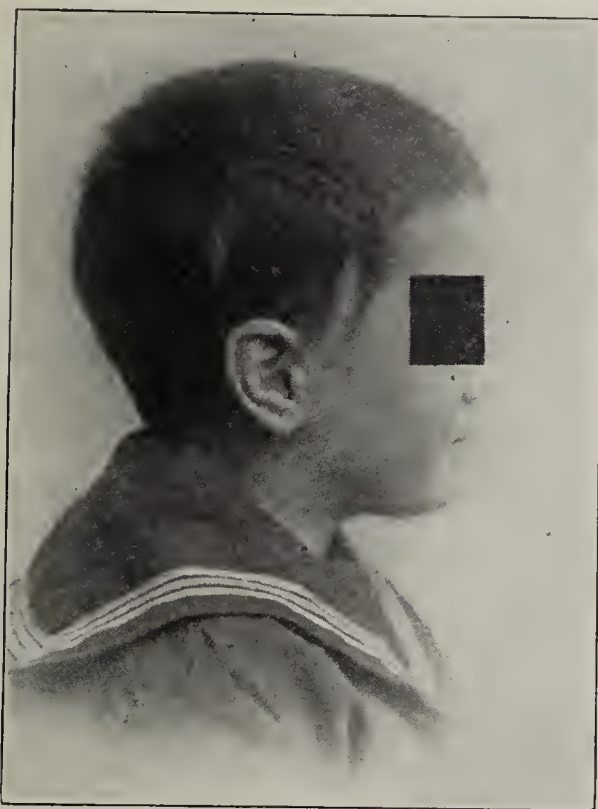


Fig. 2.—Scar of subtemporal decompression.

condition, with exaggeration of the patellar reflexes, moderate dilatation of the pupils, slightly subnormal temperature, and normal pulse and respirations. These signs pointed to the fact that the patient had at least cerebral concussion, possibly a cerebral contusion, and a possible fracture of the skull, of which we were not sure.

We attach no great importance to the small hematoma in the right parietal eminence, although we are inclined to believe that the trauma was received at this point, and an underlying fracture may have occurred; it would thus have involved the vault, radiating then to the base, as it has been shown that from 60 to 70 per cent. of fractures of the vault radiate to the base, and conversely.

Such inferences from the history and the physical signs must be substantiated by more accurate methods of procedure, in order to decide whether there are present definite signs of increased intracranial pressure for which an operation should be immediately performed after the patient has reacted from the primary shock, or whether he should be treated expectantly with rest, quiet, low diet, purges, ice helmet, and sedatives for restlessness and delirium, and carefully observed for subsequent signs of localized cortical irritation or general signs of cerebral compression.

The use of the roentgen ray is an important adjunct in revealing the presence of fracture, but its importance is only secondary to the estimation of the degree of intracranial pressure, whether this is due to hemorrhage or to primary edema.

It is necessary, then, in all patients having head traumatism, in whom there has been more or less disturbance of consciousness from a temporary confusion and giddiness to a partial or complete unconsciousness, that we arrive at an immediate decision as to the amount of intracranial pressure, irrespective of the presence of fracture, by means of the proper use of the spinal mercurial manometer, and by making repeated examinations of the eye grounds. This has been the course of procedure followed in more than 500 cases of brain injuries on the service of Dr. William Sharpe, at the Polyclinic Hospital, with a mortality of only 19 per cent., excluding those patients admitted in a moribund condition, in whose cases no operation was advisable, and in whom the brain injury was merely an incident in the general condition. Only those patients are operated on who have recovered from shock, with a pulse rate below 120, the spinal manometer registering 15 mm. of pressure or over, and the ophthalmoscope revealing partial or complete obscuration of the ocular disks. Less than one third (31 per cent.) of these patients having brain injuries, with or without a fracture of the skull, have shown the varying degrees of high intracranial pressure, and only those have been operated on, with the results noted above.

The patient under discussion showed a pressure of 10 mm. of mercury, which is within normal limits. The cerebrospinal fluid was clear, indicating that no subdural bleeding had occurred. The dilatation of the retinal vessels, without any marked blurring of the optic disks, represents the usual ophthalmoscopic findings, in the majority of so-called cerebral concussion cases, with or without a fracture of the skull, within the first six hours after the accident. Later on, as the patient recovers from the shock, and the intracranial pressure increases, the optic disks undergo a

general haziness. If the pressure is still higher, there will be an added obscuration, first of the nasal, subsequently of the temporal halves of the disks and their margins.

On the second and third days after this patient was admitted to the hospital, he presented the usual clinical signs of a case of concussion, as indicated by the occasional period of restlessness, headache, pain in the neck, drowsiness, and the initial rise in temperature. All these signs disappeared within the next forty-eight hours, and the patient was well on his way to recovery. Repeated fundal examinations revealed only a moderate degree of haziness of the disks, but not enough to warrant a lumbar puncture, as the other concomitant signs were gradually disappearing.

Thus, it may be seen that this patient did not show a definite increase in the intracranial pressure, but rather a local edema of the contused brain tissue, causing an irritation extending to the prerolandic area controlling the side of the body that was affected. A similar condition may be produced in cases of brain injury, complicated by a secondary infection, causing a meningitis or a meningo-encephalitis, whether of the acute type or the chronic form with the formation of a definite abscess—cortical or subcortical. Here also, a cranial decompression and drainage is the proper course of procedure.

CONCLUSION

In view of the signs and symptoms that were present in this patient, and their subsequent development requiring an immediate operation, it makes it imperative that patients, in whom, from the history or from the signs present on examination, a brain injury is suspected to have occurred, should have a lumbar puncture performed and repeated ophthalmoscopic examinations of the ocular disks.

Should there be no marked increase in the intracranial pressure nor localized signs of cortical impairment, then the expectant palliative treatment should be instituted, and if in shock, naturally no operation should be performed until the patient has reacted from it.

The prognosis in this class of patients is regarded as most uncertain, and they must always be carefully watched and examined for fear of immediate and future complications. But when these patients are watched carefully and operated on promptly when the symptoms justify operative intervention, the prognosis, as shown in this patient, is excellent.

Butter Substitutes.—As margarins are popularly supposed merely to differ from one another in price and palatability, any substitute fats placed on the market in bulk will command a ready sale. A word of caution on this point seems desirable. It is known that butter is particularly rich in one of the "accessory substances" necessary to healthy metabolism. Drummond and Halliburton in a recent note (*Proc. Physiol. Soc., Jour. Physiol.* 1917, **51**, 8) have called attention to the fact that this substance is not found indifferently in all margarins. According to them the oleo-oil margarins, which have as a basal fat an oleo-oil prepared from beef fat, can fully replace butter in the dietary. Vegetable oil margarins, on the other hand, which are usually prepared from coconuts, peanuts, etc., are by no means equal to butter and the oleomargarins in nutritive value. Apparently the fat-soluble accessory substance is present in the coconut fibers and absent from the expressed oil. Hence some of the vegetarian suets and lard substances, which are often deodorized coconut oil, or hydrogenated cottonseed oil preparations, are unsatisfactory.—*British Medical Journal*.

ARE ALL THE TUBERCLE BACILLI
FOUND IN THE SPUTUM
VIRULENT?*H. J. CORPER, M.D.
CHICAGO

On account of the lack of conclusive available data on the virulence of tubercle bacilli in the sputum of consumptives, and the tremendous importance of this information for the institution of hygienic measures in preventing and eradicating the disease, it was deemed advisable to investigate this problem. The earlier literature on this subject deals with it pro and con, but is not clear cut and decisive, lacking substantiating experiments. From this literature, however, there are several conspicuous considerations which must be kept in view in performing experiments to determine the virulence of tubercle bacilli. Fraenkel and Baumann¹ found guinea-pigs alone (not rabbits, rats or mice) to be available for revealing differences in pathogenic properties of tubercle bacilli. Marmorek² calls attention to the fact that as a criterion of the infectious power of tubercle bacilli it is necessary to note the distribution of the anatomic lesions, and only in a very insignificant manner consider the duration of life.

This investigation was begun, therefore, to determine the range of virulence of tubercle bacilli isolated from the sputum in open cases of pulmonary tuberculosis. Its purpose was not to determine the smallest number of individual tubercle bacilli necessary for causing infection, with a view to producing immunity with them, as was the case in Webb, Gilbert and Gregg's work. On account of the elaborate apparatus and consumption of time necessary to determine the virulence of a large series of cultures by the Barber method, it was deemed satisfactory to use the dilution method, after weighing the amounts of bacilli used, and to count the bacilli by staining them after carefully making the various dilutions. This method had the added advantage of protecting the bacilli from exposure to light, which can not be avoided by the Barber method and which may have an influence on the virulence of the bacilli. To secure absolutely accurate scientific data on the virulence of tubercle bacilli contained in any excreta or body fluids, it would, of course, be advantageous to use the bacilli directly from the material without previous culture, since it is conceivable that there may be bacilli of low virulence or dead bacilli in the material under investigation, which are not taken into consideration because they do not grow as well as the more hardy and virulent types.

There are a number of arbitrary points that must be considered when we speak of virulence, especially in an organism of the type of the tubercle bacillus. It is, of course, known that this term is merely relative. An organism may be highly virulent for one type of animal and yet be avirulent for another. Thus, for example, the human tubercle bacillus is virulent for the rabbit. This means within reasonable doses (0.1 mg.) and within reasonable time. The guinea-pig was therefore chosen as a suitable experimental animal for determining the virulence of the

human tubercle bacilli dealt with in this investigation. An organism avirulent for this highly susceptible animal would certainly not be very pathogenic for man. The rabbit was used merely to determine the type of bacillus, whether human or bovine. Another important fact which should be pointed out at this time is that emphasized by Cocke,³ that the infection in the human being is due to repeated or prolonged, rather than a single, exposure.

It is also advisable to call attention to the fact, brought out recently by Krause,⁴ that death in tuberculosis is due generally to accident. This is especially significant in ruling out duration of life as a factor in determining the virulence of the tubercle bacillus.

RESULTS OF VIRULENCE TESTS

The tubercle bacilli used for the virulence tests were directly cultivated from the sputum by Petroff's method⁵ and were usually from one to two months old. No appreciable difference was noted in the virulence of the bacilli taken from the same culture at from one to three months. For the tests, an emulsion was made equivalent to 1 mg. of the moist culture in 1 c.c. of physiologic sodium chlorid solution, so that on examination the bacilli were found at most only in lumps of from two to ten. The emulsion was then diluted with physiologic sodium chlorid solution until 1 c.c. contained 0.1 mg., 0.001, 0.000,0001 and 0.000,000,01 mg. These amounts were then injected into four male guinea-pigs, all of the same size and weighing from 500 to 600 gm. At the end of two months after infection, the guinea-pigs were examined for anatomic involvement and graded from — to + + + +, depending on the extent of the involvement. The number of bacilli found per milligram of moist culture was from 5 to 6 billions, so that the 0.000,000,01 mg. dilution contained from fifty to sixty tubercle bacilli.

A total of eighty-two cultures directly isolated from the sputum were thus examined, and all but two of these produced tuberculosis in the guinea-pigs within two months after a subcutaneous injection of 0.000,001 mg. of the moist culture. Of the two negative cultures, one was entirely negative, not even producing systemic tuberculosis in the guinea-pig in 1 mg. dose. Of course this amount produced a local tubercle, as always occurs even with avirulent laboratory strains; but no evidence of disease was ever found beyond the local glands. The other culture produced only a slight tuberculosis in 0.001 mg. amounts. Of the eighty cultures that produced a systemic tuberculosis (beyond the local glands) in 0.000,001 mg., eleven were not examined below this amount, sixty-two produced systemic tuberculosis in 0.000,000,01 mg. amounts within two months, while seven were negative in this amount. Of the sixty-two which produced systemic tuberculosis in 0.000,000,01 mg. amount, thirty-two gave a ± or + involvement of the retroperitoneal glands, and possibly a slight involvement of the spleen; twenty gave a ++ involvement of the retroperitoneal glands, a well marked and definite involvement of the spleen and possibly of the peritracheal glands; eight gave a +++ involvement of the retroperitoneal glands, and spleen markedly, of the peritracheal glands, of the liver slightly and the lungs slightly, and two gave a + + + +

* From the laboratories of the city of Chicago Municipal Tuberculosis Sanitarium.

1. Fraenkel, C., and Baumann, E.: *Ztschr. f. Hyg. u. Infektionskrankh.*, 1906, **54**, 246-261; *ibid.*, 1906, **55**, 327-330.
2. Marmorek, Alexander: *Berl. klin. Wchnschr.*, 1906, **43**, 328-329.

3. Cocke, C. H.: *South. Med. Jour.*, 1917, **10**, 539.

4. Krause, A. K.: *Am. Rev. of Tuberc.*, 1917, **1**, 65-82.

5. Petroff, S. A.: *Jour. Exper. Med.*, 1915, **21**, 38-42.

involvement, amounting to an entire massive systemic infection of practically all the important organs. Of the eighty-two cultures examined, eighty were definitely of the human variety, either producing no tuberculosis in the rabbit after the intravenous injection of 0.1 mg., or producing only a miliary tuberculosis of the lungs within two months. One of them was intermediate, causing a tuberculosis of the lungs, kidneys and omentum, but not death, within two months, and the other appeared to be bovine, causing tuberculosis of the lungs, liver and spleen, and death of the rabbit within one month. No relation between the virulence in the rabbit and in guinea-pigs could be noted from the experiments as performed.

The cultures were isolated from fifty-seven far advanced (National Association classification), eighteen moderately advanced, and seven incipient cases. Of the fifty-seven far advanced cases, thirty presented severe constitutional symptoms, and ten of these patients died in the sanatorium within a year; ten presented moderate constitutional symptoms, and one of the patients died within a year, and seventeen presented either slight constitutional symptoms or none at all. Of the eighteen moderately advanced cases, two presented severe symptoms, one of the patients dying within a year, five presented moderate and eleven slight constitutional symptoms or none at all. All seven incipient cases presented only slight constitutional symptoms or none at all. As far as could be observed, there seemed to be no relation between the severity of the disease in man and the virulence of the organism for the guinea-pig. There was just as little relation between the anatomic involvement in man and the virulence for the guinea-pigs.

CONCLUSIONS

The foregoing investigations have revealed that in the majority of open cases of pulmonary tuberculosis, the tubercle bacilli which could be isolated on artificial mediums from the sputum were virulent enough to produce systemic tuberculosis in guinea-pigs, by means of doses as small as 0.000,001 mg.; and that the range of variation of virulence was very small, as was also pointed out by Gilbert and Gregg,⁶ who found it to lie between ten and 120 bacilli. If the virulence of the bacilli as cultivated on artificial mediums is a direct expression of their virulence in the sputum, there is only one conclusion to be drawn from the foregoing findings, as viewed from a practical standpoint, and that is, that in open cases of pulmonary tuberculosis the tubercle bacilli discharged by droplet or by expectoration, when still uninfluenced by drying and light, are a danger to mankind, through direct transmission at least. In applying these findings to mankind, there was found in the literature only one reference which would indicate the relation between the number of bacilli of the same culture necessary to infect a guinea-pig and to infect man. These observations were made by Webb and Gilbert,⁷ who found that a culture of human tubercle bacilli, sufficiently virulent to infect a guinea-pig when ten bacilli were used, was also capable of infecting a child in practically the same dose. It seems justifiable, therefore, to conclude that the tubercle bacilli found in the sputum of patients in open cases of pulmonary

tuberculosis (provided the bacilli capable of artificial cultivation are a true index of those existing in the native sputum) vary only slightly in virulence for guinea-pigs, and are for practical purposes nearly all pathogenic. That is, in 97 per cent. of the cases, they will infect a child, as may be deduced from Webb and Gilbert's observations, in a dose of less than one-millionth milligram. These experiments also seem to lay special emphasis on the examination of the sputum of men in military service or about to enter it.

TREATMENT OF DIABETES FROM THE GENERAL PRACTITIONER'S STANDPOINT

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In spite of the recent important advances made in diabetic treatment by the studies of Allen, Joslin, Mosenthal and others, our profession at large has failed to profit in a corresponding degree. The reasons are not difficult to ascertain. Success in the treatment of diabetes lies in the smooth coordination of clinical experience in the disease with a practical system of diabetic dietetics and accurate chemical laboratory methods. Neither the general practitioner nor, indeed, the general internist can be expected to meet these severe requirements, as both treat too few diabetics at any given time to permit of elaborate dietetic management. The result is that the treatment of diabetes, at present, is carried out successfully by a relatively few physicians who have the help of a specially modified institutional system. However, the management of this difficult disease must of necessity still be largely conducted by the general practitioner and internist. No very definite attempt has been made to adapt the modern treatment to these needs.

This unsatisfactory state of affairs has been impressed on me in teaching physicians at the New York Post-Graduate Medical School. Accordingly, a simplified scheme has been worked out to fill this general need. It has been used sufficiently to demonstrate its utility in the hands of physicians with little previous experience with diabetic patients. My purpose in this article is to describe the principles of this plan together with other points of practical importance to the general practitioner. This plan of treatment, in which fixed dietaries are introduced, is by no means ideal, but it serves a very definite purpose. Whenever possible it should be replaced by more specialized dietetic and laboratory methods.

FALLACIES IN DIABETIC TREATMENT

Correction of poor treatment is a necessary adjunct to the introduction of better treatment. General carelessness may be mentioned first. Diabetes is eminently chronic. Many patients apparently get along well over long periods of time with sugar in the urine. The case is allowed so to continue until irreparable complications or unconquerable acidosis develops. It cannot be too forcibly emphasized that the only danger-free existence for the average diabetic is a sugar-free existence.

Allowing the patients more food than is absolutely necessary is always inadvisable. It must be remembered that both protein and fat, in excess, as well as

6. Gilbert, G. B., and Gregg, H.: *Med. Rec.*, New York, 1915, 88, 208.

7. Webb, B., and Gilbert, G. B.: *Immunity in Tuberculosis*, THE JOURNAL A. M. A., Sept. 26, 1914, pp. 1098-1104.

carbohydrates may cause lowering of the tolerance and eventually glycosuria and acidosis. According to my studies,¹ 50 per cent. or more of protein is converted into glucose in the diabetic organism. By stimulating protein breakdown, fat may lead to increased sugar production. For the same reason the use of special "diabetic foods" containing large amounts of protein is inadvisable, as I have previously pointed out.² In spite of various publications to the contrary, the unlimited use of gluten bread as a "good diabetic food" is still recommended by some physicians. Its use is undoubtedly responsible for the death of many diabetics. Gluten breads contain large amounts of protein and frequently carbohydrate, as well.

The "oatmeal cure" is still occasionally used. The virtue of the oatmeal diet seems to be chiefly in the fact that the monotony of such food causes less caloric intake with corresponding improvement. The use of oatmeal in modern treatment is restricted to certain special cases, as exemplified below.

The sudden change from an unrestricted diet to one containing large amounts of protein and fat but limited carbohydrates is one of the most dangerous practices still encountered in diabetic treatment. The results may be an outbreak of coma as a result of destroying the balance between the fats and the carbohydrates of the diet.

Many diabetics break their diet because of the unreasonable restriction and lack of daily variation in their dietary prescriptions.

Fasting resembles digitalis as a therapeutic agent in being an excellent remedy only in skilled hands. By its means the patient is quickly rid of sugar; but such treatment is merely a useless hardship if the subsequent diet is not properly modified to maintain the patient permanently without glycosuria. Many physicians "treat the case" rather than aim to give the patient a systematic education with the aim of teaching him to live free of sugar.

PRINCIPLES OF MODERN DIABETIC TREATMENT

The object in the treatment of diabetes is to render the urine sugar free by fasting or by the employment of low caloric diets. This is done, for experience has taught that diabetics made permanently sugar free become rapidly relieved of symptoms and curable complications, and gain strength and resistance. The carbohydrate tolerance is usually increased by this treatment so that frequently increased amounts of starchy food can be assimilated with benefit. Acidosis is best combated by the same means in all but exceptional cases.

Hygienic Treatment.—The great emphasis necessarily placed on the diet in the treatment of diabetes has made many forgetful of the great importance of hygiene in the disease. Mental worry and strain should be excluded as much as possible, for I have seen diabetes apparently develop solely from this cause. Daily exercise in the fresh air should be prescribed for all but the very feeble. This is very important. Fresh air at work and during sleep, a rest in the middle of the day, and a change to a more hygienic occupation are other measures.

Classification of Diabetic Patients.—As the treatment of diabetes varies immensely with the severity of

the case, it is important practically to divide diabetics into two groups as originally proposed by Joslin.

Group 1 comprises the light, uncomplicated cases—those showing, for example, only a few grams of sugar in the urine on an unrestricted diet. Such patients show slight clinical symptoms.

Group 2 comprises all severe, long-standing, complicated and acidosis cases; also cases with infection, and cases in the obese and elderly.

TABLE 1.—DR. JOSLIN'S DIABETIC CARD

FOODS ARRANGED APPROXIMATELY ACCORDING TO PERCENTAGE OF CARBOHYDRATES				
VEGETABLES (fresh or canned)	5 per cent.*	10 per cent.*	15 per cent.	20 per cent.
	Lettuce Cucumbers Spinach Asparagus Rhubarb Endive Marrow Sorrel Sauerkraut Beet greens Dandelion greens Swiss chard Celery	Tomatoes Brussels sprouts Watercress Sea kale Okra Cauliflower Eggplant Cabbage Radishes Leeks String beans Broccoli	Pumpkin Turnip Kohlrabi Squash Beets Carrots Onions Mushrooms	Green peas Artichokes Parsnips Canned lima beans Potatoes Shell beans Baked beans Green corn Boiled rice Boiled macaroni
FRUITS	Ripe Olives (20% fat) Grapefruit	Lemons Oranges Cranberries Strawberries Blackberries Gooseberries Peaches Pineapple Watermelon	Apples Pears Apricots Blueberries Cherries Currants Raspberries Huckleberries	Plums Bananas Prunes
Nuts	Butternuts Pignolias	Brazil nuts Bk. walnuts Hickory nuts Pecans Filberts	Almonds Wal'ts (Eng.) Beechnuts Pistachios Pine nuts	Peanuts
	Misc. Unsweetened and unspiced pickle; clams; oysters; scallops; liver; fish roe			40 per cent. Chestnuts

* Reckon available carbohydrates in vegetables of 5 per cent. group as 3 per cent., of 10 per cent. group as 6 per cent.

(30 gm. 1 oz.) Contain Approximately	Carbohydrates Gm.	Protein Gm.	Fat Gm.	Calories
Oatmeal, dry wgt.	20	5	2	120
Cream, 40 per cent.	1	1	12	120
Cream, 20 per cent.	1	1	6	60
Milk 1.5	1	1	1	20
Brazil nuts 2	5	20		210
Oysters, six 4	6	1	50	
Meat (uncooked, lean)	0	6	3	50
Meat (cooked, lean)	0	8	5	75
Bacon 0	5	15		155
Egg (one) 0	6	6	75	
Vegetables 5 and 10% group ..1 or 2	0.5	0	6 or 10	
Potato 6	1	0	25	
Bread 18	3	0	90	
Butter 0	0	25	225	
Fish, cod, haddock (cooked)	0	6	0	20
Broth 0	0.7	0	3	
Small orange or half grapefruit..	10	0	0	40

EQUIVALENTS

1 gm. protein	4 calories
1 gm. carbohydrate	4 calories
1 gm. fat	9 calories
1 gm. alcohol	7 calories
1 kg.	2½ pounds
30 gm. or c.c.	1 ounce

Treatment of Light Cases (Group 1).—The patient is assisted to select from the Joslin food card (Table 1) a simplified diet corresponding as nearly as possible to his present diet without change. The patient is directed to weigh or measure all articles of his diet for the first few days of treatment. The various articles of food, for the sake of clearness, should be recorded in columns in a special notebook.

Instructions are given how to perform the qualitative Benedict test³ for glucose in the urine. This test

1. Janney, N. W., and Co-Workers: Jour. Biol. Chem., 1915, 20, 1; 22, 203; 23, 77.

2. Janney, N. W.: Glucose Formation from Protein in Diabetes, Arch. Int. Med., November, 1916, p. 584.

3. Benedict, S. R.: The Detection and Estimation of Glucose in Urine, THE JOURNAL A. M. A., Oct. 7, 1911, p. 1193.

should be made by the patient himself on a twenty-four hour specimen or large mixed sample of urine. Several twenty-four hour specimens of urine should be tested quantitatively for glucose after the diet is being properly recorded.

The physician now calculates the approximate amount of carbohydrate in the diet, paying especial attention to the articles rich in carbohydrate, such as bread, milk, vegetables and fruit. There seems to exist an unreasonable objection on the part of the profession to accuracy in dietetic prescriptions. The calculations here suggested do not require over fifteen minutes daily. Protein and fatty foods are not calculated, but should be recorded for the patient's own instruction.

TABLE 2.—NEW DIET IN TREATMENT OF LIGHT CASES

Article	Amount		CH Gm.
	Gm.	Oz.	
10 per cent. vegetables	240	8	14
20 per cent. vegetables	120	4	24
Bread	60	2	36
Orange or grapefruit*	150	5	12
Total			86

* Edible portion.

The next step is to devise the new diet for the patient. This prescription should contain only about one half to two thirds of the amount of carbohydrate previously taken. Thus, if 150 gm. of carbohydrate were found to cause a few grams of sugar to be excreted in the urine, a maximum of 100 gm. of carbohydrate distributed somewhat as indicated in Table 2 can be ordered. The difference between this total and the 100 gm. of carbohydrate prescribed is allowed for by the 5 per cent. of vegetables, the cream, the cheese, etc., included in the general list.

TABLE 3.—GENERAL DIABETIC DIET LIST

FOODS PERMITTED:

Soups—Clear meat broths, oxtail, green turtle, vegetable soup (use only permissible vegetables). Casein, Hepco or Lister flour can be used for thickening soups.

Meats—All kinds of meats, fresh, cured or smoked, except liver. All meat must be prepared without flour or bread crumbs.

Eggs—Eggs in any form prepared without milk, flour or sweetening (sugar, jam, etc.).

Butter—Butter, oils, lard, crisco, in moderate amounts.

Cheese—All kinds of cheese.

Fish—All kinds of fish, including canned salmon and sardines. Shellfish (oysters, clams, lobsters, scallops, crab, etc.) in small amounts.

Vegetables (containing 5 per cent. of carbohydrate)—Greens, spinach, beet tops, string beans, Brussels sprouts, asparagus, lettuce, endive, cucumbers, radishes, celery, cabbage, tomatoes, cauliflower, watercress, eggplant, kohlrabi, sour pickles.

Desserts—Gelatin jellies (flavored with sour white wine, brandy or coffee), custards and ice cream made with eggs and cream only, flavored with a little vanilla. All sweetening to be done with saccharin or crystallose (do not use sugar or milk in desserts).

Beverages—Tea or coffee (without sugar or milk), cream and saccharin may be used; claret; burgundy; sour white wine; whisky in moderate amounts; Vichy and water. Cream to be used in coffee and tea, or as desired in cooking.

Condiments—Pepper, salt, mustard, oil, vinegar, nutmeg, capers, cinnamon, paprika, bay leaves.

Special—Nuts: butternuts, pecan nuts, Brazil nuts. Lister and Hepco flour.

AVOID:

All articles not enumerated above. Patent diabetic foods in general. Sugar in any form. Bread, biscuits, cake of any kind, toast, crackers. All cereals (rice, oatmeal, cornmeal, sago, tapioca, hominy, etc.). Macaroni, vermicelli, spaghetti. Potatoes and all vegetables not listed above. All fruits, fresh, dried or preserved. Jellies, pastries, puddings, ice cream. Sauces and gravies thickened with flour. Catsup, chili sauce. Milk, ale, stout, porter, beer, cider, all sweet wines, port wines, liqueurs, sparkling wines and syrups.

Less but not more than the prescribed amount of food may be taken. The noncarbohydrate food of the diet need not be especially prescribed except that the articles should be chosen from the general diabetic list (Table 3); that as little food as is necessary to maintain weight be eaten, and that fats never be used in excess. The final diet consists of

known amounts of food rich in carbohydrates in addition to the general diabetic list. The weighing of the food may cease as soon as the patient has learned to estimate accurately the portions allowed.

The patient should become sugar free within one week on the new diet, if the work has been done correctly. This fact he establishes by his own urinary examinations controlled by the physician's. Later on the test should be made twice weekly, but never entirely omitted. If desired, the sugar can be immediately removed from the urine by a fast; but its gradual clearing up represents no danger to the patient, to whom this process is far more agreeable and is followed by as good results.

In many of these light cases the patients become sugar free by simply limiting the carbohydrate food without weighing. To this common procedure there are various objections. The greatest is that the training of the patient to dietetic accuracy is of fundamental importance to successful treatment. Again, if the upper limit of the carbohydrate content of the diet is ascertained by the patient's weighing and calculating the food, frequently certain amounts of bread, a little milk, fruit, etc., may be added with impunity, and the final diet be made much more endurable and agreeable.

Treatment of Severe Cases (Group 2).—Here acidosis or the danger thereof is present. It is most advisable to order no sudden change in diet at the start, for in certain cases even fasting if abruptly begun may cause acidosis to develop. To combat this

TABLE 4.—LIQUID DIET

WATER, TEA AND COFFEE—Without sugar, cream or milk, when desired. Crystallose or saccharin can be used for sweetening.

CHICKEN OR MEAT BROTH—May be taken every two hours. The broth should be clear, and not oversalted.

WHISKY—From 1 to 2 ounces can be taken for weakness. Do not remain in bed, but lie down if necessary.

condition the diet should be gradually reduced until a fast is finally instituted. Fasting is inadvisable in the elderly, and in nephritic, exophthalmic goiter and septic cases. The latter group of patients may fail to become sugar free even after prolonged abstinence from food. Here the use of restricted diets is indicated.

1. The patient is trained to weigh and record the food without any radical change of diet at the beginning. The diet is simplified as before by omission of all complicated dishes and desserts, articles being chosen from the Joslin diet card.

The twenty-four hour urine specimens should be regularly collected and examined qualitatively and quantitatively⁴ for glucose, and qualitatively for acetone, diacetic acid, and albumin. The patient's weight should be regularly recorded every second day. Marriott's alveolar carbon dioxide test may be carried out with advantage.

2. The fats are reduced by the omission of butter, lard, oil, cream, bacon, large amounts of cheese and meat, and all fried or greasy articles of food.

3. After the fatty foods have been omitted for a day or two, the chief protein foods in the diet are halved daily until none are taken. Such foods are meat, fowl, fish, eggs, milk and cheese.

4. The carbohydrate food in the diet is halved daily until fasting has been instituted. The patient fasts

4. A simplified method for performing the Benedict quantitative glucose test is described in Joslin, E. P.: *Treatment of Diabetes Mellitus*, New York, 1917, p. 180, to which reference may be made for further details of diabetic treatment.

until sugar free for two days. The maximum duration of the fast is four days. The liquid diabetic diet is used (Table 4).

5. After the patient has been sugar free for two days, the fast is broken with the first diabetic diet, D₁ (Table 5), which supplies: carbohydrates, 12 gm.;

TABLE 5.—DIABETIC DIET 1			
BREAKFAST—			
Eggs, 2			
Vegetables, 5 per cent.	90 gm. =	3 oz.	
Tea or coffee without sugar, milk or cream			
DINNER—			
Clear meat or chicken broth, fat skimmed off.....	1 cup		
Lean round steak or lean chicken	60 gm. =	2 oz.	
Vegetables, 5 per cent.	120 gm. =	4 oz.	
4 P. M., OR AT BEDTIME—			
Clear meat or chicken broth, fat skimmed off.....	1 cup		
SUPPER—			
Lean meat, fresh fish or lean chicken	60 gm. =	2 oz.	
Vegetables, 5 per cent.	180 gm. =	6 oz.	
Tea or coffee without sugar, milk or cream			
Approximate Totals—			
Carbohydrates	Protein	Fat	Calories
12 gm.	53 gm.	22 gm.	450

TABLE 6.—DIABETIC DIET 2			
BREAKFAST—			
Eggs, 2			
Vegetables, 5 per cent.	90 gm. =	3 oz.	
Tea or coffee without sugar			
Milk	60 gm. =	2 oz.	
DINNER—			
Clear meat or chicken broth, fat skimmed off.....	1 cup		
Lean meat, fresh fish or lean chicken	90 gm. =	3 oz.	
Vegetables, 5 per cent.	180 gm. =	6 oz.	
Butter	10 gm. =	1/2 oz.	
4 P. M., OR AT BEDTIME—			
Clear meat or chicken broth, fat skimmed off.....	1 cup		
SUPPER—			
Lean meat, fresh fish or lean chicken	90 gm. =	3 oz.	
Vegetables, 5 per cent.	150 gm. =	5 oz.	
Tea or coffee without sugar			
Approximate Totals—			
Carbohydrates	Protein	Fat	Calories
16 gm.	62 gm.	43 gm.	700

TABLE 7.—DIABETIC DIET 3			
BREAKFAST—			
Eggs, 2			
Grapefruit or orange	90 gm. =	3 oz.	
Vegetables, 5 per cent.	90 gm. =	3 oz.	
Coffee or tea without sugar, cream or milk			
DINNER—			
Clear meat or chicken broth, fat skimmed off.....	1 cup		
Lean meat, fresh fish or lean chicken	90 gm. =	3 oz.	
Vegetables, 5 per cent.	150 gm. =	5 oz.	
Vegetables, 10 per cent.	90 gm. =	3 oz.	
Butter	15 gm. =	1/2 oz.	
Cream cheese	30 gm. =	1 oz.	
SUPPER—			
Egg, 1			
Lean meat, fresh fish or lean chicken	60 gm. =	2 oz.	
Vegetables, 5 per cent.	150 gm. =	5 oz.	
Butter	15 gm. =	1/2 oz.	
Approximate Totals—			
Carbohydrates	Protein	Fat	Calories
25 gm.	69 gm.	68 gm.	1,000

TABLE 8.—DIABETIC DIET 4			
BREAKFAST—			
Eggs, 2			
Vegetables, 5 per cent.	90 gm. =	3 oz.	
Orange or grapefruit	150 gm. =	5 oz.	
Tea or coffee without sugar			
Milk	100 gm. =	3 oz.	
DINNER—			
Lean meat, fresh fish or lean chicken	90 gm. =	3 oz.	
Vegetables, 10 per cent.	120 gm. =	4 oz.	
Vegetables, 20 per cent.	90 gm. =	3 oz.	
Butter	30 gm. =	1 oz.	
SUPPER—			
Lean meat, fresh fish or lean chicken	90 gm. =	3 oz.	
Vegetables, 10 per cent.	120 gm. =	4 oz.	
Butter	30 gm. =	1 oz.	
Cream cheese	30 gm. =	1 oz.	
Approximate Totals—			
Carbohydrates	Protein	Fat	Calories
53 gm.	73 gm.	100 gm.	1,400
The butter in this diet can be used in the cooking. Olive oil (for salad dressing) may be substituted for it in part.			

protein, 53 gm.; fat, 22 gm.; calories, 450. If there has been no return of sugar on this diet, the second diabetic diet, D₂ (Table 6), is prescribed, which supplies: carbohydrate, 16 gm.; protein, 62 gm.; fat, 43 gm.; calories, 700. This may be given from a few days to a week or even longer. Then a trial is made with the third diabetic diet, D₃ (Table 7), which sup-

plies: carbohydrate, 25 gm.; protein, 69 gm.; fat, 68 gm.; calories, 1,000. Finally, the fourth diabetic diet, D₄ (Table 8), may be used, which supplies: carbohydrate, 53 gm.; protein, 73 gm.; fat, 100 gm.; calories, 1,400.

6. Repeated Fasting: If the patient still has glycosuria after breaking the initial fast by the D₁ diet for two days, he should fast again a maximum of three days and then take the D₁ diet again for three days, using thrice-washed 5 per cent. vegetables.⁵ If the urine still shows sugar, a repetition of the fast, this time of two days' duration, followed by the D₁ diet with the thrice washed vegetables for four days, causes the glycosuria to vanish in nearly all cases.

When on this treatment the patient has been free of sugar for two days, the diet may be gradually increased under the fifth general scheme, but one should proceed very slowly.

7. Increasing the Diet: Even diets D₃ and D₄ are usually insufficient permanently to maintain weight and strength. As a general rule, patients should undergo treatment by fasting and very low dieting not longer than a period of three weeks' duration. After an interval varying with the severity of the case, attempts should be made gradually to increase the diet. In many cases the carbohydrates can be greatly increased if the fats are kept low, which also guards against acidosis. Many diabetics are held for too long a time to an over-restriction of carbohydrates, and do not do well in consequence.

Further increase in the foods may be made as follows: Carbohydrates may be added very gradually by (1) the substitution of 15 and 20 per cent. vegetables for the 5 and 10 per cent. varieties; (2) the giving of fruit; (3) the addition of small amounts of bread, and (4) the addition of oatmeal. Protein may be increased by the addition of eggs, meat, fish, milk or cheese; fats, by the addition of butter, cream, bacon or olive oil. It is usually more advisable to use cream in diabetes than milk, because of the increased caloric value and slightly lower carbohydrate content. Milk can be employed in dispensary work and in cases of high tolerance. By the addition of cheese and nuts to the diet, fats are introduced as well as protein.

8. Reappearance of sugar in the urine is the signal for fasting until sugar free, if there be no contra-indication, and a lower diet containing but one half to two thirds of the carbohydrate.

Calculation of the Calories.—By the use of scales and the diet card, it is possible to calculate approximately the calories in a given diet. Thirty calories per kilogram or 2,100 calories for the average weight of 70 kg. should, in the opinion of Dr. F. H. Allen and myself, be the maximal adult diabetic ration. The caloric calculations can usually be avoided in general practice by (1) strict adherence to the diets, including daily weighing and recording of the food, and (2) careful observation of the patient's weight and general condition. As soon as the permanent diet on which the patient remains free of glycosuria and maintains body weight has been attained, the weighing of food

5. The vegetables are cleaned, cut up fine and soaked in cold water. They are then strained and tied up loosely in a piece of cheesecloth sufficiently large to permit the vegetables to swell without sticking together. They are placed in a saucepan containing a large quantity of cold water, and brought to the boiling point, at which temperature they are maintained for from three to five minutes. The water is then poured off, replaced with fresh water, and the vegetables are again boiled for the same length of time. This process is again repeated. The vegetables will keep for several days in cold storage, and may be reheated as desired.

can usually be dispensed with, and domestic measures, such as cream pitchers marked for the amount allowed, can be substituted.

Detection and Treatment of Acidosis.—The tests recommended as a routine measure for the detection and estimation of the degree of acidosis by the general practitioner are but three in number: (1) the ferric chlorid test⁶ for diacetic acid; (2) the sodium nitroprussid test⁷ for acetone, and (3) the Marriott quantitative method⁸ for the determination of the alveolar carbon dioxid.

The acetone test really represents a more delicate index of the presence of diacetic acid than does the ferric chlorid reaction. A positive ferric chlorid test should lead to a Marriott carbon dioxid estimation. This test should be at the command of every one treating diabetics. The apparatus can be obtained from the Hynson, Westcott and Dunning Company, Baltimore (New York offices at 150 Nassau Street) for \$5. The technic can be learned in a few minutes, and the results are most useful. When the tension of the alveolar carbon dioxid is normal, the reading of 45 will be obtained. Readings between 30 and 40 indicate a mild acidosis, while below 30 the case is more serious. Extreme values of 10 and 15 have been obtained in diabetic coma.

The effort should be made to render the urine free of sugar, and the qualitative as well as the quantitative acidosis tests negative. The ferric chlorid and acetone tests remain positive as long as the faintest trace of the acetone bodies is present. It must also be remembered that when the urine is kept sugar free, the acidosis usually clears up if given a little time. Too great a curtailment of the diet should not, therefore, be ordered on account of a mild ferric chlorid or acetone reaction. Considerable experience is necessary in applying the results of the acidosis methods to the treatment in a given case.

Coma and Its Treatment.—The early recognition of impending coma is of the utmost importance. On being called in consultation to see a diabetic who is said to be merely "not doing well," I have only too frequently found the patient, though conscious, bordering on coma. One of the earliest signs is a peculiar change in the facial expression. The patient presents the anxious appearance of one gravely ill. Quite a number of slight signs, if observed in time, may put the physician on his guard. Such are undue drowsiness, excitement, sudden failing of the appetite, nausea, headache, apparently causeless pains in various parts of the body, dyspnea or hyperpnea. It should be borne in mind that trivial factors may cause a pre-disposed patient to go into coma. Among these may be mentioned the pulling of a tooth, a tonsillectomy, and a severe nervous shock.

Treatment, if begun in time, may lead to recovery. One should avoid, if possible, alarming the patient. He should be kept *warmly* covered in bed. If the state of his stomach permits, he may be allowed to drink

4 ounces of hot liquid every fifteen minutes to half an hour, hot broth, tea, coffee and water being permissible. The bowels should be emptied immediately by an enema. Catharsis should be avoided. From 300 to 500 c.c. of hot physiologic sodium chlorid solution should be given by enteroclysis after the enema has been expelled. This should be followed with 500 c.c. of additional physiologic sodium chlorid solution by the drip method, once during six hours. If physiologic sodium chlorid solution is not retained, water should be used. It is essential to introduce 4,000 c.c. of liquid during the first twenty-four hours. Therefore if a sufficient quantity is not being retained by mouth and bowel, 700 c.c. of physiologic sodium chlorid solution should be given intravenously. A frequent mistake is to postpone the intravenous infusion until the patient is moribund. Given early, it may save life.

Diet.—Preferably only the liquids mentioned should be given, and from 30 to 40 gm. of carbohydrate in the form of the juice of three to four oranges for the twenty-four hours.

Medical Treatment.—Occasionally codein may be necessary to control vomiting and pain. Caffein may be given to the drowsy patient as a cardiac stimulant. Such cardiac stimulants as strophanthin, $\frac{1}{100}$ grain, are frequently indicated and forgotten in the excitement.

Alkalis in Acidosis.—The treatment as outlined is seen to be purely eliminative and supportive without the use of sodium bicarbonate. Views of even the best authorities are divided at present on the advisability of using alkalis. A final opinion as to the utility or uselessness of alkalis had best be reserved until the ultimate cause of diabetic coma is elucidated. Certainly the employment of large amounts of alkalis does much harm on account of the danger of upsetting the stomach, withdrawal of liquids from the body, and, in the case of intravenous introduction, the possibility of causing collapse. It has never been proved that the alkali treatment is beneficial even when small doses are administered. Indeed, a series of fifteen cases⁹ with recovery from alarming acidosis or coma without the use of alkali has been reported.

STUDY OF THE BLOOD IN DIABETES

Much information can be gained by a study of the diabetic blood, which should be undertaken whenever possible. The blood methods used in diabetes are not emphasized in this article for the reason that the general practitioner frequently finds difficulty in having laboratory studies made, because of the lack of convenient first-class facilities and the expense. It is very advisable, however, to have blood sugar estimations made at intervals, for the height of the blood sugar is usually an indication of the severity of the disease as well as a gage of the effect of treatment. Normal blood sugar values range from 0.085 to 0.11 per cent., while in diabetes values up to from 0.20 to 0.40 per cent. and even higher are obtained. I have used the Epstein modification¹⁰ of the Lewis-Benedict method with satisfaction. A few drops of blood from the finger tip is sufficient for a blood sugar determination.

In the treatment of acidosis patients too ill for the application of the Marriott alveolar carbon dioxid technic, a few cubic centimeters of blood may be with-

6. To about 10 c.c. of urine, a few drops of 10 per cent. ferric chlorid solution (aqueous) are carefully added. A precipitate of ferric phosphate may form first, but on addition of a few more drops, it dissolves. A Burgundy-red color indicates the presence of diacetic acid, the depth of the color being an index to the amount of the acid present.

7. A few crystals of sodium nitroprussid are dissolved in a small amount of distilled water, 5 c.c. of the urine added, and the mixture rendered acid with a few drops of glacial acetic acid. This is stratified with ammonium hydroxid. A distinct purple appears at the point of contact, the width of the band depending on the amount of acetone in the urine.

8. Marriott, W. M.: The Determination of Alveolar Carbon Dioxid Tension by a Simple Method, THE JOURNAL A. M. A., May 20, 1916, p. 1594.

9. Joslin, E. P.: Treatment of Diabetes Mellitus, New York, 1917, p. 389.

10. Epstein, A. A.: An Accurate Microchemical Method of Estimating Sugar in the Blood, THE JOURNAL A. M. A., Nov. 7, 1914, p. 1667.

drawn from the vein for a more careful study by the accurate Van Slyke method¹¹ for determining the carbon dioxid of the plasma.

TREATMENT OF OTHER COMPLICATIONS

Nephritis.—In acidosis cases, slight amounts of albumin and hyaline casts are frequently found in the urine. After the patient becomes sugar free, this condition usually improves. Actual nephritis is not uncommon. In such cases, fasting should be avoided, and the urine should be rendered sugar free by moderate reduction of the carbohydrate and the total calories. Only in uremic cases or in cases in which a blood urea determination proves nitrogen retention to be present should the protein of the diet be unduly curtailed. Nephritis is no contraindication to dietetic diabetic treatment, and improvement of both conditions is the rule with judicious management. Edema of non-nephritic origin is common in diabetic patients on low diets containing much salt. It may also be caused by the taking of large amounts of soda. Limitation of salt, omission of sodium bicarbonate, and sometimes restriction of the liquid intake relieve this condition.

Skin.—Great caution to avoid even the tiniest break in the contiguity of the skin is necessary. Daily bathing and the liberal use of talcum powder are indicated.

Pruritis Vulvae.—This usually clears up as soon as the urine is sugar free, if it is not dependent on some local cause.

Furuncles.—These are frequent in diabetes. The old warning to examine the urine in every case of boils is still sometimes neglected. Aside from surgery, furuncles may be treated locally by a 3 to 5 per cent. ammoniated mercury ointment with white petrolatum. A daily bath should be ordered, followed by a boric acid sponge over the entire body, to prevent extension of the infection.

Diabetic Gangrene.—This condition is the end-result of an occlusive angiitis. Prodromal symptoms include numbness and chilliness of the extremities, and intermittent pains lasting frequently for years. In this condition hot foot-baths, massage, short walks and elevation of the feet while at rest should be prescribed. Moist, hot compresses applied for brief intervals once or twice daily are helpful in relieving pain. The use of salicylates may lead to the appearance of a positive ferric chlorid reaction in the urine, when no acidosis is actually present. If actual gangrene develops, a surgeon should be called at once.

Sepsis.—It is sometimes difficult as well as injudicious to free a septic patient of sugar. Restricted diets may be badly borne. Supportive and stimulative measures may be required until improvement permits stricter treatment.

Pregnancy and Diabetes.—A small amount of glucose is not uncommonly found in the urine of pregnant women. In such cases the carbohydrate should be limited and special care be generally employed. Marked clinical symptoms of diabetes had best be regarded by the general practitioner as an indication for an early abortion, though in expert hands cases are now carried through successfully to confinement.

DIABETES IN CHILDREN

Children are especially liable to acidosis. One should be careful never to permit an unlimited amount of fat in the diet, and to restrict fatty foods during the minor illnesses to which children are susceptible.

It should be remembered, however, that on account of growth about double the amount of food required by adults must be given to children. Happily, the life of diabetic children is becoming increasingly prolonged under modern treatment. One of my little patients has completed her eighth year, diabetes beginning at 5.

33 East Sixty-Third Street.

END-RESULTS IN THE PROSTATECTOMIZED PATIENT: A COMPARATIVE ANALYSIS

BASED ON ONE HUNDRED AND TEN CASES (FIFTY-FIVE SUPRAPUBIC, FIFTY-FIVE PERINEAL)*

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ST. LOUIS

My natural interest, as a urologist, in the life of the prostatectomized patient after complete operative convalescence, particularly as it involved the several important functions subjected to surgical assault, prompted me, in 1917, to write to a considerable number of general practitioners for information of those of their patients on whom a prostatectomy had been done. I enclosed a printed questionnaire covering the following points:

When was operation performed?
Age of patient at operation.
Suprapubic or perineal?
Did wound heal promptly?
If urinary fistula resulted, how long was it in healing?
Present frequency of urination: (1) day; (2) night.
Has patient full control of bladder?
Has patient incontinence? Complete or partial?
Cystitis?
Pain: Connected with Urination? Independent of Urination? Location.
Amount of residual urine.
What force to stream?
Effect of operation on sexual power.
Increased, lessened or unchanged?
Was there stricture of urethra following operation?
Is urine clear?
Has there been stone formation since operation?
Effect of operation on patient's general health.

I chose the family physician as the source of my information because I believed he would be in closer touch with prostatectomized patients than the genito-urinary surgeon. When we have done the prostatectomy and returned the patient to his physician, we usually lose sight of him; but the continued and more intimate relationship between family physician and patient permits the general practitioner to pass accurate and unbiased judgment on the end-results of surgical procedures. Hence, I feel sure that the figures I am about to present represent more reliable conclusions than if they were based on the reports of the men doing the work. Fully to know a person, one must "summer and winter" with him. The family physician does this with his patients. The specialist does not.

The employment of a printed questionnaire secured uniformity of information.

11. Van Slyke, D. D.: Jour. Biol. Chem., 1917, 30, 289.

* Read before the St. Louis Medical Society, March 9, 1918.

COMPARISON OF THE TWO OPERATIVE PROCEDURES

Curiously enough, on the final balancing of my returns, I found that I had reports on fifty-five cases of suprapubic prostatectomy, and fifty-five in which the perineal operation had been performed. I was not so much struck by this exact balance of choice of operative procedure as I was by the fact that the perineal operation was still in large vogue. While it is true that in recent years the suprapubic operation has attracted by far the wider attention in the literature of prostatectomy, yet by glancing at the accompanying chronological chart, we may readily see that there is not the numerical disproportion between the two operations which most of us held to be the case. Even as late as 1916, as shown by the chart, the perineal was two thirds as popular as the suprapubic operation.

The fairness of the conclusions reached after a comparative analysis of these 110 cases becomes all the more obvious when one remembers the even balance of operative routes.

Some of the patients were operated on by myself, others by other urologists, general surgeons, general practitioners and gynecologists. Hence they represent a wide assortment of surgical talent.

As far as the age factor is involved, it is interesting to note that those subjected to the suprapubic operation were, on an average, a trifle more than two years older than those subjected to the perineal. The average age of the suprapubic patients was 66.5 years, and that of the perineal patients, 64.3 years.

It is true that hitherto the perineal route has had a smaller operative mortality than the suprapubic; but during the past few years the mortality figures of the two operations have been rapidly approaching each other, particularly since the two-step suprapubic operation has been popularized. In view of this reduction of suprapubic mortality, largely due to better control of the renal factor, the element of extra hazard does not participate so markedly as formerly in the choice of operative procedure. Furthermore, since the probable end-results of an operative procedure are a weighty factor in the determination of its feasibility and choice, it is obvious that even though there is a slight extra operative hazard, either actual or apparent, this is, in a very large degree, neutralized by superior end-results. After all, the end-result of an operative measure is the acid test of its applicability.

At this point, I wish to state that any apparent discrepancy between the mathematical determination of any single factor and the total number of cases is due to the fact that in some instances certain questions were unanswered. Illustrative percentages of the several items involved are based on the actual number of available answers to each individual question. Again, when answers were vague or obviously incorrect, they were not used in the estimation of findings.

Entering on the matter of immediate operative convalescence, we may generously grant that any prostatectomy wound that closes entirely within four weeks may be designated as having healed promptly. As shown in Table 1, 61.2 per cent. of the suprapubic cases

TABLE 1.—CLOSURE OF WOUND

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Healed promptly	30	61.2	21	42
Healed within 3 months...	16	93.8	12	66
Healed within 1 year.....	3	100.	9	84
Sinus persisting beyond one year, finally closing.....	0	0.	5	10
Permanent fistula	0	0.	3	6

in this series healed promptly as against 42 per cent. of the perineal cases. Of the suprapubic cases, 93.8 per cent. were healed within three months, while only 66 per cent. of the perineal cases closed up in the same period. Within one year following operation, the wounds in a full hundred per cent. of the suprapubic cases were entirely healed; of the perineal wounds, only 84 per cent. were healed by the end of the year. In other words, while every suprapubic wound had healed within a year, 16 per cent. of the perineal

wounds were still discharging urine through a sinus. Carrying the analysis further, we find that in 6 per cent. of the cases of the entire perineal series, a permanent discharging sinus persisted. One of these cases presented a vesicorectal fistula, with the urine discharging into the rectum.

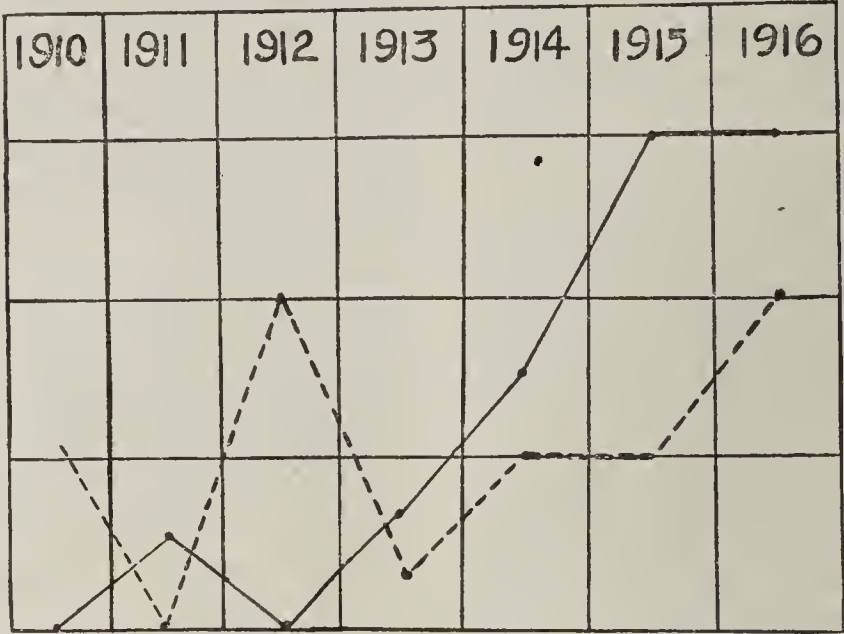
DIVERGENCE IN END-RESULTS

It is at this point that the end-results of the two modes of prostatectomy begin their wide divergence. Since these end-results are expressed in mathematical terms, they

are the more readily grasped, and the element of personal bias is eliminated.

In the vast majority of cases of prostatic hypertrophy, the symptom forcing the patient to seek surgical aid is either intolerable frequency of urination, particularly at night, or retention. Of necessity, removal of the gland relieves the retention. Now let us examine the figures and see what degree of relief is secured from the inordinate frequency. While, of course, no sharply defined line between normal and abnormal frequency can be drawn, yet for the purpose of conveniently arriving at an approximate standard of normality, we may arbitrarily fix a three-hour period for the day and a four-hour period for the night.

From my questionnaire I received definite information on the day urination of thirty-seven suprapubic and of thirty-six perineal patients. The results are summarized in Table 2. Of the thirty-seven suprapubics, thirty urinate during the day at normal intervals, five every two hours, one every hour, and one every thirty minutes. In the thirty-six perineal cases, twenty-four of the patients were restored to normal diurnal frequency, ten can hold the urine only two



Comparative popularity of the two operations: solid line, suprapubic; broken line, perineal.

hours and two must urinate every hour. There are no perineal cases in the thirty-minute class.

Expressing these results in percentages, we find, among the suprapubic cases, that they are good in 81, fair in 13.5 and poor in 5.4 per cent., while among the perineal cases the day results are good in 66.6, fair in 27.7 and poor in 5.5 per cent.

As we usually determine nocturnal frequency by the number of times a patient is compelled to arise from bed, I have thought it simpler to classify the night frequency in this manner, rather than to express it in periods of hours.

I have information on the nocturnal frequency of thirty-five suprapubic and thirty-eight perineal patients. At this point the parallel figures are quite impressive. Of the patients in the suprapubic cases, thirteen do not arise at night at all, sixteen only once or twice, two three times, and four oftener than three times. On the other hand, in the perineal cases, only one patient passes the night without urinating; sixteen arise once or twice; nine three times, and twelve must get up oftener than three times. Thus we may say that of the thirty-five suprapubic cases, twenty-nine have a normal nocturnal frequency, whereas only seventeen of the thirty-eight perineal cases are as fortunate. The patients in nine of the perineal cases

Concerning this phase of our subject, I have definite information of forty-six suprapubic and fifty perineal cases, which is summarized in Table 3. Of the forty-six suprapubic patients, thirty-seven have full control of the bladder function, seven have partial control, and two have complete incontinence. Of the fifty perineal patients, thirty-two have full control, eleven have par-

TABLE 3.—CONTROL OF BLADDER

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Full control	37	80.5	32	64
Partial control	7	15.2	11	22
Complete incontinence	2	4.3	7	14

tial control and seven have complete incontinence. Expressed in percentages, these results loom up still more strikingly. While the patients in 80.5 per cent. of the suprapubic cases have full control, only 64 per cent. of the patients in the perineal cases are equally lucky. Of the suprapubic cases, 15.2 per cent. are put into the partial control designation, while 22 per cent. of the perineal cases must be so described.

The suprapubic patients with complete incontinence embrace 4.3 per cent. of the entire suprapubic series, while 14 per cent. of the perineal cases are in this pitiable state.

In the examination of the various elements entering into the comfort of the prostatic postoperative life, only in the elements of persisting cystitis and pain do we find a balance in favor of the perineal route. By the figures set forth in Table 4, the questionnaire shows that 35 per cent. of the suprapubic patients complain of cystitis of varying grades, and 21 per cent. refer to definite pain at some point in the region of the site of operation. Of the perineal patients, 31 per cent. have cystitis and only 16 per cent. pain.

The answers relating to residual urine are too vague and inconclusive to be of substantial worth. Hence this factor will not be discussed.

As far as the force of the urinary stream is concerned, the figures so materially favor the suprapubic operation that I am sure the factor of urethral stricture must enter more deeply into the question of relative merit than we have hitherto thought. Of course, in working out the causes of reduced force of the stream, we must not forget the expulsive power of the bladder itself. I believe that in many instances the tonicity of the bladder is greatly improved on removal of the obstructing prostate; but if a stricture follows operation, this tonicity cannot be restored.

Of forty-two suprapubic cases investigated, twenty-two have a stream of good force, in eight the stream is

TABLE 4.—INCIDENCE OF CYSTITIS AND PAIN

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Cystitis:				
Present	16	35	15	31
Absent	30	65	33	69
Pain:				
Present	10	21	8	16
Absent	38	79	41	84

fair, in twelve it is poor. In only twelve out of forty-six perineal cases is it good; in seventeen it is fair, and in seventeen poor. The percentage figures, as given in Table 5, show these results more graphically.

This suspicion of a preponderance of urethral damage following perineal prostatectomy becomes all the more clearly warranted when we examine the actual stricture reports. Among forty-six suprapubic cases there are three definite reports of stricture. Among forty-three perineal cases there are ten such

TABLE 2.—PRESENT FREQUENCY OF URINATION IN SEVENTY-THREE CASES

Day:	Suprapubic	Perineal
Normal	30	24
Two hours	5	10
One hour	1	2
Thirty minutes	1	0
Night:		
Do not arise at all.....	13	1
Arise once or twice.....	16	16
Arise three times	2	9
Arise oftener than three times..	4	12
Results expressed in percentages:		
	Suprapubic	Perineal
	Day	Night
Good	81	82.8
Fair	13.5	5.7
Poor	5.4	11.5

arise three times and in twelve oftener than three times.

Since the correction of marked frequency, and especially nocturnal frequency, is an important purpose of prostatectomy, the gross figures and percentages covering this function form an index of no light value in prosecuting a comparative analysis of the two operations. My percentages demonstrate that, so far as day frequency is concerned, the suprapubic has a big lead over the perineal route, and a comparison of the night results shows that in suprapubic cases these results are almost twice as gratifying as in the perineal cases. While 82.8 per cent. of the suprapubic patients were restored to a very comfortable degree of night frequency, only 44.7 per cent. of the perineal patients were as fortunate, and whereas the night results in the suprapubic cases are poor in 11.4 per cent., among the perineal cases 31.5 per cent. may be so designated. In other words, the poor results of the perineal operation, as far as they relate to the important item of nocturnal frequency, are nearly three times as great as in the suprapubic series.

When we bear in mind the almost intolerable suffering that is consequent on an incontinent bladder, efforts to preserve the integrity of its function seem easily entitled to the most urgent consideration. The patient who returns home after a prostatectomy with a hopelessly incontinent bladder is not likely to hold his operation a success, even though it did effect the removal of his prostate gland.

reports. Expressed in percentages, these results are: suprapubic 6.5 per cent., perineal 23.2 per cent.

As the possibility of stricture formation is a most important element in the remote success of a prostatectomy, it is well to give this point the consideration its importance warrants.

Regarding the clarifying effect prostatectomy has on the urine, the two operative modes enjoy somewhat similar percentages, which are presented in Table 6.

However close in agreement the figures on the turbidity of the urine may be, we find in the percentages

TABLE 5.—FORCE OF STREAM

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Good	22	52.3	12	26
Fair	8	19	17	37
Poor	12	28.6	17	37

of stone formation a feature of considerable interest. Following suprapubic prostatectomy there was no stone formation in our series, while stone was formed in 4.1 per cent. of the perineal cases. Since lithiasis is favored through incomplete or difficult emptying of the bladder, with consequent urinary stagnation, we may look on stone formation as bearing a very close relationship to the factor of stricture formation.

While with the majority of these old men, active sexual life has ceased to be a matter of grave concern, yet there are many who, discussing with me the immediate and remote dangers of prostatectomy, inquire

TABLE 6.—CHARACTER OF URINE

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Clear	30	65.2	31	67.4
Turbid	14	30.4	14	30.4
Variable	2	4.4	1	2.1

seriously into the possibility of damaged sexual function. Hence the figures covering this phase are not without instructive value.

On this postoperative phase I have information touching on thirty-three suprapubic and thirty-three perineal cases, a similarity that makes the figures given in Table 7 easier of comparative understanding. In twenty-one of the suprapubic cases there was no change effected in the sexual function, in nine it was diminished and in three increased. In the perineal series this function was unchanged in sixteen cases, diminished in sixteen, and increased in only one. Here it

TABLE 7.—EFFECT ON SEXUAL POWER

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
No change	21	63.6	16	48.5
Diminished	9	27.3	16	48.5
Increased	3	9.1	1	3

should be remembered that the patients in the suprapubic cases are, on an average, two years older than those in perineal cases.

Naturally the effect of prostatectomy on the general well-being of the patient is of the utmost importance, and the figures describing this item should be carefully digested. Among forty-three of the patients in forty-nine suprapubic cases, the effect on the general health was good, in three it was bad, and in three patients there was no change. In thirty-six of the forty-seven perineal cases the effect was good, and in four it was bad, with no change in seven. A glance at Table 8 shows that in this important feature of prostatectomy, the suprapubic operation has a big lead over the perineal.

CONCLUSION

It is well that the perineal operation is losing popularity, for in this careful analysis of results, only in three inconsequential features is an advantage to be found for this route in the parallel figures. In all the

TABLE 8.—EFFECT ON GENERAL HEALTH

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Good	43	87.7	36	76.6
Bad	3	6.1	4	8.5
No change	3	6.1	7	14.9

important features the suprapubic operation has a big lead, showing beyond the shadow of a doubt that, measured in end-results, suprapubic prostatectomy is vastly superior to the perineal operation.

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GLOBULES OF METALLIC MERCURY IN THE TISSUES

FINDINGS IN AN AORTIC ANEURYSM WITH EROSION OF THE VERTEBRAE *

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AND

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The case here reported is one of considerable interest in view of the finding at necropsy of numerous globules of metallic mercury in the tissues of an aneurysm of the aorta, and the eroded vertebrae of the spinal column. Myriads of minute globules of mercury were scattered throughout these tissues, the metal being easily expressed and collected into larger globules in the concavity of the aneurysm and eroded tissues.

The deposition of the metal in the actively eroding and necrotic tissues, and probably primarily in the necrotic vertebrae, constitutes a finding of unique interest and considerable importance, although by no means rare or unusual. As early as 1579, Fernel¹ states, in his work on the venereal disease, that metallic mercury may be found in the "putrid caries of bones" if the patient has been exposed to the vapor of mercury or of cinnabar, and also in those who have had repeated rubbings with the ointment. Since then, several observers have recorded the presence of metallic mercury in the necrotic bones of syphilitics receiving vigorous mercurial treatment; the literature of the last twenty-five years, however, contains but few records, owing probably to the practice of less vigorous dosage with mercury in the treatment of syphilis.

That mercury may be found by chemical methods in the brain, liver and other internal organs following its administration by inunction, subcutaneous and intramuscular injections of soluble and insoluble salts, or by swallowing, is well established; Fernel believed that the mercury as such was transported to these organs, but this result is now regarded, according to Hallopeau,² as due to successive combinations (as mercury albuminate) and decompositions, ending by the formation of a soluble salt and pure metal, or a reducible insoluble salt. The method of administra-

* From the Laboratories of the Philadelphia Polyclinic.

1. Fernel d'Amiens, J.: Le meilleur traitement du mal vénérien, 1579; traduction, préface et notes par L. Le Pilier, Paris, 1879.

2. Hallopeau, H.: Du mercure; action physiologique et thérapeutique, Paris, 1878.

tion of mercury in those instances in which the metal itself was found in the tissues is not always stated; but in most of them it would appear that the drug was given in the form of inunctions with mercurial ointment; unfortunately we were unable to learn from our patient the treatment he had received from various physicians. The suggestion has also been made that mercury may be transported in the body fluids in a colloidal state, its absorption and deposition in the tissues being placed on a physicochemical basis; the subject requires further study and elucidation.

It is also of interest to note that metallic mercury has been found chiefly in necrotic bones. In our case globules were found not only in the necrotic vertebrae, but also in the inflammatory soft tissues of the aneurysm. In a second aneurysm, however, without involvement of bone, we were unable to find metallic mercury.

While mercury has an apparent protoplasmic affinity for the *Spirochaeta pallida*, explaining the specificity of the drug in the treatment of syphilis, the deposition of mercury in the tissues bears no relation to the distribution of spirochetes; we were unable to find spirochetes in the eroding mercury-laden aneurysm, and numerous chemical studies have shown the presence of mercury in the liver and other internal organs of otherwise normal experimental animals, as recently described by Schamberg, Kolmer, Raiziss and Gavron,³ and also in healthy rabbits following inunctions of mercurial and calomel ointments. So far as the deposition of metallic mercury is concerned, it would appear that this occurs by reason of chemical changes in necrotic tissues of syphilitic or nonsyphilitic etiology; Blundell has recorded the finding of scores of globules of mercury in the tissues of a fly blister in the epigastric region in a person who took half an ounce of metallic mercury for cathartic purposes.

REPORT OF CASE

The main features in the clinical history and necropsy of our case were as follows:

A negro man, aged 40, admitted to the medical wards of the Polyclinic Hospital, September 24, 1916, in the service of Dr. R. Max Goepp, complained of dyspnea, blood stained sputum, dry cough, a sense of pressure in the throat that rendered respiration difficult, and pains throughout the thorax. The patient died two days after admission with symptoms of suffocation; a clinical diagnosis of aneurysm of the arch of the aorta had been made.

The patient had had the usual diseases of childhood, but no other illnesses until fifteen years before admission, when syphilis was contracted, a chancre on the penis being followed three weeks later by a general rash. He had been addicted to the use of alcohol and tobacco for many years.

According to the patient's statements the present symptoms began about three and a half months before admission to the hospital. A sensation of choking and a dry, harassing cough induced him to consult several physicians, two of whom diagnosed "bronchitis" and "asthma," respectively. The dyspnea gradually became worse, and severe shooting pains developed in the left side of the thorax, particularly over the precordial area, radiating to the left shoulder, to the base of the neck and along the spine on the left side. A slight hemorrhage from the mouth occurred two days before admission to the hospital. Physical signs of aortic aneurysm were elicited; the urine contained albumin and casts; the Wassermann reaction was strongly positive.

At necropsy a severe aortitis and two aneurysms were found. The first aneurysm was fusiform in shape and involved the first portion of the descending aorta. This aneurysm was pressing on the trachea and esophagus, but had not produced ulceration of these structures. The mucous membrane of the trachea and bronchi of both lungs was considerably thickened, congested and covered with a thick tenacious mucus. No actual erosion of a blood vessel was found, and the one slight hemorrhage occurring during life may have been due to the rupture of a small vessel in the inflamed mucosa of the trachea during an attack of coughing. The smaller bronchi contained considerable mucopurulent material, and the right lung several patches of an early bronchopneumonia.

The second aneurysm occurred at a point just above the passage of the aorta through the diaphragm, and had produced considerable erosion of the bodies of the second, third, fourth and fifth dorsal vertebrae on the left side and the contiguous ribs. Several small clots of blood were found in various cavities within this larger cavity. During the manipulation of the tissues consequent to the removal of the specimen, several large globules of metallic mercury were found to have collected. Minute inspection of the tissues showed the presence of myriads of pure globules of mercury-scattered throughout the remainder of the wall of the aneurysm and the eroded tissues of the vertebrae.

Mercury was not found microscopically in the first mentioned aneurysm or in any other organ or tissue.

Sections of the heart, aorta, both aneurysms, lungs, trachea, spleen, liver, kidneys, suprarenal glands, and other tissues stained by the method of Levaditi and also with Warthin's modification, did not show the presence of *Spirochaeta pallida*. Sections of the tissues of the mercury-bearing aneurysm showed numerous cavities and spaces previously occupied by the mercury, some with and many without surrounding lymphocytic infiltration; with tissues embedded in paraffin and celloidin the globules invariably escaped during the process of cutting, although occasionally very small masses remained.

Unfortunately the patient could not remember the names or addresses of several of the physicians whom he consulted and whose medicines he took; for this reason we were unable to ascertain how much mercury was taken and the route of administration. There can be but little doubt, however, that mercury was administered; and the deposition of the metal in the active eroding lesions, and probably primarily in the vertebrae, constitutes a finding of unique interest and considerable importance.

Thirst at Sea.—M. Roberts suggests that persons suffering from thirst at sea might find relief by injecting sea water into the rectum. He writes to the *British Medical Journal*, Feb. 16, 1918, p. 220, to describe an experience by Mr. R. Graham, who undertook a fast during a sea voyage and while fasting injected daily 2 gallons of pure sea water. "During the first five days he did not take anything to drink although the fourth and fifth days he rinsed out his mouth with ordinary water. He did not feel in the least thirsty until the sixth day, when he took half a glass of water. Thirst was very slight. On the seventh day he drank one and one-half glasses of water although he felt he could have gone without had he chosen to do so. During this period his pulse was normal, his general condition good, his strength well maintained and though the injections resulted in the usual evacuation there was no tendency to diarrhea or other disturbance. On the eighth day he resumed his normal life." Roberts suggests that with a rectal syringe as part of the boat's normal equipment the lives of seamen and others dying of thirst, even this last year, might have been saved. Injections of sea water are used as a routine measure in Lieutenant-Colonel Wherry's service, he writes. He adds that in an emergency a rubber tube might be used as a siphon or the nozzle and bowl of a tobacco pipe. He commends the suggestion for the slow injection of sea water as an enema for absorption, although he knows of no navigator who has tried it.

3. Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. W., and Gavron, J. L.: Experimental Studies of the Mode of Absorption of Mercury when Applied by Inunction, *THE JOURNAL A. M. A.*, Jan. 19, 1918, p. 142.

CONTROL OF POLYURIA IN A CASE OF
DIABETES INSIPIDUS

BY MEANS OF HYPOPHYSIAL EXTRACT

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It is gradually becoming known that certain cases of diabetes insipidus are due to an underfunction of the pars intermedia of the hypophysis, and that in these cases the polyuria may be controlled by the injection of hypophysial extract. The case I am about to report, which is a typical case of hypopituitarism with diabetes insipidus, shows well the effect of this therapy.

Barker and Mosenthal¹ have described a case of diabetes insipidus treated by pituitary solution, and they present the literature in relation to the subject. Barker and Hodge² also described a case in a multi-glandular endocrinopathy so treated.

David S., a boy, aged 12½ years, had urinated excessively since he was 3½ years of age. In the last year of that period, his mother had noticed that his eyesight was getting bad. His mother, father and sister were well.

The physical examination was negative with the exception of the presence of a bilateral temporal hemianopsia. The Wassermann and leutin tests were negative. A roentgenogram of the brain showed a normal sella turcica. The diagnosis of diabetes insipidus with a possible suprasellar cyst of the pituitary was made. On account of the lack of pathologic conditions in the sella turcica and the absence of erosion of the clinoid processes, it was decided that the growth was out of the sella turcica. Because of the fact that the condition had been present for nine years, it was considered cystic rather than malignant, and the presence of the hemianopsia revealed the fact that there was pressure on the optic tracts.

The accompanying table shows the fluid intake and output and the influence of the treatment on these two factors. The table shows very clearly the control of the polyuria by means of the pituitary solution. It

INTAKE AND OUTPUT OF FLUIDS

Day	Intake Fluids C.c.	Urine C.c.	Sp. Gr. Urine	Treatment
1	5,000	6,860	1.002	
2	5,600	6,000	1.003	
3	5,800	6,400	1.002	
4	6,960	7,000	1.002	
5	6,900	7,200	1.002	
6	6,200	7,100	1.003	
7	8,640	8,200	1.003	Thyroid tablets 2 grains t. i. d.
8	8,680	8,300	1.003	Thyroid tablets 2 grains t. i. d.
9	9,012	8,500	1.004	Thyroid tablets 2 grains t. i. d.
10	9,000	8,510	1.003	Thyroid tablets 2 grains t. i. d.
11	8,680	8,400	1.003	
12	8,600	8,500	1.002	
13	8,160	8,300	1.002	
14	8,400	8,600	1.002	
15	3,500	3,600	1.008	1 c.c. pituitary (solution) injected
16	3,200	3,000	1.009	1 c.c. pituitary (solution) injected
17	3,300	3,000	1.009	1 c.c. pituitary (solution) injected
18	6,200	7,000	1.002	
19	8,600	8,300	1.002	
20	9,000	8,600	1.002	Pituitary tablet, 5 grains by mouth
21	8,800	8,610	1.002	Pituitary tablet, 5 grains, by mouth
22	8,500	8,800	1.002	
23	9,000	8,700	1.002	
24	3,600	3,400	1.007	1 c.c. pituitary (solution) injected
25	3,200	3,000	1.008	1 c.c. pituitary (solution) injected
26	3,400	3,100	1.009	1 c.c. pituitary (solution) injected
27	6,200	6,900	1.002	
28	8,600	9,020	1.002	

also shows that the thyroid extract does not have any effect on the polyuria. The ingestion of pituitary gland does not affect the polyuria. The effect of the injection of the pituitary solution lasts only about twenty-

four hours. It may be noticed that after the injection the urine shows some pigment, not having the water-clear color of the usual urine. As the effect of the pituitary solution wears off, it may be noticed that the urine again becomes pale.

Jenkin's Arcade.

THE TOTAL BLOOD VOLUME IN PER-
NICIOUS ANEMIA

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In a preliminary report,¹ I described a new method for the estimation of the total volume of blood in anemia.

In no disease is it of greater importance to know the volume of blood in the body than in pernicious anemia. We find patients in this disease bearing their illness variably, though the degree of anemia in all may be the same. In many the same group of symptoms are present, varying only in intensity. I believe that individual peculiarities may account for differences in the intensity of symptoms, and that also some differences may possibly be accounted for by varying degrees of toxicity; nevertheless, the main factor, in my opinion, is the hitherto unrecognized importance of blood volume.

Ranke has demonstrated that the blood is thus distributed in the various organs: In the rabbit, one-fourth to the heart, lungs and great vessels; one-fourth to the resting muscles, and one-fourth to the remaining organs. In man, to the spleen, 0.23 per cent.; to the brain and cord, 1.24; to the kidneys, 1.63; to the skin, 2.10; to the intestine, 6.30; to the bones, 8.24; to the heart, lungs and great vessels, 22.76; to the resting muscles, 29.20, and to the liver, 29.30 per cent. According to Ranke, therefore, a man (Case 3) with a 30 per cent. hemoglobin and a blood volume of 1,600 c.c. has an amount of blood nourishing his brain that is the equivalent of 6.5 c.c. of normal blood. If we assume that this man normally would carry 5 liters (quarts) of blood in his body, then the brain would be nourished by 62.5 c.c. of blood containing 100 per cent. of hemoglobin.

It is very singular and startling, in view of all we have previously been taught about the amount of blood that may be lost before life becomes extinct. The literature tells us that a loss of half the blood will in most cases produce death. Yet, in the case cited below, the blood in the brain of this individual is reduced to one-tenth that of a normal person without an approach to even partial unconsciousness. As a matter of fact, this man's brain (Case 3), if anything, was in a hyper-excitable condition whereby he was enabled to perform business tasks of large proportions with unusual keenness, in marked contrast to his physical condition, which was very desperate.

In this case, the intestine, according to Ranke's figures, was nourished by an amount of blood equal to 34 c.c. with 100 per cent. of hemoglobin, whereas if this man were normal, the intestine would be perfused by a volume of 315 c.c. of blood containing 100 per cent. of hemoglobin. Is it at all singular that such a patient should suffer severe gastro-intestinal disturbances with loss of appetite and nausea? Indeed,

1. Barker and Mosenthal: Jour. Urol., 1917, 1, 449.
2. Barker and Hodge: Endocrinology, 1917, 1, 427.

1. Lindeman, Edward: A New Method for Estimating Total Blood Volume in Anemia, THE JOURNAL A. M. A., April 27, 1918, p. 1209.

it is remarkable that his symptoms were not worse; and the prompt restoration of appetite and relief from gastro-intestinal disturbances are the most striking things that occur after the blood transfusion in such cases.

I have observed that in the cases of anemia of the same or even of greater degree in which there is a larger blood volume, the gastro-intestinal disturbances are less severe. It is evident, therefore, and imperative that every effort should be employed to produce a high blood volume and to maintain it. A patient can tolerate his disease with greater comfort and with a feeling of well-being. Despite the anemia, he becomes less discouraged and is more inclined to take food. The increased quantity of food, especially liquids, will increase his blood volume, and a favorable cycle may be established. An increased consumption of food favors blood regeneration and may be regarded as a favorable sign in this disease. Naturally any depressing influences, such as sepsis, bad teeth, worry, intestinal disorders, etc., must be eliminated so that the regenerative power of the patient may not be suppressed.

I think we are apt to exaggerate the relationship of the teeth in this disease. I have seen cases in which a distinct slump followed the removal of bad teeth, out of proportion to other crises; and the course in these cases was no more favorable after the removal of the teeth than before. That, however, is another phase that does not interest us particularly here, excepting as a comment in restraining an overzealous enthusiast.

The ringing in the ears and the palpitation of the heart, which are frequently very distressing to a patient, are due not alone to the quality but more largely to the diminution of the quantity of the blood. Thus a patient with a larger blood volume will bear a greater degree of anemia without experiencing palpitation of the heart (often spoken of as fluttering) or roaring in the ears. Another quite frequent symptom of this disease is weakness, with exhaustion and syncope.

It is surprising how well some patients can go about and even sometimes perform laborious tasks in the face of a severe grade of anemia. I intend to show that this is possible only when there is a relatively large blood volume. When the blood volume is small, a less degree of anemia will produce a greater degree of exhaustion, weakness and faintness.

While it is evident that a shrunken blood mass intensifies the symptoms enumerated, it is not sufficient simply to restore the bulk of the blood. The bulk of blood is only one of the factors to be corrected. It is of the greatest importance to increase and maintain the richness of the blood not only in terms of red cells and hemoglobin but also in ferments, salts, proteins, alkali capacity, etc.

In spite of the relative hydremia to cell volume in pernicious anemia, if the blood volume is reduced 50 or 60 per cent., even though the salts, ferments and proteins may be of normal percentage, there is a great impoverishment in these elements proportional to the diminution in blood volume. Blood analyses in these cases, therefore, are necessarily incomplete without a knowledge of the blood volume. I am certain that many pathologic factors will be revealed by chemical analyses in the light of blood volume which have not heretofore been detected.

The method for calculating blood volume I have already described.¹ It is based on percentage relation-

ships of cell volumes before and after transfusions according to the formula:

$$x = \frac{lb - bc}{a - l}$$

x = initial blood volume

a = percentage by volume of red blood cells

b = volume introduced by transfusion of blood

c = percentage by volume of the volume of red blood cells introduced by blood transfusion

l = final percentage by volume of red blood cells

REPORT OF CASES

CASE 1.—A man, aged 45, weighing 150 pounds, and 5 feet 10 inches in height, had been ill with the disease five months. His teeth were bad. No transfusion had been performed. He was dyspneic from air hunger. He was very drowsy, and partially comatose. He was pallid, and had lost strength. His appetite was poor, and he suffered from nausea. He moaned frequently because of his distress. He was too weak to walk.

TABLE 1.—BLOOD AND RESPIRATION IN CASE 1

	Before Transfusion	After Transfusion
Red blood cells	800,000	2,216,000
Hemoglobin, per cent.	15	40
Respiration	24-28	20-24
Pulse	96	66-72
Blood Pressure—		
Systolic	115	140
Diastolic	60	70
Cell volume, per cent.	12.16	24.8

The cell volume of the donor was 46.64 per cent.; 1,222 c.c. of blood were transfused; 67 c.c. of blood were withdrawn for analysis before transfusion.

Blood volume = 2,103 c.c. + 67 c.c. = 2,170 c.c. = 3 per cent., or one thirty-third of the body weight.

The patient felt and showed a very striking improvement as soon as he had received 160 c.c. of blood. At this stage of the transfusion, the improvement cannot be accounted for by the increment of red blood cells and hemoglobin, but is to be attributed rather to the improved blood volume. There was continued improvement throughout the transfusion. Pallor, drowsiness and weakness rapidly disappeared, and the patient's appetite improved the following day. He walked about in a few days.

There were no chills. After the transfusion there was a rise of temperature of 2 degrees.

CASE 2.—A man, aged 59, weighing 150 pounds, and 5 feet 7 inches in height, had been ill with the disease fourteen months. Transfusions had been performed, July 5, Sept. 19 and Dec. 5, 1917, with 1,800, 1,600 and 1,500 c.c., respectively. There were no chills, and there was a postoperative rise in temperature of 2, 3 and 2 degrees.

Jan. 29, 1918, there was a red blood count of 2,600,000, and the hemoglobin was 50 per cent. The patient's condition was good.

February 1, two abscessed teeth were extracted.

February 14, the condition of the patient before transfusion was very grave. There were great weakness, prostration, loss of appetite, sore mouth, nausea and vomiting, very slow mentality, forgetfulness, slurring speech, palpitation of the heart, a temperature of from 101 to 102, dyspnea on exertion only, and a roaring and thumping noise in the ears. There was no edema. A transfusion of 1,500 c.c. was performed. There was no chill. There was a rise in temperature of 2 degrees.

Seventy c.c. of blood were removed before transfusion.

TABLE 2.—BLOOD AND RESPIRATION IN CASE 2

	Before Transfusion	After Transfusion
Red blood cells	1,200,000	3,200,000
Hemoglobin, per cent.	30	68
Respiration	26-30	20-22
Pulse	104	72
Cell volume, per cent.	10	26.77

The cell volume of the donor was 51.3 per cent.

Blood volume = 2,131 c.c. + 70 c.c. = 2,201 c.c. = 3 per cent., or one thirty-third of the body weight.

When the patient had received 100 c.c. of blood he began to experience marked improvement.

Immediately after the transfusion, all the symptoms disappeared, and a few days later the patient walked about and went to business. His mental condition cleared up spontaneously.

CASE 3.—A man, aged 63, weighing 135 pounds, and 5 feet 6 inches in height, had been ill with the disease two and a half years. There had been complete absence of hydrochloric acid in the stomach for twenty years before the present illness, but no evidence of this disease had been present up to two and a half years before.

The first transfusion, of 1,500 c.c., was performed, March 15, 1915. There were no chills and no rise of temperature. Splenectomy was performed, March 24, 1916.

The second transfusion, of 1,400 c.c., was performed, July 14, 1916. There was no chill. There was a rise in temperature of 3 degrees.

The third transfusion, of 1,400 c.c., was performed, May 10, 1917. There was no chill. There was a rise in temperature of 2 degrees.

Four weeks prior to the third transfusion, the patient had several carious teeth extracted. This was followed by a bad slump in his blood and general condition.

The fourth transfusion, of 1,700 c.c., was performed, Sept. 11, 1917. There was no chill. There was a rise in temperature of 4 degrees.

Just before the fifth transfusion the patient was in a desperate condition and was apparently in the terminal stage of his disease. There were extreme weakness and prostration, nausea and vomiting, complete aversion to food, and eructations of quantities of gas. He was unable to walk or sit up on account of weakness. There was no paralysis. He was short of breath without exertion, he moaned constantly because of distress, and he was the picture of a complete physical wreck. In striking contrast to his physical was his mental condition, which was unusually active; he was keen to a degree almost uncanny. He performed many complicated mental tasks with remarkable celerity. He retained a vivid and acute memory of the remote past even better than the other members of his family. In brief, it seemed as though the inhibitory mechanism governing his mental activities was released and that his cerebration was accelerated by irritation due to an impoverished blood stream.

Jan. 10, 1918, 1,400 c.c. of blood were transfused. There was no chill nor rise of temperature. Ninety c.c. of blood were withdrawn before transfusion.

TABLE 3.—BLOOD AND RESPIRATION IN CASE 3

	Before Transfusion	After Transfusion
Red blood cells	1,800,000	3,500,000
Hemoglobin, per cent.	36	70
Respiration	32	22
Pulse	108	76
Blood Pressure—		
Systolic	110	130
Diastolic	80	85
Cell volume, per cent.	18.2	31.3

The cell volume of the donor was 45.5 per cent.
Blood volume = 1,518 c.c. + 90 c.c. = 1,608 c.c. = 2.4 per cent., or one fortieth of the body weight.

The relatively high cell volume may be compared with that in Case 5, the difference in blood volume, and also the physical state.

There was a prompt disappearance of all symptoms after the transfusion, and an increasingly rapid return of strength and appetite. The patient was less excitable, and he became quite calm and normal. He walks about his home, drives about town, and attends the theater twice weekly.

CASE 4.—A man, aged 60, weighing 160 pounds, and 5 feet 2 inches in height, had been ill with the disease two years. He had been treated for a period of about fifteen months with the usual medication, to which he responded very well in the first two crises. The blood pressure varied considerably, and in the height of his anemia it rose to 240 systolic, and 140 diastolic. When the blood condition improved, the blood pressure dropped and at one time reached a systolic of 140 and a diastolic of 80. During the past six months,

however, while he has been under my observation at frequent intervals, his blood pressure average has been between 180 and 190 systolic, and between 80 and 90 diastolic.

In July, 1917, he developed angina pectoris, from which he suffered considerably. At first the attacks were controlled satisfactorily by nitrites, but later these failed to afford relief. In July and August, when nitrites had failed, he was given small transfusions at intervals of from one to two weeks, and the angina was promptly relieved after each transfusion. Later these small transfusions failed to influence the angina. I was called in consultation by Dr. Stockton of Buffalo and Dr. Leonard of North Tonawanda in September, 1917. I then advised large transfusions. I performed transfusion, Sept. 14, 1917; 1,200 c.c. of blood were given. There was a prompt disappearance of angina for a period of about seven weeks. There were no chills. The temperature rose 3 degrees.

Transfusion was repeated whenever the angina recurred, with prompt relief, and the patient remained free of any attacks during the interim indicated by the following dates:

October 27, a transfusion of 1,440 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

November 25, a transfusion of 1,000 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

December 20, a transfusion of 500 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

December 29, a transfusion of 1,489 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

Jan. 23, 1918, the patient's condition was one of loss of appetite, weakness, and return of angina. He walked, but with considerable effort.

January 24, a transfusion of 1,600 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree; 80 c.c. were withdrawn for analysis.

TABLE 4.—BLOOD AND RESPIRATION IN CASE 4, JANUARY 24

	Before Transfusion	After Transfusion
Red blood cells	2,080,000	3,950,000
Hemoglobin, per cent.	48	72
Respiration	24	20
Pulse	72	60
Blood Pressure—		
Systolic	190	185
Diastolic	90	85
Cell volume, per cent.	21	30

The cell volume of the donor was 41 per cent.
Blood volume = 2,079 c.c. + 80 c.c. = 2,159 c.c. = 2.8 per cent., or one thirty-fifth of the body weight.

February 24, the condition of the patient was excellent in every respect excepting for the recurrence of his angina in the past thirty-six hours. The appetite and strength were very good. The patient had gained 15 pounds in weight since January 24, and there had been no edema.

February 20, a transfusion of 1,650 c.c. was performed. There was no chill. There was a rise in temperature of 0.5 degree; 76 c.c. of blood were removed before transfusion.

TABLE 5.—BLOOD AND RESPIRATION IN CASE 4, FEBRUARY 20

	Before Transfusion	After Transfusion
Red blood cells	2,240,000	4,900,000
Hemoglobin, per cent.	55	78
Respiration	24	20
Pulse	68	60
Blood Pressure—		
Systolic	195	200
Diastolic	95	100
Cell volume, per cent.	25.24	30.05

The blood volume of the donor was 40.2 per cent.
Blood volume = 2,889 c.c. + 76 c.c. = 2,965 c.c. = 3.53 per cent., or one twenty-eighth of the body weight.

The blood analysis indicates a case of hypertension. The electrocardiogram demonstrates considerable involvement of the myocardium. This is the first case to my knowledge of pernicious anemia with a complication of angina pectoris.

Up to this time the angina has not recurred.

Blood volume after the last transfusion = 4,549 c.c. = 5.42 per cent., or one eighteenth of the body weight.

CASE 5.—A man, aged 43, weighing 130 pounds, and 5 feet 7 inches in height, had been ill with the disease two and one-half years. The teeth were excellent. Roentgenoscopy of the teeth, etc., was negative.

The first transfusion, in June, 1916, of 1,400 c.c., had not been followed by a chill. There was a rise in temperature of 4 degrees.

The second transfusion, Sept. 4, 1917, of 1,460 c.c., had not been followed by a chill. There was a rise in temperature of 2 degrees.

The symptoms noted immediately before the third transfusion were slight palpitation, a moderate thumping and roaring noise in the ears, some weakness, no prostration, loss of appetite, slight nausea, and no vomiting. The patient's mental condition was excellent. The general condition was fairly good. He was able to attend his occupation to within a few days of his last transfusion. Sensory disturbances of the limbs existing at the time of the first transfusion and for a period of about eight months afterward have entirely disappeared.

Dec. 19, 1917, transfusion of 1,603 c.c. was performed. The amount removed before transfusion was 90 c.c.

TABLE 6.—BLOOD AND RESPIRATION IN CASE 5

	Before Transfusion	After Transfusion
Red blood cells	1,360,000	2,800,000
Hemoglobin, per cent.	30	65
Respiration	24	20
Pulse	84	72
Blood Pressure—		
Systolic	120	140
Diastolic	65	75
Cell volume, per cent.	13.675	24.675

The cell volume of the donor was 48.9 per cent.

Blood volume = 3,520 c.c. + 90 c.c. = 3,610 c.c. = 5.78 per cent., or one nineteenth of the body weight.

After the transfusion, the patient was able to perform his duties with disappearance of all symptoms.

The difference in the condition of this patient should be compared with that of others of lower blood volume.

CASE 6.—A woman, aged 60, weighing 139 pounds, and 5 feet 4 inches in height, had been ill with the disease one and one-fourth years.

In April, 1916, she was operated on for cholecystitis. The gallbladder was drained, and the appendix removed. No stones were found. A large amount of bile was present. The appendix was normal.

The teeth were false excepting the lower five teeth in front, which were in good condition.

Symptoms before transfusion were weakness, nausea, vomiting and persistent cough. The patient was generally uncomfortable. She was able to walk, but with difficulty.

Feb. 7, 1918, the first transfusion, of 1,270 c.c., was performed; 66 c.c. of blood were withdrawn before transfusion.

TABLE 7.—BLOOD AND RESPIRATION IN CASE 6

	Before Transfusion	After Transfusion
Red blood cells	1,288,000	3,192,000
Hemoglobin, per cent.	30	60
Respiration	28-40	20
Pulse	96-108	80-88
Cell volume, per cent.	7	19

The cell volume of the donor was 49 per cent.

Blood volume = 2,623 + 66 c.c. = 2,689 c.c.

The patient improved promptly, and gained in strength and appetite. The cough ceased, and a few days later she went about the wards. She left the hospital two weeks after transfusion. Her condition was good.

CASE 7.—A man, aged 58, weighing 150 pounds, and 5 feet 8 inches in height, had been ill with the disease one year. The teeth were in poor condition. This is the type of case I regard as unfavorable. The reasons for this will be discussed in some of my subsequent papers. We have not succeeded as yet in persuading the patient to have the mouth roentgenographed and treated.

The first transfusion, of 2,300 c.c., was performed, Sept. 5, 1917. There was no chill. There was a rise in temperature of 3 degrees. The second transfusion, of 1,500 c.c., was performed, Nov. 14, 1917. There was no chill. There was a rise in temperature of 2 degrees.

The third transfusion, of 1,200 c.c., was performed, Jan. 17, 1918. There was no chill. There was a rise in temperature of 3 degrees. Before the third transfusion, 70 c.c. of blood were withdrawn. Before this transfusion, the patient was very pale, there was palpitation of the heart, and there were roaring and a thumping noise in the ears. He was able to walk about the house, and up and down stairs, though he was weak. His appetite was fair.

TABLE 8.—BLOOD AND RESPIRATION IN CASE 7

	Before Transfusion	After Transfusion
Red blood cells	1,100,000	2,800,000
Hemoglobin, per cent.	25	60
Respiration	22	20
Pulse	76	72
Cell volume, per cent.	12.58	23.29

The cell volume of the donor was 48.88 per cent.

Blood volume = 2,868 c.c. + 70 c.c. = 2,938 c.c. = 4.08 per cent., or two forty-ninths of the body weight.

The usual improvement following transfusion was delayed in this case until the fourth day. The appetite was increased, and there was a return of strength with disappearance of the symptoms.

The symptoms should be compared with those in the same degree of anemia in Cases 1, 2 and 3.

The patient has remained in good condition since his last transfusion.

March 22, I was informed that there had been general moderate edema in the past few days, with hemoglobin, 38 per cent.

CASE 8.—A man, aged 66, weighing 180 pounds, and 6 feet in height, had been ill with the disease two and one-half years. Before consulting me in May, 1916, he had received a series of small transfusions at home of 500 c.c. each, over a period of about four months, with only slight temporary benefit.

I performed the first transfusion, of 1,600 c.c., May 2, 1916. There was no chill nor fever.

May 4, 1916, splenectomy was performed. He remained well one year, when he again returned for transfusion.

May 13, 1917, the patient received 2,300 c.c. There was no chill. There was a rise in temperature of 2 degrees. He went home, a distance of 150 miles, two days later.

Convinced of the benefit of large transfusions, he came to New York, Dec. 6, 1917, for a transfusion. He received 1,500 c.c., with no chill and no rise of temperature, and returned to his home twenty-four hours later. The symptoms before transfusion were loss of appetite, moderate weakness, a slight ringing and a thumping noise in the ears, and "fluttering of the heart."

TABLE 9.—THE BLOOD IN CASE 8

	Before Transfusion	After Transfusion
Red blood cells	1,250,000	2,800,000
Hemoglobin, per cent.	30	60
Blood Pressure—		
Systolic	130	145
Diastolic	90	95
Cell volume, per cent.	13.5	24.1

The cell volume of the donor was 48.6 per cent.

Blood volume = 3,207 c.c. + 8 c.c. = 3,215 c.c. = 4.94 per cent., or one twentieth of the body weight.

The transfusion was followed by a rapid disappearance of all the symptoms and a return of the appetite.

It should be noted that this man, with an anemia of 1,250,000, and 30 per cent. hemoglobin, was capable of traveling 150 miles to New York without any distress. This would not have been possible if the volume of the blood had not been adequate as in Cases 1, 2 and 3, even though the degree of anemia was the same.

CASE 9.—A woman, aged 67, weighing 160 pounds, and 5 feet 9 inches in height, had been ill with the disease one

and one-fourth years. An interesting fact to note in conjunction with this case is that the daughter during the past twenty years has also had no free hydrochloric acid in her stomach; she is now 43 years old, and as yet shows no evidence of the disease.

The first transfusion, of 1,400 c.c., was performed, July 2, 1917. There was no chill nor fever.

The second transfusion, of 1,600 c.c., was performed, Nov. 17, 1917. There was no chill. There was a rise in temperature of 4 degrees.

The third transfusion, of 1,520 c.c., was performed, Feb. 11, 1918. There was no chill. There was a rise in temperature of 2 degrees.

Before the third transfusion this patient was in fairly good general condition excepting for loss of appetite and weakness. Her weakness was due chiefly to lesions of the spinal cord (partial paralysis), which was involved at the onset of her disease. Her first symptoms were those referred to these lesions, and they have persisted and gradually increased since. There was no dyspnea, prostration, palpitation, or noises in the ears.

TABLE 10.—BLOOD AND RESPIRATION IN CASE 9

	Before Transfusion	After Transfusion
Red blood cells	1,440,000	2,900,000
Hemoglobin, per cent.	30	50
Respiration	20	20
Pulse	72	72
Blood Pressure—		
Systolic	130	140
Diastolic	90	95
Cell volume, per cent.	15.19	27.11

The cell volume of the donor was 45.76 per cent.; the amount transfused, 1,520 c.c.; 75 c.c. of blood were removed before transfusion.

Blood volume = 4,130 c.c. + 75 c.c. = 4,205 c.c. = 5.4 per cent., or one eighteenth of the body weight.

After the transfusion, the patient's appetite returned, and her general condition, except that associated with the cord involvement, improved.

The absence of many symptoms in this case, except those referred to the cord compared with other cases of the same degree of anemia but lesser blood volume, should be noted.

CASE 10.—A man, aged 60, weighing 165 pounds, and 5 feet 9 inches in height, had been ill with the disease six years. The teeth were in good condition. Roentgenoscopy of the teeth was negative. The patient had been through several remissions of the disease, and responded well to arsenic at each crisis. Finally, in the last crisis, he failed to respond to any form of medication or treatment. It was then decided to employ transfusion.

The chief symptom before transfusion was drowsiness.

There was moderate weakness; no palpitation of the heart, and no ear noises. The amount transfused was 1,510 c.c.; 65 c.c. were withdrawn before transfusion.

TABLE 11.—BLOOD AND RESPIRATION IN CASE 10

	Before Transfusion	After Transfusion
Red blood cells	1,330,000	2,900,000
Hemoglobin, per cent.	26	45
Respiration	20	20
Pulse	68	68
Cell volume, per cent.	14.75	22.2
Blood Pressure—		
Systolic	136	145
Diastolic	90	95

The cell volume of the donor was 42.6 per cent.

Blood volume = 4,134 c.c. + 65 c.c. = 4,199 c.c. = 5.29 per cent., or one eighteenth of the body weight.

After the transfusion, there was return of appetite and strength.

The absence of many symptoms in this case that are present in other cases of anemia of the same degree but of lesser blood volume may be noted.

COMMENT

In the preliminary report I mentioned the fact that the blood counts give results that are inaccurate and therefore valueless in the estimation of blood volume.

I do not mean to convey the idea that it is only necessary to correct the blood volume in order to effect a cure. My studies indicate that the blood volume in pernicious anemia is always reduced—that when the reduction in volume is only slight, the symptoms other than those referred to the nervous system, even though the degree of anemia may be severe, are relatively fewer and milder, and are borne with less distress. As the volume of blood is reduced, the symptoms of the disease increase proportionally. It is imperative, therefore, that to give proper treatment, an effort should be made to increase the bulk. The two ways in which this is best accomplished are by (1) an abundant fluid diet, preferably 2 quarts of milk a day, and (2) blood transfusion.

Diarrhea must be avoided because it reduces blood volume. Should it occur it should be regarded seriously and relieved promptly.

Patients should be given an abundance of milk in addition to the other forms of dietary regimen that may be employed. Even though the patient has aversion to all forms of food, milk should be forced. I am sure it will be found that many patients will bear their disease better and will be better able to await the favorable moment for improvement. In a great many cases, however, the blood regenerative power is extremely low and incapable of stimulation by the usual methods. These patients grow worse even with a relatively high blood volume. A large volume and a rich blood mixture are imperative in order to improve the desire and ability to take food and to restore the patients to a nearly normal condition. The only thing capable of doing this promptly and effectively is transfusion of unmodified blood in large amounts. It is a life saving measure. No other therapeutic procedure has so much value in robbing the disease of its terrors.

I have a large series of patients in whom transfusion has been performed with small amounts; but the large quantities yield very much better results.

It is seen that in this series of patients with pernicious anemia the blood volume varies from 1,600 to 4,200 c.c., or from 2.4 to 5 per cent. of the body weight. Those with the lowest figures are not ambulatory patients, and they suffer greatly with the disease. The patients with the higher figures, except in Case 9, could go about their homes and attend to their personal wants, and are in relatively better condition.

The normal blood volume in man, according to Keith, Rowntree and Geraghty, is 9 per cent. According to Haldane and Smith it is about 5 per cent. From my studies on donors when large quantities of blood have been drawn for transfusion, I am inclined to believe that the former workers are more nearly correct.

One should guard against extravagant claims as to curing the disease, because of its tendency to recur even after many years. Recently I was consulted in a case that had recurred after seventeen years.

The cases cited above are undoubted cases of pernicious anemia. They are not selected, but comprise a complete group of patients who have presented themselves to me during the interim of these blood volume studies. I have several cases of apparent cure, but I do not know when the disease may recur. I think that from the new studies now being made, and the new instrumentalities and procedures available, so much can be done in pernicious anemia that it may yet be possible to effect a cure in some cases.

The transfusions were all performed by the syringe cannula system² without recourse to saline, citrate of soda or any other foreign material. Lindeman cannulas are painlessly inserted into the veins without skin incision and with record syringes 20 c.c. capacity blood is rapidly transfused from donor to patient. The work is done in such manner that the entire blood mass, regardless of the amount transfused, is outside the body for a period of only 6 to 10 seconds. This is well within the time limits of any possible chemical or physical change of the blood transfused. Reactions are thus eliminated.

565 Park Avenue.

Clinical Notes, Suggestions, and New Instruments

AN INSTRUCTIVE CASE OF PROSTATIC ADENOMAS WITH VESICAL CALCULUS CONCEALED BY A SESSILE PEDUNCULATED MEDIAN LOBE

G. FRANK LYDSTON, M.D., CHICAGO

The case herewith presented has several instructive features from the peculiar arrangement of the prostatic overgrowth. The impossibility of diagnosing the calculus on account of its concealment by a broad sessile pedunculated tumor originating in the posterior median portion of the prostate is unique.

A man, aged 69, a merchant, had always enjoyed unusually good health until the development of vesical symptoms about six years before consulting me. The urine had remained normal in appearance and apparently had not been infected, despite several attacks of retention, which had occurred during the past year and had been relieved by the catheter. Micturition became very frequent, and the disturbance of rest at night had compelled the patient to seek relief.

Examination revealed a large, diffuse, prostatic tumor. This was moderately firm and only slightly sensitive. Cystoscopy revealed a trabeculated bladder and a large median prostatic tumor. The bladder mucosa was in remarkably good condition, considering the attacks of retention and the catheterization necessary for relief. The kidneys apparently were in good condition and the case an ideal one for operation.

I performed a perineal prostatectomy, the operation proving exceptionally easy of performance. Thirteen adenomas of various sizes and shapes were shelled out from the lateral lobes. Digital exploration of the bladder revealed a large, flattened tumor, which fell directly down curtainwise from the lower segment of the vesical orifice. The attachment of this tumor was so tenuous that it may be described as "membranous," the tumor being readily detached by being wiped off, so to speak, from the sublying tissues. Beneath the tumor was found a phosphatic calculus, which was so completely concealed by the overhanging growth that it could not be felt with the exploring finger until the tumor was detached. That cystoscopy or instrumental exploration of the bladder should fail to detect a stone located as in this case is not at all remarkable. The distal surface of the median tumor, which concealed the stone, showed a concavity that perfectly fitted the calculus. It is obvious that this arrangement saved the patient considerable annoyance from the presence of the foreign body. The operation occupied only twelve minutes, the tumor being shelled out with great cility.

The patient left the hospital on the fourteenth day, at which time he was passing urine naturally. At last accounts, ten years after operation, the patient was perfectly well.

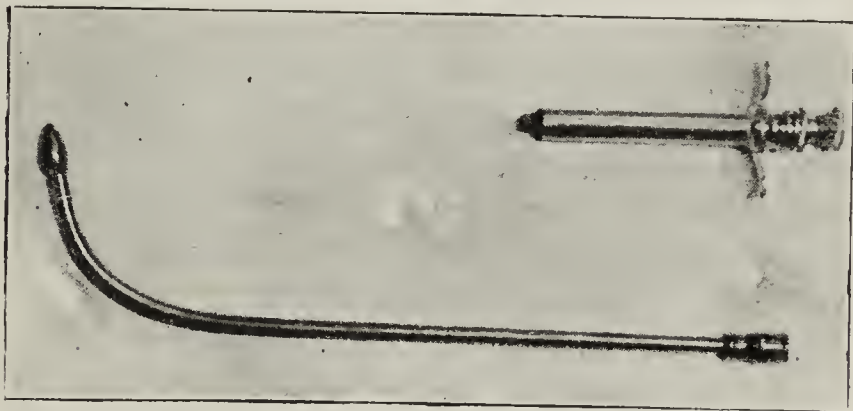
25 East Washington Street.

A MODIFICATION OF ULTZMANN'S SYRINGE FOR POSTERIOR URETHRAL INSTILLATIONS

FRANK HINMAN, M.D., SAN FRANCISCO

The proper instillation of solutions into the posterior urethra has a well recognized value in the treatment of many of its chronic inflammatory conditions. The particular object in view is to insert the end of the instrument just beyond the external sphincter. The colliculus should not be touched or reached. It has been shown experimentally in animals that stimulation of a healthy urethra will not produce an antiperistaltic wave, whereas, almost invariably, stimulation of an inflamed colliculus produces antiperistalsis of the vas deferens, which, if we argue from analogy, in men would frequently carry infective material to the globus minor of the epididymis.

The instruments introduced for giving these posterior urethral instillations have been quite numerous. The two types most frequently in use are the Ultzmann cannula, and the Guyon elastic catheter. The latter has the great advantage, because of the bulb at the end, that it can be more accurately placed to a point just inside the external sphincter without any great risk of irritating the colliculus; but it has the disadvantage of not being easily sterilized and, when a great many treatments have to be given, the catheters quickly wear out or become rough and irritating to the urethra. In certain patients with tight sphincters, furthermore, catheters, if at all limber, are difficult to insert.



Metal urethral cannula with bulb: an all metal syringe for urethral instillations.

The Keyes-Ultzmann instrument is a silver cannula of even caliber which has a glass barrel syringe with a metal piston. The original Ultzmann used a record type of syringe, and this could be readily boiled for sterilization; but in frequent boiling the glass barrels of the syringes are often broken, and the absence of a bulbous end makes it more difficult of accurate insertion.

Bumstead introduced a hard rubber cannula, and his instrument was modified by Taylor with the addition of a bulb, as in Guyon's catheter. With the Taylor-Bumstead cannula a glass-barrel syringe was also used. Dick introduced his silver catheter syringe, which, however, must be inserted to the level of the colliculus on account of the multiple perforations at its end.

In the accompanying illustration, an Ultzmann silver cannula is shown on which has been soldered a No. 16 bulb from a metal bougie à boule. The bulb has been tunneled so as to connect with the lumen of the cannula. This allows the cannula to be inserted into the urethra with the same accuracy that can be obtained with Guyon's elastic bulb catheter, and with greater ease, because it is a stiff instrument. The syringe used is an all metal one of the military type which can be firmly screwed to the end of the cannula, making a one piece instrument. This can be boiled and reboiled without injury or wear. It fulfils, therefore, the demands of practical utility, as well as sterilization. Several of these modifications have been in use for over two years at the University of California Urologic Clinic and are apparently still in as good condition as at the beginning.

516 Sutter Street.

² Lindeman, Edward: Sample Syringe Transfusion with Special Cannulas, Am. Jour. Dis. Child., July, 1913.

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SATURDAY, MAY 4, 1918

SOME FEATURES OF MAMMARY GLAND FUNCTIONS

Precisely how the mammary gland elaborates the products that characterize milk as a unique secretion has long been a serious problem of physiology. Much of the interest has centered in the fat of milk, for this foodstuff is readily deposited in various parts of the body and is seemingly also mobilized readily and transported by the circulation to other organs and tissues. With reference to milk production the question has often been raised as to whether fat is taken up by the mammary glands from the blood and eliminated with their secretion, or whether the milk fat is produced within the cell protoplasm, whence it is set free as the suspended globules of milk.

These inquiries permit a new formulation in the light of the more recent studies on the assimilation and metabolism of fats in the body. The investigations of Bloor in particular have indicated an unexpected participation of the blood lipoids, cholesterol and lecithin, in the transformations and transport of ingested fats. Bloor's studies lead to the conclusion that the blood corpuscles take up the fat from the plasma and convert it into lecithin. As most if not all absorbed fat seems to be so transformed, it seems more than likely that lecithin is an intermediate step—perhaps the first stage—in the metabolism of the fats. It has even been suggested¹ that the peculiar anatomic arrangement whereby the fats are thrown into the circulation through the thoracic duct and thoroughly mixed with blood in the heart and lungs before they reach any of the organs of intermediate metabolism, like the liver, may be attributable to the need for conversion into lipid compounds. If the first step takes place in the blood corpuscles, it is to be expected, says Bloor, that they will be given an opportunity to take up as much of the fat as possible before it comes into contact with the organs and tissues. He adds that it is quite unlikely that lecithin formation is limited to the blood cells. Many types of fixed cells may play a similar part.

1. Bloor, W. R.: *Fat Assimilation*, Jour. Biol. Chem., 1916, **24**, 447.

In the light of these considerations, a new interest attaches to the phosphorus metabolism of the mammary gland in relation to the secretion of milk fat. The lipid lecithin, it will be recalled, contains phosphorus. At the Bureau of Animal Industry in Washington, Meigs and Blatherwick² have made analyses of blood samples obtained nearly simultaneously from the jugular and mammary veins of milking cows. The plasma was analyzed with the object of determining whether the concentrations of total, lipid and inorganic phosphorus were appreciably altered during the passage of the blood through the active gland. Under suitable experimental conditions, the mammary plasma had a lower concentration of lipid phosphorus and a higher concentration of inorganic phosphorus than the jugular. These results are taken to mean that the precursor in plasma of both milk fat and milk phosphorus is either lecithin or some related compound. The ratio of phosphorus to fat in lecithin is about 1:18, whereas it is about 1:50 in milk. The government dairy chemists argue, therefore, that if the mammary gland takes from the plasma enough lecithin or enough of some related phosphatid body to supply its milk with fat, it gets with it more phosphorus than can be used for the milk, and the excess must be returned to the blood. These considerations are taken to explain the backflow of inorganic phosphorus from the mammary gland to the blood, which occurred in all the experiments. The prospect of new and important contributions to the genesis of the fats and other components of milk thus looms up.

PROTEIN HYPERSENSITIVENESS AND THE KIDNEYS

The time has long since passed when a variety of cutaneous disturbances, such as erythemas and urticarias, were assumed to be essentially local or skin manifestations. The attempt to manage some of them as if they were merely the indexes of abnormalities due to the peripheral nervous mechanisms has likewise not been advantageous from a therapeutic standpoint. On the other hand, the demonstration that recurring attacks of purpura, angioneurotic edema, erythema and urticaria may be associated with changes in the internal viscera³ has helped, among other considerations, to emphasize the manifold and perhaps generalized character of the underlying pathogenic factors.

Since some of the pronounced reactions of the skin and mucous membranes—even chronic eczema and asthmatic attacks—have of late been assigned an anaphylactic etiology in part at least, and since hypersensitiveness to certain proteins has clearly been demon-

2. Meigs, E. B., and Blatherwick, N. R.: *The Relation Between Phosphorus Metabolism and the Secretion of Milk Fat*, Jour. Biol. Chem., 1918, **33**, iv.

3. Osler, W.: *Am. Jour. Med. Sc.*, 1895, **110**, 629; 1904, **126**, 751; *Brit. Med. Jour.*, 1914, **1**, 517.

strated in numerous carefully observed cases, the question of the extent to which various other tissues may also be involved naturally arises. In other words, if the skin, the respiratory tract, and the gastro-intestinal canal may be the seat of phenomena of hypersensitiveness to foreign proteins, what other organs may also be involved?

In the case of the kidneys, which are already believed to participate at times in the disturbances of experimental anaphylactic shock, the evidence ought to be obtainable in clinical cases without great difficulties; for the methods of evaluating renal function have been developed with much success in recent times. At the Medical Clinic of the Presbyterian Hospital, New York, the observations of Longcope and Rackemann,⁴ on a very limited number of persons demonstrably hypersensitive to foreign proteins, have shown albuminuria, cylindruria, increase in blood urea, profound depression of the index of urea excretion, decrease in the output of phenolsulphonephthalein, and retention of chlorids and water during attacks of urticaria and erythema. It is conceivable that infections which so frequently leave kidney impairment may bring about their results by a somewhat comparable response to foreign bacterial protein. As Longcope and Rackemann visualize the possibility, the reaction in the kidney might be closely analogous to the cutaneous reactions. The peculiar inflammation of the renal structures might accordingly be dependent on an altered reaction or allergy of these structures toward the soluble protein products of bacterial origin or to the proteins of the bacterial bodies themselves. Whether the intoxication causes a general disturbance in protein metabolism in addition to the renal injury remains to be clearly demonstrated.

STARCH DIGESTION IN EARLY LIFE

Current ideas regarding the ability of the organism of the very young to digest starch have undergone considerable change in recent years. The supposed failure to detect starch-digesting enzymes in the saliva of the new-born was presumably responsible for the conclusion that the body possesses no mechanism for converting starch into absorbable derivatives at an early age. On such a deduction obviously rests the decision as to whether starch in any form can properly be included in the food of this period of life; in other words, the problem of the time when cereal feeding may become a physiologic propriety is here involved.

Careful examination of the saliva of the very young has, however, shown that amylase is by no means always entirely lacking; but even if it were, the possibilities for the digestive utilization of starch are not

limited to the efficiency of the saliva. Beside the salivary glands, other structures, notably the pancreas, are sources of starch-digesting enzymes that need to be reckoned with. Certain animals, like the dog and cat, do not possess any salivary amylase at any age; yet they can utilize starch in considerable measure.

Obviously a more adequate method of judging the starch-digesting capacity of the very young consists in examining the feces for unutilized starch after this foodstuff has been fed. Long ago the Berlin pediatrician Heubner¹ reported the outcome of such studies in the case of children a few weeks old. Among others in this country Kerley, Campbell and Mason² reported in *THE JOURNAL* the results of an examination for starch of 324 stools collected under controlled conditions at the New York Infant Asylum from sixty children, all under 1 year of age, who had been fed either wholly or in part on barley water. More than half of these children always showed negative tests indicating complete utilization of the starch thus fed.

Details of such findings might easily be duplicated now in considerable number. In view of the fact that many of the views regarding the question here at issue have been derived by analogy from experimental observations on embryonic and new-born animals, it is not without interest to follow some of the later developments in the domain of comparative physiology. In a once widely quoted monograph on the digestive enzymes of the embryo and the new-born, Krüger³ reported that in fetal and new-born calves ptyalin is secreted in the salivary glands as early as the seventh month of fetal life, but that while the quantity increases up to birth, even at that time it is too small to be of any importance in the digestion of food. The latest data from the Dairy Division of the Bureau of Animal Industry in Washington⁴ show that calves from 4 to 7 days old are able to digest considerable cornstarch added to their milk ration. The capacity seems to increase so that at the age of 3 or 4 weeks more than 90 per cent. of a liberal starch intake may be digested. The dairy chemists who conducted these studies conclude that while it is quite probable that a calf only a few hours old cannot digest an appreciable amount of starch, it can readily be seen that the quantity of starch-splitting enzymes must increase very rapidly in the first few days of life, for the calves under experiment, when only 3 or 4 weeks old, were able to digest a ration, nearly 10 per cent. of the dry matter of which was starch.

The attempt to ascertain the digestive capacities of the young is not to be construed as advice to use

1. Heubner, O.: Ueber die Ausnützung des Mehls im Darm junger Säuglinge, Berl. klin. Wchnschr., 1895, **32**, 201.

2. Kerley, C. G.; Campbell, W. C., and Mason, H. N.: A Further Contribution to the Study of Stools of Starch-Fed Infants, *THE JOURNAL A. M. A.*, Sept. 8, 1906, p. 763.

3. Krüger, F.: Die Verdauungsfermente beim Embryo und Neugeborenen, Wiesbaden, 1891, p. 80.

4. Shaw, R. H.; Woodward, T. E., and Norton, R. P.: Digestion of Starch by the Young Calf, *Jour. Agr. Research*, 1918, **12**, 575.

4. Longcope, W. T., and Rackemann, F. M.: Severe Renal Insufficiency Associated with Attacks of Urticaria in Hypersensitive Individuals, *Jour. Urol.*, 1917, **1**, 351.

starchy foods at any definite age in infant feeding. Whatever will help us to forecast the possibilities of digestion in early life is likely to facilitate rational procedures where dietary intervention becomes necessary.

A MAINTENANCE DIET FOR DIABETICS

In the modern treatment of diabetes by a rigorous dietary regimen, the difficulties presented in certain cases by the necessity of reduction of the intake of all types of foodstuffs often offer a most perplexing problem to the practitioner. When the "strict" diet involving merely the complete omission of all forms of carbohydrate came into vogue, the difficulties seemed to be avertible by an increase in the allowance of protein and fat so that the total calory intake would still be abundant. The foremost aim of many therapeutists seemed to be to conserve the weight of the patient quite as much as to stop the elimination of unburned sugar. But it is recognized today that in a severe case of diabetes not only sugar but also protein and fat may be incompletely oxidized by the organism.

To avoid the always unfavorable production of undesirable intermediary products that thus result, it often becomes necessary to restrict the food intake to a level within the metabolic capacity of the person under consideration. Starvation presents one very effective method of accomplishing such a result, but obviously it cannot be persisted in for any considerable period. One result of the systematic and radical reduction in the food of diabetics—a procedure made practicable in many ways through the investigations of Allen—is the inevitable reduction in the body size of the patient. The fact is often overlooked that when a person has been reduced in weight, his metabolism when he is fed on a low dietary will also be reduced. This may bring his organism within the range of metabolic performances that would not have sufficed for the larger stage of nutrition.

Mosenthal and Clausen¹ have recently pointed out that the widespread use of very limited diets in diabetes has brought up the question of how little the individual may eat and still remain physically and mentally fit. As they rightly point out, the maintenance diet, under ideal conditions, should be sufficiently high not only to enable the patient to live, but also to carry on an average amount of physical and mental work without undue fatigue. The nitrogen equilibrium, they add, represents the lowest possible diet standard that can be exacted of any patient who is to be maintained in a condition of reasonable well-being for any considerable period. To quote Mosenthal and Clausen in their fundamental contention, food which still permits nitrogen equilibrium under these circumstances results in the conservation of the protein tissues, but

does not necessarily prevent the loss of fat. This principle has been applied in the treatment of obesity. No living being can afford to lose muscle and glandular tissue indefinitely. How far the fat store of any individual may be depleted with advantage is another question. There is much to be said in favor of allowing the diabetic to become thin, so that his metabolism may be established at a lower level, as has frequently been urged; but it should be distinctly appreciated that this loss of weight should occur in the fats and not in the vitally necessary proteins.

Contrary to what may have been anticipated, these investigators at the Johns Hopkins Medical Clinic have observed that a diabetic may often not only conserve but even amass body protein while on a practically carbohydrate-free diet. According to them, furthermore, diabetic patients may be established in nitrogen equilibrium by a carbohydrate-free diet having a caloric value equal to the standard total caloric requirement. In many instances this may be accomplished at a considerably lower level of feeding. The factors that determine the dietary level at which a diabetic attains a nitrogen balance are apparently very numerous, and not fully determined; glycosuria at times, and infections, even of very slight degree, may necessitate a higher diet to bring about the desired result. A rough estimate of what constitutes a maintenance ration for the diabetic on a carbohydrate-free diet is placed by Mosenthal and Clausen at between 1,500 and 2,000 calories, with the reminder that women and small persons generally require less food than men and larger persons.

Current Comment

WHERE NEGATION IS A VIRTUE

It is the practice of newspapers and other publications to advertise their own advertising preeminence. Naturally such advertisements usually emphasize the large amount of advertising patronage the papers have enjoyed during a given period, and comparison is frequently made with the amount of advertising carried by competitors. The *Chicago Tribune* this week, in an advertisement three columns wide and seventeen inches high, directs the attention of advertisers in general to the desirability of the *Tribune* as an advertising medium. It points out that during the past year it has led all other Chicago papers "in the advertising of automobiles, clothing, groceries, financial, real estate, musical instruments, furniture, publishers, hotels and resorts, educational and other classifications." Thus far there is nothing unusual in the advertisement. The balance of the advertisement, however, emphasizes the fact that, although the *Chicago Tribune* was *first* in the list of advertising commodities just named, it "was *fourth* in medical advertising." THE JOURNAL has not infrequently expressed its opinion of quack and nostrum advertising. All it

1. Mosenthal, H. O., and Clausen, S. W.: The Maintenance Diet in Diabetes Mellitus as Determined by the Nitrogen Equilibrium, *Arch. Int. Med.*, February, 1918, p. 269.

has ever published and all it may ever publish will never show more effectively than does this *Tribune* advertisement, the generally undesirable character of the "patent medicine" business and quackery. A high class newspaper emphasizes the desirability of its pages for the advertising of meritorious products and takes pride in the fact that it accepts less medical advertising than certain of its competitors! To attempt to add to this indictment would be to gild refined gold and paint the lily.

SUGAR REAGENTS

One of the most frequently employed chemical tests by the physician is the "sugar test"—Fehling's, Haines', Benedict's, etc.—whereby a copper solution is reduced by a sugar, forming a precipitate of copper oxid which is generally red. These tests, however, often yield indecisive colors, leading to doubtful clinical interpretations. In testing urine of diabetics, for example, sometimes the reduction causes the formation of a precipitate not red, but orange, yellow, or even greenish. A number of years ago, McLean¹ surmised that these differences were merely physical. More recently two Cincinnati workers² have confirmed McLean's views, although at the time of the research, they were unaware of the previous work. Contrary to the impression given by many textbooks, these authors state that in testing urine with Fehling's solution "a dirty pea green solution means just as much from a qualitative point of view as does a red precipitate." The causes for the variations in the tests are such factors as relative degree of concentration, presence of such substances as will have a stabilizing effect (protective colloids), and temperature. After a series of experiments, they concluded that "the different colors observed in the reduction of Fehling's solution by dextrose (or other reducing substance) are nothing more than color changes coincident with a gradual increase in the size of the copper oxid particles." In connection with the foregoing discussion on Fehling's and modified solutions, it is interesting to note that Folin and McEllroy³ have proposed a copper-phosphate mixture as a sugar reagent, which they claim has several advantages. The alkaline phosphates are less expensive than the tartrates, citrates or glycerin used in other reagents; they do not themselves reduce sugar; and they tend to regulate the degree of alkalinity at a lower level of hydroxyl ion concentration than is obtained by carbonates alone. The copper-phosphate⁴ mixture for qualitative determinations is used exactly as Benedict's reagent for sugar, and is of the same degree of reliability but a trifle more prompt. For the quantitative determination of sugar in urine or lactose in milk⁵ a somewhat similar copper-phosphate mixture proved very satisfactory.

THE RESPONSE TO THE CALL FOR MEDICAL OFFICERS

A few weeks ago we published the letter of the Surgeon-General asking the American Medical Association to secure 5,000 additional medical reserve officers; also the announcement that the War Committee of the American Medical Association had arranged to call into conference the secretaries of the constituent state associations in order to outline an efficient method for securing the necessary men. The physician who reads the report of this conference in this issue of *THE JOURNAL*¹ will realize that the American Medical Association is answering this call with an energy and a utilization of its resources which cannot fail to produce the desired increment. As the secretaries of the state associations outlined the work thus far done in their respective states and pointed out the defects of the system which, although it has produced to date 22,000 physicians, has nevertheless permitted many defects, it became apparent that the task before the profession is important not only in securing physicians to meet the present demand, but for the future, whatever it may be. In securing over 20,000 volunteers some communities may be suffering through the taking away of men needed in those communities. Some industrial plants may be suffering through the removal of physicians whose duties in caring for the health of thousands of industrial workers were at least as important as any task which they might undertake in connection with the military department. The organization of the state for war means the utilization of every man to the best possible advantage. The secretaries of the state associations were firm in their belief that they would be able to secure the men needed for the new increment. Their conference was especially important with a view to meeting the future needs of the country, whether the war lasts one year or five years or ten years.

1. See page 1302.

Banana as Food.—In an article in the *Scientific Monthly* (January, 1918) Prof. Samuel C. Prescott of the Massachusetts Institute of Technology says that the banana is a high power fuel food and is also rich in desirable salts. He quotes the table of Bulletin 28 of the United States Department of Agriculture showing the caloric value per pound of the edible portion of the banana and other foods, from which the following comparisons may be selected: banana, 460; squash, 215; onions, 225; parsnips, 300; green peas, 465; cabbage, 145; green corn, 470; fresh Lima beans, 570; macaroni, cooked, 415; string beans, 95; clams, 240; lobster, 390; oysters, 230; halibut, 470; whole milk, 325; apples, 290; cherries, 365; figs, 380; grapes, 450; oranges, 240. It will thus be seen, as Professor Prescott says, that the banana exceeds in real food value many foods of different classes which are in almost daily use, such as whole milk, boiled oatmeal, shellfish and other fish and fresh vegetables, and according to a bulletin of the Life Extension Institute, prepared by Dr. Eugene Lyman Fisk, presenting a table of raw materials in common use, it is the cheapest. In concluding his article Professor Prescott says that the banana is practically the only food which during the last two years has not shown a marked increase in price, and will stand comparison with any food on the market on the basis of caloric costs. Everything, he says, points to its continued favor not merely as the "poor man's fruit," as it has sometimes been called, but as a staple food for universal use.

1. McLean, Hugh: *Brit. Med. Jour.*, 1906, **1**, 147.
2. Fischer, M. H., and Hooker, M. O.: Note on the Colloid Chemistry of Fehling's Sugar Tests, *Jour. Lab. and Clin. Med.*, 1918, **3**, 368.
3. Folin, Otto, and McEllroy, W. S.: Copper-Phosphate Mixture as a Sugar Reagent, *Jour. Biol. Chem.*, 1918, **33**, 513.
4. Directions for preparing the solution for qualitative use: Dissolve 10 gm. of sodium pyrophosphate (U. S. P.), 30 gm. of crystallized sodium phosphate and 50 gm. of sodium carbonate (monohydrate) in about 1 liter of water. To this solution add 13 gm. of copper sulphate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) previously dissolved in 200 c.c. of water. The solution is stable.
5. Folin, O., and Denis, W.: The Determination of Lactose in Milk, *Jour. Biol. Chem.*, 1918, **33**, 521.

Association News

WAR CONFERENCE OF SECRETARIES OF THE CONSTITUENT STATE ASSOCIATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Held at the Headquarters of the American Medical Association, April 30, 1918

The meeting was called to order by Dr. Alexander R. Craig, secretary of the American Medical Association. Dr. Thomas McDavitt of St. Paul, chairman of the Board of Trustees, was elected chairman, and Dr. A. R. Craig, secretary.

Dr. McDavitt emphasized the great importance of the meeting. He said the government had made a new call for physicians. There are already in the service, in the different corps, at the present time about 20,000 physicians. The issues involved are so great that the government is anxious to have an excess if possible. The 5,000 physicians that are requested now do not provide for an excess. The ways and means of filling these ranks will depend largely on the successful issue of the action taken by this conference.

The roll of the states was called, and the following secretaries answered as being present:

Alabama—H. G. Perry	Nevada—M. A. Robinson
Arizona—D. F. Harbridge, acting	New Hampshire—D. E. Sullivan
Arkansas—C. P. Meriwether	New Jersey—Thomas N. Gray
Colorado—Crum Epler	New Mexico—R. E. McBride
Connecticut—J. E. Lane	New York—Floyd M. Crandall
Dist. of Columbia—H. C. Macatee	North Dakota—H. J. Rowe
Illinois—W. H. Gilmore	Ohio—E. O. Smith, president
Indiana—Chas. N. Combs	Oklahoma—Horace Reed
Iowa—T. B. Throckmorton	Oregon—Clarence J. McCusker
Kansas—L. F. Barney, acting	Pennsylvania—Cyrus Lee Stevens
Kentucky—P. E. Blackerby, special	Rhode Island—J. W. Leech
Louisiana—Paul T. Talbot	South Carolina—Edgar A. Hines
Maine—Bertram L. Bryant, acting	South Dakota—R. D. Alway
Michigan—F. C. Warnshuis	Texas—I. C. Chase, acting
Minnesota—Thomas McDavitt	Utah—W. Brown Ewing
Mississippi—T. M. Dye, acting	Vermont—W. G. Ricker
Missouri—E. J. Goodwin	Virginia—Paulus A. Irving
Montana—E. G. Balsam	W. Virginia—J. Howard Anderson
Nebraska—Joseph M. Aikin	Wisconsin—Rock Sleyster

WORK OF THE WAR COMMITTEE OF THE ASSOCIATION

The chairman introduced Dr. Simmons, who, he said, had been in close touch with the government authorities and would give information on the subject of the conference.

Dr. Simmons said that we are today confronted with what some regard as a serious proposition but that he did not so regard it. He has always felt that the medical profession would respond to whatever call was made on it, and that the response has been made. Practically 23,000 physicians volunteered for the Medical Reserve Corps. On April 26, 18,693 had accepted commissions. We may estimate that at least between 1,000 and 1,500 will be added to this number from those who have already been offered commissions. At the beginning of the war there were 449 medical officers in the regular corps. Today there are 20,851 in the service; in the regular corps, 843; in the reserve corps, 18,693; in the National Guard, 1,204; in the National Army, 111.

When the call was first made it was for 21,000 physicians, estimated on the basis of an army of 3,000,000. There are supposed to be seven medical officers per thousand; it is recognized that this is not enough and they estimate now ten men to a thousand.

WORK OF THE ASSOCIATION

It might be well for a moment to say what the American Medical Association has done. In April, 1917, THE JOURNAL began to appeal to the medical profession. In that month we published a special appeal and with it an application blank—64,000 blanks—for both the Regular and Medical Reserve Corps. Four weeks later an application blank—67,000 this time—was again inserted in THE JOURNAL.

The next work done was that done ostensibly by the Surgeon-General, who assigned to our office Major J. R. McKnight, who is present this morning. I have here the report that Major McKnight made to the Surgeon-General, July 19. The work was begun May 28, and this report covers

the work up to July 16. At that time the total number of circulars addressed was 39,710; the reply cards received were 17,874; requests for information answered by personal letter, 764. This final analysis of this work, I am sorry to say, is not at hand. Analysis of the cards received show that 2,786 immediately applied for commission; 1,781 stated that they would reply soon, and 1,990 that they would apply within a few weeks. Various reasons were given for not applying, such as physical disqualifications, dependents, etc. This work was done, as I say, ostensibly by the Surgeon-General's Office, in so far as Major McKnight superintended it; but the Association furnished the material and did all the printing; everything was sent out from this office—the application, letters of appeal, information for those who responded as to what to do, the list of examining boards, etc.

THE NEW CALL

Now this drive, if I may call it so, because that is what it is going to be, is to be done in the name of and by the American Medical Association and its constituent associations. The responsibility is on us to make good.

Dr. M. L. Harris said that the Association, through the Board of Trustees, has been called on by the Surgeon-General to assist. A special meeting was called and a committee appointed to look after this work directly, which for want of a better name was called the war committee. This committee has been in touch with Washington ever since its appointment, and has attempted to help the department by placing at its disposal the entire American Medical Association and all its machinery, including, of course, THE JOURNAL, which as you know already had been doing what it could from the beginning.

Now that we have been requested to assume this further task of enlisting 5,000 additional doctors for the Army and to secure this number in a short time, this meeting was called to distribute the burden down to the individual unit; in other words, those who are most familiar with local conditions, so that this could be done with the least harm, we may say, to local communities and with the greatest dispatch. The idea is to get the doctors where they are most available and where their withdrawal would mean the least trouble in properly taking care of civil conditions. Not only the general population, but industries must be considered; in fact, all the factors that are essential to the organization and maintenance of the Army.

The purpose of this meeting is for all of us to discuss the matter and to suggest means. The general idea which may be presented, of course for your approval or modification and ratification, is that in addition to what we may call the national war board, that is, the committee of the Association representing the Board of Trustees, each state society have its state war committee represented by its officers, and that each county have a county war committee, the committees to be small in number so that they may work rapidly and expeditiously, the idea being that each county naturally is most familiar with its own local conditions and can best determine who is most eligible for the service in the sense of the needs of the community. In the same way the state as a whole is more familiar with general conditions and can work out its own problems better than any one else. It is hoped that by the organization of these committees the work could be carried out with dispatch and with the best results, having in mind the needs of local conditions and the needs of the Army.

The chairman introduced Dr. Charles Mayo, President of the Association. Dr. Mayo said that this is really to be a drive like a liberty loan drive, as Dr. Simmons says. The medical profession was almost the first to become well organized before the war began, because we have had an organization for a long time. So far as the Association is concerned, it was easy for organized medicine to get the

names of the men we needed to do their bit. In fact, they had been doing their bit by going over to help Britain, France and Serbia in every possible way.

DISORGANIZATION

Our profession is organized, but around the outskirts is a great deal of disorganization that has been held over from the methods of the profession in advancing their work in education. In the early period there were in Washington about eighteen bureaus, boards and departments that had to do with medicine. Each of these bureaus and departments spends a great deal of money, and there is absolutely no coordination and no one will let go. Each head wants to be chairman of the committee to look after it. The more we study the question, the more we find that there will be no change until we get a real department of health with an officer in the cabinet to look after it, and then we will have an organization.

CONDITIONS IN FRANCE

A serious problem comes to mind in relation to France. There they have not had any medical schools running for four years. In England the same thing is true. With the natural death rate of doctors and no new degrees granted, it means a great deduction, and the danger that when the schools have started again, there will be lowered standards. I think organized medicine in this country did great service in seeing to it that the government did not in developing draft laws break up the medical schools. I think that has been one of the greatest features shown by organized medicine.

A FRENCH MEDICAL SCHOOL

The thing I have been hoping for is that funds may be obtained to develop a great medical teaching institution in Paris. From letters received from the French government, the president and others high in authority, this idea is approved. We could move our men over there a thousand at a time and they could be trained by men at the front who for four years have had at their fingers' ends things that we cannot possibly get in this country. I would suggest to turn over now for teaching purposes two thirds to the Americans and one third to France, and after the war make France a present of it, and make Paris the center for American medical study in Europe. It takes a lot of money to run such an institution, but yet it looks as though the money might be raised. It is estimated that it would take from \$100,000 to \$150,000 under present circumstances to run such a school for a year. It is most difficult to bring about such a thing under government control. Something like that must be planned by organized medicine, but not by government organized medicine, and turned over to the Surgeon-General for the period of the war. Surgeon-General Gorgas could easily detail men in the service for temporary duty for the education of these men and give them one month or two months of lectures, and without disorganization we could give our surgeons the absolutely necessary instruction and all around service we have been trying to develop in a more or less haphazard way.

The chairman introduced Dr. Alexander R. Craig, secretary of the American Medical Association. Dr. Craig said: It may be well for me to try to supplement what has been said of the work of the Association with your cooperation. Lists of names of applicants in the Medical Reserve Corps are being sent to this office and are reviewed in connection with the data concerning physicians of the country. So far as the war is concerned, we have on file here at the office the names of the men who have made applications for commissions, with a certain percentage of error due to loss of lists; but we can tell you every one in your state who has made application, who has been commissioned and who is under orders in a large percentage of the cases, and we can tell something about certain individuals as to personal character and professional reputation. That is a point, however, on which we need your help and the help of the county societies. We have a list of the men under orders in each of the several states. We have given to you also a preliminary table of all men in the United States. There are errors due to the fact that we report the men at their permanent addresses, but you will be able to determine how certain groups of doctors have responded to the call and where further enlistment may be obtained after we have available this honor roll. We wish also to hear from each state secretary how he deems this draft can best be con-

ducted in his state. I would suggest that we resolve ourselves into a committee of the whole for the purpose of deciding how we can best put these things over.

The chairman introduced Dr. A. R. Mitchell of Nebraska, member of the war committee of the Board of Trustees, who said: The statements made by Dr. Harris cover everything that I might say. The idea is to get concentrated work and get it quickly. I would call for a committee to draft resolutions.

MOTION TO APPOINT COMMITTEE ON RESOLUTIONS

Dr. E. J. Goodwin of Missouri said: I believe, in view of the fact that we are pretty well informed of the object of this meeting, that it would be well to appoint a committee on resolutions first, and then discuss the topics that the committee suggests. I, therefore, move that the Chair be authorized to appoint a committee of three which shall hand in such resolutions which shall seem to cover the purposes of the meeting for consideration at the afternoon session.

The motion was seconded by Dr. E. G. Balsam of Montana.

Dr. Crum Epler of Colorado asked whether, if the talks were made now, the ground would be gone over again in the afternoon when the resolutions were presented.

Dr. Goodwin said that the object of his motion was to have the committee appointed first so that it could listen to the discussion and then bring in concrete suggestions for action during the afternoon.

The motion of Dr. Goodwin was carried, and the Chair appointed the following committee on resolutions: Dr. E. J. Goodwin, Missouri; Dr. F. C. Warnshuis, Michigan, and Dr. D. E. Sullivan, New Hampshire.

ALABAMA

Dr. H. G. Perry, Alabama, said: One of the troubles under which we have been laboring is a multiplicity of organizations, all trying to do the same work. I am here today as the secretary of the state organization of Alabama, but am also secretary of the state committee of National Defense, Medical Section, and member of various organizations and activities. We organized in Alabama early in 1916 with the retiring president of the state association as president of the organization. That was before the State Committee on National Defense was formed. When the governor was called on to appoint this Committee on National Defense, he took the organization we already had and made his committee identical with the committee already raised. In Alabama we have an organization of medical men in every county in the state who are charged with the execution of the medical laws of the state in their respective counties, and have also jurisdiction such as medical societies have over the professional side of medicine. In each society there are five men who constitute a board of censors. Our central committee organized for the purpose of increasing the membership of the Medical Reserve Corps in the Army. They did not have to go very far in order to get a working committee in every county, and these committees in each county got very busy. A little later we found that with sixty-seven committees and sixty-seven counties, it was hard to get frequent reports and sometimes hard to get cooperation, so a good deal of the work was done by the central committee, the president of the committee and the secretary. Up to April 1, according to the Surgeon-General's Office, we had 333 men to whom commissions had been offered. We have endeavored time and again to get the number of those in actual service, but up to this time have failed to get this list or a list of those who had accepted their commissions. We know of a good many who have been discharged. Out of 333 that we know have been tendered commissions, 134 were in actual service outside of the largest county, which adds another hundred, making 234, leaving ninety-nine still unaccounted for. They will constitute a large problem when we start into this new draft. The thing we have to work out is some plan by which we can judge the local conditions in such a way that we can go to a certain county and put our hands on a certain number of men without reducing the necessities or without jeopardizing the welfare of the civil population.

ARKANSAS

Dr. C. P. Meriwether, Arkansas, said: The Arkansas Medical Society made a complete survey of our state last October through our councilors. The State Committee of the

Council of Defense was inactive. Our report was made to the National Council of Defense, but we got little encouragement; until the last three or four weeks, the Council of Defense in our state had done practically nothing. About three weeks ago, I was made secretary of the state committee by appointment from Washington. The status of affairs in our state is possibly a little different from that of most of the states. We have about 2,680 doctors in our state according to the directory. As we all know, up until 1909 the laws of Arkansas controlling the practice of medicine allowed almost anybody to get a license. As a result we have thirty-seven or thirty-eight undergraduates licensed and carried in the directory. We have from 225 to 250 undergraduate doctors, two commissioned in the Medical Reserve Corps. At the request of Dr. Craig, secretary of the Association, we called a meeting of the officers of the state medical society and have sent a letter making a special appeal to each member of the state society. We have notified the state eclectic society and the homeopathic society to meet with us in Jonesboro, May 7 and 8, at which time the Council of National Defense will send to our meeting Major John T. McLean of the Medical Reserve Corps who will be in a position to enroll all of the men and examine them at that meeting, so that we will get them while they are warm and in the notion. In Newton County they have ten doctors, and not a single one is a graduate. Yell County has forty-five doctors; eighteen are under 45 and only seven are graduates. That is a situation that does not confront many other states. But as Arkansas came over in her Liberty Loan allotment, the first on top, we are coming over with our men, too.

ARIZONA

Dr. E. F. Hardrige, Arizona, said: Arizona is a community of magnificent distances. Physicians frequently travel 50 or 60 miles to see patients. Last week we held a state meeting and certain efforts at drafting a resolution as to what we are willing to follow, were made. We have peculiar conditions on account of the great distances. In Graham County there are over 6,000 square miles with only three physicians. In Arizona, we have large copper industries that must be kept going. In all these institutions, the medical staffs have been greatly depleted. In one company of twenty-one men, five have responded and are already in the Army. In another county, out of seventeen men there are five who have gone. That is a proportion of 25 or 30 per cent. On receiving the call for this meeting, I immediately telegraphed to each county secretary to give me the name, age and number of every physician that had accepted the call or was under orders. I received a list of 217, of whom forty-two have responded. The point I wish to raise is that we are willing to do everything that is possible, but we have an industrial situation that must be taken care of.

COLORADO

Dr. Crum Epler, Colorado, said: I will confine my remarks to the position taken by the physician who does not go. It is not a matter of a lack of patriotism. In my own state we have had forty-four apply according to the quota given us through the medical section of the Council of National Defense. Now why is this? The first proposition is that Colorado has been properly designated as a finishing place for "lungers," and we have in the state a considerable number who did not get finished entirely but who are in good physical condition, healed lungers, doing good business, and yet under the present rules they are not eligible for the reserve corps on account of their histories. It would appear to me after visiting a number of the cantonment camps and seeing some of the healthy, robust, red-cheeked young men there in the division hospitals, that they could be put on more active duty, and a limited service might be provided for the healed lungers in these base hospitals. With the large number in the service and the other large number who have accepted commissions but have not been called, men ask, What is the use of breaking up a business that has taken years to build up when not all the commissioned men have been called? I know fifty men, some of them as good men as have been commissioned, two of them in one town, who have not been called into active service. Another condition is that men are holding commissions too low for them. Physicians are asked to accept commissions lower in rank than are given to their assistants. That is a condition that exists in Colorado and other states in which I have talked. Another condition

is that the deadwood about the cantonments needs to be removed. When the Surgeon-General says "We are now asking you to join the cause; we need you," physicians will go—every one of them.

CONNECTICUT

Dr. John E. Lane, Connecticut, said: Connecticut is pretty well ready on the medical side. From the first of last October the medical society has worked with the Council of Defense—the men on the medical section—and the secretary's office of the state society has sent out circulars. There is perfect harmony, and if this scheme goes through we can make a war committee in a week in our state. Connecticut is prepared to furnish her quota and more. In Connecticut it would be useless to have county committees; the state is small and the state society can handle it all. By that plan the personal equation of a committee working in a local community is eliminated. Some counties have only seventeen physicians. The state society can do this work without arousing personal antagonisms. The chairman of the State Council of Defense, Dr. Brown, has done magnificent work. The physicians have been classified into those who should go and those who should stay at home, and Dr. Brown has personally gone through the state asking physicians to appear before them, and he knows the conditions with reference to every physician. One thing we need is direct cooperation so that the work we have done will not be undone. Some months ago the National Council of Defense sent out a questionnaire that we were to classify these physicians and should not injure any communities. These answers were included in the Surgeon-General's letter two weeks ago. Within three days' time the State Council of Defense in our state without getting information from the local council sent out two letters urging men to join the Medical Reserve Corps of the Army and Navy. The State Council would have taken the very men who should have been left—the teachers in the medical schools and the like—thus spoiling the work we had done.

DISTRICT OF COLUMBIA

Dr. H. C. Macatee, District of Columbia, said: The medical society of the District of Columbia occupies a position equivalent to the county society in the states. The data published in the list of the American Medical Association give the district 1,514 physicians. One of our great difficulties has been this exaggerated estimate for the District of Columbia. The telephone directory which covers the whole district gives only 759 names. That would cover all the men who are active practitioners of medicine, and therefore covers all the men available from that jurisdiction. On that basis instead of having a percentage representation of 12.8 in active service, we have a percentage representation of 27.6. The medical society of the District has a membership of 560 and a male membership of 530. It has 133 in the various public services, making a percentage of 25. In looking over the lists, making a rough estimate of the availables, I find 189 men still to be approached in this matter. Out of these, many are members of the medical society; many of them will be found unavailable by reason of civil needs, physical disqualification, etc.; so that for the District we cannot approach the matter from the basis of a quota. I shall recommend to our society that we simply cull over all the men possible, keeping in view the needs of the community, and put all those men to be commissioned and leave the public services as these need. I feel that I must also endorse the remarks of the secretary for Connecticut that there is a great deal of feeling in Washington on account of the disparity on account of commissions granted. These commissions are granted on some basis that we are unable to fathom, because the relative standing of the men in the communities is not taken into consideration. We are strongly of the opinion that commissions should be made of the lowest grade and that promotions should go according to merit. I am also secretary of the state committee of the Council of National Defense, and we have been unable to do any effective work because we have been ignored, superseded or overridden by central authority.

ILLINOIS

Dr. W. H. Gilmore, Illinois, said: I understand that the idea of the meeting is to get the 5,000 physicians as quickly as possible. The discussion has been too general. We should come down to the point of how to go about it to get these

men. As secretary of the State Council of Defense, and chairman of the state licensing board, particularly of the latter board, I have been in personal contact with men all over the state. I have made two trips over the state recruiting for the Medical Reserve Corps. From Springfield south I have found that 45 per cent. have accepted commissions, and from Springfield to Cook County, 18 per cent.

I have no confidence in anything being done locally. If it comes direct from the American Medical Association to these men we will get results. How are you going to do it? How can you do it? We have a list of the men under 45. We have the number in the reserve corps. Let the letter from the President and Secretary of the American Medical Association say to John Jones, "You are of the proper age and qualifications. Your county is short so many men. Get together with the men who have not enlisted in the Reserve Corps and decide who is to go, because some of you have to." They will go then. When I came back from my trip I was cocked and primed to recommend the draft for physicians. We had the day set to discuss the draft for physicians. An editorial in *THE JOURNAL* knocked it into a cocked hat, and I have never ceased to believe that editorial was inspired.

INDIANA

Dr. Charles N. Combs, Indiana, said: Dr. Gilmore's pertinent remarks offer a definite field for some work. Some criticisms will have to be cleared away before the men will take seriously this letter even from the American Medical Association. There has been a difficulty encountered because of lack of statements from the Surgeon-General's Office. The statements issued from various sources leave the mind in confusion. There is difficulty on account of statements regarding the mortality rate of physicians in the service; on account of resignations and discharges, which of course men staying out of the service read with avidity. There is difficulty caused by the long wait for assignments that has been spoken of, and also on account of unfair distribution of favors as to rank by which some men who have not a high standing in the medical profession are given higher rank than others, for some unknown reason. The printing of news, even in the newspapers, regarding the lack of definite need for men is unfortunate; also the uncertainty as to what assignment men are going to get when in the service. The War Department issues but one answer, and that is that you will probably be assigned to the work you are accustomed to doing, but no promises are made. In my own experience it seems to me that the government requires us to go back to the experience of twenty years ago and be general specialists. We are planning to have meetings in every county in the state on Lusitania Day, May 7. We are going to get men in uniform assigned to these meetings so that the men who enlist will have the stronger appeal. Men have been enheartened on account of the survey made by Dr. Squier, for conditions are changing and more attention will be paid to particular qualifications along certain lines.

IOWA

Dr. T. B. Throckmorton, Iowa, said: Conditions that exist in Iowa are no different from those of other states, and I cannot help but feel that some of the difficulties of raising men for the Medical Reserve Corps have come through ignorance. I have learned more regarding the needs of the corps during the last week or ten days than since the declaration of war. We have had no organized effort made in the way of obtaining volunteers save that which came through the Council of National Defense, through the medical section of the State Council of Defense. Nothing succeeds without organization. In the first place, we have had no one competent in Iowa to answer questions asked by applicants concerning admission into the Reserve Corps. Early in the season it was hard to obtain blanks for those who did apply. No one was there to tell the doctors where to go for physical examination, and above all, we had no one there competent to explain to the doctor when he called by phone or in person as to the real necessity of volunteering. I did not know until a few days ago really how many men the War Department wanted from Iowa. I recently got a letter saying that 462 were accepted and commissioned, and that they expected 350 more. That is the first information I had. A man is not going to give up his business unless there is a real necessity, and while I am not here to pick differences with these gentlemen concerning Iowa's apparent lack of patriotism, if it may

be so stated—because we have from 12 to 13 per cent. of the profession now in the Reserve Corps—still I think it is a question of ignorance. There is going to be great good from this conference, because we are going to put the facts before physicians and show them there is a necessity of obtaining volunteers in the Medical Reserve Corps. I am here to listen to the dictates of this conference and carry back whatever wishes it has, and so far as I am concerned I am willing to do my bit with all my heart and soul.

KANSAS

Dr. L. F. Barney of Kansas said: I am not prepared to make a report from Kansas. The secretary, Dr. Hassig, left recently for service and I am not in position to state what conditions are. Dr. Throckmorton has perhaps expressed conditions in Kansas very well. There has been no knowledge of conditions and what is needed. It is necessary for some one to make up the minds of a great many physicians. We have got to have something brought to bear on the individual physician who is convinced that his conditions are different from those of some one else. Each one has his own reasons for not going, and under the best plans it has been pretty hard to get away from those individual reasons; but when we have these things pointed out, and when some one in authority goes to them and says, "This man is more available for service than some one else," I think we shall have a better response.

KENTUCKY

Dr. P. E. Blackerbie, Kentucky: Dr. A. T. McCormack, the secretary, is now in the service. Dr. J. N. McCormack was not able to be here and asked me to represent him. As long as Dr. Arthur McCormack was in Kentucky following up the work of raising the quota, things went along well, and as a climax at the meeting of the State Association forty Kentucky physicians were examined at the meeting, and 70 per cent. of these were commissioned. Kentucky has 540 men commissioned. I do not know how many are actually in the service. Unfortunately, two things militate against our growing: The first one was the unfortunate court-martialing of the retiring state president on charges on every count of which he was vindicated. That had some influence in the state against men offering their services. And then again, as the doctor from Colorado said, a lack of understanding of the men in the service as to the time they would be called for active work had its influence in holding back men. We have just prepared a classification of physicians in Kentucky in which we are trying to determine the number of men available out of the 1,500 physicians not examined, and in this classification we are showing the communities and the required number of physicians, their family relations, whether they have children or not, etc. On this list there are 460 men yet available, and we hope without draft to get at least half of these, which will keep Kentucky in the same position she now has. I am by Dr. McCormack requested to say that if this conference recommends the draft, Kentucky is behind it, or in whatever move is instituted here. Personally, I am very much in favor of the move of the gentleman from Illinois (Dr. Gilmore) to the effect that the American Medical Association make a personal appeal to every available man in each state in the United States to go into the service. I think it ought to be stated in that appeal emphatically that the result of this work of the American Medical Association would forecast either a draft or not a draft.

LOUISIANA

Dr. P. T. Talbot, Louisiana, said: I was recently elected secretary of the state society. In Louisiana conditions are about the same as mentioned by the other secretaries. The state medical society in session last week passed resolutions endorsing the movement of the American Medical Association, and wants to lend its best efforts to do anything the American Medical Association desires. As secretary of the Orleans Parish Society for a number of years, I have been intimately associated with physicians throughout the state. We feel in Louisiana that if we have been negligent in this response, it has been due almost entirely to the fact that the doctors did not realize that they are needed. They did not realize that because the needs have not been expressed through organized medicine. We feel that if this plea comes from the American Medical Association, through its sub-

sidiary societies, there will be excellent results; and the state medical society is anxious for some plan to be suggested by this meeting to enable it to fulfil its purposes to the country. In regard to the solution of this problem, the securing of enlistments through organized medicine, the state medical societies, appears most expedient to me. The Orleans Parish Medical Society, representing the largest medical center in Louisiana, has instructed me to say that it wishes to lend all possible aid in securing the enlistment of physicians. They are ready and anxious to go. They are waiting for a definite call from the American Medical Association to respond, and I am sure when the call is sent out, Louisiana will come forward with all that is needed.

MAINE

Dr. B. L. Bryant, Maine, said: The population in our state is scattered. The great majority of towns contain from one to two physicians, and often they have to cover a great deal of territory. It is going to be quite a problem to get the quota from the state of Maine, but I think it can be done after a careful reorganization. There has been practically nothing done outside of the work of the Council of National Defense. The heads of that council are now in the service, and since they went away several months ago, practically nothing has been done in the organization. I think we have in the service practically 150. The other fifty must come from the populous districts—the cities—to a great extent. Our next state meeting comes June 5. We stand ready to put the plan through. I want to get information of what has been done, which our Council has not been able to get hold of. It is purely a matter of getting a plan and then adopting it in the state. I believe then the state will come up over her quota. The men who have gone have come irregularly. For instance, out of one town with eleven doctors, five have gone. Out of another town with fifty, sixteen; in another with 160, only twenty-four; and another city with twenty-two has sent none. It is simply a question of organization, and then for the organization to get after these men. The best way to do that is what I came to find out.

MICHIGAN

Dr. F. C. Warnshuis, Michigan, said: There has been a multiplicity of effort. Many things we have attempted to do have been undone. Many things we have done have not succeeded. I think we have got to learn as doctors one thing: that we must not ask ourselves what are we going to get out of it, but what are we going to put into it; not what our rank is, but what is our individual part to do to lick these contemptible curs, the Huns. I myself cannot be a lieutenant. I have resigned three times and made application, and they have said, "You stay at home. You are of more value there." So far as I am concerned, until it is over I shall remain a high private in the rear rank, but I will do what I can. It is a question we must carry home: not What are you going to get out of it? but What are you going to put into it? We are going to bear the test, and the sooner we realize it the sooner we are going to come across. I know we shall go home and send to General Gorgas a message not to worry for one minute; that he is going to have sufficient doctors to take care of the work in this war. The great problems are what we are going to do to supply the men for the Army and what we are going to do to protect the communities at home. We cannot take away all the men from the rural districts. We have already found conditions whereby communities are totally bereft of medical attendants. During the winter months I traveled miles and miles to visit the only physician in a county, who himself was ill with pneumonia. We must take the doctors from the larger cities, and we need no further organization. We have the organization. I do not believe we have need for further state committees and county committees if we have good secretaries. The secretary will respond all that is necessary to you as state secretary if you approach him in the right manner. I think our conference should resolve itself into a committee to determine how we are going to get these men. I myself am inclined to have a draft made of every doctor, if necessary. Put every man in the Medical Reserve Corps and then perfect our organization so that when the Surgeon-General needs doctors he can say, "We want fifteen, or fifty, men from your state." And when that man gets your order he is going and there will be no dearth of doctors.

MISSISSIPPI

Dr. T. M. Dye, Mississippi, said: I am acting secretary; our secretary is in camp. I am here to learn what we can do

in Mississippi. All the work done in Mississippi has been done through the Council of National Defense. The state association meets two weeks from today, and we are prepared to do anything you tell us to do. We have no advice to give.

MINNESOTA

Dr. Thomas McDavitt, Minnesota: We are up to the quota as far as the doctors are concerned, and we are going to get a lot more. The principal trouble we are having is a dearth of doctors in the rural communities. We have a great sufficiency of doctors in the cities. They should be transferred. I believe Uncle Sam is going to make a draft of some kind and transfer men from the cities to the country where they are needed, and that will be the solution of this whole question.

The reports of the remaining state secretaries will appear next week.

AFTERNOON SESSION

The conference reconvened at 2 p. m. and was called to order by the Chairman, Dr. Thomas McDavitt.

The following is an abstract of the proceedings of the afternoon session. A complete report will appear next week.

The following state medical associations were called on for reports, and each state secretary or his representative gave an epitome of the work that had been done and is now being done in the state: Missouri, Dr. E. J. Goodwin; Montana, Dr. E. G. Balsam; Nebraska, Dr. Joseph M. Aiken; Nevada, Dr. M. A. Robinson; New Hampshire, Dr. D. E. Sullivan; New Jersey, Dr. Thomas M. Gray; New Mexico, Dr. R. E. McBride; New York, Dr. Floyd M. Crandall; North Dakota, Dr. H. J. Rowe; Ohio, Dr. E. O. Smith and Dr. B. R. McClellan; Oklahoma, Dr. Horace Reed; Oregon, Dr. Clarence P. McCusker; Pennsylvania, Dr. Cyrus Lee Stevens, Rhode Island; Dr. J. W. Leech; South Carolina, Dr. Edward A. Hines; Texas, Dr. T. C. Chase; Utah, Dr. W. Brown Ewing; Vermont, Dr. W. G. Ricker; Virginia, Dr. Paulus A. Irving; West Virginia, Dr. J. Howard Anderson; Wisconsin, Dr. Rock Sleyster.

Dr. Arthur Dean Bevan, President-Elect of the American Medical Association, spoke of the importance of a survey of every state with a view of recording exactly how many medical men there are in each state, and how many have applied for commissions in the Medical Reserve Corps. This work, he said, can be perfected, as is contemplated and as requested by the Surgeon-General of the Army, by the American Medical Association through its county and state societies.

The Committee on Resolutions, consisting of Drs. E. J. Goodwin, Missouri, chairman; F. C. Warnshuis, Michigan, and D. E. Sullivan, New Hampshire, reported through its chairman, Dr. Goodwin.

The report was freely discussed by Drs. G. H. Perry, Alabama; C. L. Stevens, Pennsylvania; Crum Epler, Colorado; R. E. McBride, New Mexico; Thomas N. Gray, New Jersey; T. B. Throckmorton, Iowa; J. E. Lane, Connecticut; W. Brown Ewing, Utah; F. C. Warnshuis, Michigan; I. C. Chase, Texas, and others. The report was finally modified by substituting the following:

Moved that the secretaries of state medical associations request the presidents of their respective state associations to appoint a war committee of three immediately, one of whom may be the secretary of the state association, for the purpose of coordinating the profession of each state for war work.

Motion seconded and carried.

Dr. W. Brown Ewing, Utah, moved that it be the sense of the conference that each secretary immediately on arriving home shall elicit the support of every county society in the state association, in order that this important matter may be brought to the attention of physicians as soon as possible.

Dr. F. C. Warnshuis, Michigan, moved that the chairman of the conference (Dr. Thomas McDavitt) be delegated to represent the state secretaries at the conference to be held at Washington, Saturday, May 4.

Seconded and carried.

Dr. I. C. Chase, Texas, moved that the conference request the War Board, after conference with the Surgeon-General to draw up a form of questionnaire as a guide for the collection of the data regarding individual doctors throughout the United States.

Seconded by Dr. Rock Sleyster and carried.

On motion, which was duly seconded and carried, the conference then adjourned.

Medical Mobilization and the War

Body of Colonel Reno Recovered

The body of Lieut.-Col. W. W. Reno, mysteriously lost at sea while he was returning from France, has been recovered off the coast of Nova Scotia, and has been sent to Cleveland for burial.

Wounded in Action

Capt. Hyman Green, M. R. C., attached to the Royal West Kent Regiment of the British army, was wounded in the recent fighting in Flanders and northern France.

American Medical Officer Awarded French War Cross

Lieut. George Patton, M. C., of New York City, has been awarded the French War Cross for courage shown in caring for wounded men during a heavy bombardment of gas shells. Lieutenant Patton remained at his task without the protection of a gas mask.

Cuba to Send Medical Unit

Voting under suspension of the rules, April 10, the senate of Cuba adopted a resolution to send to France a medical unit consisting of 100 physicians and an equal number of nurses, to represent the Cuban Red Cross.

American Medical Officer Missing

Lieut. John S. Abbott, M. C., of Minneapolis, was reported missing on April 15. Lieutenant Abbott, who had answered the appeal for aid made by the British Medical Service, was attached to the Eighteenth Field Artillery of the British army, which has been engaged in the present great drive in Flanders.

Personnel of the Medical Department

For the week ending April 26, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 843, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 239 majors, 1 captain and 427 lieutenants.

MEDICAL RESERVE CORPS: 18,693, including 1,221 majors, 4,487 captains and 12,985 lieutenants. On active duty: 16,359, including 1,105 majors, 4,029 captains and 11,225 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,204, including 16 lieutenant-colonels, 253 majors, 146 captains and 789 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 111, including 3 brigadier-generals, 11 colonels, 88 lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,220, of whom 1,369 are on active duty; DENTAL CORPS, N. G., 258; VETERINARY CORPS, 17; VETERINARY RESERVE CORPS, 1,434, of whom 786 are on active duty; VETERINARY CORPS, N. G., 50; VETERINARY CORPS, N. A., 412; SANITARY CORPS, 1,030, and AMBULANCE SERVICE, 157, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number			
	M.R.C.	M.C.N.G.	D.C.N.G.	San.C.
Physical disability	607	46	7	6
Inaptitude	237	16	0	1
Other branches	485	62	7	58
Resignations	104	45	5	8
Domestic troubles	59	1	0	1
Needed by community	46	1	0	0
Deaths	61	3	0	1
Dismissals	6	2	0	0
Duty completed	1	0	0	0
No reason	14	0	0	0
Good of service	0	0	0	1
	1,620	176	19	76

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 19, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):	
All Troops	1,745.5
National Guard Camps	2,053.0
National Army Camps	1,742.0
Regular Army	1,515.8
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	49.1
National Guard Camps	46.8

National Army Camps	54.2
Regular Army	43.6

3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):

All Troops	12.9
National Guard Camps	6.5
National Army Camps	17.3
Regular Army	12.4

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK OF APRIL 19, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth.....	2	..	..	99	1	1	..	7	529.0	22.0
Hancock.....	2	..	..	22	..	1	1	1	653.5	25.2
McClellan.....	4	..	..	5	1	..	..	0	2,783.5	43.6
Sevier.....	16	..	..	25	21	1	5	4	732.8	27.0
Wheeler.....	24	..	..	12	..	..	..	8	4,818.5	85.1
Logan.....	14	..	..	73	11	..	9	2	3,393.4	51.7
Cody.....	19	..	..	12	..	..	..	5	450.6	26.2
Doniphan.....	23	..	..	1	..	..	..	4	2,646.2	68.4
Bowie.....	23	..	..	67	..	..	..	7	1,554.3	50.5
Sheridan.....	5	..	..	17	3	..	1	1	2,698.5	45.4
Shelby.....	8	..	..	17	3	..	..	6	4,536.7	87.4
Beauregard.....	15	..	18	27	..	1	..	2	2,083.3	65.4
Kearny.....	1	..	1	1	..	..	6	2	1,173.0	42.3
Devens.....	37	..	..	27	3	..	..	7	831.4	42.5
Upton.....	13	..	..	48	19	..	7	11	953.1	43.0
Dix.....	11	..	..	73	14	1	8	4	1,169.2	35.9
Meade.....	17	..	..	69	8	..	1	6	1,262.7	43.1
Lee.....	11	1	2	212	5	..	1	3	1,730.4	59.7
Jackson.....	14	1	6	15	17	..	..	3	1,950.0	67.4
Gordon.....	32	..	..	44	22	1	4	9	2,554.0	51.6
Sherman.....	29	..	..	58	1	1	20	16	1,560.0	46.7
Taylor.....	37	..	..	21	48	2	..	11	4,660.5	82.4
Custer.....	28	..	..	37	4	..	8	6	937.7	32.0
Grant.....	7	..	..	15	5	..	3	20	772.8	28.3
Pike.....	28	..	..	90	31	2	3	9	2,307.0	71.6
Dodge.....	75	..	..	63	19	3	44	29	1,898.6	107.0
Funston.....	41	..	..	20	15	2	..	9	1,163.8	66.4
Travis.....	27	..	..	37	18	..	..	13	3,394.9	62.0
Lewis.....	23	..	1	75	5	..	13	4	1,241.0	48.5
Northeastern Dept. .	..	..	..	9	4	1	1	7	1,167.3	35.3
Eastern Dept.	9	1	1	14	15	..	1	6	978.5	33.0
Southeastern Dept. .	11	..	4	37	13	..	1	4	1,609.2	58.5
Central Dept.	6	..	..	37	33	3	20	3	1,221.5	40.4
Southern Dept.	6	..	1	89	21	13	..	14	2,161.4	53.2
Western Dept.	8	..	..	53	15	1	2	2	1,367.1	29.2
Aviation, S. C.	22	..	2	91	56	5	28	25	1,566.8	40.7
Camp Greene.....	13	..	..	19	4	1	3	8	1,097.1	31.2
Camp Fremont.....	5	..	1	17	19	..	..	1	2,112.5	55.0
El Paso.....	..	1	..	11	1	..	..	0	1,528.0	7.0
Columbus Barracks.	4	..	..	16	..	..	3	1	2,306.6	66.8
Jefferson Barracks..	10	..	..	35	4	..	16	1	2,977.0	123.5
Fort Logan.....	5	..	1	1	..	..	3	1	2,500.8	105.3
Fort McDowell.....	1	..	1	5	3	..	..	1	2,414.0	63.2
Fort Slocum.....	..	..	..	10	1	..	..	2	1,319.7	39.1
Fort Thomas.....	2	..	..	6	4	..	..	1	1,730.7	63.5
D. B. Alcatraz.....	..	..	..	..	..	..	..	0	1,999.9	23.8
D. F. Fort Leavenworth.....	..	..	..	2	..	..	..	2	1,130.4	33.1
A. A. Humphreys....	..	..	..	..	2	..	..	0	859.5	3.4
J. E. Johnston.....	3	..	1	43	10	..	..	2	1,452.9	39.4
Camp Merritt.....	39	..	..	121	6	..	6	9	1,244.0	51.1
Camp Stuart.....	34	..	..	99	20	1	5	13	1,294.7	64.1
West Point, N. Y. .	..	..	..	..	..	..	..	0	742.4	9.9
Edgewood-Aberdeen.	..	..	..	1	3	..	..	0	825.8	32.6
Provisional Depot for Corps and Army Troops.....	15	..	..	6	7	1	..	6	1,776.2	41.4
Camp Holabird.....	..	..	..	1	..	..	1	0	430.3	27.6
Camp Raritan.....	..	..	..	1	1	..	..	0	558.0	25.3
Natl. Guard Depts. .	5	..	..	3	11	..	1	5	..	..
Natl. Army Depts. .	15	..	..	136	84	..	31	14	..	..
Camp Colt.....	1	..	..	5	..	..	..	1	3,447.0	50.5
Total (all troops).	800	4	47	2,057	609	42	256	338	1,745.5	49.1

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 19, 1918	Regulars in U. S., Week Ending April 19, 1918	National Guard, All Camps, Week Ending April 19, 1918	National Army, All Camps, Week Ending April 19, 1918	Expeditionary Forces, Week Ending April 11, 1918
Pneumonia.....	33.8	24.5	26.1	49.5	27.8
Dysentery.....	0.1	0.2	0.0	0.2	0.6
Malaria.....	1.9	1.5	4.1	1.0	0.4
Venereal.....	86.9	90.4	49.5	104.2	47.9
Paratyphoid.....	0.0	0.0	0.0	0.0	0.0
Typhoid.....	0.0	0.0	0.0	0.0	0.3
Measles.....	25.7	30.4	6.7	26.7	4.4
Meningitis.....	1.8	3.2	0.6	1.4	2.4
Scarlet fever.....	10.8	11.3	3.7	12.9	15.9

EXPERIENCES OF A MEDICAL OFFICER WITH THE BRITISH ARMY DURING THE RECENT ACTIVITIES IN FLANDERS

A most interesting letter has been received by Dr. J. W. Pettit of Ottawa, Ill., from his son, Lieut. Roswell T. Pettit, M. R. C., U. S. Army, attached to the British Army during its withdrawal from San Quentin. Lieutenant Pettit describes his experiences during this movement from the time of its commencement until he was relieved from duty, a period of nine days. His narrative is most interesting because he speaks of happenings which had only just occurred and which are not apt to be included in any official reports. It is a narrative of personal experiences. He speaks only of what he saw and did, not of what he heard. He had not seen a newspaper for eight days, nor had he received any mail, therefore his knowledge of what was going on elsewhere came to him in the nature of rumors. For instance, he says:

All I know is that on this part of the front the Germans attacked us in overwhelming numbers, in places ten divisions to our one; that they suffered terrible losses, but finally broke through our lines of defense, one after another, and fighting for the most part, a rear guard action, we have retired about fifteen miles in a straight line.

The battle was expected for a week; everybody was ready to move on thirty minutes' notice. Medical officers had made tours of reconnaissance, and definite methods of evacuation of the wounded had been worked out. Finally the storm broke, and Dr. Pettit describes the commencement of activities as follows:

The boche opened up on us at 5 a. m., March 21, with the heaviest barrage I have ever heard. "Stand to," was sounded, we turned out, dressed, and had all our equipment packed in thirty minutes. Then we sat down and waited for orders to move. The barrage kept up continuously, sometimes heavier and then of less intensity, sometimes it seemed to be the north of us and then suddenly it switched to the south.

Our balloons were up as soon as it was light and the aeroplanes were buzzing over our heads. The ground mist gradually cleared and the Germans put a hail of shrapnel on our camp and we all took cover, but three men were hit.

The British troops then retired, amid the most terrific shell fire. Tanks went into action. The troops were still about a mile from the front line. At this point Dr. Pettit opened up an aid post under the crest of the hill to take care of what wounded came in while the troops were getting into position. He says:

Shrapnel was bursting in the air, shells were whizzing overhead, and our guns behind me were belching forth the fire. The noise was deafening.

That the doctor is possessed of a sense of humor as well as keen powers of observation is shown by the following extract from his letter:

A railroad ran through the valley and an engine pulling a couple of flat cars was going by. A couple of soldiers were sitting on the rear truck swinging their feet. A shell burst on the track and only missed the last car about fifteen yards. Neither man was hit and the train went blithely on.

By this time it was getting along toward evening, the sun was sinking in the west, and finally went down a great ball of fire. At the time, I remember, I noticed its color. It was blood red and had a sinister look. Was it my imagination, or might it have been a premonition? At any rate, I shall never forget the color of the sun as it set that night at the end of the first day of probably one of the greatest battles in history. It certainly didn't look good to me.

Some of the hardships which the army surgeon is compelled to undergo are well outlined by Dr. Pettit:

I opened an aid post in an old dugout and settled down to sleep until morning. You may think it funny that one could sleep under such conditions, but I had been up since 5:30, had tramped about six or seven miles, had had a rather trying day and was dog tired.

So I settled down on the rough plank floor and was soon asleep. I must have been asleep a couple of hours when a runner came from headquarters and told us we were to move off immediately. I looked at my watch and it was 1:30 a. m. on the second day.

And then there came some more marching, with orders to establish an aid post near battalion headquarters. It was at this time that Dr. Pettit walked in the wrong direction, toward and not away from the enemy. Being set right by the company commander, he about faced and went in the other direction. Then it came to pass that the doctor ran into a piece of good luck:

On the way back I found a gallon can full of water, got into a corrugated iron shelter and had a wash and a shave. It certainly felt good. I do not believe I had washed for thirty-six hours.

Then things began to liven up:

Headquarters had been established in a sunken road with banks about 15 feet high on either side (later this cut was half filled with dead). My aid post was in a dugout nearby and gradually things got hotter and hotter.

Our men had dug themselves in and were popping away with their rifles. The field batteries behind us were putting up a barrage, aeroplanes were circling overhead, both ours and the Germans'. The Germans put up a counter barrage; the machine guns were going like mad. I was standing with the colonel on a little rise of ground above the sunken road when the Germans broke through about a mile to the north of us. They could be plainly seen pouring over the ridge in close formation.

TANKS GET INTO ACTION

Then the tank came up, and you should have seen them run! Just like rabbits! The tanks retired; the boches reformed and came at it again. They tell me that at certain places our men withstood fifteen successive attacks and that the Germans went down in thousands. One Welshman told me that his gun accounted for seventy-five in three minutes during one wave.

Machine gun bullets were nipping around me, the shell fire was getting hotter, and even though it was a wonderful sight to watch I decided "discretion was the better part of valor," or something like that and got down in my dugout.

I was sitting there smoking a cigaret when my orderly came down and said I was being relieved and was to go back and work with the ambulance. Fifteen hours later the man that relieved me was captured.

From this point on, Dr. Pettit's description is so intensely interesting that nothing short of reading every word can convey an adequate picture of what his experiences were at this time:

I went back to the advanced dressing station through the hottest shell fire I ever experienced. More than once I went down on my face when a shell burst and the pieces went whizzing over my head. I spent the night in a mined village where the advanced dressing station was located, and all night they shelled it to blazes. It was remarkable how few casualties we had.

About 11 o'clock the morning of the third day a shell blew in the side of our post, but luckily no one was hurt. We stuck to it until about 4 in the afternoon, when we saw our men retiring over a ridge in front of us, keeping up a continuous machine gun and rifle fire, and we beat it back to another village and opened another post.

About 10 o'clock on the morning of the fourth day Lord Thyme, my colonel when I was with the battalion, stumbled into the shack where I was sitting. He looked like a ghost. He had lost his hat, his face was covered with a four days' beard, the sweat had traced tracks in the dust from his forehead to his chin. His sleeve was torn and bloody and he had a gash in his arm where he had been struck by a piece of flying shell case.

"My God, doc, are you here?" he said. "You got out just in time. The battalion is all gone. The sunken road is filled with dead—mostly Huns, damn 'em. The line broke on the right; we were surrounded, and at the last we were fighting back and back. Only thirty of us got away."

So we knew the boche had broken through to our right and our left, and it was a question of how long it would be before we, too, were surrounded, but we wanted to stick it out as long as we could.

TOLD TO RETIRE

But not more than an hour later a medical officer rushed in from one of the battalions and between gasps for breath told us the Germans were on the edge of the village, had shot him through the sleeve with a machine gun bullet (luckily that was all), and for us to beat it.

Let me tell you we did. I threw my knapsack and made the first hundred yards in nothing flat and then settled down to a walk because I was so out of breath I couldn't run any more.

The incessant scream and crash and bang of the shells kept up and the rat-tat-tat of the machine guns never ceased. The village immediately behind us was a seething mass of brick dust, smoke, flame, and bursting shells. We were told on our way back that a stand was to be made behind this village, so we circled around it and took up a position about a half mile behind it at a crossroads.

Unfortunately for us, a six inch battery came into action about fifty yards from us and, aside from the harassing effect of the terrific noise, batteries are always unpleasant neighbors, as they invite shell fire. We stopped here until 10 o'clock at night, when we were ordered to retire.

There was no way of getting out the wounded that we had collected, so the stretcher bearers carried them on their stretchers for six or seven miles. In fact, we all helped, and when we arrived at our destination at 4 o'clock in the morning of the fifth day we were all in.

I could hardly move, but after two big bowls of hot tea and some hard tack I turned in on the floor and slept like a log for four hours, when we moved to another place and opened a dressing station.

And so it went for three days more, open a dressing station, retire (sometimes on the run), long marches, very little to eat except what we foraged from abandoned camps and dumps, dog tired, sleeping when and where we could, and finally the division was relieved. We now saw our first civilians, and last night I slept in a bed. It wasn't much of a bed, and the mattress was full of humps, but to get my boots off my sore and aching feet, to stretch out, and know I wouldn't be routed out in fifteen minutes—well, you couldn't have bought that bed from me for \$100.

Then the good doctor is reminded of Robert W. Service's description of the retreat from Mons:

Tramp, tramp, the grim road, the road from Mons to Wipers;
I've 'ammered out this ditty with me bruised and bleeding feet;

Tramp, tramp, the dim road—

We didn't 'ave no pipers—

All bellies that were 'oller was the drums we 'ad to beat.

On the ninth day Dr. Pettit was relieved from duty with the British army and assigned to the American Expeditionary Force. All of his kit had to be burned to prevent it from falling into the hands of the enemy. While the doctor was "kitless" he certainly cannot be accused of being "witless."

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Major WILLIAM H. ALLEN.

To Camp Dix, Wrightstown, N. J., and Camp Upton, Long Island, N. Y., for duty, and on completion to his proper station, from Camp Meade, Lieut.-Col. PHILIP W. HUNTINGTON.

To Camp Dodge, Des Moines, Ia., Camp Grant, Rockford, Ill., Camp Custer, Battle Creek, Mich., Camp Sherman, Chillicothe, Ohio, and Cleveland, Ohio, for duty, and on completion to his proper station, Lieut.-Col. WINFORD N. SMITH.

To Camp Lee, Petersburg, Va., for temporary duty, and on completion to his proper station, Col. WILLIAM H. MONCRIEF. For temporary duty, from Camp Wheeler, Lieut.-Col. CONDON C. McCOR-NACK.

To Camp Lewis, American Lake, Wash., for duty, from Seattle, Lieut. CARLTON L. VANDERBOGET.

To Camp Perry, Ohio, for duty, from New Haven, Major ARDEN FREER.

To Camp Pike, Little Rock, Ark., for duty, from Camp MacArthur, Lieut. HALL G. VAN VLACK.

To Camp Zachary Taylor, Louisville, Ky., and Camp Sherman, Chillicothe, Ohio, for duty, and on completion to his proper station, from Camp Shelby, Lieut.-Col. ROBERT M. BLANCHARD.

To Cleveland, Ohio, for duty, and on completion to his proper station, Lieut.-Col. WINFORD N. SMITH.

To Fort Riley for inspection, and on completion to their proper stations, Major-General WILLIAM C. GORGAS, Col. EDWARD L. MUNSON.

To Muncie, Ind., Cincinnati, Ohio, and Indianapolis, Ind., for inspection, and on completion to his proper station, from Louisville, Major JOHN P. FLETCHER.

To Newport News, Va., for duty, and on completion to his proper station, Lieut.-Col. EDGAR KING. For duty, from San Francisco, Major ERNEST C. McCULLOCH. To Newport News, Va., Locust Point, Md., and New York City, for inspection, and on completion to his proper station, from Washington, D. C., Major FRANCIS X. STRONG.

To New York City for duty, and on completion to his proper station, from Camp Crane, Col. ELBERT E. PERSONS. Neurological Institute,

for instruction, and on completion to Hoboken, N. J., base hospital, from Fort Des Moines, Major ARTHUR C. STOKES.

To Pinchurst, N. C., and Birmingham, Ala., for duty, and on completion to his proper station, Col. ROBERT E. NOBLE.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, from Camp Beauregard, Major OLIVER L. POTHIER.

To San Francisco, Calif., as commanding officer of Letterman General Hospital, from San Francisco, Lieut.-Col. WALTER H. WINTERBERG. For duty, from Philippine Department, Major WALTER P. DAVENPORT.

To Springfield Arsenal, Springfield, Mass., U. S. Army General Hospital, New Haven, Conn., Waterchiet Arsenal, U. S. Disciplinary Barracks, Fort Jay, and U. S. Army General Hospital, Williamsbridge, N. Y., Picatinny Arsenal, Camp Raritan, Camp Alfred Vail, Little Silver, and U. S. Army General Hospital, Lakewood, N. J., for sanitary inspection, and on completion to his proper station, Lieut.-Col. FRANK W. WEED.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN L. GOOD.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ALBERT D. McFADDEN, Ariton.

To Camp Gordon, Atlanta, Ga., Camp Greene, Charlotte, N. C., and Camp Lee, Petersburg, Va., for conference, and on completion to his proper station, Major JAMES N. BAKER, Montgomery.

To Camp Travis, Fort Sam Houston, Tex., for duty, from duty as a private at Camp Wheeler, Lieut. ALVIN E. BELDEN, Birmingham.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. OLLIE P. BOARD, Birmingham.

To Panama Canal Department for duty, from Canal Zone, Capt. HENRY GOLDTHWAITE, Perdodo Beach.

Honorably discharged, Lieut. THEODORE M. BLAKE, Fruitdale. On account of physical disability existing prior to entrance into the service, Lieuts. JACOB D. STAPLES, Goodwater; CHARLES W. BRASFIELD, Linden.

Arizona

To Camp Cody, Deming, N. M., base hospital, from Camp Cody, Lieut. ROBERT FERGUSON, Bisbee.

To Camp Travis, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. SPENCER D. WHITING, Salt River.

To Fairfield, Ohio, Wilbur Wright Field, Signal Corps Aviation School, for duty, and on completion to his proper station, from Camp Sherman, Capt. CHARLES T. STURGEON, Globe.

Arkansas

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. RAYMOND C. WOLFE, Little Rock.

To Camp Travis, San Antonio, Tex., base hospital, from Camp Kearny, Lieut. JAMES W. RAMSEY, Jonesboro.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Wheeler, Lieut. WALLACE D. ROSE, Little Rock.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, from Camp Gordon, Lieut. ARTHUR G. KELLEY, De Witt.

California

To Ann Arbor, Mich., University of Michigan, for temporary duty, from New York City, Capt. BYRON P. STOOKEY, Los Angeles.

To Army Medical School for instructions, Lieuts. CARLTON S. ALLEN, Los Angeles; JAMES G. ANDERSON, Petaluma; RAY W. KARRAS, Sawtelle.

To Camp Fremont, Palo Alto, Calif., base hospital, Capt. WILLIAM W. CROSS, Fresno.

To Camp Grant, Rockford, Ill., for duty, from Camp Bowie, Capt. GEORGE A. FIELDING, Sawtelle.

To Camp Kearny, Linda Vista, Calif., base hospital, Major JEAN J. A. VAN KAATHOVEN, Los Angeles; Capt. GEORGE TUPPER, Long Beach; ELIOT ALDEN, EDWIN H. WILEY, JR., Los Angeles; THOMAS R. McHUGH, San Bernardino; Lieuts. KARL L. DIER-TERLE, SIMOND A. JESBERG; ARCH M. PAULSON; BRET A. SWARTZ, Los Angeles; from Camp Cody, Major WALTER V. BREN, Los Angeles; from Camp Fremont, Lieut. RUSSELL W. PRINCE, Los Angeles; from Camp Lewis, Capt. FREDERICK A. COLLIER, Los Angeles; from San Francisco, Lieut. ROBERT B. HILL, Los Angeles. For duty, Capt. GEORGE B. WORTHINGTON, San Diego; from duty as contract surgeon, at Camp Kearny, Lieut. LEON SHULMAN, Los Angeles. To Camp Kearny, Camp Fremont, Palo Alto, Calif., and Letterman General Hospital, San Francisco, Calif., for inspection, and on completion to Washington, D. C., for conference, and on completion to Fort McPherson, for temporary duty, from Los Angeles, Capt. JOHN C. WILSON, Los Angeles.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Lewis, Capt. MAYNARD C. HARDING, San Diego. For duty, Lieut. GLENN E. MYERS, Agnew.

To Camp Sevier, Greenville, S. C., base hospital, from Fort McHenry, Capt. HOWARD C. NAFFZIGER, San Francisco.

To Fort Leavenworth, Kan., for duty, Lieut. HERSEL E. BUTKA, Los Angeles.

To Fort Oglethorpe, base hospital, from San Francisco, Capt. LAWRENCE H. HOFFMAN, San Francisco; from Camp Fremont, Lieuts. EARL B. FITZPATRICK, Martinez; HERBERT J. COHN, San Francisco; from Fort Riley, Lieut. EARL L. LUPTON, Los Angeles.

To Fort Riley for instruction, Capt. ARTHUR McINTOSH, Berkeley; BERTRAM C. DAVIES, ROBERT C. HOWE, Los Angeles; JOHN H. MEYER, San Bernardino; Lieuts. ALVIN H. WILMAR, Paso Robles; WILLIAM J. CAESAR, Richmond.

To Lake Charles, La., Signal Corps Aviation School, for duty, from San Antonio, Major LORENZO F. LUCKIE, Los Angeles.

To Los Angeles, Calif., for duty, Lieut. PAUL K. SELLEY, Los Angeles.

To Mineola, Long Island, N. Y., Hazelhurst Field, Signal Corps Aviation Section, for duty, from Camp Lewis, Lieut. JAIME DE ANGULO, Carmel.

To New York City, Orthopedic Hospital, for instruction, from Army Medical School, Capt. JOSEPH W. COOK, Redlands.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. FREDERICK E. HERZER, Loma Linda.

Honorably discharged, Lieut. CHARLES A. MACKEY, Oakland. On account of physical disability existing prior to entrance into the service, Lieut. GEORGE D. TROUTMAN, Los Angeles.

Colorado

To Army Medical School for instruction, Lieuts. OMER R. GILLET, Colorado Springs; JOSEPH W. PECONY, Denver.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. JOHN C. HERRICK, Denver.

To Camp Cody, Deming, N. M., base hospital, Lieut. RANULPH HUDSTON, Denver.

To Camp Lewis, American Lake, Wash., base hospital, from Denver, Capt. ROBERT LEVY, Denver.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from San Antonio, Lieut. JOHN W. THOMPSON, Pueblo.

To Fort Riley for instruction, Lieuts. GEORGE B. LEWIS, WILLIAM ROBERTS, Denver; VARDRY A. HUTTON, Florence; EARL W. KEMBLE, Golden.

To Fort Thomas, Ky., for duty, from Fort Oglethorpe, Lieut. ORION A. GRANTHAM, Johnstown.

Connecticut

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. EDWARD B. ALLEN, South Manchester.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. LEONARD J. LOEWE, Higganum.

To Edgewood, Md., base hospital, Lieut. FRANK H. McLAURY, Westport.

To Fort Oglethorpe for instruction, Capt. HENRY G. ANDERSON, Waterbury; Lieuts. JOHN G. ADAM, Canaan; WILLIAM W. CRAMM, Mansfield Center; JAMES A. HARTEN, New Haven.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Capt. JOHN H. EVANS, Norwich. Neurological Institute, from Fort Oglethorpe, Lieut. RUSSELL B. STREET, Suffield.

To Pittsburgh, Pa., for instruction, and on completion to Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. OWEN J. GROAK, Bridgeport. On completion to Camp Pike, Little Rock, Ark., base hospital, Lieut. MAURICE J. STRAUSS, New Haven.

To Washington, D. C., for duty, Capt. WILLIAM C. DEMING, Georgetown. Gas defense service, for duty, Lieut. MICHAEL F. CLAFFEY, Naugatuck.

Delaware

To Fort Oglethorpe for instruction, Lieuts. HORACE J. WILLIAMS, Georgetown; ABRAM J. GROSS, Wilmington.

District of Columbia

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. HARRY L. SCHURMEIER, Washington.

To Fort Riley for duty, Capt. WILLIAM B. MACDERMOTT, Washington.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Hancock, Lieut. OLIVER C. COX, Washington.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Williamsbridge, Lieut. JAMES A. CAHILL, Jr.

Letter directing Lieut. EDGAR SNOWDEN, Washington, to Hoboken, N. J., for duty, revoked.

Florida

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. LELAND F. CARLTON, Tampa.

To Camp Grant, Rockford, Ill., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Capt. JOHN MACDIARMID, DeLand.

To Fort Oglethorpe for instruction, Capt. BEDFORD E. VAUGHAN, Palmetto.

To Panama Canal Department for duty, from Canal Zone, Capt. MAURICE B. HECK, St. Augustine.

Honorably discharged, Lieut. JOEL W. HOOD, Ocala. On account of physical disability existing prior to entrance into the service, Lieuts. OVODIA F. GREEN, Mayo; TOBERT H. TRAMMELL, Muskogee.

Georgia

To Army Medical School for instructions, Lieuts. WILLIAM P. PHILIPS, Atlanta; CHESTER A. WITMER, Waycross.

To Camp Gordon, Atlanta, Ga., base hospital, Major JAMES R. PAULIN, Lieuts. FORREST M. BARFIELD, Atlanta; JESSE H. CAMPBELL, Jefferson. For duty, from service as an enlisted man at Camp Wheeler, Lieut. JAMES M. TRIBBLE, Senoia.

To Camp Meade, Annapolis Junction, Md., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Meigs, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. REUBEN T. CAMP, Fairburn.

To Camp Taliaferro, Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Lieut. JAMES L. BLAIR, Atlanta.

To Fort McPherson, Ga., for duty, from New Orleans, Major WILLIAM A. CHAPMAN, Cedartown.

To Fort Oglethorpe for instruction, Capt. JOHN A. SELDEN, Macon. To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Gordon, Capt. FRANK BIRD, Valdosta.

To Newport News, Va., for duty, Lieut. LUTHER T. YOUNG, Atlanta.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. JEFFERSON W. PAFFORD, Nicholls.

Honorably discharged on account of physical disability incurred in line of duty, Capt. JESSE M. ANDERSON, Columbus.

Idaho

To Fort Riley for instruction, Lieut. FRANK W. MITCHELL, Blackfoot.

Illinois

To Army Medical School for instructions, Lieuts. WILLIAM D. NAPIANTEK, RICHARD TORPIN, Chicago; ARTHUR E. SHELTON, Clinton; PORTER W. HOPKINS, East Chicago; HOWARD E. WHARFF, Edwardsville; ROSCOE WHITMAN, Morris; LAWRENCE M. MARLEY, Nokomis.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. NELSON H. LOWRY, Jr., Chicago.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Greble, Major THOMAS A. WOODRUFF, Chicago; from Army Medical School, Lieut. CHARLES J. MANLOVE, Chicago.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ROY M. MONTFORT, Danville.

To Camp Custer, Battle Creek, Mich., base hospital, Capt. MAX L. MENDEL, EDWIN W. RYERSON, Chicago; WILLIAM B. FISK, Oak Park; Lieuts. JOHN D. DAVENPORT, EARLE B. FOWLER, HAROLD E. JONES, SELIM W. McARTHUR, Chicago; ERNEST N. GREENMAN, EDWIN S. HAMILTON, Kankakee; from Camp Grant, Major JOHN J. McCLELLAN, Lieut. THEODORE L. HANSON, Chicago; from Camp Greene, Lieut. RALPH B. BETTMAN, Chicago; from Camp Lee, Lieut. JOHN FAVILL, Chicago; from Camp McClellan, Lieut. ADELBERT M. MOODY, Chicago; from Fort Riley, Capt. THOMAS L. DAGG, Chicago; from New York City, Lieut. CHARLES L. MOIR, Chicago. As orthopedic surgeon, from Chicago, Lieut. ALFORD E. BUDDE, North Chicago.

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. ROBERT W. KISPERT, Chicago.

To Camp Dodge, Des Moines, Iowa, base hospital, Major NELSON M. PERCY, Capt. HENRY H. KLEINPELL, NELSON C. MORROW, Lieuts. JOHN P. ASHWORTH, CLARENCE J. HICKS, JR., BENNETT R. PARKER, ALBERT R. TORMEY, ANDERS J. WEIGON, Chicago; GEORGE H. SCHROEDER, Oak Park; ALEXANDER F. STEWART, Oneida; from Camp Bowie, Lieut. ERIC K. BARTHOLOMEW, Chicago; from Camp Custer, Lieut. HARRY J. DWYER, Chicago; from Camp Grant, Lieuts. THOMAS A. CARTER, Chicago; CARL F. LEWIS, Jerseyville; from Camp Pike, Capt. GEORGE F. DICK, Lieuts. MICHAEL M. CODY, ROBERT H. HENDERSON, Chicago; from Fort Oglethorpe, Lieuts. LEO M. CZAJA, SAMUEL C. FLEMING, JOHN J. LUCZAK, HERMAN C. SCHUMM, Chicago; from Fort Snelling, Lieut. THOMAS D. CANTRELL, Bloomington; from Fort Riley, Lieut. ROYAL W. DUNHAM, Chicago.

To Camp Gordon, Atlanta, Ga., base hospital, from Boston, Lieut. CLARENCE A. JACOBSON, Chicago.

To Camp Greene, Charlotte, N. C., base hospital, from Walter Reed General Hospital, Capt. BERNARD M. CONLEY, Wilmette.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Major MAURICE L. GOODKIND, Chicago.

To Camp Lee, Petersburg, Va., for temporary duty, and on completion to his proper station, Major ALLEN B. KANAVEL, Chicago.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. EVERETT E. HOWARD, Rossville.

To Camp Perry, Ohio, for temporary duty, from Camp Pike, Lieut. MILTON A. WIESE, Chicago.

To Camp Pike, Little Rock, Ark., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. ARTHUR C. CONRAD, Chicago.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Capt. LOUIS A. GREENSFELDER, Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Boston, Lieut. BENJAMIN J. SCHWARTZ, Waukegan.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. RALPH KING, Olney.

To Fort Benjamin Harrison, Ind., for duty, Lieuts. MARCUS S. FLETCHER, Georgetown; FRANK H. DEANE, Humboldt.

To Fort Bliss, Tex., to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso district, Capt. ROMNEY M. RITCHEY, Elgin.

To Fort Leavenworth, Kan., Signal Corps Training Camp, Capt. HALL WHITTAKER, Mount City.

To Fort McPherson, Ga., for duty, from Camp Gordon, Lieut. WILSON K. DYER, Kankakee.

To Fort Oglethorpe for instruction, Capt. CHARLES W. CARTER, Clinton; HENRY M. VAN HOOK, Mount Pulaski; Lieuts. JAMES A. LOMAS, ANTHONY T. WEBER, JOHN P. WOITALEWICZ, Chicago; WALTER F. DUCKETT, Forrest; JAMES J. ROSE, Marshall; CLYDE D. GULICK, Urbana; from Chicago, Lieut. DANIEL H. LEVINTHAL, Chicago.

To Fort Riley for duty, Capt. EDMOND A. HOLBERG, Chicago. For instruction, Capt. CHARLES B. YOUNGER, Chicago; JAMES F. PERCY, Galesburg; Lieuts. HARRY G. KITSCHLE, Canton; SYLVIO A. SCIARRETTA, ADOLPH D. TOLLEFSEN, Chicago; JOSEPH BRAYSHAW, Homer; ANTHONY B. ZWASKA, Rockton.

To Fort Screven, Ga., for duty, from Fort Oglethorpe, Lieut. CLARENCE McK. CHEADLE, Rockford.

To Hoboken, N. J., for duty, from the Surgeon-General's Office, Major PAUL B. MAGNUSON, Chicago; from Fort Oglethorpe, Lieut. HARRY E. VANDER BOGART, Chicago.

To Mineola, L. I., N. Y., for duty, from Fort Riley, Lieut. PAUL H. ROWE, Chicago.

To Mount Clemens, Mich., Selfridge Field, Signal Corps Aviation School, for duty, from Mineola, Lieut. ROBERT F. KNOLL, Chicago.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. IRA E. NEER, Springfield.

To New York City for duty, and on completion to his proper station, Major HARRY E. MOCK, Chicago. For instruction, from Fort Riley, Lieut. RAYMOND E. DAVIES, Chicago. Bellevue Hospital, for instruction, and on completion to Camp Dix, Wrightstown, N. J., base hospital, Lieut. ROLLE K. PACKARD, Chicago. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. CHARLES F. HARRIS, Chicago. Orthopedic Hospital, for instruction, from Chicago, Capt. ALBERT B. McQUILLAN, Chicago; Lieut. ELMER M. THOMAS, Aurora.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Wadsworth, Lieut. JOHN V. DILLMAN, Louisville.

To Pittsburgh, Pa., for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. LEROY H. HARNER, Chicago.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, Lieut. HARVEY T. LITTLE, Chicago.

To *Walter Reed General Hospital*, Takoma Park, D. C., for duty, from Fort McPherson, Capt. WILLIAM A. N. DORLAND, Chicago.

Honorably discharged, Lieuts. RESIN P. JOHNSON, Chicago; NORTON W. BOWMAN, Flora. On account of physical disability existing prior to entrance into the service, Lieut. E. N. RICHARDSON, Mattoon. On account of physical disability incurred in line of duty, Lieut. ALBERT R. CARTER, Murphysboro.

The following orders have been revoked: To *Camp Custer*, Battle Creek, Mich., Lieut. JOHN D. DAVENPORT, Chicago. To *Camp Custer*, base hospital, Capt. EDWIN W. RYERSON, Chicago.

Indiana

To *Army Medical School* for instructions, Lieuts. FORREST J. YOUNG, Milford; ARTHUR J. WHALLON, Richmond.

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. MERRILL S. DAVIS, Marion.

To *Camp Grant*, Rockford, Ill., for duty, from Camp Bowie, Lieut. MICHAEL ROBINSON, Muncie; from Garden City, Lieut. PAUL A. GARNER, Sidney.

To *Camp Meade*, Annapolis Junction, Md., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. CLYDE E. WATSON, Nampa.

To *Camp Pike*, Little Rock, Ark., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. DORSEY D. METCALF, Fort Wayne.

To *Camp Sheridan*, Montgomery, Ala., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Capt. AMZI W. HION, Indianapolis.

To *Camp Travis*, Fort Sam Houston, Tex., for duty, from Camp MacArthur, Capt. BEN WEBSTER, Kingsbury.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to *Camp Logan*, Houston, Tex., base hospital, Capt. JOSEPH H. WEINSTEIN, Terre Haute. On completion to *Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. CHESTER N. FRAZIER, Indianapolis.

To *Fort Benjamin Harrison*, Ind., for duty, Lieuts. MILLARD F. BRACKNEY, Mooresville; CHARLES N. COMBS, Terre Haute; LESLIE A. KUHN, Wyatt; CHARLES C. McFARLIN, Zenas; from New York City, Capt. FREDERICK M. WHISLER, Wabash.

To *Fort Des Moines*, Ia., base hospital, Lieut. CHARLES N. COMBS, Terre Haute.

To *Fort Oglethorpe* for instruction, Lieuts. BARUCH M. EDLAVITCH, Fort Wayne; GEORGE B. MORRIS, Petroleum; from Chicago, Lieut. THOMAS P. GOODWYN, South Bend.

To *Fort Riley* for instruction, from Fort Des Moines, Lieut. ARTHUR L. LEEDS, Michigan City.

To *Gettysburg, Pa.*, for duty, from Camp Sevier, Lieut. LLOYD H. SIMMONS, Millersburg.

To *Hoboken, N. J.*, for duty, Capt. CHARLES R. DANCER, Fort Wayne.

To *New York City* for instruction, from Camp Dix, Lieut. HARRY E. WOODBURY, Plymouth.

To *Philadelphia, Pa.*, University Hospital, for instruction and on completion to *his proper station*, from Fort McPherson, Capt. MALACHI R. COMBS, Terre Haute.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School* for duty, from Atlanta, Capt. MERTON A. FARLOW, Milroy.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. OTTO H. SWANTUSCH, Metz.

Resignation of Lieut. DAVID D. OAK, Whiclosse, accepted.

Iowa

To *Army Medical School* for instructions, Lieuts. CECIL C. BOWIE, Dedham; FRANK A. WILL, Des Moines.

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. THEODORE A. WILLIS, Iowa City.

To *Camp Colt*, Gettysburg, Pa., for duty, from Fort Logan H. Roots, Lieut. ORSON A. KELLOGG, Dows.

To *Fort Benjamin Harrison*, Ind., for duty, Lieut. FRANK A. HUBBARD, Columbus Junction.

To *Fort Riley* as instructor, from Boston, Capt. EDWIN E. HOBBS, Iowa City. For instruction, Lieuts. LEWIS A. HOPKINS Grinnell; CLARENCE McC. WRAY, Iowa Falls; FRED C. SMITH, Keokuk; from Fort Des Moines, Capt. THOMAS E. McCAUGHAN, Ireton.

To *Fox Hills, N. Y.*, for duty, from Camp Grant, Capt. ELMER J. LAMBERT, Ottumwa.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to *his proper station*, from Camp Travis, Lieut. HENRY E. KLEINBERG, Redfield.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to *his proper station*, from Camp Wadsworth, Lieut. MEREDITH B. MURRAY, Macedonia.

Honorably discharged, Capt. RAYMOND N. JACKSON, Fort Des Moines.

The following orders have been revoked: To *Army Medical School* for instruction, Lieut. CECIL C. BOWIE, Dedham. To *Camp Dix*, Wrightstown, N. J., for duty, from Camp Upton, Lieut. WILLIAM HARRIS, Moravia.

Kansas

To *Army Medical School* for instructions, Lieut. HOWARD E. MARCHBANKS, Pittsburg.

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. WILLIAM G. BOUSE, Centralia.

To *Camp Gordon*, Atlanta, Ga., as assistant to camp surgeon, from Fort Riley, Lieut. EMORY A. DRAKE, Natoma.

To *Fort Riley* for instruction, Lieuts. WALTER J. NICHOLS, Pittsburg; JOHN L. WORK, Topeka.

To *Fort Sheridan*, Ill., hospital train, Lieut. SOLON C. WINERY, Clearwater.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CHARLES W. ROBINSON, Atchison.

Resignation of Lieut. MALCOMB C. NEWMAN, Toronto, accepted.

Kentucky

To *Army Medical School* for instruction, Lieuts. JOSEPH A. WALL, Hopkinsville; WILLIAM P. K. HOWARD, Wallins Creek.

To *Camp A. A. Humphreys*, Accotink, Va., for duty, Lieut. ROY F. ROBINSON, Madisonville.

To *Camp Logan*, Houston, Tex., for duty, from Camp Cody, Lieut. GEORGE A. CRAFTON, Fulton.

To *Camp Sevier*, Greenville, S. C., base hospital, from Camp Sevier, Lieut. CHARLES L. VENABLE, Franklin.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Thomas, Capt. JOHN L. PYTHIAN, Newport.

To *Fort Bliss, Tex.*, to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso district, Lieut. EMORY L. DRAVO, Jeffersonstown.

To *Fort Oglethorpe* for instruction, Capt. FREDERICK I. YATES, Covington; Lieut. ROBERT F. JASPER, Somerset.

To *Fort Riley* for instruction, Capt. WILLIAM W. W. WILSON, Henderson.

To *New York City*, Bellevue Hospital, for instruction, and on completion to *his proper station*, from Camp Greene, Capt. BENJAMIN D. CHOATE, Louisville; from Fort Thomas, Capt. JOHN B. ROBARDS, Harrodsburg.

To *San Francisco*, Calif., Letterman General Hospital, for instruction, from Camp Kearny, Capt. JAMES W. HILL, Frankfort.

Louisiana

To *Camp Colt*, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. HENRY B. BURDESHAW, New Orleans.

To *Fort Bliss, Tex.*, to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso district, Major ROY McL. VAN WART, New Orleans.

To *Fort Oglethorpe* as instructor, from Camp Dix, Major KARL W. NEY, New Orleans.

To *Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, from Fort Oglethorpe, Capt. JOHN C. MARTIN, Lake Charles.

Maine

To *Army Medical School* for instructions, Lieut. FRANK O. BLOSSOM, Caribou.

To *Camp Devens*, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. HAROLD M. GOODWIN, Lincoln.

To *Camp Dix*, Wrightstown, N. J., base hospital, from Portland, Lieut. CARL D. GRAY, Portland.

To *Camp Hancock*, Augusta, Ga., base hospital, from Boston, Lieut. RAYMOND VAN N. BLISS, Bangor.

To *Camp Lee*, Petersburg, Va., base hospital, from Camp Lee, Capt. TALCOTT O. VANAMEE, Portland.

To *Camp Logan*, Houston, Tex., for duty, from Camp MacArthur, Lieut. PRESTON W. WHITAKER, Unity.

To *Hoboken, N. J.*, for duty, Lieut. JAMES M. STURTEVANT, Dixfield.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. BERNARD A. BAILEY, Wiscasset.

Maryland

To *Camp Crane*, Allentown, Pa., for duty, from Camp Dix, Capt. ALEXANDER D. McCONACHIE, Baltimore.

To *Camp Laurel*, Laurel, Md., for duty, from Army Medical School, Lieut. WILLIAM B. DAVIDSON, Baltimore.

To *Camp Logan*, Houston, Tex., for duty, from Camp MacArthur, Lieut. WILLIAM S. TILLET, Baltimore.

To *Camp Travis*, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort Riley, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

To *Danville, N. Y.*, for duty, Lieut. NOELAN D. C. LEWIS, Baltimore.

To *Edgewood, Md.*, base hospital, Lieut. MOSES R. KAHN, Baltimore.

To *Fort Leavenworth, Kan.*, Signal Corps Training Camp, for duty, from Fort Riley, Lieut. JOSEPH C. SCHAFER, St. Louis.

To *Fort Oglethorpe* for instruction, Lieuts. BENJAMIN M. JAFFE, ALBERT L. WILKINSON, Baltimore.

To *Gettysburg, Pa.*, for duty, from Fort Oglethorpe, Lieut. HENRY R. KRITZER, Baltimore.

To *New Haven, Conn.*, Yale University Medical School, for duty, Lieut. WILLIAM P. FINNEY, Jr., Baltimore.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to *Camp Greene*, Charlotte, N. C., base hospital, Lieut. VERNON H. CONDON, Baltimore.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, Lieut. CHURCHILL F. WORRELL, Baltimore.

To *San Juan, Porto Rico*, base hospital, Lieut. GABRIEL RIGAU, Baltimore.

Massachusetts

To *Army Medical School* for instruction in orthopedic surgery and on completion to *his proper station*, from Boston, Major ROBERT W. LOVETT, Boston. For instructions, Lieuts. MICHAEL T. SWEENEY, Atlantic; HENRY J. KEANEY, Everett; ALBERT A. NAUMANN, Springfield.

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. CLARENCE A. HYMAN, Boston.

To *Camp Devens*, Ayer, Mass., as division tuberculosis specialist, from Fort Oglethorpe, Capt. PARKER M. CORT, Springfield. Base hospital, Major EDWARD H. NICHOLS, Capt. ROBERT J. KISSOCK, Boston; WALTER A. LANE, Milton; Lieuts. MARTIN J. ENGLISH, ARCHIBALD McK. FRASER, JAMES J. PUTNAM, Jr., WOLFERT G. WEBBER, Boston; from Fort Leavenworth, Major JOHN J. THOMAS, Boston; from Fort Oglethorpe, Lieut. WILLIAM R. OHLER, Brookline; from Fort Riley, Capt. PAUL WITHINGTON, Boston; from New York City, Capt. DAVID D. SCANNELL, Boston; JOHN J. LAMBERT, Lowell.

To *Camp Lee*, Petersburg, Va., base hospital, Capt. JOHN G. HATHAWAY, New Bedford, and on completion to *his proper station*, Capt. RICHARD D. BELL, Somerville.

To *Camp Logan*, Houston, Texas., as a member of the board examining the command for mental and nervous diseases, from Camp Doniphan, Lieut. FRANCIS S. CALDICOTT, Milford.

To *Camp Meigs*, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. ISRAEL E. RUDMAN, New Bedford.

To *Camp Sheridan*, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. AUGUSTUS H. GALVIN, Springfield.

To *Camp Sherman*, Chillicothe, Ohio, Camp Lee, Petersburg, Va., and Camp Taylor, Louisville, Ky., for conference, and on completion to *his proper station*, from Camp Custer, Major WALTER R. WEISER, Springfield.

To *Camp Stanley*, Leon Springs, Tex., as orthopedic surgeon, from Fort Oglethorpe, Lieut. MARTIN J. SPELLMAN, Whitman.

To *Camp Upton*, Long Island, N. Y., as a member of the board examining the command for tuberculosis, from Springfield, Mass., Lieut. HARRISON M. STEWART, Pittsfield.

To *Cape May, N. J.*, base hospital, from Camp Meade, Lieut. DONALD J. McPHERSON, Boston.

To *Chicago, Ill.*, for duty, and on completion to his proper station, Major HORACE D. ARNOLD, Boston.

To *Fort Oglethorpe* for instruction, Lieuts. DEAN S. LUCE, Canton; HERBERT W. ELLAM, Gardner.

To *Fort Sam Houston, Tex.*, for assignment to duty, from Camp Cody, Lieut. AIME W. FREGEAU, Fitchburg.

To *Hoboken, N. J.*, for duty, Lieut. DAVID M. BUTLER, Brockton; from Dansville, Lieut. MERRICK LINCOLN, Worcester.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp McClellan, Lieut. KENNETH L. DOLE, Boston; from Camp Sheridan, Lieut. WYATT S. ROBERTS, Boston.

To *New York City*, Bellevue Hospital, for instruction, and on completion to *Camp Hancock*, Augusta, Ga., base hospital, Lieut. PAUL C. BENNETT, Allison. On completion to *Camp Sherman*, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Lieut. RALPH W. HAYWOOD, Salem. For instruction from Camp Dix, Lieut. ARTHUR J. GANLEY, Methuen.

To *Rockefeller Institute* for instruction, and on completion to Bellevue Hospital, New York City, for further instruction, and on completion to *Camp Upton*, Long Island, N. Y., base hospital, Major HENRY T. HUTCHINS, Boston. For instruction in laboratory work, and on completion to his proper station, from Otisville, Capt. GEORGE L. SCHADT, Springfield.

To the inactive list, Major SAMUEL J. MIXTER, Boston. Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. FRANK E. WHEATLEY, North Abington.

Resignation of Capt. OSCAR L. SPENCER, Lynn, accepted.

Michigan

To *Army Medical School* for instructions, Lieuts. WELLS B. FILLINGER, Grand Lodge; HAROLD L. HURLEY, JAMES A. McQUILAN, Jackson; J. ATWOOD WHITAKER, West Branch.

To *Camp Devens*, Ayer, Mass., base hospital, Major WILEY E. WOODBURY, Detroit.

To *Camp Grant*, Rockford, Ill., as member of the board examining the command for tuberculosis, from Fort Riley, Capt. WILLIAM J. MARSHALL, Flint.

To *Camp Hancock*, Augusta, Ga., base hospital, from Madison, Lieut. JAMES RHINES, Laurium.

To *Camp Lee*, Petersburg, Va., for duty, from Camp Lee, Lieut. MORTIMER E. DANFORTH, Stanton.

To *Camp Perry*, Ohio, for duty, Lieut. GUY G. ALWAY, Whitmore.

To *Camp Sherman*, Chillicothe, Ohio, base hospital, Major WILLIAM T. DODGE, Big Rapids; Capt. ROBERT BEATTIE, Detroit.

To *Camp Travis*, Fort Sam Houston, Tex., for duty, from Camp Cody, Capt. ALLEN C. TIFFANY, Mackinaw.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to *Camp Grant*, Rockford, Ill., base hospital, Lieut. JOHN J. WALSH, Escanaba.

To *Fort Bliss*, Tex., to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso District, Lieut. JAMES A. BELYEA, Detroit.

To *Fort Leavenworth, Kan.*, Signal Corps Training Camp, for duty, from Camp MacArthur, Lieut. VINCENT S. MANCUSO, Detroit.

To *Fort Oglethorpe* for instruction, Capt. SAMUEL C. CROW, Detroit; LUCIUS A. FARNHAM, Pontiac; Lieuts. MAURICE J. CROSS, Delton; DAVID C. EISELE, Gwinn; JOHN F. GRUBER, Mesick.

To *Fort Riley* for instruction, Lieut. HANA P. GOTFREDSEN, Onkama.

To *Fox Hills, N. Y.*, for duty, from Allentown, Major FREDERICK W. BAESLACK, Detroit.

To *Madison, Wis.*, University of Wisconsin, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Dansville, Lieut. BRUNO J. SAWICKI, Detroit.

To *Mount Clemens, Mich.*, Selfridge Field, Signal Corps Aviation School, from Detroit, Lieut. FRANK L. RYERSON, Detroit.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp Sheridan, Capt. FRANK C. KINSEY, Grand Rapids.

To *New York City*, Bellevue Hospital, for instruction, and on completion to *Camp Hancock*, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. HUGH R. HILDEBRANT, Dundee. On completion to *Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. FRED N. BLANCHARD, Detroit.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to his proper station, from Fort McHenry, Capt. GEORGE C. HAFFORD, Albion. On completion to his proper station from Camp Jackson, Lieut. EDWIN M. CHAUNCEY, Albion.

To *Washington, D. C.*, Elizabeth Hospital, for intensive training, from San Antonio, Capt. MYRON S. GREGORY, Eureka.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM J. DUBOIS, Grand Rapids.

The following orders have been revoked: To *Fort Riley* for instruction, Capt. ANDREW A. McKAY, Manistee; Lieut. SETH E. GILKEY, Detroit.

Minnesota

To *Army Medical School* for instruction, Lieuts. ALBERT M. TREAT, Blooming Prairie; MICHAEL A. DESMOND, Glenwood; FRANK B. MACH, Minneapolis; HAROLD E. MARSH, Rochester; HARRY W. ARNDT, St. Cloud.

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. PIO BLANCO, Rochester.

To *Camp Colt*, Gettysburg, Pa., for duty, from Mineola, Capt. JOHN W. LEE, Minneapolis.

To *Camp Crane*, Allentown, Pa., base hospital, from Camp Dix, Lieut. CHARLES D. SQUIRES, Rochester.

To *Camp Dodge*, Des Moines, Ia., as assistant to camp surgeon, from Fort Riley, Major PAUL B. COOK, St. Paul base hospital, Lieut. WALTER E. CAMP, Minneapolis.

To *Camp Jackson*, Columbia, S. C., for duty, from Camp Taliaferro, Capt. SOLOMON F. RUDOLF, Albert Lea.

To *Camp Shelby*, Hattiesburg, Miss., base hospital, from Rantoul, Major WALTER H. DARLING, Minneapolis; from Fort Oglethorpe, Lieut. THOMAS G. CLEMENT, Vernon Center.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Custer, Capt. CHARLES R. CHRISTENSON, Starbuck; from Camp Sherman, Lieut. ADOLPH E. DETUNEO, Preston. On completion to *Camp Doniphan*, Fort Sill, Okla., base hospital, Lieut. WILFRED P. FRELIGH, Stillwater.

To *Fort Oglethorpe* for instruction, from Newport News, Lieut. JOSEPH H. COSGROVE, Duluth.

To *Fort Riley* as instructor, from Boston, Lieut. OTTO L. WINTER, St. Paul. For instruction, Lieuts. JOHN F. TRAXLER, Henderson; GILBERT HENDRICKSON, Lewistown; GEORGE L. JOHNSON, Newfolden.

To *Fort Sam Houston, Tex.*, for assignment to duty, from Camp Cody, Capt. JAMES D. WALKER, Wykoff.

To *Mineola*, Long Island, N. Y., Hazelhurst Field, Signal Corps Aviation School, from Garden City, Lieut. REUBEN A. JOHNSON, Minneapolis.

Mississippi

To *Army Medical School* for instructions, Capt. HARVEY L. SHANNON, Itta Bona; Lieuts. RICHARD B. AUSTIN, Knoxville; FRANK A. ROGERS, McLaurin; FRANK L. McGAHEY, Sweetman.

To *Camp Grant*, Rockford, Ill., for duty, from Garden City, Lieut. GRAHAM W. DIGGS, Black Hawk.

To *Camp Laurel*, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAM C. HAYS, Blue Springs.

To *Camp Sevier*, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. ROBERT L. PEYTON, Jackson.

To *Fort Oglethorpe* for instruction, Lieuts. BURRELL S. HOOD, Bond; WILLIAM J. WHITEFOOT, Liberty; HENRY McC. BURNHAM, Moss Point.

To *Fort Sam Houston, Tex.*, for assignment to duty, from Fort Oglethorpe, Lieut. JOHN H. WOOD, Roxie.

To *Milwaukee, Wis.*, base hospital, from Camp Shelby, Lieut. LUTHER R. OTKEN, McComb.

To *Newport News, Va.*, for duty, Lieut. ARTHUR S. BRISTOWN, Princeton.

To *New York City*, Bellevue Hospital, for instruction, and on completion to *Camp Sevier*, Greenville, S. C., base hospital, Lieut. KUTCHEN T. KLEIN, Meridian. On completion to his proper station, from Camp Forrest, Lieut. JAMES S. REID, Lamkin.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to his proper station, from Camp Sevier, Lieut. MARCELLUS C. GARNER, Meridian.

To *Washington, D. C.*, gas defense service, for duty, Lieut. ROY W. CARRUTH, Tupelo.

Missouri

To *Army Medical School* for instructions, Capt. HUBERT B. REEDLE, St. Louis; Lieuts. THOMAS A. KYNER, Kansas City; SAMUEL E. GASTON, Meta; JAMES E. WILLIAMS, HUGH J. WITTWER, St. Louis; ABRAHAM L. STEPP, Vanduser.

To *Camp Dodge*, Des Moines, Ia., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. JACOB I. KENNEDY, Frankford. Base hospital, from Camp Grant, Lieut. JOHN AULL, Kansas City.

To *Camp Gordon*, Atlanta, Ga., base hospital, from Dansville, Lieut. EUGENE D. McCARTY, St. Louis.

To *Camp Grant*, Rockford, Ill., and *Camp Sherman*, Chillicothe, Ohio, for duty, and on completion to his proper station, Major FREDERICK W. BAILEY, St. Louis.

To *Camp McClellan*, Anniston, Ala., base hospital, Lieut. NEIL S. MOORE, St. Louis.

To *Camp Meade*, Annapolis Junction, Md., to examine the command for mental and nervous diseases, from Jefferson Barracks, Lieut. JAMES F. McFadden, St. Louis.

To *Camp Travis*, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. HARRY M. STRACHAN, St. Louis. For duty, from Fort Riley, Lieut. JOSEPH C. SCHAFER, St. Louis.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to *Camp Dodge*, Des Moines, Ia., base hospital, Capt. OWEN W. KRUEGER, Kansas City.

To *Fort Des Moines, Ia.*, base hospital, Lieut. HORACE S. DOWELL, Clearmont.

To *Fort Riley* for duty, Capt. CLARENCE MARTIN, St. Louis. For instruction, Lieuts. REGINALD C. McD. MILLAR, Foristell; WILFORD H. UROUHART, Holliday; ARTHUR C. LEONARD, Kansas City; WILLIAM T. DEAN, PATRICK McGENNIS, St. Louis.

To *Fort Sheridan, Ill.*, hospital train, Lieut. GEORGE D. McCARTY, Kansas City.

To *Fox Hills, N. Y.*, for duty, from Dansville, Capt. ELBERT J. LEE, Jr., St. Louis.

To *Hoboken, N. J.*, for duty, from Camp Meade, Lieut. JAMES B. BIGGS, Bowling Green; from Fort Riley, Lieut. JAMES C. LANDREE, St. Louis.

To *Jefferson Barracks, Mo.*, for duty, from New York City, Capt. MARC R. HUGHES, St. Louis.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp MacArthur, Major JOHN C. MORFIT, St. Louis.

To *Newport News, Va.*, for duty, Lieut. HOOPER W. WELCH, St. Louis.

To *New York City*, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Lieut. EDWARD X. LINK, St. Louis. Neurological Institute, for instruction, Lieut. SAMUEL F. WENNERMAN, St. Louis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. EDWARD E. HEIPLE, St. Louis. Resignation of Lieut. CLARENCE C. C. MAX, St. Louis, accepted.

Montana

To *Army Medical School* for instructions, Lieuts. LIONEL A. ANDERSON, Glendive; WALTER E. ESTABROOK, Moccasin.

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieuts. ARTHUR A. HUSSER, Hingham; JOHN W. OLSON, Troy.

To *Camp Sherman*, Chillicothe, Ohio, *Camp Lee*, Petersburg, Va., and *Camp Zachary Taylor*, Louisville, Ky., for conference, and on completion to his proper station, from Camp Dodge, Major THOMAS C. WITHERSPOON, Butte.

To *Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. CARL O. RINDER, Deer Lodge.

To *New York City* for instruction, from Fort Riley, Lieut. EARL S. PORTER, Moore.

Nebraska

To Army Medical School for instructions, Lieut. OSCAR F. LANG, Falls City.

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Lieuts. WARD W. HEDLUND, Ingleside; ANDREW J. SMITH, Salem.

To Camp Dodge, Des Moines, Ia., base hospital, from Fort Riley, Capt. HENRY R. MINER, Falls City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Dodge, Lieut. THOMAS E. ATKINSON, Mullen.

To Fort Des Moines, Iowa, base hospital, Lieut. EDWIN G. DAVIS, Lincoln; from Camp Pike, Lieut. HARRY E. FLANSBURG, Lincoln; from Camp Shelby, Capt. JOHN B. POTTS, Omaha; from Fort Oglethorpe, Lieut. GEORGE W. COVEY, Lincoln; from Fort Riley, Major CHARLES A. HULL, Capt. JOHN R. NILSSON, Omaha; JAMES C. WADDELL, Pawnee City; Lieuts. ROBERT C. PANTER, Dorchester; MILES J. BREUER, JAMES E. M. THOMSON, Lincoln; JOHN S. SIMMS, N. Platte.

To Fort Riley for instruction, Capt. FINDLEY J. McRAE, Albion; FRANK L. FRINK, Newman Grove.

To New York City, Neurological Institute, for instruction, and on completion to Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. ABRAHAM GREENBERG, Omaha.

Nevada

To Fort Riley for instruction, Lieut. HALLE L. HEWETSON, Las Vegas.

New Hampshire

To Camp Perry, Ohio, for temporary duty, from Camp Custer, Capt. JOHN B. WARDEN, Whitefield.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. MAURICE A. STARK, Goffstown.

To Fort Snelling, Minn., for duty, from Camp Pike, Major AMOS G. STRAW, Manchester.

To New York City, Bellevue Hospital, for instruction and on completion to his proper station, from Camp Devens, Capt. JOHN E. TOYE, Charlestown. To New York City for instruction, from Camp Dix, Lieut. RALPH S. PERKINS, Exeter.

New Jersey

To Army Medical School for instructions, Lieuts. ISADOR H. FRANKLIN, EDWIN PYLE, Jersey City.

To Bristol, Pa., for duty, from Dover, Lieut. ERNEST A. L. DICKINSON, Trenton.

To Camp Devens, Ayer, Mass., as member of a board examining the command for tuberculosis, from Fort Warren, Lieut. SAMUEL R. FAIRCHILD, Penn's Grove.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Sherman, Lieut. HOWARD S. SMITH, Newark.

To Camp Travis, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. CHARLES ENGLANDER, Cedar Grove.

To Fort Des Moines, Ia., for duty, from Army Medical School, Lieut. HALVOR L. HARLEY, Pleasantville.

To Fort McPherson, Ga., base hospital, from Fort Oglethorpe, Lieut. KENNETH E. McCAMEY, Jersey City.

To Fort Oglethorpe for instruction, Lieuts. KENNETH JOHNSON, Montclair; SYDNEY R. TITSWORTH, Plainfield.

To Hoboken, N. J., base hospital, Lieut. EVERETT A. TYLER, Haddon Heights. For duty, from Camp Lee, Lieut. AARON H. BALDWIN, East Orange.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Hancock, Augusta, Ga., base hospital, Capt. JOHN A. FREESE, East Orange. On completion to Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. LEONARD M. KALAHER, Jersey City.

To Washington Barracks, D. C., for duty, from Fort Oglethorpe, Lieut. HARVEY M. EWING, Montclair.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HARRY VAUGHAN, Morristown.

New Mexico

To Austin, Tex., University of Texas, for duty, Capt. THOMAS P. MARTIN, Taos.

To Camp Travis, Fort Sam Houston, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. ROLAND R. CROSS, Dulce.

To Fort Riley for instruction, Lieut. LEWIS B. ROBINSON, Pinos Altos.

To San Antonio, Tex., Kelly Field, for duty, Capt. WILLIAM MACLAKE, Silver City.

New York

To Army Medical School for instruction, Capt. ARTHUR F. HOLDING, New York City; Lieuts. SAMUEL L. TRUEX, Middletown; NATHANIEL CROST, ROBERT J. SHEA, New York City; HAROLD F. MORRISON, Tuxedo Park.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Delaware, Lieut. ROWLAND P. STANLEY, New York City; from Fort Oglethorpe, Lieuts. MORRIS T. KOVEN, Brooklyn; ISIDOR GRAD, New York City; HERBERT I. KALLET, Syracuse.

To Camp A. A. Humphreys, Accotink, Va., for duty, Lieut. JACOB J. STEINFELDER, New York.

To Camp Colt, Gettysburg, Pa., for duty, from Camp Logan, Lieut. FRANK A. WALDER, Lockport.

To Camp Devens, Ayer, Mass., base hospital, from Camp Dix, Capt. HENRY W. JACKSON, New York City; from Camp Dodge, Lieut. JOHN H. REYNOLDS, Brooklyn. As member of a board examining the command for tuberculosis, from Fort Warren, Lieuts. HERMAN JUDKOWITZ, Brooklyn; CLYDE D. OATMAN, Poolville.

To Camp Grant, Rockford, Ill., for duty, from Camp Bowie, Lieut. HARRY C. SAUNDERS, New York City; from Garden City, Lieuts. NORMAN L. SHEEHE, Dunkirk; HERMAN LEVISON, New York City.

To Camp Greene, Charlotte, N. C., for duty, from Camp Jackson, Major HARRY J. LIPES, Albany.

To Camp Lee, Petersburg, Va., base hospital, Lieut. ALEXIS V. MOSCHOWITZ, New York City; from Camp McClellan, Lieut. RAYMOND A. VOISINET, New York; from Camp Pike, Lieut. CHARLES PHILLIPS, New York City.

To Camp Logan, Houston, Tex., for duty, from Camp Bowie, Capt. STEPHEN J. H. REED, Fultonville.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. THOMAS F. MAHER, New York. To examine the command for mental and nervous diseases, Lieut. MELVIN J. TAYLOR, New York.

To Camp Meigs, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. PHILIP KORN, New York.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. HEMAN L. DOWD, New York City; from Fort Oglethorpe, Lieut. BERRYMAN GREEN, Jr., New York City.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Boston, Capt. ALFRED H. PARSONS, Great Neck.

To Camp Upton, Long Island, N. Y., as member of board examining the command for tuberculosis, from Springfield, Lieut. ADELBERT C. ABBOTT, Syracuse; base hospital, from New York City, Lieut. IRA W. LIVERMORE, Gowanda.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Kelly, Capt. DONALD T. McPHAIL, New York City.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. ST. CLAIR BARDEN, Poughkeepsie. Base hospital, Lieut. ROBERT G. CARLIN, New York City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion, to his proper station, from Camp Grant, Capt. JOHN M. KEYES, New York City.

To Fort Du Pont, Delaware, for duty, from Fort Oglethorpe, Lieut. MERLE Q. HOWARD, New York City.

To Fort Keogh, Mont., for duty from Garden City, Major JOSEPH B. COOKE, Cooperstown.

To Fort McHenry, Md., base hospital, Major WILLIAM F. HOMAN, New York City. For temporary duty, from Fort Oglethorpe, Lieut. BROOKS W. McCUEN, Syracuse.

To Fort Oglethorpe for instruction, Major FRED N. ALBEE, New York City; Capt. WALTER M. LIPPINCOTT, Long Island; ARTHUR E. GADBOIS, New York City; Lieuts. ABRAHAM FELDMAN, IRVING D. LAUDENTSCHER, DONALD E. McKENNA, JACOB J. SEIDENSTEIN, Brooklyn; LEO M. SACHS, HAWORTH R. TRAVER, Buffalo; STANLEY A. ALDERSON, WELLINGTON B. HUNTLEY, SIDNEY P. LEVY, THOMAS F. MAHER, MAN J. SCHROEDER, ROBERT J. SHEA, EDWIN D. SMITH, ELMER P. WEIGEL, New York City; ANTHONY BONDI, HAROLD L. ST. JOHN, Rochester; from Hoboken, N. J., Capt. HAROLD L. HUNT, New York City; from Springfield, Capt. BRUNO S. HOROWICZ, New York; from Camp Upton, Lieuts. FERDINAND F. SEIGEL, Brooklyn; GEORGE M. OPPERMAN, Buffalo.

To Fort Porter, N. Y., for temporary duty, Capt. JOHN A. HEATLY, Schenectady.

To Fort Riley, as assistant to camp surgeon, from Surgeon-General's Office, Major GEORGE DRAPER, New York.

To Fort Sam Houston, Tex., for assignment to duty, from Camp Cody, Lieut. HORD SHARP, New York.

To Fort Sill, Okla., Post Field, for duty, from San Antonio, Capt. JOHN D. GULICK, Schenectady.

To Fort Slocum, Camp Upton, Long Island, and U. C. Army General Hospital, Williamsbridge, N. Y., Harvard Graduate School of Medicine, Boston; Fort Banks, Winthrop, and Camp Devens, Ayer, Mass., U. S. Army General Hospital, Fort Ontario, N. Y., Camp Dir, Wrightstown, N. J., U. S. Filling Plant, Edgewood, Md., Camp Meade, Annapolis Junction, Md., and Fort Myer, Va., for orthopedic instruction, and on completion to his proper station, from New York City, Major BRAINERD H. WHITBECK, New York City.

To Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. BROOKS W. McCUEN, Syracuse.

To Hoboken, N. J., base hospital, Majors FREDERICK M. DEARBORN, New York City; ARTHUR R. GRANT, Utica; Capt. EDWARD G. RANDALL, Waterville; Lieuts. ALFRED A. RICHMAN, Brooklyn; FRANCIS T. CHASE, Utica; from Camp Lee, Capt. LLEWELLYN E. HETRICK, New York City. For duty, Lieuts. LOUIS COHEN, SAMUEL KRANSHAR, Brooklyn; JOHN A. CONLEY, Penn Yan; from Fort Oglethorpe, Lieut. LAWRENCE E. COTTER, Poughkeepsie.

To Jackson Barracks, La., for duty, from Fort Oglethorpe, Capt. WALDEMAR T. BROWN, Brooklyn.

To Lexington, Ky., University of Kentucky, to make physical examinations, and give medical attention to the drafted men to be enrolled at that institution, from Camp Custer, Capt. GEORGE F. MILLS, Oneida.

To Middletown, Pa., for duty, from Boston, Capt. WILLIAM W. LAING, Brooklyn.

To Mineola, Long Island, N. Y., Hazlehurst, Signal Corps Aviation School, from Garden City, Lieuts. HARRY FRIED, PAUL B. JENKINS, New York City.

To Mount Clemens, Mich., Selfridge Field, Signal Corps Aviation School, from Mineola, Lieut. JAMES P. FITZGERALD, New York City.

To New Haven, Conn., for duty, from Fort Riley, Capt. JOHN E. WHITE, Port Chester.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Travis, Lieut. FRANK E. FOX, Fulton.

To New York City for instruction, from Army Medical School, Capt. CHARLES F. E. PANNACI, Gloversville; from Camp Dix, Lieut. FRANK G. WALZ, Buffalo. Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Greene, Capt. JAMES R. SWANICK, Bronx; from Williamsbridge, Capt. HERBERT R. CHARLTON, Bronxville. On completion to Camp Hancock, Augusta, Ga., base hospital, Lieut. OSCAR I. BAUMAN, New York.

On completion to Camp Wheeler, Macon, Ga., base hospital, Lieut. PETER F. PURCELL, Salem. Neurological Institute for intensive training, Capt. WILLIAM M. KENNA, Mount Vernon; JAMES F. MUNSON, Sonyea.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, Capt. GEORGE W. CONTERNO, New York City. On completion to his proper station, from Camp Dix, CLARENCE B. GOULD, Batavia.

To Pittsburgh, Pa., for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. JAMES R. BOYD, New York City. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieuts. ISAAC E. GREENBERG, Brooklyn; LOUIS CARP, New York City.

To Rantoul, Ill., Chanute Field, Signal Corps Aviation School, for duty, from Camp Logan, Capt. SAMUEL M. STRONG, New York.

To Rockefeller Institute for instruction, and on completion to Williamsbridge, N. Y., for temporary duty, Major JOHN R. JENNINGS, Brooklyn. On completion to Bellevue Hospital, N. Y., for further instruction, Lieut. JAMES C. SULLIVAN, Buffalo. For instruction in laboratory work, and on completion to Army Medical School for duty, Lieuts. ETHELBERG E. CALLAGHAN, Brooklyn; RALPH F. GREGORIOUS, Corning. For instruction in the serum therapy of pneumonia, from Camp Devens, Lieut. ARTHUR H. TERRY, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. WILLIAM J. A. DONAHUE, Huntington; from Camp Meade, Lieut. ONSLOW A. GORDON, Brooklyn.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. HERBERT B. WILCOX, New York City; WARD W. MILLIAS, Rome.

Resignation of Lieut. GEDNEY JENKS, Hastings-on-Hudson, accepted.

Letter directing Lieut. HAROLD E. SHAVER, Sherman, to Hoboken, N. J., for duty, revoked.

North Carolina

To Army Medical School for instruction, Lieut. WILLIAM C. WILKINS, Apex.

To Camp A. A. Humphreys, Accotink, Va., for duty, Lieut. THOMAS C. LOVELACE, Mooresboro; from Fort Oglethorpe, Capt. GEORGE S. MACPHERSON, Highlands.

To Camp Perry, Ohio, for temporary duty, from Long Island, Lieut. JOHN C. DYE, Statesville.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Grant, Lieut. JOSEPH W. HOOPER, Wilmington.

To Fort Oglethorpe for instruction, Lieut. GEORGE T. WATKINS, Durham.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Fort McPherson, Capt. THOMAS M. CHANEY, Winston-Salem. On completion to Camp Jackson, Columbia, S. C., base hospital, Lieut. LEE JOHNSON, Gastonia.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. PERCIVAL R. BENNETT, Bryson City.

Resignation of Lieut. ERNEST L. ENGLISH, Rosman, accepted.

North Dakota

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. JAMES F. HANNA, Fargo.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. FRANCIS J. SCULLY, Bottineau.

To Camp Greene, Charlotte, N. C., Camp Meade, Annapolis Junction, Md., and Camp Lee, Petersburg, Va., for conference, and on completion to his proper station, from Camp Jackson, Major ERIC P. QUAIN, Bismarck.

To Fort Riley for instruction, Lieuts. JOHN A. JOHNSON, Grand Forks; DENNIE E. RYAN, Nankison.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. GEORGE V. JAMIESON, Devil's Lake.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Jackson, Columbia, S. C., base hospital, from Camp Dodge, Lieut. ALOYSIUS P. NACHTWEY, Dickinson.

Letter directing Lieut. DENIS E. RYAN, Hankison, to Fort Riley for instruction, revoked.

Ohio

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Lieut. JAMES McC. McGEORGE, Salem.

To Arcadia, Fla., Signal Corps Aviation School, from Dayton, Ohio, Major COURTNEY P. GROVER, National Military Home.

To Army Medical School for instructions, Lieuts. BRADNER E. GORHAM, Kent; GEORGE DUB. DUNN, Youngstown.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. MARTIN E. HERRELL, Woodstock.

To Camp Colt, Gettysburg, Pa., for duty, from Army Medical School, Lieut. THOMAS F. HIGGINS, Toledo.

To Camp Devens, Aver, Mass., as assistant to the camp surgeon, from Camp Greene, Major PAUL G. WOOLLEY, Cincinnati. Base hospital, from Army Medical School, Lieut. EDWARD REMY, Jr., Mansfield; from Hoboken, Lieut. MILTON J. LONGSWORTH, Lima.

To Camp Grant, Rockford, Ill., as member of the board examining the command for tuberculosis, from Camp Dodge, Lieut. JOSEPH M. ULRICH, Akron.

To Camp Hancock, Augusta, Ga., for duty, from Camp Gordon, Lieut. CHARLES R. DEEDS, Dalton.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. NEIL E. TAYLOR, Cincinnati.

To Camp Perry, Ohio, for temporary duty, from Long Island, Lieut. GEORGE W. MANNING, Kelleys Island.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieuts. JESSE E. THOMPSON, Bristolville; KARL H. BARTH, Chatfield; NATHAN H. KELLER, Cincinnati; WILLIAM A. LIESER, Fort Recovery; JOSEPH B. McHENRY, Hanoverton.

To Camp Taliaferro, Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Lieut. FRANCIS W. THOMAS, Piqua.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Doniphan, Lieut. CHELSEA A. COLEMAN, Dayton.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. ALEXANDER R. JOHNSTON, Lore City.

To Fort Oglethorpe for instruction, Capt. LUCIUS B. GOODYEAR, Toledo; Lieuts. LUCIAN D. CLARK, Akron; FRANK E. AYERS, Celina; HORACE F. TANGEMEN, Cincinnati; LESLIE J. PAUL, Cleveland; EDWARD VON DEN STEINEN, Cleveland Heights; ARTHUR C. RICHARDS, Columbus; MERLE D'A. McCUTCHEON, East Liverpool; FRED C. HUNT, Girard; JAMES F. EARP, Holgate; THOMAS A. MINAHAN, Jr., Hubbard; from Camp Shelby, Capt. CARL MULKY, Warrensville; from Chicago, Capt. JOHN W. HARTMAN, Findlay.

To Fort Sam Houston, Texas, for assignment to duty, from Fort Oglethorpe, Lieut. THOMAS H. WALKER, Cleveland.

To Fox Hills, N. Y., for duty, from Camp Grant, Lieut. CHARLES W. BEAMAN, Cincinnati.

To Hoboken, N. J., base hospital, Lieut. FRED B. GROSVENOR, Columbus.

To New York City, Orthopedic Hospital, for instruction, from Chicago, Lieuts. JOHN K. LAWSON, LEONARD E. STUTSMAN, Dayton.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Lee, Lieut. BENJAMIN H. GILLESPIE, Akron.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LOCKE E. W. HEABLER, Cleveland.

Oklahoma

To Army Medical School for instruction, Lieut. THOMAS B. TRIP-LETT, Moreland.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. ALONZO P. GEARHART, Blackwell.

To Camp Bowie, Fort Worth, Texas, base hospital, from Oklahoma City, Lieut. WILLIS K. WEST, Oklahoma City.

To Fort Riley for instruction, Lieut. EDWARD S. WEAVER, Dill City.

To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp McArthur, Waco, Texas, base hospital, Lieut. ROBERT B. GIBSON, Oklahoma City.

Letter directing Lieut. HERBERT V. L. SAPPER, Oklahoma City, to Fort Riley for instruction, revoked.

Oregon

To Army Medical School for instruction, Lieut. WENDELL J. PHILLIPS, Cornwallis.

To Camp Lewis, American Lake, Washington, base hospital, from Portland, Capt. JOSEPH L. MCCOOL, Portland.

To Fort Riley for instruction, Lieuts. JAMES L. WOODEN, Clatskanie; EDWARD L. ZIMMERMAN, Eugene; HERMAN R. KAUFFMAN, Forest Grove.

Pennsylvania

To Army Medical School for instructions, Lieuts. HENRY A. LAYE, Galetton; WILLIAM F. PETERS, Kelly Station; JACOB K. MARKS, Philadelphia; DAVID M. SHOEMAKER, Waynesboro.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieuts. WILLIAM C. KELLER, New Bethlehem; CHARLES F. BUTLER, Pittsburgh.

To Camp A. A. Humphreys, Accotink, Va., for duty, Capt. ANDREW A. O'DANIEL, HARRY A. DUNCAN, JOSEPH M. MIRMAN, Philadelphia.

To Camp Colt, Gettysburg, Pa., for duty, from Army Medical School, Lieut. JOHN W. BANCROFT, Johnstown.

To Camp Dix, Wrightstown, N. J., base hospital, from Army Medical School, Lieut. MAX A. BLUMER, Pittsburgh.

To Camp Dodge, Des Moines, Iowa, base hospital, from Camp Custer, Capt. WILLIAM W. RICHARDSON, Mercer.

To Camp Grant, Rockford, Ill., for duty, from Garden City, Lieuts. ROBERT E. BARTO, Elizabethville; MELVILLE M. PALMER, Homer; HERBERT B. SHEARER, Norristown; VICTOR J. B. FRIES, Philadelphia.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. SCOTT A. NORRIS, Homestead.

To Camp Logan, Houston, Texas, for duty, from Camp Cody, Lieut. JOHN N. NEWHOUSE, Pittsburgh.

To Camp Pike, Little Rock, Ark., base hospital, from Pittsburgh, Capt. RALPH V. ROBINSON, Pittsburgh.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. JAMES L. HEARD, North East.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieut. SETH A. BRUMM, Philadelphia.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. JAMES B. HELLER, Pottsville.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Camp Joseph E. Johnston, Lieut. ADDISON M. ROTHROCK, Reading; for duty from Camp Zachary Taylor, Lieut. THOMAS S. HICKS, Braddock.

To Camp Wheeler, Macon, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. BROWN FULTON, Pittsburgh.

To Chicago, Ill., Presbyterian Hospital, for inspection, and on completion to his proper station, from Fort Riley, Lieuts. GEORGE M. PURVES, ARTHUR R. WOODS, Philadelphia.

To Edgewood, Md., base hospital, Lieut. HENRY L. PICARD, Philadelphia; from Camp Pike, Capt. EARL McC. McLEAN, Eldred.

To Fort Jay, N. Y., for duty, Lieut. HAROLD A. GHERING, Edinboro.

To Fort Oglethorpe for instruction, Lieuts. W. STURGIS FRANK-ENBURGER, Allison; ALEXANDER W. SPEARS, Brownsville; FRANCIS H. MURRAY, Chester; RAYMOND J. HAUSER, Danville; FRANK F. D. RECKFORD, GEORGE A. ZIMMERMAN, Harrisburg; JOHN B. CRITCHFIELD, Lock Haven; CHARLES D. DIETTERICH, Parkerford; CHARLES A. BIGLER, Jr., ALFRED A. FERRY, LINWOOD L. RIGHTER, LOUIS SELIGMAN, JOHN H. WEBER, Philadelphia; HERBERT LER. JONES, Pittsburgh; SIMON B. GLICK, Reading.

To Fort Sam Houston, Texas, for assignment to duty, from Camp Cody, Lieut. JOHN D. PERKINS, Jr., Philadelphia; from Fort Oglethorpe, Lieuts. EDWIN S. POTTER, Ardmore; BARTON BROWN, Ellentown.

To Hoboken, N. J., base hospital, Lieut. ROBERT V. WHITE, Scranton; from Camp Dix, Lieut. KARL S. SIMPSON, Pittsburgh; from Fort Oglethorpe, Lieut. CHARLES D. SAUL, Philadelphia. For duty, Lieut. MICHAEL P. CORCORAN, Philadelphia.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. WILLIAM F. HERBST, Allentown.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Lee, Capt. WILLIAM D. HUNTER, Monessen; from Camp Jackson, Lieut. ROBERT N. McIVER, Philadelphia.

To Pittsburgh, Pa., for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. WILLIAM P. NOLAN, New Kensington.

To Rochester, N. Y., base hospital, Lieut. HIRAM RANDALL, Philadelphia.

To Rockefeller Institute for instruction, and on completion to Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Zachary Taylor, Capt. JOSEPH D. FARRAR, Philadelphia. For instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. FRED B. HARRINGTON, Pittsburgh.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Surgeon-General's Office, Lieut. CARL C. YOUNT, Philadelphia.

Honorably discharged, Lieut. JOHN O. CALHOUN, Pittsburgh. On account of physical disability existing prior to entrance into the service, Lieuts. JOHN S. ANDERSON, Greensburg; JOHN J. DAILEY,

McAdoo; CHARLES J. CAVANAGH, CLARENCE W. JUDD, Philadelphia; LEO DEL PARRY, Rock Glen.
Resignation of Capt. JAMES C. WILSON, Philadelphia, accepted.
Letter directing Lieut. HARRY J. OWENS, Hazleton, to Hoboken, N. J., for duty, revoked.

Porto Rico

To Army Medical School for instruction, Lieut. JUAN R. LAUGIER, San Juan.
To Camp Colt, Gettysburg, Pa., for duty, from Garden City, Lieut. MANUEL D. GARCIA, Barceloneta.
To San Juan, P. R., base hospital, Lieut. LUIS F. GONZALEZ, Gurabo. For duty, Lieut. JAIMIE J. FIGUERAS, San Juan.
To Washington, D. C., for consultation, and on completion to San Juan, P. R., Major WILLIAM F. LIPPITT, San Juan.

Rhode Island

To Camp Lee, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. ALLEN A. WEEDEN, Woonsocket.
To New York City, Neurological Institute, for instruction, Capt. JOHN B. FERGUSON, HERMAN C. PITTS, Providence. Bellevue Hospital, for instruction, and on completion to Camp McClellan, Anniston, Ala., base hospital, Lieut. GEORGE G. BERGERON, Warren.

South Carolina

To Army Medical School for instruction, Lieut. THOMAS A. PITTS, Charleston.
To Camp Laurel, Md., for duty, from Fort Oglethorpe, Lieut. ALLSTON N. WILLCOX, Nesmith.
To Fort Oglethorpe for instruction, Lieuts. HENRY P. WAGENAR, Charleston; CLAUDE B. MILLS, Cross Hill.

South Dakota

To Army Medical School for instructions, Lieut. WALTER C. MOODIE, Elk Point.
To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. ALEXANDER O. FASSER, Bellefourche.
To Camp Lewis, American Lake, Wash., base hospital, Lieut. FRANK C. SMITH, Yankton.
To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Custer, Battle Creek, Mich., base hospital, Capt. ARASTUS V. ELLIOTT, Beresford.
To Fort Riley for instruction, Lieuts. ALBIN D. SCHEIB, Hitchcock; ALBERT I. HAUGEN, McBride.

Tennessee

To Army Medical School for instructions, Lieuts. THOMAS E. WRIGHT, Bethpage; VIVIEN P. RANDOLPH, Memphis; IRA R. SISK, HUGH D. WHITE, Nashville.
To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. CECIL E. WARDE, Memphis.
To Camp Alfred Vail, Little Silver, N. J., for duty, Lieut. JOSEPH P. DELANEY, Chattanooga.
To Camp Sevier, Greenville, S. C., base hospital, from Camp Meade, Lieut. ALLEN L. LEAR, Sewanee.
To Camp Travis, Fort Sam Houston, Texas, base hospital, from San Antonio, Lieut. FLEMING J. O'CONNER, Jackson.
To Dallas, Texas, Love Field, Signal Corps Aviation School, from Camp MacArthur, Major VERNON K. EARTHMEN, Murfreesboro.
To Fort Oglethorpe for instruction, Capt. WILLIAM H. L. WHITE, Knoxville; MATHIAS B. MURFREE, Murfreesboro; Lieuts. COMPTON N. CROOK, Moscow; HEDDY S. SHOULDERS, Springfield; WILLIAM B. NASH, Stanton.
To Gettysburg, Pa., from Fort Oglethorpe, Lieut. JOHN W. FROST, Fruitland.
To New Haven, Conn., for duty, from Camp Devens, Lieut. LEOPOLD SHUMACKER, Chattanooga.
To New York City, Bellevue Hospital, for instruction, and on completion to Camp Meade, Annapolis Junction, Md., base hospital, Capt. FRANK GRAHAM, Memphis.
Honorably discharged, Lieuts. WILLIAM H. DELAP, LaFollette; CHESTER T. WATERS, Memphis. On account of physical disability existing prior to entrance into the service, Lieut. CLARENCE F. FOWLER, Llano.
The following orders have been revoked: To Camp Pike, Little Rock, Ark., for duty, Lieut. CARL R. CRUTCHFIELD, Nashville. To Fort Oglethorpe, base hospital, Major FRANK D. SMYTHE, Memphis.

Texas

To Army Medical School for instructions, Capt. MICHAEL M. WALKER, Wichita Falls; Lieuts. HARRY W. LEGGETT, Dallas; FREDERICK L. STORY, Ennis; WILLIAM O. PADGETT, Graham; WILLIAM K. LOGADON, Marlin; COLE F. SMITH, San Antonio.
To Camp Shelby, Hattiesburg, Miss., for duty, from Behbrook, Lieut. STERLING P. BOOTHE, Westhoff.
To Camp Zachary Taylor, Louisville, Ky., base hospital, Major ALFRED C. McDANIEL, San Antonio.
To Fort McPherson, Ga., for duty, from Camp Gordon, Lieut. CHARLES W. STEVENSON, Lorane.
To Fort Oglethorpe for instruction, Capt. EDWARD C. FOSTER, Whitt; Lieut. WILLIAM L. BABER, Winnsboro. To Fort Riley for instruction, Lieuts. WILLIAM C. KIDWELL, Bryans Mill; FRANK S. GLOVER, JR., Houston; JOHN E. LATTIMORE, Waco.
To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Austin, Capt. ROBERT A. TRUMBULL, Dallas; from San Antonio, Lieut. WILSON M. BASSETT, San Antonio.
To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Bowie, Capt. WILLIAM W. FITZPATRICK, Paris; Lieut. WILLARD C. HEARIN, Canton; from Camp Logan, Capt. WILLIAM F. McMANUS, Lieut. FRANK N. HAGGARD, San Antonio.
To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Wadsworth, Spartanburg, S. C., base hospital, from Camp Wadsworth, Lieut. THOMAS P. McCLENDON, Wortham.
To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. HUBERT L. BROWN, Sherman.
To San Antonio, Texas, Kelly Field, for duty, Capt. WALTER R. RUSSELL, Mart.
To Waco, Texas, Aviation Section Signal Corps, Lieuts. BEN C. SMITH, Brandon; Y. FRANK HOPKINS, Thrall.
To Washington, D. C., gas defense service, for duty, Lieut. JOHN W. GOODS, San Antonio.
Resignation of Lieut. HENRY BRADBROOK, Cat Springs, accepted.

Utah

To Fort Riley for instruction, Capt. CARL L. SANDBERG, Salt Lake City, Lieuts. GEORGE W. HANKS, Lchi; GEORGE W. GREEN, Vernal.

Vermont

To Army Medical School for instruction, Lieut. WILLIAM G. WATT, Vergennes.
To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. ALBION A. CROSS, Williamstown.
To Camp Gordon, Atlanta, Ga., base hospital, from Army Medical School, Lieut. JOHN P. TIERNEY, St. Johnsbury.
To Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ROWLEY S. FLAGG, North Troy.

Virginia

To Camp Lee, Petersburg, Va., base hospital, Major STUART McGUIRE, Lieut. ROY C. FRAVEL, Richmond; from Camp Doniphan, Capt. ERASMUS G. HOPKINS, Glen Allen; from Camp Greene, Capt. PAUL V. ANDERSON, Richmond; from Camp Jackson, Lieut. QUINTUS H. BARNEY, Richmond; from Camp Sevier, Lieut. WILLIAM B. PORTER, Richmond; from Fort Oglethorpe, Lieuts. FRANK C. PRATT, Fredericksburg; WILLIAM B. HOPKINS, ROBERT G. WILLIS, Richmond; from New York City, Capt. FREDERICK M. HODGES, Richmond; from Rockefeller Institute, Lieut. JOHN O. BOYD, Roanoke.
To Camp Sevier, Greenville, S. C., base hospital, Capt. BURNLEY LANKFORD, Norfolk; from Army Medical School, Lieut. BEVERLY R. WELLFORD, Richmond.
To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. WILLIAM B. McILLWAINE, III, Petersburg.
To Fort Des Moines, Iowa, base hospital, from Newport News, Lieut. FAYETTE A. SINCLAIR, Richmond.
To Fort Snelling, Minn., for duty, from Chicago, Major RHODRIC W. BROWNE, Norfolk.
To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Fort Monroe, Capt. WILLIAM W. GILL, Richmond.
To Waynesville, S. C., for duty, from duty as a contract surgeon, Lieut. DEAN B. COLE, Catawba Sanatorium.
Letter directing Lieut. CARRINGTON WILLIAMS, Richmond, to Fort Oglethorpe for instruction, from Richmond, revoked.

Washington

To Army Medical School for instructions, Lieuts. ALBERT W. TIEDEMANN, Baker; JOHN A. BOWLES, Black Diamond.
To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Flagler, HERBERT Y. BELL, Centralia.
To Camp Kearney, Linda Vista, Calif., base hospital, Capt. RICHARD H. LYON, Bothell; FRANK T. WILT, Seattle; Lieuts. HOWARD C. RANDOLPH, Aberdeen; WILLIAM C. KANTNER, HOWARD J. KNOTT, Seattle; from Camp Lewis, Capt. EDWARD P. PICK, Seattle; Lieut. GUY E. MARCY, Montesano; from Vancouver Barracks, Capt. FOREST A. BLACK, Seattle.
To Fort Riley for instruction, Lieuts. THEODORE L. BORDSEN, WILLIAM W. MATTSON, Seattle; from Portland, Oregon, Lieut. JAMES B. COUCHE, Twisp.
To Monterey, Calif., for duty, from Camp Fremont, Capt. SHIRLEY Q. ELMORE, Pasco.
To New York City, Neurological Institute, for instruction, from Camp Lewis, Capt. WILMOT DEL. READ, Tacoma. On completion to Hoboken, N. J., base hospital, from Camp Lewis, Capt. ALFRED J. HELTON, North Yakima.
To Philadelphia, Pa., University Hospital for instruction, and on completion to his proper station, from Camp Dix, Lieut. KARL S. STAATZ, Tacoma.
To Waynesville, N. C., for duty, from Fort Riley, Capt. KENELM WINSLOW, Seattle.

West Virginia

To Army Medical School for instruction, Lieuts. DAVID B. EALY, IVNA H. STIDGER, Moundsville.
To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Fort Oglethorpe, Lieut. EARL B. HENSON, Charleston.
To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. RUFUS M. MUSICK, Gilbert.
To Fort Oglethorpe, for instruction, Capt. HARRY G. STEELE, Bluefield.
To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, from Jackson Barracks, Lieut. LATIMER P. JONES, Pennsboro.
To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. SOLOMON L. CHERRY, Clarksburg.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE W. SHRIVER, Glendenin.
Resignation of Lieut. ALVIN McCLUNG, Pickens, accepted.

Wisconsin

To Army Medical School for instructions, Lieuts. ROBERT L. MACCORMACK, Alma Center; JOHN P. HARKINS, Forest Junction.
To Camp Cody, Deming, N. M., base hospital, from Camp Cody, Capt. GERARD A. BADING, Milwaukee.
To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Riley, Lieuts. ROY F. BREEDEN, Richland Center.
To Camp Laurel, Laurel, Md., for duty, from Camp Joseph E. Johnston, Lieut. LEON H. FLANCHER, Milwaukee.
To Camp Lee, Petersburg, Va., base hospital, from Camp Lee, Lieuts. CORNELIUS J. CORCORAN, Milwaukee.
To Camp Logan, Houston, Texas, for duty, from Camp MacArthur, Lieut. IVAN S. PIPPAN, Excelsior.
To Camp Meade, Annapolis Junction, Md., to examine the command for mental and nervous diseases, from Camp Devens, Lieut. CHAS. C. ROWLEY, Winnebago.
To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Custer, Capt. ALBERT A. MAURER, La Crosse; from Camp Zachary Taylor, Capt. BURT EXCOTT, Berlin. On completion to Camp Pike, Little Rock, Ark., base hospital, Lieut. EARL L. BAUM, Milwaukee.
To Fort Riley for instruction, Capt. CARL O. HERTZMAN, Ashland, AUGUST L. C. BORCHARDT, New London; Lieuts. HERMAN M. LYNCH, Allentown; HENRY A. SINCOCK, Odanah, KNUTE A. RUETHIN, Ridgeland, LOUIS M. PEARSON, Tomahawk.
To Mount Clemens, Mich., Selfridge Field, Signal Corps Aviation School, from Mineola, Capt. EDWIN G. FESTERLING, Reedsville.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Dix, Wrightstown, N. J., base hospital, Lieut. EDWIN R. F. MURPHY, Antigo.

To Philadelphia, Pa., University of Pennsylvania, for instruction and investigation, and on completion to his proper station, Major ROBERT H. IVY, Milwaukee.

To Pittsburgh, Pa., for instruction, and on completion to Camp Dix, Wrightstown, N. J., base hospital, Lieut. THEODORE C. H. ABEL-MANN, Watertown. On completion to Camp Meade, Annapolis Junction, Md., base hospital, Lieut. MORDAHL O. GUNDERSON, Beloit.

Wyoming

To Army Medical School for instruction, Lieut. EDWARD T. GAULE, Moorcroft.

To Fort Des Moines, Ia., base hospital, from Camp Dodge, Lieut. DURWARD B. PARK, Laramie.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Meeting of Orthopedic Association.—The thirty-second annual meeting of the American Orthopedic Association was held at the Army Medical School, Washington, April 22 and 23. The meeting was decidedly a war session, as the program was composed almost entirely of papers on orthopedic subjects connected with the Army and Navy service, and the authors were, for the most part, orthopedists now in the service.

ILLINOIS

Health Insurance Commission Begins Active Work.—The health insurance commission of the state of Illinois is arranging to send to all physicians in the state a questionnaire to be used in formulating a report on this subject for the governor and legislature. The personnel of the commission is as follows: William Butterworth, employer, Deere and Company; Dr. E. B. Coolley, president, Illinois Medical Society; Edna L. Foley, superintendent, Visiting Nurses' Association; Dr. Alice Hamilton; Mary McEnerney, secretary, Bindery Women's Union, member Women's Trade Union League; John E. Ransom, superintendent, Central Free Dispensary; Matthew Woll, president, International Photo Engravers' Union; M. J. Wright, farmer; William Beye, attorney, with wide experience in compensation legislation. It is hoped that physicians will give the matter their immediate attention and return the questionnaire promptly so that the medical profession's point of view may be presented to the governor.

Chicago

Personal.—Dr. Willis O. Nance, who, at the spring election, was reelected a member of the city council for his fifth term by a plurality of more than 6,000, was again chosen chairman of the committee on public health at the meeting of the council, April 22.

Smallpox.—During the week of April 20, three cases of smallpox in one day were discovered in the general offices of one of the railroads. Some months ago, the medical directors of all the railroads were called in conference by the health commissioner and requested to make it a requirement that all employees be vaccinated. All roads but this one had complied.

Notification of Venereal Diseases.—A letter addressed to physicians in the city has been prepared and is being distributed by policemen calling attention to the ordinance of July 29, 1917, requiring the reporting of venereal diseases on penalty of a fine of from \$25 to \$200 for neglect or refusal to comply with the ordinance. This is done to promote the general campaign against venereal diseases now being conducted by the federal government in the interest of the Army and Navy.

LOUISIANA

Bureau of Venereal Diseases Reports.—At the meeting of the Louisiana State Medical Society, held in New Orleans recently, a complete report by the bureau of venereal diseases was made to the society. The bureau was appointed by the Louisiana State Board of Health to investigate the social diseases problem and make recommendations. The members of the bureau were Dr. Merrick W. Swords, chairman; Dr.

Henry W. E. Walther, secretary; Dr. Abe Nelken, Dr. Joseph Hume, Dr. Silas Y. Alexander, Dr. John H. Ellis, Miss Agnes Morris, and Mr. Solomon Wolff. Dr. Henry F. Ader of New Orleans has been appointed head of the bureau.

Officers Elected.—At the recent meeting of the Louisiana State Medical Society the following officers were elected to serve for the ensuing year: Dr. Wilkes H. Knolle, New Orleans, president; Dr. G. M. G. Stafford, Alexandria, first vice president; Dr. Amedee Granger, New Orleans, second vice president; Dr. Albert E. Fossier, New Orleans, third vice president; Dr. Paul T. Talbot, New Orleans, secretary-treasurer; councilors from the congressional districts, Dr. Paul J. Gelphi, New Orleans; Dr. Homer J. Dupuy, New Orleans; Dr. Beverly W. Smith, Franklin; Dr. Joseph E. Knighton, Shreveport; Dr. Jesse L. Adams, Monroe; Dr. James J. Robert, Baton Rouge; Dr. E. M. Ellis, Crowley, and Dr. E. Lee Henry, Lecompte.

MARYLAND

Measles Epidemic Spreading.—As an indication that the epidemic of measles in Baltimore has not been checked, 123 new cases were reported to the health department within twenty-four hours during the past week and 1,000 cases have been recorded in the past ten days. The disease has gained foothold because parents have failed to regard measles as anything but a trifling ailment and because the premonitory symptoms indicate nothing very serious. The health department in a note of warning has advised parents to guard healthy children from contact with those having measles. The department is also fighting whooping cough, and seventeen new cases of this disease were reported in one day.

New Officers of the Medical and Chirurgical Faculty.—At the closing session of the Medical and Chirurgical Faculty of Maryland at Osler Hall, Baltimore, the election of officers took place and resulted as follows: president, Dr. John Rühräh; vice presidents, Drs. J. McFarland Bergland, Phillip Briscoe, Mutual, and James E. Deets; secretary, Dr. John Staige Davis, University, Va.; Treasurer, Dr. William S. Gardner; state board of medical examiners, Drs. J. McP. Scott, Hagerstown; Henry M. Fitzhugh, West Minister, and Henry T. Collenburg. After the election, a scientific meeting on end-to-end suturing of the intestine, personal hygiene and pneumonia in the army camps was held, followed by a clinic at the Johns Hopkins Hospital in the afternoon.

Personal.—Lieut.-Col. Thomas B. Fitcher of the Johns Hopkins Hospital, has just returned to Baltimore from England, where he has been in charge of the medical division of the Canadian Expeditionary Hospital for the past eight months.—The faculty of physics of the University of Maryland School of Medicine and College of Physicians and Surgeons has elected Dr. Charles L. Summers, Winston-Salem, N. C., professor of clinical pediatrics and visiting pediatrician to the university hospital. Dr. Summers has already entered on his new duties.—Capt. Henry W. Kennard, M. R. C., who has been for the past five years in the Philippines, has returned to Baltimore for a short time.—Capt. Hugh W. Brent, formerly of the staff of the university hospital, has arrived in France, where he is inspecting hospitals established for the American Expeditionary Force and will join the university hospital unit on its arrival in France. Captain Brent was connected with the Camp Meade Base Hospital before sailing.

MASSACHUSETTS

Tuberculosis Bill Fails.—In the legislature, April 18, the bill providing that careless and incorrigible tuberculous persons, who fail to observe the rules for the control of such patients, may be committed to institutions for treatment, failed by a vote of 72 to 30.

Personal.—Dr. George G. Sears, Boston, has been appointed by the mayor trustee of the Boston City Hospital.—Dr. Vernon C. Stewart, Woburn, has been named by the governor as medical examiner of Middlesex County.—Dr. Charles B. Frothingham, Lynn, has been made a trustee of the Boston State Hospital in place of Dr. John F. Fennessey, whose term has expired.

Cutter Lectures.—April 25 and 26, at the Harvard Medical School, Frederick S. Lee, A.M., Ph.D., professor of physiology in the College of Physicians and Surgeons, Columbia University, New York, delivered the 1918 Cutter lectures, his subject being "Industrial Efficiency and the War." These lectures are given annually on some subject in preventive medicine, under the terms of a bequest from the late John

Clarence Cutter of Boston, and are free to the medical profession and the press.

MINNESOTA

Major Jump to Recruit Physicians.—Major H. D. Jump, M. R. C., U. S. Army, will address the physicians of Minnesota, their wives, families and friends, in the Radisson Hotel, Minneapolis, May 18. Major Jump will speak on the needs of the government for 5,000 additional men for the Medical Reserve Corps of the Army, and for 2,000 for the Medical Department of the Navy. It is the earnest request of the Surgeon-General that all physicians under 55 years of age register themselves as ready for service. There will be a commissioned officer from the government present at this meeting in Minneapolis to examine all applicants for commissions. It is hoped that as many of the physicians of the state as possible will attend this meeting. It will be a patriotic meeting with prominent speakers present.

Minneapolis Clinic Week.—The clinic held in the twin cities, April 8 to 12, as already announced, was organized by the clinical section of the Hennepin County Medical Society. Various committees were appointed to carry on the work. In preparation for the session, the entire northwest states of Minnesota, North and South Dakota, Montana and the western section of Wisconsin were thoroughly circularized. During the session week, a daily bulletin was issued giving full advices as to all clinics. Nearly 300 physicians outside the twin cities registered. There were 158 clinicians and the clinics were held at fourteen different hospitals.

Special clinics in all the departments of internal medicine were given and clinics were held by the various specialists. In the afternoon there was a general session at the Radisson Hotel, where moving picture films were shown, and demonstrations were given, especially lantern slide demonstrations and such other material as could be presented without a didactic lecture.

MISSISSIPPI

Health Officer Discharged.—It is reported that the executive committee of the state board of health, April 6, summarily discharged Dr. Rockwell E. Smith, health officer of Smith County, recently charged by the military authorities as having accepted money to grant exemption certificates to selective service registrants.

Sanatorium Committee.—The following is the sanatorium committee of the state board of health: chairman ex-officio, Dr. C. D. Mitchell, president of the board, Jackson; secretary ex-officio, Dr. Waller Leathers, Jackson; Drs. Thomas H. Seay, Laurel; Harvey F. Garrison, Seminary; J. Harvey McNeill, Olive Branch, and Willie H. Watson, Brandon.

MISSOURI

Physician Wins Suit.—In the suit for \$16,500 damages brought by Miss Juliette Wurst against Dr. Remy J. Stoffel, wherein it was charged that the defendant had torn off the hat of the plaintiff, jerked her to her feet, and pulled her hair when she failed to stand during the playings of the "Star-Spangled Banner," April 4, the jury, after a short deliberation, rendered a verdict in favor of the physician.

Personal.—Dr. George P. Pipkin, formerly superintendent of the Kansas City General Hospital and health commissioner of the city, who was obliged to go to New Mexico a year ago on account of a physical breakdown, has returned recovered.—Dr. Max C. Starkloff, health commissioner of St. Louis, has been seriously ill with influenza.—Dr. Thomas T. Sawyer has succeeded Dr. Joseph B. Cowherd, who resigned as physician-in-charge of the eye, ear, nose and throat work of the school hygiene staff of Kansas City.

MONTANA

New Hospital.—Ground was broken for the new Deaconess Hospital at Billings, March 15.

Override Antivaccination Protests.—At a meeting of the state board of health in Helena, April 6, it was decided, despite protests from Butte, to adhere to the board's policy of compulsory vaccination. Laurel was added to the list of towns that have been ordered to vaccinate all their school-children at once.

Antituberculosis Work.—The field secretary of the state society for the study of prevention of tuberculosis has organized a public health society for Cascade County, and is organizing a similar society in Lewis and Clark County. The purpose of these organizations is to promote the study and prevention of tuberculosis, the establishment of tuber-

culosis sanatoriums and the opening of free tuberculosis clinics.

NEBRASKA

Dinner for Base Hospital Staff.—Dr. and Mrs. August F. Jonas, Omaha, gave a dinner, March 20, to members of the committee of physicians who organized the University of Nebraska Base Hospital Unit No. 49, which has been ordered to mobilize. The guests of honor were Major Arthur C. Stokes, director, and Major Charles A. Hull, chief of the surgical service of the unit.

Hospital Contract Awarded.—The contract for the erection of a new hospital building at the state industrial school for boys, Kearney, has been awarded to Ernest Rokahr, Lincoln, for \$22,465. The building will be paid for out of the cash fund of the institution, which has been accumulated by the sale of products raised by the inmates on the farm connected with the institution.

NEW JERSEY

Medical Group Elects New Officers.—The medical group of the Trenton Chamber of Commerce met, April 1, and elected Dr. Ira C. Leedom, chairman, and Drs. Walter T. Madden, and E. Gimmelley, vice chairmen.

Personal.—Dr. C. Hewson Canning, Atlantic City, fell three stories through an elevator shaft, March 23, fracturing his skull and sustaining other serious injuries.—Dr. H. L. Goddard, Vineland, has been appointed head of the bureau of juvenile research under the Ohio State Board of Administration, with headquarters in Columbus.

NEW MEXICO

Ban on Legalized Vice.—At a conference held at Santa Fe, March 29, by Dr. James A. Massie, president of the state board of health, Assistant Attorney-General Hatch, and Lieut. Paul Papenoe, representing the Surgeon-General of the United States Army, stringent measures were adopted to prevent the spread of venereal disease. It was decided that licensed houses of ill fame be abolished after April 15, and the reporting of venereal disease was made compulsory. The governor has agreed to provide \$3,500 to put these regulations into effect until the legislature convenes.

NEW YORK

State Closes Brooklyn Hospital.—At a special meeting of the state board of charities, held April 25, orders were issued closing the old Williamsburg Hospital, at Bedford Avenue and Third Street, in the Williamsburg section of Brooklyn. This order was prompted by the dangerous and unsanitary condition of the antiquated building. The institution was recently merged with the Eastern District Hospital to which institution many of the patients, following the order to close the Williamsburg Hospital, were removed.

Extension of Tuberculosis Work.—The details of a movement to aid local health authorities in dealing with tuberculosis growing out of the war conditions have been announced by the tuberculosis committee of the New York State Charities Aid Association. Two physicians, Dr. Elliott Washburn, former superintendent of the state tuberculosis sanitarium at Rutland, Mass., and Dr. Charles S. Prest of the New York State Department of Health, have been placed at the disposal of authorities throughout the state to aid in establishing dispensaries and providing medical oversight and supervision for tuberculous patients. It is estimated that the draft has revealed 22,000 cases of tuberculosis, in the great majority of which the patients must remain at home and be cared for. These cases serve to emphasize the need for a vigorous renewal of antituberculosis work.

New York City

City Hospitals Taken for Army.—After a conference between Mayor Hylan and representatives of the federal government, announcement is made that the government will take over the Sea View Hospital, on Staten Island, and the Otisville Sanatorium, at Otisville, N. Y. These institutions will be operated jointly by the federal government and the city officials. The government is planning to expend about \$450,000 in additional wards and beds.

Government Designates Hotels for Nurses.—Ten New York hotels owned and managed by the Knott Brothers have been designated by the government for the care of Red Cross nurses during their stay in New York when they have been assembled for transportation. These hotels have been selected

because of their convenience to steamship piers and because some of them have been designated for use as base hospitals and replacement stations.

Annex for Flower Hospital.—Flower Hospital celebrated April 21 as Loyalty Day. At the exercises on this occasion, Dr. Royal S. Copeland, president of the hospital, announced the gift of a completely furnished 300-bed annex to the hospital, by Charles M. Warner, president of the Warner Sugar Refining Company. A six-story building immediately adjoining the hospital building has been acquired for this purpose. This annex is to be used in caring for soldiers and sailors and will be ready for occupancy by August 1.

Meningitis Expert Goes to China.—Lieut. Peter K. Olitsky, Medical Corps, U. S. Army, and of the scientific staff of the Rockefeller Institute for Medical Research, on permission granted him by the Surgeon-General, sailed from Vancouver, April 11, for China, in response to a cabled request received by the institute from the colonial secretary at Hong Kong for assistance in a local outbreak of epidemic meningitis. Dr. Olitsky is to advise the Hong Kong government concerning the control of the disease, especially in the preparation of an effective serum and the institution of other therapeutic and prophylactic measures.

Clinical Facilities for Cruiser and Transport Force.—Through the mayor's committee on national defense, the commander of the Cruiser and Transport Force, United States Atlantic Fleet, has sought and obtained access to the clinics and hospitals of greater New York for the professional experience of medical officers of the cruisers and naval transports. A number of the hospitals of the city have announced hours at which clinics are held. The Society for the Advancement of Clinical Study in the New York Bureau of Clinical Information, New York Academy of Medicine, 17 West Fourth-Third Street, is prepared to give daily information of operations, hours and operators at the various hospitals throughout the greater city.

Protest Against Reorganization of Health Department.—Protests against the abolition of certain bureaus in the New York Health Department that have been shown to be essential to effective public health work continue to pour in from many quarters. Among those who have written letters to Mayor Hylan are Dr. William H. Welch, president of the Maryland State Board of Health and director of the school of hygiene and public health at Johns Hopkins University; Dr. William A. Evans, former commissioner of health of Chicago; Dr. Charles J. C. O. Hastings of Toronto, Canada, president of the American Public Health Association; Peter H. Bryce, chief medical officer, Department of Interior, Ottawa, Canada; Charles E. A. Winslow, professor of public health at the Yale University Medical School; Dr. Charles V. Chapin, superintendent of public health of Providence, R. I., and many others prominent in public health work. The protest against the proposal to abolish the bureau of public health education is especially emphasized by these authorities on public health matters. The Surgeon-General's Office has entered a protest and there has been a rumor afloat that the government would interfere if the efficient heads of bureaus were removed and inferior or untrained men and women employed. Surgeon-General Blue, in his letter says, "In the larger centers and industrial communities, health problems in their relation to industries have never constituted a more important consideration than in these days when increased production along many lines is absolutely essential. The conservation of health not only among the fighting forces, but in the entire civil population as well, is a war time problem of greatest moment. The day has passed when inferior men can do the work, and skilled men in sanitation and public health science are necessary." A statement issued, April 26, by James E. McBride of the municipal civil service commission contains recommendations made by Dr. S. Josephine Baker for the reorganization of her bureau along more economical lines, whereby she proposes a saving of \$105,000. The abolition of the district offices in the borough of Queens is recommended on the ground that the work in that borough was carried on effectively before those offices were established. Other economies, the recommendations state, could be effected by a reorganization of the nursing service and a reduction in the clerical work done by nurses, and part time inspectors could be required to work three and one-half hours a day instead of three hours.

OKLAHOMA

Tuberculosis Survey.—April 1, the Oklahoma Association for the Prevention of Tuberculosis began a series of public

health surveys in the larger towns of the state to secure reliable data concerning communicable diseases, particularly tuberculosis. The towns to be included in the survey are Oklahoma City, Tulsa, Muskogee, Enid, Shawnee, Bartlesville, Ardmore, Chickasha and McAlester. It was found last fall that the association was much handicapped in its work by the lack of information concerning health matters, hence these surveys were instituted. The information obtained by the surveys will permit of the inauguration of satisfactory measures for safeguarding the public health and a more comprehensive program with relation to tuberculosis. The surveys are in charge of M. P. Horowitz, of the department of biology and public health, Massachusetts Institute of Technology, and Dr. Gayfree Ellison, Norman, professor of bacteriology and hygiene of the University of Oklahoma, assisted by members of the executive and nursing staff of the state tuberculosis association, as well as by the staff of the state board of health and the board of agriculture. The surveys will be continued all summer and to the end of September.

PENNSYLVANIA

Personal.—Dr. Samuel P. Longstreet has been appointed director of the Scranton Health Department.—Dr. Roger P. Batchelor has been appointed superintendent of the Palmerston Hospital, succeeding the late Dr. John W. Luther.—Dr. Walter W. Seibert of Easton has been elected president of the Lehigh Valley Homeopathic Medical Society.—Dr. Florence L. Marsh of Mount Pleasant celebrated her fiftieth year in the practice of medicine, having graduated from Jefferson Medical College in 1868.

Philadelphia

Naval Hospital Provided.—In the program to build fifteen temporary naval hospitals approved by the house of representatives, two will be located in Philadelphia, one of them being on League Island.

Fund to Fight Mosquitoes.—The state department of health has been granted \$75,000 by the state commission of the National Council of Defense to fight mosquitoes in the vicinity of Hog Island and League Island.

Public Health Day.—Wednesday, May 1, Public Health Day was celebrated by a great public health meeting at the academy of music. Dr. William W. Keen presided and addresses were made by former President W. H. Taft, Dr. Alice Weld Aallant, Dr. James M. Anders and Dr. Wilmer Krusen, chief of the department of public health and charities. This meeting was under the auspices of the College of Physicians, the county medical society, the Child Federation, the Pennsylvania Society for the Prevention of Tuberculosis, the City Club, the board of education, the board of recreation and the city health department.

Personal.—Dr. Ross B. Cobb has been appointed a city physician in the bureau of charities at a salary of \$720 a year.—Dr. Ida L. Dunmoyer has been made assistant physician in the bureau of charities at a salary of \$1,000 a year, and Dr. Alma H. Hinman has been appointed clinical physician in the bureau of charities at a salary of \$900.—Dr. Samuel McClintock Hamill addressed the committee conference at its annual meeting at the City Club, Monday, April 22, on "What Philadelphia Can Do and the Duty of the City in Child-Saving."—Dr. H. Augustus Wilson has resigned the chair of orthopedic surgery in the Jefferson Medical College. Dr. Henry W. Stelwagon has resigned from the chair of dermatology in Jefferson Medical College. Both resignations are to take effect at the close of the present college year.—Dr. George A. Meeker has been appointed dean of the postgraduate school of the University of Pennsylvania.—Dr. Paul J. Pontius was elected a member of the board of directors of the Philadelphia County Medical Society, to fill the unexpired term of Dr. J. Norman Henry, resigned.

RHODE ISLAND

Relief Plans Outlined.—At a meeting of the Rhode Island Medical Society in Providence, March 20, Dr. N. Darrell Harvey, after giving an account of the work of the Rhode Island Red Cross Relief Unit, Halifax, N. S., last December, detailed the proposed plans for effective emergency relief work, which could be given Providence in the event of a similar disaster. The city is divided into eight precincts, in each of which two physicians are assigned to duty. Provision is made for keeping records of all patients treated, and for a house-to-house canvass by social service workers and nurses. The available amount of medical and surgical sup-

plies is ascertained and also the amount to be obtained from the department stores for relief work. Nurses, physicians, stretcher bearers, and orderlies have been enrolled, and automobile trucks and buildings suitable for hospital purposes have been secured.

SOUTH CAROLINA

County Tuberculosis Camp.—The work preliminary to the establishment of Camp Alice, Sumter County Tuberculosis Camp, which was made possible by Mr. H. J. Harby's donation of \$10,000 in cash and a site for the institution, has been practically completed. The work of construction will be begun as soon as the site can be cleared.

Personal.—Dr. Skottowe B. Fishburne, city health officer of Columbia, has sent in his resignation, which took effect, May 1. Dr. R. T. Jennings has received a temporary appointment as his successor.—Dr. Baxter Haynes, Spartanburg, has entered on his duties as health officer of Spartanburg County.—Dr. Charles E. Low, Spartanburg, formerly health officer of Spartanburg County, has resigned to accept the position of director of health in Wilmington, N. C.

CANADA

University News.—About sixty young doctors just graduated from the University of Toronto will join the Canadian Army Medical Corps within the next month. Many of the third and fourth year men have already offered themselves for service on destroyers and elsewhere.—Queen's medical faculty are making preparations with regard to the new military service regulations. Men liable for service under the act are being placed in the C. A. M. C. for service in Canada, and will be allowed to continue their studies next fall if conditions permit. A summer session will likely be held to provide for fourth-year men graduating in the fall.—It is reported that the students of Laval University, Montreal, are joining the colors in large numbers.

Cod Liver Oil.—According to *Commerce Reports*, large quantities of cod liver oil are produced in Newfoundland as a by-product of the fishing industry. The quality of the oil heretofore however, has been said to be inferior to that prepared in Norway. In 1910, the government procured an expert from Norway and a law was passed in 1916 requiring refiners of cod liver oil to take out licenses. The product has been much improved and it is said oil as good as that produced in Norway is now obtainable from Newfoundland. The production of refined oil has increased considerably in the past few years. In 1913-1914, the amount of refined oil exported was 26,218 gallons, in 1914-1915 it was 47,170 gallons, and in 1915-1916 it was 142,637 gallons. The amount of common oil exported during those years was in excess of a million gallons a year, and a greater output of refined oil only awaits a market.

Saskatchewan Medical Legislation.—It has been decided in the province of Saskatchewan to place the medical men under their own act, the medical profession act, and the irregular practitioners under the act respecting drugless healers. Under the latter, the commissioner of public health shall admit on the register of drugless practitioners and issue licenses to every person registered under the osteopathic act at the time this act comes into force, whose fees at such time are fully paid. Such persons shall not be restricted in the practice of their profession to a greater degree than they are restricted by the osteopathic act. The commissioner of public health shall also admit any person who has been certified to by the registrar of the University of Saskatchewan as having satisfactorily passed the examination for drugless practitioners and who produces satisfactory evidence of his identity as being the person certified, as well as evidence that he is 21 years of age, and is of good character, provided that such person shall be restricted to the practice of the method of treatment cited in his license. A drugless practitioner may use words or symbols to designate his calling, and may use the title, "doctor" or "physician," provided it is used in connection with words indicating that he is a drugless practitioner, or he may adopt the title "manipulative surgeon." Otherwise, he shall not use the letters "M.D.," or the prefix "Dr.," or the term "doctor" or "physician" or "surgeon," or the words "Doctor of Medicine," or "physician and surgeon" in connection with his name, nor shall he by advertisement, announcement or otherwise represent himself as a physician or surgeon.

Personal.—Lieut.-Col. James J. Fraser, D. S. O., Walkerton, Ont., has returned to Canada on leave from overseas service. Colonel Fraser went over as a captain, but has since

gained his promotion, and also D. S. O., having been mentioned in despatches three times.—Major George F. Boyer, Toronto, who has been overseas with the University of Toronto Base Hospital, has returned. He served at Saloniki and later at Shorncliffe, Ramsgate and Buxton.—Dr. O. R. Avison, president of the Severance Union Medical College at Seoul, Korea, is on a visit to Toronto. Before going to Korea twenty-five years ago, Dr. Avison practiced in Toronto.—Major Alexander Mackay, Toronto, who has been overseas at the Ontario Military Hospital, Orpington, England, has been appointed inspector of prisons and hospitals for the insane and other charitable institutions in Ontario, succeeding the late Robert W. Bruce Smith.—It is understood that Capt. Frank S. Park and Walter R. W. Haight, Toronto, who were taken prisoners by the enemy at Zillebeke in 1916, have been released in a recent exchange of prisoners.—It is announced that Dr. Alfred Thompson, Dawson, elected a member of parliament for the Yukon, will resign his position as medical superintendent of the hospital for returned invalided soldiers.—Col. William B. Hendry, Toronto, who has been consulting with the University of Toronto authorities as to the university base hospital in England, has returned overseas.—Col. James A. Roberts, Toronto, who went overseas three years ago in command of the University of Toronto Base Hospital, has recently been appointed assistant medical director of services in London, England.—Capt. George Ewart Wilson, Toronto, who served overseas nearly three years with the University of Toronto Base Hospital, is now in Toronto, and has been appointed to the military section of the Toronto General Hospital, under Col. Alexander Primrose.—Dr. Clarence M. Hincks, Toronto, has been appointed secretary and assistant medical director of the Canadian National Committee for Mental Hygiene, a new organization just formed in Ottawa.—Dr. Agatha Doherty, Toronto, is junior surgeon on the staff under Dr. Aldrich Blake of the hospital for women, London, England. Dr. Doherty is also lecturing at the Queen Charlotte Hospital, and is connected with the Women's Compensation Board for the Marleybone district.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

An addition to the Good Shepherd Hospital, Syracuse, N. Y., for the care of wounded American soldiers, and two scholarships in the Harvard Medical School, by the will of Mrs. Elizabeth C. Farnham of New York City.

Sanitary Conference.—A conference of health and sanitation experts of the South was held at Birmingham, Ala., March 25 and 26, under the presidency of Dr. Watson S. Rankin, Raleigh, N. C. The principal subjects discussed were soil pollution and its prevention, the diseases arising from soil pollution, including typhoid fever, dysentery, and hookworm disease, and compulsory sanitary ordinances.

For Poliomyelitis Work in South Africa.—At the request of the South African Institute for Medical Research, the Rockefeller Institute for Medical Research has arranged with the Vermont State Department of Health to release Dr. Edward Taylor for temporary service in Johannesburg, in order that he may advise the government there in respect to an epidemic of poliomyelitis prevailing in that region. Dr. Taylor sailed from New York, April 20.

Eighth Pan-American Medical Congress to Meet at Buenos Aires.—The official notice has been received by the authorities of Argentina from the permanent international committee that, according to the unanimous vote at the seventh congress, held at San Francisco, the next meeting will convene at Buenos Aires. The Academia de Medicina has been empowered to appoint the committee of organization for the celebration of the congress, the Eighth Pan-American Medical Congress, in 1919.

District Association Meeting.—The spring meeting of the Iowa and Illinois Central District Medical Association was held at Rock Island, Ill., April 11. After the presentation of clinical cases, Dr. Henry Albert, Iowa City, Iowa, gave an illustrated talk on "Animal Parasitic Infections Increased by War Conditions." Dr. Clifford U. Collins, Peoria, Ill., presented a paper on "Parotitis as a Postoperative Complication," illustrated by lantern slides, and Dr. David S. Fairchild, Clinton, Iowa, gave some reflections on medical economics.

National Tuberculosis Association Meeting.—In the *Bulletin* of the National Tuberculosis Association for April, it is announced that the name of the National Association for the Study and Prevention of Tuberculosis has been changed to

the National Tuberculosis Association. The fourteenth annual meeting of the organization will be held in Boston, June 6, 7 and 8, 1918. The Copley-Plaza Hotel will be the place of meeting, and on the evening of the first day there will be a meeting of the American Sanatorium Association. The preliminary program is being sent out from the executive offices, 105 East Twenty-Second Street, New York. The new address of the association is 381 Fourth Avenue, New York. The association has recently been incorporated. A committee on federal legislation has been appointed, and also a committee of five clinicians to act for the association in cooperation with the military and naval authorities in government plans for caring for soldiers and sailors suffering from tuberculosis.

Prevention of Blindness.—The third annual report of the National Committee for the Prevention of Blindness, covering the calendar year 1917, shows that, in the thirty-one state schools for the blind in the United States, there was a total of 2,961 pupils blind from ophthalmia neonatorum. In addition, there were 375 pupils in classes for the blind in public schools, making a total of 3,336 pupils blind from this cause. Three states, Delaware, Minnesota and North Carolina, were added to the list of states having laws for the prevention of ophthalmia neonatorum. During the year, the committee undertook more active work in the prevention of eye injuries in the industries, of which there were about 200,000 among the two million nonfatal accidents in industrial occupations, or 10 per cent. of the total. Approximately 15,000 persons in the United States are blind as the result of industrial injury. The committee has carried on its campaign of education in prevention by lectures, exhibits, and publications of various sorts, as well as by personal work of the officers and others of the committee. During the fifteen months from October, 1916, to the end of December, 1917, the expenditures of the committee were \$22,375, and there was a balance of \$6,543.03 on hand to begin the work of the new year.

FOREIGN

Medical School in French African Colony.—Provisions have been made for a medical school at Dakak in French West Africa. The aim is to train native practitioners and midwives.

Price of Paper in France.—The *Paris Médical* cites a recent official publication which mentions that while paper in the second quarter of 1914 cost 27 francs, in 1915 the same amount cost 31.2; in 1916, 55.65; in 1917, 81, and in January, 1918, 145, with a jump to 160 the following month.

Deaths in the Profession Abroad.—H. Mallet, professor of pediatrics at the University of Geneva, aged 43.—P. M. C. B'arez, professor of chemistry at the University of Bordeaux and author of over 200 works on pure and applied chemistry, aged 66.—E. T. Speyr, a leading Swiss ophthalmologist, and writer on his specialty, aged 50.—the *Nederlandsch Tijdschrift* mentions the death of O. von Sicherer, professor of ophthalmology at the university of Munich, and of Prof. A. Wossidlo, a urologist of Berlin, aged 63.

CENTRAL AND SOUTH AMERICA

Lepers Escape from Colony.—On account of dissatisfaction with the food furnished them, 300 lepers segregated in the colony at Agua de Dios near Bogota, Colombia, escaped from their keepers, and scattered to various parts of the Sanlander district.

Porto Rico's Roll of Honor.—The *Boletin de la Asociacion Medica* gives the names of fourteen physicians who have responded to the call of the Surgeon-General and joined the Medical Corps of the American Army. Some have given up a good practice or remunerative position. Those from San Juan are Drs. Laugier, Font, Lippitt, Igaravidez, Glines, Casellas and Ferrer; from elsewhere in the island, Drs. Benitez, De Quevedo, Caparro, Mejias, Janer and Crescioni.

Semicentennial of Bahia Medical Journal.—The *Gazeta Medica da Bahia* celebrates its fiftieth anniversary by issuing a special number of 364 pages. Bahia is on the seacoast of northern Brazil and its university dates from 1808. Among the collaborators on the *Gazeta* are Profs. P. Pereira, C. Fraga, C. de Andrade, and Drs. O. Torres, A. de Britto and O. Freire—all authorities on various phases of tropical medicine. This special number contains reviews of the incidence of beriberi, malaria, trachoma, and tropical and general diseases at Bahia during the last half century.

Leprosy in Porto Rico.—Dr. J. A. Diaz presents in the journal issued by the Porto Rico Medical Association the report of a committee appointed to investigate conditions in

regard to leprosy in Porto Rico. The committee visited Cabras Island, which is set apart for the leper colony. The island is so sandy and rocky that there is no chance to raise vegetables or flowers. The colony consists of fifteen leper women and twenty-six leper men, with two servants and a resident practitioner. The only drinking water available is rain water, with a central arrangement for collecting it. The passage by small boats to the island is a dangerous one. Several persons have been drowned trying to make the trip, including one government employee. The committee recommends removing the leper colony from Cabras Island to some remote but fertile portion of the mainland of Porto Rico, and applying to the care and treatment of the lepers the principles of a modern sanatorium for tuberculosis, instead of leaving them in this hopeless isolation.

CORRECTIONS

Disloyalty Charge.—In THE JOURNAL, April 27, under medical news, Indiana, appeared an item concerning the retirement of Dr. Frederick W. Krueger from the Wayne County conscription board. Dr. Krueger writes that this statement is incorrect as he tendered his resignation to the board on account of local conditions, and that the resignation was accepted with sincere regret by Governor James P. Goodrich, who has expressed his absolute confidence in Dr. Krueger's loyalty.

Canadian Students Continue Studies.—In THE JOURNAL, April 13, under medical news, Canada, it is stated that the fifth year medical students of McGill University will dispense with their vacation and study until autumn in order to be able to go overseas with the Canadian Army Medical Corps. The registrar of this school writes that this item is incorrect as special courses of this nature are conducted only at the urgent request of the military authorities, who up to this time have made no request for such a course this year.

Death of Medical Officer.—In THE JOURNAL, April 27, 1918, a picture and a notice of the death in the service in France of Lieut. Julian Neal Dow, M. R. C., of Arcola, Ill., appeared. His parents reside at Neoga, Ill., and the information of his death came from apparently official sources, his parents furnishing the photograph on our request. The report of his death was an error, according to the *Chicago Tribune*, of the same date, April 27, which says that a cablegram was received stating that Lieutenant Dow was wounded, but not killed, and is now a prisoner in Germany.

PARIS LETTER

PARIS, March 28, 1918.

The Antiseptic Power of Vincent's Boric Acid-Hypochlorite Mixture

Dr. Bazin demonstrated recently at the Society of Biology the results of comparative studies between the antiseptic power of the boric acid-hypochlorite mixture and that of the tincture of iodine and of iodoform. The first researches in vitro have shown that to inhibit the development of bacteria in a given bouillon culture required the use of 3 gm. of Vincent's mixture, while to check the cultures in the same bouillon, 10 gm. of tincture of iodine and 25 gm. of iodoform were required. To study the comparative toxicity of the several products, Bazin introduced them into the peritoneal cavity of guinea-pigs. Swabbing this cavity with tincture of iodine, or the introduction into its interior of a weak dose of iodoform, caused the death of the animal, while the mixture of Vincent caused only a slight reaction. In cutaneous wounds and other superficial wounds suppurating after infection with dirt, the tincture of iodine and Vincent's mixture seemed to have equal power; in muscular wounds soiled with dirt the mixture of Vincent showed a notable superiority. In wounds of the bones, the mixture showed great superiority over the tincture of iodine. As to iodoform, it showed always a very notable inferiority.

Antityphoid and Paratyphoid Vaccination of Native Troops from New Caledonia

At the last meeting of the Académie de Médecine, Drs. Guy Laroche and Mazet stated that the contingents of the black race had not been subjected as yet to antityphoid vaccination because of the infrequency of typhoid among the adults of these people; hence they feared that the reaction would be too severe. Nevertheless, last year they had occasion to vaccinate a contingent of Canaques following an epidemic of typhoid, which, in the same battalion, did not attack the vaccinated whites but only the unvaccinated

Canaques. Two inoculations of 1 and 2 c.c. were made with an eight day interval. The vaccine used was the heated vaccine of the typhoid and paratyphoid bacilli. (New Caledonia in the Southern Pacific belongs to France.) Only slight reactions occurred, although the Canaques presented the majority of the conditions in the presence of which we hesitate to vaccinate: malaria, dysentery, filariasis, etc. Not only were there no accidents, but in the majority of cases the injections were tolerated better than they are by the Europeans. The lesser intensity of the reaction was probably due to the fact that the nervous system of the black races is much more calm than that of the white race. This observation proves that in the presence of analogous cases among colored people, there is no need to hesitate to practice antityphoid and paratyphoid vaccination.

Medical Students Serving in the Navy

The minister of marine has decreed that medical students serving in the marine in the capacity of seaman nurses and *titulaires* of one, two or three inscriptions, who have not been able to enter the preparatory school of medicine at Bordeaux because of their service with the colors, which has prevented them from completing their medical course, are to be sent to Bordeaux to pursue the prescribed complementary course at the preparatory school of medicine under officers of the corps de santé de la marine.

American Aid

The president of the republic recently received Mr. Henry P. Davison, president of the war committee of the American Red Cross, accompanied by Major Perkins, secretary-general, who had been presented by Mr. Sharp, the United States ambassador. The president extended to Mr. Davison his warmest thanks and warmest felicitations for the valuable assistance rendered by the American Red Cross to the allied armies and particularly to France. He added that he had witnessed again at the Courneuve the great services rendered to the victims of the recent catastrophe.

Mr. Davison, at the hotel Ritz, had previously received the representatives of the Paris press. After explaining the nature of the American Red Cross, he detailed the enormous development of that institution since its reorganization a year ago. The membership has increased from 200,000 to 3,000,000, with 75,000 local chapters throughout the United States. Mr. Davison outlined the work undertaken by the American Red Cross in Europe, and insisted that it was not a work of charity, but of love and affection. In order to realize the materialization of the plans outlined, a new public subscription would be launched in the United States next May, and it is estimated that as large a fund at least, if not larger, will be secured as was obtained by the same means last year, over 500,000,000 francs.

Mr. Davison has left for the American front. He will visit some of the Red Cross centers in France and then he will proceed to Italy.

Interallied Food Conference

A scientific interallied food conference of professors from the French medical schools, and English, American, Italian and French experts, convened, March 25, at the Faculté de médecine de Paris under the presidency of M. Victor Boret, minister of agriculture and food commissioner. In his opening address the minister outlined the object of the conference, namely, to study the conditions permitting of making the best possible use of the limited resources at the disposal of the allies, sustenance not only for man but also for animals. The chemical composition of foods and their equivalents will serve as a basis for this work. Following the minister's remarks, the delegates outlined the program for their work, and set to work at once.

Institution of a Fund for Social Study

Two Americans, Miss Eleanor Chalfant and Mrs. Walter Mitchell, have donated the sum of 5,000 francs as a fund to be given to some French woman who has distinguished herself in social service work, enabling her to take a trip to the United States in order to gather information at first hand. Dr. Charles White of the American Red Cross has been entrusted with the carrying out of this plan, which will be supervised by a committee of patronage including Professor Lctulle, member of the Academy of Medicine, and Senator Léon Bourgeois, president of the Alliance for Social Hygiene.

Death of Dr. Camille Sauvage

Dr. Camille Sauvage, aged 44, professeur agrégé de la Faculté de médecine de Paris and accoucheur des hôpitaux,

is dead. Since the first day of mobilization he has been on active duty in the zone des armées, first in charge of an ambulance and then of a large hospital. He was active for two and a half years; then worn out by fatigue he was forced to take to his bed. After a lengthy convalescence, he reported for service again, but just then he became ill again and died. Sauvage was the author of a number of important publications. Of special note are those on rupture of the uterus and on syphilis and its bearing on reproduction.

BUENOS AIRES LETTER

BUENOS AIRES, March 24, 1918.

Infant Mortality in Buenos Aires

According to statistics published recently by Dr. E. R. Coni, the infant death rate during the ten years ending with 1907 was 31.1 per cent. of the total mortality. In the decade following, ending with 1917, the proportion was 36.4 per cent. By infant mortality he means the deaths of children less than 2 years old. The Argentine Sociedad de Pediatría is to discuss this increasing infantile death rate at its next meetings.

Bibliographic Index of Medical Works in Argentina

The Circulo Medico of Rosario issued last year an alphabetical index of all the medical works published in Argentina up to the end of 1916.

Tuberculosis Death Rate at Cordoba

The mortality from tuberculosis in this large city of northern Argentina has shown a progressive increase in recent years, having risen from 30 per ten thousand inhabitants in 1897 to 43.8 in 1916. The Cordoba province is sought by the tuberculous elsewhere on account of its climate, but at the same time there is an increase among the older residents.

Pituitary Body and Polyuria

In a recent publication, Drs. Houssay and Romaña assert that the so-called pituitary polyuria is dependent on lesions of a zone in the cortex adjoining the pituitary, and extending from the pons to the chiasm. They witnessed the development of polyuria in young dogs after complete removal of the pituitary. This zone in the brain seems to be responsible for the polyuria, but it is impossible to say whether the posterior lobe is or is not included in this zone.

Venereal Granuloma

Considerable research has been done on venereal granuloma in South America, particularly in Brazil. It is comparatively rare in Argentina. Roffo with some of his co-workers (Nin Posadas, Ghiso, Zarate, Farini and Zerbini) have described several cases, curing them all completely by the Viana method of treatment, namely, intravenous injections of a 1 per cent. solution of tartar emetic, sterilized by filtration.

Marriages

LIEUT. FREDERICK EFNER WRIGHTMAN, M. R. C., U. S. Army, Sabetha, Kan., to Miss Rosina Tinsley of Wilkes-Barre, Pa., at Washington, D. C., recently.

GEORGE EUGENE DODGE, Tucson, Ariz., formerly of New York, to Mrs. Mabel R. Kerrigan of Tucson, Ariz., April 9.

LIEUT. GERALD SPENCER SHIBLEY, M. R. C., U. S. Army, New York, to Miss Florence Isabel Miller, recently.

CHARLES BERNARD PRITCHETT, Danville, Va., to Miss Shepherd Leak, Wadesboro, N. C., April 17.

JAMES ALFRED FISHER, Clayton, N. J., to Miss Janet Ackerman of Ashbury Park, N. J., April 9.

HAYNES JORDAN FREELAND, Rocky Ford, Colo., to Miss Mary Osgood Parker of Indianapolis, April 9.

JOHN CONGER BRYAN, New York, to Mrs. Margaret A. A. Rumsey, at Trenton, N. J., March 28.

RUFFIN ALEXANDER PAINE, Denver, Colo.; to Miss Imogene Norris, New Orleans, La., April 17.

COLIN LUKE BEGG, New York City, to Miss Susanne Confere of New Orleans, April 10.

VOYLE ABRAMS PAUL to Miss Ada G. Stark, both of Stamford, Conn., March 28.

Deaths

Ephraim Fletcher Ingals, Chicago, died at his home on April 30 from angina pectoris. Dr. Ingals was born in Lee Center, Ill., Sept. 29, 1848, and graduated from Rush Medical College in 1871. He was a nephew of Ephraim Ingals, for many years professor of materia medica and therapeutics in Rush Medical College, and it was under the tutelage of his distinguished uncle that Dr. E. F. Ingals took up the study of medicine. In 1871, after his graduation, Dr. Ingals became assistant professor in materia medica from 1871 to 1873; lecturer on diseases of the chest and physical diagnosis, 1874; professor of laryngology from 1883 to 1890; professor of laryngology and practice of medicine from 1890 to 1893; laryngology and diseases of the chest from 1893 to 1898; professor of diseases of the chest, throat and nose, and comptroller since 1898. He also was professor of diseases of the throat and chest in the Northwestern Woman's Medical School from 1879 to 1898; professor of laryngology and rhinology in the Chicago Policlinic since 1890, and lecturer on medicine in the University of Chicago since 1901. Dr. Ingals was one of those who were instrumental in arranging the affiliation of Rush Medical College with the University of Chicago, especially in convincing President Harper of the university of the importance of linking medical education with the university in order to make progress. The importance of his connection as comptroller of Rush Medical College with the life of the medical school cannot be overestimated. The West has had few men who have worked so actively and efficiently for the advancement of scientific medicine.

Dr. Ingals was a Fellow of the American Medical Association, being trustee from 1893 to 1896, and from 1900 to 1903 a member of the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American College of Surgeons, the Chicago Institute of Medicine, the Chicago Pathological Society, the American Climatological Association and the American Medical College Association. He was chairman of the section of laryngology of the Pan-American Medical Congress in 1883. He was author of "Diseases of the Chest, Throat and Nose," the fourth edition of which appeared in 1900, and of many articles and monographs on the same subject. His most recent literary work, entitled "Angina Pectoris," was published in THE JOURNAL for April 6. In this he describes, in great detail, his own experience with this disease. During his severe and extended illness he displayed remarkable courage and bravery. His discussion of the condition reveals a sustained, clear, scientific consideration and judgment under most trying conditions.

Moses H. Waters, Terre Haute, Ind.; New York Homeopathic Medical College and Hospital, New York, 1865; aged 37; a member and formerly president of the Indiana Institute of Homeopathy; senior at the American Institute of Homeopathy; a veteran of the Civil War; formerly president of the Terre Haute Board of Health; general surgeon of the Morton Post Grand Army of the Republic; died at his home, April 14, from heart disease.

Lloyd Jones Belt, Millen, Ga.; New York University, New York, 1885; aged 61; formerly a Fellow of the American Medical Association; a member of the Medical Association of Georgia; formerly vice president of the Screven County

Medical Society; a member of the State Commission of Tuberculosis; formerly president of the Jenkins County Medical Society; died at the Savannah, Ga., Hospital, April 9 from heart disease.

Lieut. Hugh Tate Moore, M. R. C., U. S. Army, Wilmington, N. C.; Tulane University, Medical Department, New Orleans, 1910; aged 31; a Fellow of the American Medical Association; a specialist in diseases of the eye, ear, nose and throat; a member of the medical staff of the Base Hospital at Camp Kearny, San Diego, Calif.; died, April 8, from mercuric chlorid poisoning, the drug being taken by mistake for calomel.

Capt. Peter L. S. Keough, M. R. C., U. S. Army, Pawtucket, R. I.; College of Physicians and Surgeons, Baltimore, 1912; aged 28; formerly a member of the Medical and Chirurgical Faculty of Maryland; formerly assistant superintendent of the Maryland State Hospital; and a member of the staff of the Memorial Hospital, Pawtucket; died while on active service at Camp Sherman, Ohio, April 15, from pneumonia.

Augustus Chapman Walker, Cambridge, Mass.; Harvard University Medical School, Boston, 1866; aged 84; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; a veteran of the Civil War; formerly a member of the State Board of Registration and Pharmacy; died at his home April 5, from arteriosclerosis.

Lieut. Abraham Lewis Brick, M. R. C., U. S. Army, New York; Long Island Medical College, 1917; aged 26; house surgeon at the Harlem Hospital, New York; ordered to report at the Army Medical School, April 15, died at the Harlem Hospital, April 17, from streptococcus septicemia following an infection of the right forearm.

Robert Alexander Blackford, Martin's Ferry, Ohio; University of Pennsylvania, Philadelphia, 1899; aged 53; a Fellow of the American Medical Association; director of the Martin's Ferry Hospital; formerly president of the Martin's Ferry Board of Education; died in the Martin's Ferry Hospital April 12, from pneumonia.

Jacob Friedman, St. Louis; Washington University, Medical School, St. Louis, 1897; aged 61; a Fellow of the American Medical Association; professor of therape-

tics and clinical medicine in the St. Louis University, School of Medicine; died in the Augustana Hospital, Chicago, April 13, from carcinoma of the colon.

Lieut. Francis Virgil Frazier, M. R. C., U. S. Army, Altamont, Mo.; University of Nashville, Tenn., Medical Department, 1911; aged 29; a member of the Missouri State Medical Association; died from wounds received from German bomb, while passing from one base hospital to another on the Belgian front, April 3.

Perley G. Garlick, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1903; aged 42; formerly associate professor of dermatology in the Hahnemann Medical College of the Pacific; a member of the American Institute of Homeopathy; died at his home, January 27, from ruptured aortic aneurysm.

George Baptie, Ottawa, Ont.; Trinity Medical College, Toronto, 1875; aged 72; professor of chemistry in Province Agricultural College, Guelph; formerly coroner of Ottawa; former president of the Ottawa Clinical Society, and Medical-Chirurgical Society; died at his home, January 5, from Bright's disease.



EPHRAIM FLETCHER INGALS, 1848-1918

Albert V. Linton, Saginaw, Mich.; College of Physicians and Surgeons, Keokuk, Iowa, 1889; aged 53; formerly a fellow of the American Medical Association; a member of the Michigan State Medical Society; at one time coroner of Saginaw County; died at his home, April 7.

Edward Mott Moore, Rochester, N. Y.; University of Buffalo, Medical Department, 1874; aged 67; formerly a fellow of the American Medical Association; a member of the American Surgical Society, and the American Academy of Medicine; died at his home, April 5.

Charles F. Scattergood, Albany, N. Y.; Albany, N. Y., Medical College, 1868; aged 74; local chairman of the National Society of Chiropodists; and was a charter member and treasurer of the Albany division of the State Medical Society; died at his home, April 1.

Alvino Henry Von Ruck, Asheville, N. C.; University of Bellevue Hospital Medical College, New York City, 1899; aged 42; a Fellow of the American Medical Association; a leading authority on tuberculosis research; died in a hotel in New York City, April 8, from pneumonia.

James W. O'Connor, Elizabethton, Ky.; Kentucky School of Medicine, Louisville, 1889; aged 56; formerly a Fellow of the American Medical Association; a member of the Kentucky State Medical Association; died suddenly, January 30, from organic heart disease.

Sidor Samuel Leopold Bermann, Washington, D. C.; University of Marburg, Germany, 1878; aged 72; a Fellow of the American Medical Association; a specialist in diseases of the eye, ear, nose and throat; died at his home, about April 6, from angina pectoris.

Edward Mortimer Boykin, Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1905; aged 34; a member of the South Carolina Medical Association; died at the Roper Hospital, Charleston, April 4, from meningitis.

Esse A. Clason, Fond du Lac, Wis.; Missouri Medical College, St. Louis, 1884; aged 57; formerly a Fellow of the American Medical Association; a member of the Wisconsin State Medical Society; died at his home, April 7, from heart disease.

James Horace Ingalls, Worcester, Mass.; Kentucky University, Medical Department, Louisville, 1904; aged 37; for several years connected with the Emergency Hospital, Worcester; died at his home, April 6, from pneumonia.

Ferritt E. Proctor, Lake Placid, N. Y.; Baltimore Medical College, 1900; aged 35; a Fellow of the American Medical Association; county health officer of Essex County; died at his home, April 4, from cerebral hemorrhage.

Maurice J. Silverman, New York; New York University, Medical Department, New York, 1892; aged 55; a Fellow of the American Medical Association; died suddenly while visiting a patient, April 11, from heart disease.

Elvy Andrey Bass, Wichita, Kan.; Hahnemann Medical College and Hospital, Chicago, 1881; aged 65; formerly a member of the staff of Wichita Hospital; died at his home, April 8, from heart disease.

James William Shaul, Los Angeles; University of Buffalo, Medical Department, 1896; aged 47; a Fellow of the American Medical Association; died at his home, February 21, from heart disease.

Edwin Huntington Bailey, Flint, Mich.; Detroit Homeopathic Medical College, 1903; aged 37; a member of the Michigan State Medical Society; died at his home, April 4, from pneumonia.

William S. Throckmorton, Canonsburg, Pa.; Jefferson Medical College, 1865; aged 79; formerly a member of the

Medical Society of the State of Pennsylvania; died at his home, April 5.

George Mill, Philadelphia; Medico Chirurgical College of Philadelphia, 1902; aged 41; a member of the Medical Society of the state of Pennsylvania; died at his home, March 7, from pneumonia.

Bernard Oscar Harris, Detroit; Detroit College of Medicine and Surgery, 1914; aged 23; a Fellow of the American Medical Association; died at his home, April 9, from pneumonia.

Charles F. Livengood, Boswell, Pa.; Baltimore Medical College, 1896; aged 53; a Fellow of the American Medical Association; died suddenly at his home, March 26, from paralysis.

P. Louis Nagin, New York; Long Island College Hospital, Brooklyn, 1914; aged 32; formerly clinic physician of Gouverneur Hospital; died at the Rockefeller Hospital, April 5.

Thomas J. Deem, Parkersburg, W. Va.; Starling Medical College, Columbus, 1891; aged 50; died suddenly at his home in Vienna, April 3, from heart disease.

Charles C. Jolliffe, Hasbrouck Heights, N. J.; Kentucky School of Medicine, 1892; aged 69; died in the Hackensack Hospital, Hackensack, N. J., April 7.

Anthony P. Witting, Evansville, Ind.; Jefferson Medical College, 1879; aged 64; died at St. Mary's Hospital, Evansville, April 6, from pneumonia.

Irwin Hibbs, Brazil, Ind.; Kentucky School of Medicine, Louisville, 1854; aged 89; died at the home of his son, April 10, from senile debility.

Van Dyck McKelvey, Denver; Denver and Gross College of Medicine, Denver, 1910; aged 30; died at his home, April 4, from pneumonia.

John W. Reed, Beallsville, Ohio; Medical College of Ohio, Cincinnati, 1864; aged 77; died at his home, January 28, from bronchial pneumonia.

Norman Leslie Beale, Middletown, Del.; Atlantic Medical College, Baltimore, Md., 1909; aged 34; died at his home, April 7, from pneumonia.

Henry W. Boynton, Toledo, Iowa; Albany (N. Y.) Medical College, 1866; aged 80; died at his home, January 21, from cardiorenal disease.

Joseph B. George, Gainesville, Ga.; Medical College of the State of South Carolina, Charleston, 1890; aged 56; died at his home, April 5.

John H. DeWitt, Saugerties, N. Y.; Albany, N. Y., Medical College, 1863; aged 75; health officer of the town and village of Saugerties; died at his home, March 18.

James Buchanan King, Wyoming, Ohio; Miami Medical College, Cincinnati, 1885; aged 54; a member of the Academy of Medicine; died at his home, April 10.

Milton M. Catlin, Canton, Ohio; Western Homeopathic College, Cleveland, 1868; aged 72; died at his home, April 4, from pneumonia.

Gustavus Weems Petherbridge, Charlotte Hall, Md.; University of Maryland, Baltimore, 1866; aged 72; died at his home, March 9.

Lewis P. Walton, Atlanta, Ga.; Meharry Medical College, Memphis, Tenn., 1900; a colored practitioner; died at his home, April 4.

Frederick Veazile Hardwick, Boston (license, Massachusetts, 1904); aged 40; died at his home, April 9, from pneumonia.

A. R. Bowen, Tyro, Miss. (license, Mississippi, 1882); aged 69; died at his home, April 15.



Died in the Service

LOST AT SEA

LIEUT.-COL. WILLIAM W. RENO, M. C.,
U. S. ARMY, 1873-1918

(See The Journal, April 20, p. 1182)

Correspondence

TO THE CONSTITUENT ORGANIZATIONS OF THE AMERICAN MEDICAL ASSOCIATION

To the Editor:—May I address through THE JOURNAL, particularly the officers of constituent and component organizations of the American Medical Association? The necessity of securing an American army of physically efficient troops is of immediate fundamental importance to the United States. The initial steps toward this lie with and are dependent on the medical profession. The obligation is no longer limited to those appointed by governors to examine registrants, but has been, morally at least, imposed on the entire profession. It is axiomatic that our troops must be of finer fiber, stronger physique, better drilled and officered than an equal number of the enemy, that we may prevail. It therefore becomes the duty of every member of the American Medical Association to aid in securing soldiers of such physical stamina. In attaining this result the cooperation of physicians is confidently anticipated.

I conceive it to be the duty of the officers of constituent state medical associations and component county societies, the branches of the American Medical Association, to assist actively in carrying out the medical detail connected with the selective service law. The importance of medical examinations, careful in detail and accurate of record, cannot be exaggerated. Delays of induction, confusion in mobilization camps, and expenses to registrants and to the government have been entailed that could have been minimized and it is hoped may be avoided hereafter. If county medical societies will make a study, with discussions, of that part of the selective service regulations and their elaborations bearing on physical examinations, and will proffer assistance to examiners of local boards, who have doubled their daily duties by doing this work, the advantages to the service will be of inestimable value.

There are almost 5,000 local boards in the United States. One neglect or error, or delay of an examination or in recording its results in one day, multiplied by the number of registrants examined, arrives at a staggering total of possible mistakes. Errors in grouping men who pass before local and medical advisory boards result in the deferred classification of men who belong in Group A. This detains those who should be in service and sends others to duty in their place, or sends to camp men belonging in Group B because of a remediable defect not remedied, and no provision made except for their rejection, or, again, results in inducting into camp men falling into Group C, qualified only for special or limited service, when no call for such men has been issued.

There is a medical education to be had through the examination of many registrants, and the close professional contact with other medical men is of value, quite independent of other considerations. A weakness in our preparation for war has developed within the medical profession, not from incompetence nor from disloyalty nor from indifference, but rather from lack of experience in military matters. This has hindered somewhat the securing of a perfect execution of the medical examination of registrants—a fundamental necessity.

It was not possible to provide a medical advisory board for every local board, but one has been placed within the reach of nearly all. Their assistance should be invoked in all cases of doubt. The expense connected will be less than that arising from the induction of an unfit registrant into camp and his return home after being rejected.

Advisory boards, when not in full quota, should not hesitate to refer selected registrants whose condition requires special technical study to a qualified specialist.

The records in this office suggest a failure to appreciate the importance of accuracy. Nature does not come to the examiner's assistance, but he must decide the registrant's future unaided. Indirectly, he is thus determining his country's safety. District boards of appeal may no longer

conduct a medical examination, but appeal cases on physical grounds should be determined by the findings of local and medical advisory boards. This throws additional responsibility on these boards for painstaking examinations and for full and clearly stated records.

County medical societies could not more profitably occupy one or more meetings than by having examiners of registrants prepare papers on the selective service regulations pertaining to the examination of registrants, for discussion by members. Officers of state societies could provide for a session to be given over to the study of this work, and the program in many sections of the American Medical Association, at its June meetings, might very profitably devote time to its discussion. In this way the physical examination of registrants may be perfected and our Army strengthened immediately. From the exact recording of such examinations, sociologic data of great value will be obtained.

HUBERT WORK, Major, M. R. C., Washington, D. C.
Medical Aide to the Provost Marshal-General.

NUTS AS A FOOD SUPPLY

To the Editor:—The editorial on "Peanuts as Food" (THE JOURNAL, March 23, 1918, p. 850) is in line with progress. More, however, may be said to advantage. It is a rule in economics that people do not make an effort toward filling a need until the need is felt. The American Indians used a large number of plants that have not as yet been cultivated systematically for the general food market. Eventually civilized man may employ most of the things that the Indians ate. Man began to cultivate the annual plants that bring prompt return for his labors, and this he is likely to continue to do by preference until he comes to understand that nut bearing trees give a larger yield per acre at lesser expenditure of time, care and expense than annual plant crops require, as a general rule.

Nuts may be divided into two general classes, first those that are rich in fats and nitrogen, members of the *Juglandaceae*, for example; and next the starchy nuts, members of the *Castaneae*, for example. In some parts of the world, nuts already furnish a basic food supply, and perhaps 200 kinds of nuts are employed to greater or lesser extent for substantial food supply or as luxuries.

One reason that nut bearing trees have not been more generally cultivated lies in the idea that many years are required for their coming into bearing. This is not true of grafted nut trees of several kinds, some of which begin to bear in the first year after transplanting from the nursery or after top working of standing stock trees.

If any of the members of the American Medical Association care to take up the subject, they may wish to know that we have in this country two journals devoted exclusively to nut growing, the *American Nut Journal*, published at Rochester, N. Y., and the *Nut Grower*, published at Waycross, Ga. A number of responsible nurserymen who make a special feature of grafted nut trees advertise in these journals. Grafted nut trees of superior varieties are the only sort worth setting out if one has any sort of commercial proposition in mind.

ROBERT T. MORRIS, M.D., New York.

VENEREAL DISEASE IN THE ARMY: A SUGGESTION

To the Editor:—The lowest venereal rate of our regular army since the war with Spain was attained in 1916, when 91.23 men per thousand acquired such infection. Prior to the present war, the venereal rate in the home army of England was about 68; of Austria, 54; France, 28; Prussia, 19, and Bavaria, 15. At the present rate, the daily average of disability for duty through venereal disease in our entire army exceeds 30,000 men.

The success of the prophylactic treatment admittedly depends on its early use—the sooner the better. Under present regulations, the soldier is not provided with nor required to use prophylactic measures at the time of exposure,

because it is believed that his use would be an inefficient substitute for the official treatment that he receives when he returns to camp—an indefinite time after exposure.

But why regard his effort as a substitute for the official treatment? Why may not both be used? Since Reasoner's observations (*THE JOURNAL*, March 31, 1917, p. 973) have corroborated the clinical belief that soap alone destroys the spirochete of syphilis, it seems desirable to supply the soldier, if not with a complete kit, at least with a package of "prophylactic" soap, as a first aid packet; and to explain to him clearly both the method and the necessity for thorough use immediately after exposure. If the soap should be scented with some freakish perfume and colored with an anilin dye, the soldier's neglect to use it would probably be detected when he reports at barracks for the official treatment, in which event he should be penalized for disobedience of orders. If he fails to report and develops venereal infection, he is penalized under present regulations.

WILLIAM T. BELFIELD, M.D., Chicago.

AS TO TOBACCO AND AVIATION

To the Editor:—The editorial on "The Physical Qualities of Aviators" (*THE JOURNAL*, April 27, 1918, p. 1229) condemns the use of alcoholics by fliers. I have noticed the same condemnation in other articles on the subject. On the face of it, it seems so plain that alcoholic narcosis has no place in so hazardous a task that it is almost unnecessary to mention the prohibition. Doubtless too, if a soldier were known to be under morphin narcosis, he would not be allowed to fly. Singularly enough though, the effect of tobacco narcosis on the aviator is never so much as mentioned. Cigaret narcosis has been conclusively proved to make the victim unsafe both to himself and to his fellow workmen, and by the law of business is not permitted to be indulged during working hours in factories. Can it be possible that such narcosis affects favorably the one who is to fly? Or does the cigaret user not apply for the position? Or is nicotin narcosis above and beyond discussion?

J. L. TRACY, M.D., Toledo, Ohio.

CONTINUOUS ELASTIC TRACTION IN THE TREATMENT OF CERTAIN FRACTURES OF THE PHALANGES

To the Editor:—There are occasional fractures of the phalanges in which it is difficult to hold the fragments in alignment by the methods usually employed. This applies especially to fractures of the phalanges of the toes, in which the fracture may be near the metatarsophalangeal junction and the toes are more or less deformed from the wearing of light and narrow pointed shoes.

Some time ago (*THE JOURNAL*, Jan. 12, 1918, p. 78) I called attention to a new method of correcting the deformity in greenstick fractures of the forearm through the use of continuous elastic traction; and recently I have employed this principle in caring for two cases of complete fracture of the phalanges of the toes, in which roentgenoscopy showed that the fragments were not held in proper alignment by ordinary methods of treatment and there would be considerable angular deformity. In one case the fracture was within the web line, and angulation was marked and otherwise uncontrollable. The following technic was employed: A long, well padded wooden splint, extending from the heel to about 1 inch beyond the toes, was applied to the plantar surface of the foot and held rigidly in place by adhesive plaster strapping and a bandage. One broad adhesive strip overlapped the anterior border and ran along the entire under surface of the splint, over the heel, which was lightly padded, and continued 10 or 12 inches up the posterior surface of the leg; another adhesive strap about 2 inches wide embraced the anterior border of the splint and the heel and encircled the foot, while a third was somewhat loosely applied transversely at the level of the ball of the foot. A rubber band about one-eighth inch wide was cut at the center of one loop, and the resulting segments were fastened to the sides of the

toe by a very narrow strip of adhesive plaster applied as a circular bandage. The free loop of the rubber band was then brought over the anterior end of the plantar splint under moderate tension and fastened securely by adhesive plaster, which embraced the loop and was attached for a considerable distance to the under surface of the splint. A gauze bandage was then applied from the toes to above the ankle.

In both cases in which this method was employed, the continuous slight elastic traction relieved the pain in a remarkably short time, the fragments were soon brought into almost perfect position, and the final results were equally pleasing.

WESLEY GROVE VINCENT, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

QUESTIONS OF INTEREST TO MEDICAL OFFICERS

To the Editor:—In *THE JOURNAL* last week I noticed a statement to the effect that medical reserve officers may now purchase equipment from the Quartermaster's Department. Is this law now pending in Congress or is it now effective? If so, shall I apply to the Quartermaster's Department of the nearest camp, that is, Camp Grant, for uniform and equipment? Can you give me an idea of the amount an officer's equipment would cost?

J. H. McMORRIES, M.D., Muncie, Ind.

To the Editor:—At the last meeting of our county medical society I heard several members say that they would join the Medical Reserve Corps if it were not for the injustice of being obliged to spend between \$350 and \$400 for uniforms. Our society meets again soon, and I wish you would give me some information which I could offer the members. Can a medical officer buy uniforms from the government instead of paying these robbing clothing men from \$60 to \$100 for an overcoat?

A. G. B., Minn.

To the Editor:—I have just sent in my application for a commission in the Medical Reserve Corps. I am anxious to know just what the emoluments are. I am married and have one child and an orphan nephew depending on me. A full explanation of the remuneration of the officers of the various ranks will be greatly appreciated.

E. A. R.

To the Editor:—Can you furnish me with the following information: 1. Has the Chamberlain bill been passed by Congress and signed by the President? This bill provides for extra allowance to commissioned officers for commutation, board, room, etc. 2. Has the bill passed providing that the government furnish to commissioned officers the necessary uniforms, equipment, etc., at cost price?

MORRIS B. KARATZ, M.D., Chicago.

To the Editor:—Please indicate, roughly: (1) the approximate recompense of officers of the Medical Reserve Corps; (2) the cost of an ordinary service outfit.

R. B. OLESON, M.D., Lombard, Ill.

To the Editor:—I have just finished reading your editorial on the call for medical officers. In it you refer to a number of provisions which Congress has recently made to render it easier for men to enter the service. Among them you speak of the care of dependents, insurance and compensation, increased pay on foreign service, commutation of quarters, heat and light, moratorium on debts and leases of officers in the service, and purchase of equipment from the Quartermaster's Department. May I trouble you to supply me with information in regard to these points, or to advise me where I can obtain it, either in the columns of *THE JOURNAL* or elsewhere?

THOMAS J. HARRIS, M.D., New York.

ANSWER.—*Purchase of Equipment.*—A bill was introduced into Congress to permit officers to buy their equipment from the Quartermaster's Department; however, before the bill came up for passage a general order No. 22, March 2, 1918, was issued stating that "orders heretofore restricting the sales of clothing and equipage to officers are hereby rescinded, except as to sales of woolen coats and breeches. Sales will be permitted only when articles are available and not needed for immediate issue to enlisted men." The Surgeon-General's Office has suggested to Medical Reserve Corps officers that they provide themselves with the following articles so as to be in readiness when called: 1 hat, service; 2 breeches, service olive-drab; 1 coat, service, O. D.; 1 leggins, leather, officer's; 2 pairs shoes, russet; 2 shirts, woolen, O. D.; 1 sweater, army; 1 hat cord, officer's; collar insignia and insignia of rank; 1 notebook, manifolding, pocket; 1 compass; 1 watch.

Officers may use their own underclothing, socks, handkerchiefs and toilet articles. Additional articles to the foregoing list can be purchased later. Provide yourself with 1 bedding roll, 2 army blankets, 1 sleeping pad (or two comforters); 1 mosquito bar, cot; 1 canvas basin, 1 canvas bucket, 1 collapsible candle lantern; 1 folding camp chair. These are sold by private dealers. If possible, provide yourself with a trunk locker, army pattern, sold by the Quartermaster's Department or private dealers. Your necessary mess equipment includes: 1 canteen, cavalry; 1 canteen strap, cavalry; 1 cup; 1 knife; 1 fork; 1 spoon; 1 meat can. You can purchase these from the ordnance officer at the nearest military post; or write to the Commanding Officer, Rock Island Arsenal, Rock Island, Ill., for the necessary vouchers and costs. Private dealers also sell them.

Cost of Equipment.—The estimated cost of a complete initial equipment of good quality is well within \$200, and many officers have obtained it at a lower cost.

Dealers in Uniforms.—The following dealers in uniforms have advertised in THE JOURNAL, and so far as we know have given satisfaction to those purchasing equipment from them: Sigmund Eisner Company, Red Bank, N. J.; Kahn Tailoring Company, Indianapolis; Jacob Reed's Sons, 1424 Chestnut Street, Philadelphia.

Salary of Medical Officers.—The salary of officers is as follows: first lieutenant, \$2,000 a year and allowance for quarters, fuel and light; captain, \$2,400 a year and allowance for quarters, fuel and light; major, \$3,000 a year and allowance for quarters, fuel and light. The allowance for quarters is, respectively, \$36, \$48 and \$60, and is allowed only to officers who have dependents. The allowance for fuel and light varies according to tables published by the Comptroller's department. Officers are not furnished with food, the average cost of mess varying from 75 cents to \$1.25 per day.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular Board, Little Rock, May 14-15. Sec. Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

FLORIDA (H): Jacksonville, May 22. Sec., Dr. Geo. A. Davies, East Port.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

Hawaii January Examination

Dr. Grover A. Batten, secretary of the Board of Medical Examiners of the Territory of Hawaii, reports the oral, practical and written examination held at Honolulu, Jan. 10-13, 1918. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Six candidates were examined, of whom 3 passed and 3, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Med. Coll. and Hosp. of Chicago	(1917)	76
Tokyo Charity Hosp. Special Med. School	(1914)	76
University of Geneva	(1913)	91
FAILED			
University of Pennsylvania	(1896)	73
Tokyo Charity Hospital Special Med. School	(1916)	69

Indiana Reciprocity Report

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports that 4 candidates were licensed through reciprocity during 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College	(1911)	Illinois
Chicago College of Med. and Surg.	(1914)	Illinois
St. Louis University	(1916)	Missouri
Ohio Medical University	(1898)	Ohio

Iowa February Examination

Dr. Guilford Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Feb. 5-7, 1918. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Med. Coll. and Hosp. of Chicago	(1917)	85.2
St. Louis University	(1917)	85.2

Pennsylvania January Examination

Mr. Nathan C. Shaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the oral and written examination held at Philadelphia, Jan. 8-10, 1918. The examination covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 50 candidates examined, 42 passed and 8 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Licensed
George Washington University	(1916)	1
Illinois Medical College	(1895)	1
Bellevue Hospital Medical College	(1895)	1
Cornell University	(1916)	1
Fordham University	(1916)	1
Western Reserve University	(1915)	1
Jefferson Medical College	(1915,3)	16
Medico-Chirurgical College of Philadelphia	(1916,13)	8
Temple University	(1916)	1
University of Pennsylvania	(1915,2)	5
Woman's Medical College of Pennsylvania	(1916)	5
Royal University of Naples	(1905)	1
FAILED			
Howard University	(1910)	1
Bennett College of Eclectic Med. and Surg.	(1886)	1
University of Louisville	(1912)	1
University of Michigan Medical School	(1902)	1
Western Reserve University	(1901)	1
Medico-Chirurgical College of Philadelphia	(1916)	2
College of Phys. and Surg., Baltimore	(1914)	1

Book Notices

ESSENTIALS OF PRESCRIPTION WRITING. By Cary Eggleston, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. Second edition. Cloth. Price, \$1.25 net. Pp. 134. Philadelphia: W. B. Saunders Company, 1917.

The author has recently revised this little handbook with a view to bringing it up to date. It contains much that is valuable, and also much that is hardly necessary for medical students who are learning how to write prescriptions today. There are tendencies toward writing prescriptions in English, toward simplification of prescriptions, and toward limitation of the number of drugs to be studied and used which this little book does not take into account. Of the 127 pages twenty-two are taken up with Latin grammar.

NINE HUMOROUS TALES. By Anton Chekhov. Translated by Isaac Goldberg and Henry T. Schnitzkind. Boards. Price, 25 cents. Pp. 60. Boston: The Stratford Company, 1918.

This is the first of a series of classics to be known as the Universal Library, published by the Stratford Company. The work of Chekhov should be particularly interesting as he was a physician, and the knowledge and point of view gained from his medical practice are noticeable in practically all his stories. He has been called the Russian "de Maupassant" and also the Russian "O. Henry." Many of his stories reveal a feeling for mankind, a spicy humor, and an insight into human nature such as were possessed by those great masters

Medicolegal

Corporate Rights of the American Medical Association

(*People ex rel Maclay Hoyne, v. W. W. Grant et al.*)

Mr. Justice Farmer delivered the opinion of the Supreme Court of Illinois, in affirming the judgment of the Appellate Court:

This is an appeal from a judgment of the Appellate Court of the First District affirming a judgment of the circuit court of Cook County sustaining a demurrer to and dismissing an information in the nature of quo warranto to oust the defendants to the information from the office of trustees of the American Medical Association, a corporation not for pecuniary profit, organized under the laws of Illinois in 1897. The Appellate Court granted a certificate of importance, on which the case is brought to this court by appeal.

The question raised and on which we are asked to pass is the right of a corporation not for pecuniary profit, organized under the laws of the state of Illinois, to adopt a constitution and by-laws by which the members of the association can be deprived of the right to vote for the election of trustees, and which permit or authorize the election of a board of trustees outside the boundaries of the state of Illinois.

Articles 3 and 4 of the by-laws are as follows:

"Article 3. *Membership*.—The membership of this Association shall consist of such members of the constituent associations and of such medical officers of the Army, of the Navy and of the United States Public Health and Marine-Hospital Service as shall make application in accordance with the by-laws hereinafter provided.

"Article 4. *Constituent Association*.—State and territorial medical associations which have or which hereafter may come organized in accordance with the general plan of organization of the American Medical Association and . . . declare allegiance to the formation and the perpetuation of the House of Delegates of the American Medical Association shall be recognized as constituent association," etc.

Section I of Article 5 provides that the business body shall be known as the "House of Delegates" and consist of delegates elected by constituent associations, by the scientific sections of the American Medical Association, from the medical departments of the Army and the Navy and from the United States Public Health and Marine-Hospital Service, and that the house of delegates shall represent the delegated powers and shall be the national representative body of the constituent associations. The membership of the house of delegates was not to exceed 150.

The information was filed on the relation of Dr. G. Frank Edston, who alleged in his petition, on which the information was filed, that he is a member in good standing of the Chicago Medical Society, which is a constituent association of the American Medical Association, and is also a member of the latter association. The information alleges that the by-laws of the American Medical Association provide for the election of delegates to the national House of Delegates, which House of Delegates shall elect three trustees each year, "at such place in such city and state as such house of delegates might assemble." The information alleges the American Medical Association had no authority, under its charter or the laws of the state, to adopt a constitution or by-laws by which the members of the association may be deprived of the right to vote for the election of trustees or which authorize the election of trustees outside of the state. It is then alleged that certain of the trustees were elected by the House of Delegates at Minneapolis, certain of them at Atlantic City, N. J., and certain of them at San Francisco, and that they were not fully elected and are usurpers of said office of trustees.

If the law governing the conduct of corporations organized for pecuniary profit in this state applies also to corporations organized not for pecuniary profit, it would have to be held that a meeting of the officers or directors held outside of the state and the election of trustees by delegates to such a meeting would be unlawful and the action void unless pre-

viously authorized or subsequently ratified. The first twenty-eight sections of the chapter of our statutes entitled "Corporations" relate to corporations organized for pecuniary profit. No provision of that part of the chapter relating to corporations organized for pecuniary profit contains any intimation of any right of a corporation to hold meetings beyond the limits of the state except Section 20, which permits a meeting to be held beyond the limits of the state where the meeting was authorized or the action taken at such meeting ratified by a vote of two thirds of the directors, trustees, or officer's corresponding to trustees, at a regular meeting. When a meeting is held outside the state by the corporate officers without being previously authorized or subsequently ratified, as required by Section 20, the action of the officers will be void; but where the meeting outside was authorized or afterward ratified, the action of the corporation is as valid as if taken or had within the state (*Place v. People*, 192 Ill. 160). Sections 29 to 34, inclusive, of the chapter on corporations apply to corporations not organized for pecuniary profit. Section 32 provides that corporations not for pecuniary profit may elect trustees, directors or managers "in such manner, at such times and places, and for such period as may be provided by the certificate of incorporation, or in case such certificate does not contain such provisions, then as may be provided by the by-laws, which trustees, directors or managers shall have the control and management of the affairs and funds of the corporation, society or association." Here the by-laws provided the manner in which trustees should be elected, namely, by the House of Delegates selected by the constituent associations, and provided that the times and places of such election should be fixed and determined by the House of Delegates, subject, however, to change by the unanimous action of the Board of Trustees at any time prior to two months of the time selected for the session. "The annual session may be held at any place in the United States." Pursuant to its by-laws the American Medical Association, at meetings held in the states of New Jersey, Minnesota and California, elected the trustees made defendants to the information.

The statutes relating to the control and conduct of corporations organized for pecuniary profit and those relating to the control and conduct of corporations organized not for pecuniary profit are not the same (*Santa Clara Female Academy v. Sullivan*, 116 Ill. 375), and the reasons for their being different are very apparent. Corporations not for pecuniary profit have no capital stock and pay no dividends. Many of them have constituent associations (as is the case with the American Medical Association) throughout the various states of the Union and hold national meetings at stated times, composed of representatives selected by the constituent associations. The life and success of such corporations depend on their being able to hold, and in holding, meetings and transacting business at various places selected throughout the United States. The reasons and the necessity for applying a different rule with respect to the places of holding meetings by corporations organized not for pecuniary profit and corporations organized for profit were fully stated in *Derry Council v. State Council Junior Order United American Mechanics*, 197 Pa. St. 413; 80 Am. St. Rcp. 838.

It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the state of Illinois, composed of delegates selected by the constituent associations, for the transaction of the business of the corporation, it is not unlawful to authorize and provide for the election by said House of Delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the Association throughout the United States, by delegates selected by the constituent associations from the various states in the Union. Such authority to the House of Delegates is conferred by the by-laws and is not in conflict

with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit (Hurd's Stat. 1917, chap. 32, sec. 32).

One question not insisted on in this court but which was urged in the Appellate Court and is extensively treated in the opinion of that court we think should be referred to here. When the relator, Dr. Lydston, presented a petition to the state's attorney of Cook County for leave to file an information in the nature of quo warranto and requested the state's attorney to file the information, the request was refused. Thereupon the relator filed a petition in the circuit court for a writ of mandamus to compel the state's attorney to sign a petition for leave to file the information. A demurrer was sustained to the petition by the circuit court and the petition dismissed. Relator appealed to the Appellate Court for the First District, which court in its final judgment reversed the decision of the circuit court and remanded the cause to that court. The Appellate Court in its opinion treats the entire merits of the controversy the same as if the information had been filed, and expresses the view that the corporation had no authority to elect trustees outside the state and that the house of delegates could not lawfully elect trustees. When the case was reinstated in the circuit court the demurrer was overruled in obedience to the mandate of the Appellate Court and a judgment entered awarding the peremptory writ of mandamus against the state's attorney. The Appellate Court, on appeal, affirmed that judgment for the reason it considered the previous decision and judgment of the Appellate Court conclusive on the Appellate Court on this second appeal. The appellant presented to this court a petition for a writ of certiorari, which was denied, and thereafter, in obedience to the writ of mandamus, the state's attorney signed the petition and filed the information, and the question presented in this case is the sufficiency of the information. The question raised in the Appellate Court but not insisted on here is that the denial of the writ of certiorari by this court amounted to an affirmance of the judgment of the Appellate Court, is res judicata and conclusive on this court.

The case before the Appellate Court on a petition for mandamus was a different case, and the parties to it were different parties, from the case and parties here before us. In the mandamus case it was sought to compel the state's attorney to sign the petition for leave to file, and to file, the information. If the petition made a prima facie showing of a proper case, it was the duty of the state's attorney to sign it, and the merits of the question would be determined on the information when filed, in which case those whose rights were attacked would have an opportunity to be heard. The real question, therefore, presented to the Appellate Court for determination was whether the petition for leave to file the information made such prima facie showing that the state's attorney should have signed it and presented it. The denial of the writ of certiorari, therefore, meant nothing more than that we approved the conclusion of the Appellate Court that the state's attorney should have signed and presented the petition. It did not mean that we approved the reasons set out in the opinion of that court and its determination of the merits of the case, and of the rights of the parties to be affected by the information when filed (*Soden v. Clancy*, 269 Ill. 98). Until the information was filed, the parties defendant to it had no right to be heard or to present their defense. They were not parties to the mandamus proceeding.

Transformation of Homosexuality by Implanting Testicles.

—The *Nederlandsch Tijdschrift* mentions briefly an article by E. Steinach and R. Lichtenstern in the *Münchener medizinische Wochenschrift* describing experimental research on the influencing of sexual characters by gland implantation, and a clinical case. This was in a homosexual man of 30 who had to be castrated on account of a tuberculous lesion. They implanted in the external-oblique muscle, on both sides, half of an undescended testicle taken from a sexually normal man. It is said that the man felt heterosexual directly after the operation and the feminine characteristics he had previously presented became transformed in the male direction, and he married a year later.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.
Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Neurological Association, Atlantic City, May 9-10.
American Otolological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Psychopathological Association, Atlantic City, May 11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Florida Medical Association, Tampa, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Texas State Medical Association, San Antonio, May 14-16.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Meeting held at Philadelphia, March 29 and 30, 1918

The Rôle of Immunity in the Conduct of the Present War

DR. JOHN A. KOLMER, Philadelphia: Many practical problems lie before the immunologist. One is the discovery of a practical test, analogous to the Schick test, to ascertain the presence of a natural immunity to pneumonia and meningococcus meningitis, if such immunity exists. This may also obtain in the case of tetanus. Measles, anterior poliomyelitis, syphilis and gonorrhea are diseases that must be combated by some means of active immunization, not forgetting that problem of problems, the question of immunization against tuberculosis.

Active Immunity in Experimental Poliomyelitis

DR. H. L. ABRAMSON, New York: Rabbits were found to be unsatisfactory experimental material, and young *Macacus rhesus* monkeys were chosen for the work. An attenuation of the poliomyelitis virus was aimed at, bearing in mind the analogy to the rabies virus. The virus was exposed (1) to heat and (2) to chemical action. In the latter modification 0.5 per cent. formaldehyd was used. The monkeys sickened and died of what was termed the marantic type of monkey paralysis. Modification by heat was then used, two methods of vaccine injection being tried. The first one consists of four successive daily injections of 5 c.c. of 10 per cent emulsion in saline of brains and cords of recently infected monkeys. On the fifth day the animals received 5 c.c. of virus emulsion, unmodified by heat. The second type of vaccine was a 5 c.c. injection, on ten successive days, of emulsion in saline of brains and cords of infected monkeys heated to 55 C. for a half hour. This was really a killed virus. It was then sought to determine the amount of immunity by the animals, and also the neutralizing properties of their blood serum. Eleven monkeys were subjected to the five day injection series, without ill effect. This method, being short, makes it particularly applicable during an epidemic. It seems to confer a strong degree of immunity.

Persons that have recovered from poliomyelitis contain in their blood neutralizing substances, and the same is true of monkeys. These substances can be artificially produced, and in sufficient quantity to overcome infection of human poliomyelitis, which is far less virulent than the type of disease produced in monkeys, experimentally.

DISCUSSION

DR. A. F. COCA, New York: It is important to emphasize the concluding remarks of Dr. Abramson. The conditions under which he was working to produce immunity were highly artificial, and this defense was more than was necessary to constitute an absolute resistance to the natural infection as occurring in human beings. The natural resistance might need very much less than the artificial one. In the artificial experiments, resistance was circumvented.

DR. W. H. PARK, New York: I can say one word in line with Dr. Coca's remarks. In test animals, one may react, and one may not react. The rabbit gives very feeble protective serum: the monkey gives better serum, but the horse gives as good or even better serum than the monkey. Perhaps Dr. Abramson would say a word on that question. In my own experiments I first used virus from the brain, digested by trypsin, and then straight virus. Different animals showed a different period of development of antibodies and also a different degree.

DR. JOHN A. KOLMER, Philadelphia: Has the serum been used in the treatment of human infections?

DR. H. L. ABRAMSON: In regard to rabbit poliomyelitis, I spent about six months inoculating animals to get signs of paralysis. I did not test for immune bodies. I then subjected monkeys to injections of virus from rabbits. The virus of the 1916 epidemic was tested. The incubation period was variable. The control came down in six days. The animal injected with rabbit cord came down in fourteen days.

The Types of Meningococci Concerned in Epidemic Infections

DRS. A. PARKER HITCHENS, Glenolden, Pa., and G. H. ROBINSON, Uniontown, Pa.: The troops in this country are now undergoing the same conditions as the British troops at the beginning of the war. The work of Gordon on the meningococci is of value. He classified the different strains, as had been done with the pneumococci, into four different types. In the present experiments, 100 cultures, received from the first of the year, have been classified into types according to the Gordon method. The strains had come from several concentration camps in this country. The cultures are gram-negative cocci and correspond more or less to Gordon's types, namely, I, parameningococcus; II, normal meningococcus; III and IV, types comparatively rarely found in this country. Each camp has a predominating type, but whether this is a true epidemic is not determined. It is hoped that specific serums may be evolved to counteract the types, as Gordon had excellent results with his specific strains. He found that if specific serum were given before the third day of the disease the mortality was only 9 per cent.; if on the seventh day, the mortality was 50 per cent.

The Influence of Active Normal Serum on Meningococci

DRS. JOHN A. KOLMER, I. TOYAMA and T. MATSUNAMI, Philadelphia: Fresh serum, both normal and immune, has greater antibacterial properties than old serum, the latter having sustained a loss of antibodies as well as complement and opsonins. Antimeningitis serum is rich in opsonins and has high phagocytic properties. Recovery from meningitis is in great measure due to this phagocytosis. A clinical test, the addition of 1 c.c. of fresh sterile human or guinea-pig serum to each 9 c.c. of antimeningitis serum, before intraspinal injection, would be of value for the purposes of increasing phagocytosis of the micro-organisms, especially in cases of severe and serum-resistant meningococcus meningitis.

The Influence of Active Normal Serum (Complement) on Meningococci

DRS. T. MATSUNAMI and J. A. KOLMER, Philadelphia: We found that the bactericidal activity in vitro of different antimeningitis serums is quite low. Fresh or active antimenin-

gitis serums are somewhat more bactericidal than the same serums after inactivation by heating at 60 C. for thirty minutes. Active normal human and guinea-pig serums are slightly bactericidal for meningococci. Horse antimeningitis serum and normal human and guinea-pig serum are also found to have a bactericidal activity, independent of complement bacteriolysis. It is further found that the use of whole blood was of more effect than the use of serum alone. The final conclusions from these experiments is that the addition of active normal human or guinea-pig serum (complement) to antimeningitis serum does not greatly add to bactericidal activity, as bacteriolysis is unimportant in antimeningitis serum; but it is also found that opsonic activity (an important curative factor) is greatly increased by such addition. Moreover, it is considered worth while, in view of these findings, to use clinically an antimeningitis serum to which has been added active human or guinea-pig serum, prior to intraspinal injections, especially in severe and serum-resistant cases. In this respect human serum is superior to guinea-pig serum, when proper aseptic precautions are maintained.

DISCUSSION

DR. WILLIAM H. PARK, New York: I should like to ask a question as to the use of "specific therapy" in the treatment of cerebrospinal meningitis. Could not one get a serum for one type which would be stronger than the polyvalent serum? If one or two types could be injected into the horse at once and an antiserum produced, the advantage would surely be greater than if one used two different horses for those types. Has a true polyvalent serum been produced?

DR. A. P. HITCHENS, Glenolden, Pa.: Dr. Park's point is well taken. There may, however, be greater possibility of reducing the death rate through the use of specific serums. It was possible that there might be immunologic variations of meningococci within the serologic types. It was well known that, with the best balanced serums obtainable, one finds cases of meningitis to resist the action of the polyvalent serum. Meningococci can not be accurately and sharply grouped within certain types, but follow the order of a chromatic scale. There are an almost innumerable number of slight variations.

DR. CHARLES KRUMWIEDE, New York: I am interested in the precipitin test diagnosis of type, but I am far from accepting its specificity. There are reactions alike for Types I and III, and Strain II will pick up Strain IV. Before progress can be made, an easier way of differentiation must be found; but I feel a little hopeless about discovering it.

A Rapid, Simple Method for Extraction of Precipitin Antigen from Bacteria

DR. CHARLES KRUMWIEDE, New York: This is not original, but it demonstrates the extraordinary resistance of bacterial precipitin antigen to both heat and chemicals. A very heavy suspension of bacteria is necessary for the technic. Antiformin is added and the mixture is kept boiling till the bacteria are dissolved. Phenolphthalein is next added, then hydrochloric acid, and finally alcohol. The solution is then dissolved to twenty times its volume with saline, to get rid of bacterial rests. The clear solution results in an extract to be diluted from fifty to 200 times. The essential point is to start with a very heavy bacterial suspension. Acid-fast bacteria can not be used for this method, as they are not dissolved by the solution.

DISCUSSION

DR. GEORGE SMITH, Glenolden, Pa.: Is this as valuable for the production of other immune bodies, when employed as antigen?

DR. CHARLES KRUMWIEDE, New York: I have tried to produce immune serum to the antigen. It does not produce any antibodies.

Observations on the Intraspinal Auto-Arsphenamized Serum Therapy of Cerebrospinal Syphilis

DR. BENJAMIN A. THOMAS, Philadelphia: Cases of tabes are often found that do not respond to treatment. The spinal fluid sometimes gives a positive Wassermann reaction, when the blood is negative. In four years' experience I have used auto-arsphenamized serum. Intraspinal injection is given

after intravenous injection, under careful sterile technic. An amount of spinal fluid is removed equal to the amount injected. The foot of the bed is raised after treatment. The treatment is continued until the spinal fluid is permanently negative. If improvement is found to follow intensive intravenous treatment, the intraspinal injection is not used. Degeneration of the cord cannot be affected by intraspinal methods of treatment. Vascular cases are found to respond better to intravenous treatment alone.

DISCUSSION

DR. H. L. ABRAMSON, New York: Was whole serum used, or was it diluted with salt solution?

DR. J. A. KOLMER, Philadelphia: At the Polyclinic in Philadelphia we have a large number of cases of syphilis, under Dr. Schamberg's care. A number of intraspinal injections are given. We believe that something can be gained by arsphenamizing the serum in vitro after Ogilvie's method.

DR. B. A. THOMAS, Philadelphia: We diluted neither serum nor spinal fluid. I think that that is an open question. I do not put the patient under the ordeal of intraspinal injection, if it can be avoided.

(To be continued)

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-Fifth Annual Meeting, Held at Memphis, April 9-11, 1918

The Surgical Treatment of Chronic Gastric and Duodenal Ulcers

DR. R. L. SANDERS, Memphis: In the surgical treatment of duodenal ulcer, posterior all catgut gastro-enterostomy is the method of choice. In selected cases, pyloroplasty, after the method of Finney, is very satisfactory. When the ulcer is small and no obstruction present, it may be excised and the opening closed after the method of Heineke-Mikulicz. If there is a recurrence of symptoms, it is probably due to faulty technic.

The mortality is much higher in excision with the knife than that by the actual cautery. Balfour has shown that cautery excision of the ulcer is quite safe and that the resulting scar produces a limited amount of deformity. The heat destroys the ulcer and also the cancer liability. The opening thus made should be closed with chromic catgut and reinforced by a layer of omentum to prevent leakage. Gastro-enterostomy should always accompany this procedure.

DISCUSSION

DR. J. HUGH CARTER, Memphis: While it is difficult to differentiate between gastric and duodenal ulcers and gall-bladder diseases, as they are closely associated, yet it can be done by going over the history of the patient carefully and using the roentgen ray as an aid to diagnosis.

DR. G. C. SAVAGE, Nashville: I believe every operating room, where the stomach or duodenum is to be operated on for ulcer that may be cancerous, should be equipped with the machinery for producing the high frequency current of electricity, and that the spark desiccation treatment should be used, and not the galvanocautery or thermocautery.

DR. E. J. JOHNSON, Memphis: In any attempt to remove a duodenal ulcer we must consider the necrotic condition of the tissue due to extension of the ulcer beyond the reach of the finger, and we may have an additional sloughing.

Some Unsettled Points in the Etiology of Appendicitis

DRS. E. H. BAIRD and J. P. BAIRD, Dyersburg: Concurrent or recent attacks of tonsillitis and other infections of the upper air passages given in the histories of cases of appendicitis, especially in children, cause one to associate these cases together. In a certain number of these cases, pus has been taken from the gums, from the gallbladder or appendix, and cultures, and the predominating infection found in one closely corresponded to the other.

DISCUSSION

DR. JERE L. CROOK, Jackson: We are still losing 10 per cent. of all cases from appendicitis regardless of the time

when operation is performed. This mortality in practically every instance is due to delay in removing the appendix. I have found a number of cases of appendicitis due to diseased teeth, both in children and in adults.

DR. JOHN L. JELKS, Memphis: I have known of a number of cases of pellagra in this section in which operation has been performed under the mistaken diagnosis of appendicitis. I would sound a note of warning not to operate in cases of appendicitis without a blood count.

DR. E. J. JOHNSON, Memphis: With reference to relying exclusively on a blood count, I agree with Dr. Jelks that if it is always convenient, a blood count should be made. On the other hand, I have seen a good many cases in which blood counts made by competent pathologists were negative, yet the clinical symptoms were positively convincing, and after the abdomen was opened, a badly diseased appendix was found and removed. If one relies too much on a blood count, some patients may be lost from appendicitis that might be saved by operation.

DR. WILLIAM KRAUSS, Memphis: A surgeon is never justified in going into the abdomen for an acute condition without a blood count, and this blood count should include both total and differential. A surgeon ought to have sense enough to estimate the value of the various points in his evidence before he operates. If his total and differential blood counts are negative, and he has other reasons to suppose that an operation is necessary, it is a question for his surgical judgment of what he is going to do next.

DR. ROBERT CALDWELL, Nashville: I grant that occasionally we see an acute appendix case in which there is not a leukocytosis. In my experience I recall only one such case. In all the others there has been a leukocytosis. I think we ought to have a blood count in all these cases if we are going to do scientific surgery.

Surgery of the Thyroid

DR. J. B. HASKINS, Chattanooga: A simple adolescent goiter should be given an opportunity to subside under proper management, and if it does not disappear after puberty is well established, it should be removed. In cases in which the enlargement begins to increase, operative treatment is especially advisable, as the gland will surely make pressure and may possibly change its form and become toxic.

DISCUSSION

DR. W. D. HAGGARD, Nashville: The adolescent types of goiter ought not to be operated on, as these patients get well without treatment and in spite of treatment; whereas the smooth adenomatous type of goiter should be removed because its growth is rapid. It is a deformity. It tends to undergo degeneration, and its enucleation is very simple. The large colloid tumor can be benefited in the early stages by iodine, and sometimes cured; but it becomes a nuisance on account of the deformity resulting, and is not an unmixed blessing because it occasionally undergoes not only malignant but sometimes toxic degeneration; hence this type of goiter should be removed.

Complete Intestinal Obstruction from Carcinoma of the Sigmoid and Rectum

DRS. W. D. HAGGARD and W. O. FLOYD, Nashville: Our experience in five cases justifies the following conclusions: 1. Intestinal obstruction from carcinoma of the sigmoid and rectum is preceded by a very definite set of prodromal symptoms. 2. These symptoms consist of attacks of colic, nausea and vomiting, without elevation of temperature, with a left-sided tenderness or tumefaction, with or without much pain, and with constipation, obstipation, loss of weight, and blood in the stools, over a period of a few to many months. 3. With these symptoms, especially in a patient within the cancer bearing age, a roentgen examination of the colon should be made, and if necessary an exploration to determine the diagnosis before complete obstruction has occurred. 4. With carcinoma undisturbed, it being one of the most deadly conditions known to the physician, why should we, with the foregoing symptoms, allow our patients to go undiagnosed until

obstruction actually occurs, which, without operation, is one of the most rapidly fatal lesions encountered within the abdominal cavity, and which with operation carries with it one of the highest mortality rates known to surgery?

DISCUSSION

DR. JOHN L. JELKS, Memphis: Cancer of the sigmoid is not disseminated as quickly as cancer elsewhere. Cancer of the sigmoid may remain latent for a long time, and cancer of almost any part of the colon is later in its metastasis than are cancers in some other localities. A diagnosis of cancer of the intestine, especially of the rectum and sigmoid, should never be delayed until bloody stools appear. Certainly, the diagnosis of, at least, a suspicious condition should be made by proctoscopy and sigmoidoscopy long before the latent and late symptoms appear.

Acute Osteomyelitis

DR. E. M. SANDERS, Nashville: Acute osteomyelitis is in all probability primarily a metastatic condition, and the focus exists, or has existed, in the patient, being regarded innocent perhaps at the time. Typhoid fever sometimes gives rise to symptoms very similar to those of osteomyelitis, but the Widal and leukocyte count will usually differentiate the conditions. In the fulminating type, in which convulsions and delirium are the first symptoms, the local condition may be overlooked until the postmortem clears up the case. The roentgen ray, when available, should always be tried; but a negative picture means nothing.

The Proper Interpretation of Bladder Symptoms

DR. GEORGE R. LIVERMORE, Memphis: Bladder symptoms may be due to disease of any part of the genito-urinary tract. A cystitis that does not respond to bladder irrigations in a short time is, in the majority of cases, due to infection higher up; but it is a fact that a cystitis may persist, even after the infection higher up has been eradicated. A pyelitis, due to infection following traumatism induced by a calculus, may clear up under pelvic lavage, diuretics, and rest in bed, with consequent relief of bladder symptoms, only to have both return if the stone is not removed. Therefore, it is important to find the cause, for it would be unfair to irrigate the pelvis of the kidneys for a pyelitis that was constantly being reinfected from a pus pocket in the tonsils.

Contracture of the neck of the bladder, prostatic bar and hypertrophy of the prostate produce similar symptoms, and as the treatment is so different one should be sure that one's diagnosis is correct before subjecting patients to treatment. Every person presenting bladder symptoms should be subjected to a complete physical, chemical, microscopic, cystoscopic and roentgen-ray examination before treatment is begun, for only by such painstaking study can one accurately locate and scientifically treat diseases of the genito-urinary system.

Surgical Treatment of Varicose Veins

DR. WILLIAM S. ANDERSON, Memphis: The following operation has proved satisfactory: About an inch below Poupart's ligament a transverse incision is made in the groin 2 or 3 inches long, and through this the saphenous vein is exposed at the opening and ligated; the vein is now dissected by the Mayo stripper or any other satisfactory means down to the region just below the knee. At this point open dissection should be used, for here the larger branches of the great vein begin to enter, and it is always advisable to dissect out all the veins of the calf down to where they are very small. This is easily done by a long cut from the knee to the ankle down to the deep fascia, turning back the flap of skin and fat and dissecting out the veins. The cure of the ulcer depends largely on the complete removal of the vein; but if the ulcer is associated with a thick base of scar tissue, it is best to remove it down to or better through the deep fascia with the mass of poorly nourished scar tissue beneath and around them. This procedure may lay bare quite an exposed area, and it is best to cover this at once with Thiersch skin grafts. The third requisite is secured by the proper nourishment of the skin and the proper healing of the wound by perfect

hemostasis, proper asepsis, and delicate handling of the tissues.

The whole leg is kept well bandaged, immobilized and elevated for one week. After this the calf should be kept well bandaged for a week longer. After slight exercise the patient is allowed to get up. The leg to the knee should be kept well supported by a well applied bandage for several weeks longer, and then the bandage discarded.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Boston

April, 1918, 16, No. 4

- 1 *New Procedure for Compensatory Shortening of Unaffected Femur in Cases of Considerable Asymmetry of Lower Limbs (Fractures of Femur, Coxalgia, etc.). J. Calvé and M. Galland, France. —p. 211.
- 2 Some Conditions of Artificial Stumps. E. M. Little, England. —p. 236.
- 3 Results of New Operation for Obstetric Paralysis. J. W. Sever, Boston.—p. 248.
- 4 *Treatment of Lesion of Musculospiral Nerve in Military Surgery. N. Dunn.—p. 258.

1. **Compensatory Shortening of Femur.**—Three procedures are proposed by Calvé and Galland: First, "autopegging;" second, a "setting procedure;" third, "the procedure of direct holding" (dovetailing) which the authors have practiced twice on the living subject, is difficult of execution if it is to be carried out with true mathematical precision. It is better not to employ this method. Autopegging: The upper fragment is cut obliquely, with the obliquity from above downward, from within outward, and from the back forward, following a predetermined plan. Due to the mechanical procedure, the lower fragment presents an exactly identical obliquity. At the lower part of this section, that is to say, the part lowest down and to the outside, a quadrangular tenon is cut out with a rotary electric saw. The tenon is inserted and sutured into the medullary canal of the upper fragment. Experience has shown that angular displacement of the lower fragment (anterior, posterior, or lateral) is impossible. Setting by tenon and mortise. The lower fragment is cut as in the preceding method, but the extremity of the tenon is bevelled on its upper face. The tenon, as in the previous method, presents lateral parallel cut surfaces. The upper fragment has the same oblique section as before, but a mortise is cut which allows the exact fitting in of the tenon. When the osseous extremities are fitted in, the oblique section prevents the forward and outward displacement of the lower fragment. The tenon, held by strong catgut or reindeer tenon, cannot fall into the medullary cavity, which prevents the backward and inward displacement of the lower fragment. The tenon set in the mortise prevents lateral displacement. Finally, on account of the bevelling of the tenon on the upper surface, it cannot slip round and get out of the mortise. Direct holding (dovetailing). Two lower tenons are set in two upper mortises; two upper tenons are set in two lower mortises. Each of these tenons is the crown of an arch, and one ought to prevent backward displacement, while the others oppose displacement forward and to the side.

4. **Treatment of Lesion of Musculospiral Nerve.**—Dunn has had under treatment at the Military Orthopedic Hospital, Shepherds Bush, twenty-six cases of partial or complete lesion of the musculospiral nerve or its branches. Pre-operative treatment of the lesion included: (a) splintage; (b) electrical treatment and massage. The method of suture which Dunn has adopted has been transfixion of the nerve by a single suture to maintain apposition until the sheath has been united by either continuous or interrupted sutures, when the tension suture can usually be removed. The nerve

can then be wrapped in corgile membrane, egg membrane, or fascia, etc. Dunn has seen recovery take place where no ensheathing membrane has been used, and it has been his practice for the last ten months to dispense with wrapping. The points he attaches most importance to are careful handling of the nerve—uniting the nerve without torsion, so that bundles, originally in continuity, are again in apposition; taking care that the fine suture bites the sheath only, and unites its edges accurately, and where much scar tissue is present, embedding the nerve in healthy muscle substance. If the lesion is the result of a clean bullet wound, Dunn says, operation may be safely performed as soon as the superficial wounds are healed.

In cases in which the wound has been septic, it is his practice to allow at least two months to elapse after the last sinus has healed before proceeding to suture of the nerve, and in cases in which there has been involvement of bone with the scar adherent, it is advisable to excise the scar, suturing the nerve a fortnight later if primary healing has taken place. Where the case is complicated with limitation of the flexion of the elbow, it is important to overcome this before suture, as the position of acute flexion in the pronated position, will, with stretching, allow apposition of the ends in cases in which there is destruction of 2 to 3 inches of nerve substance. This position should be maintained continuously for one month after operation. If the lesion is complicated by an ununited fracture of the humerus, one should, before proceeding to bone grafting, explore the nerve and see that suture without tension is possible, as the question of further shortening of the humerus might arise. Dunn has performed nerve grafting on two occasions only, and in neither has this proved satisfactory.

American Journal of Physiology, Baltimore

March, 1918, 45, No. 4

- 5 Sensory Activation by Alkalies. W. J. Crozier.—p. 315.
- 6 Sensory Activation by Acids. W. J. Crozier.—p. 323.
- 7 *Differences in Behavior of Segments from Different Parts of Intestine. W. C. Alvarez, San Francisco.—p. 342.
- 8 Quantitative Studies on Intracellular Respiration. Relation of Oxygen Concentration and Rate of Intracellular Oxidation in Paramecium Caudatum. E. J. Lund, Minneapolis.—p. 351.
- 9 Id. Rate of Oxidations in Paramecium Caudatum and Its Independence of Toxic Action of Potassium Cyanid. E. J. Lund, Minneapolis.—p. 365.
- 10 Quantitative Study of Effect of Radium Radiations on Fertilization Membrane of Nereis. A. C. Redfield and E. M. Bright, Woods Hole, Mass.—p. 374.
- 11 *Mechanism of Action of Anesthetics. W. E. Burge, A. J. Neill and R. Ashman, Urbana, Ill.—p. 388.
- 12 *Relation Between Growth Capacity and Weight at Birth. F. S. Hammett, Boston.—p. 396.
- 13 Increase of Permeability to Water in Fertilized Sea Urchin Eggs and Influence of Cyanid and Anesthetics on Change. R. S. Lillie.—p. 406.
- 14 Experimental Study of Alternating Growth and Suppression of Growth in Albino Mouse, with Special Reference to Economy of Food Consumption. H. B. Thompson and L. B. Mendel, New Haven, Conn.—p. 431.
- 15 Orokinase and Ptyalin in Saliva of Horse. C. E. Hayden, New York.—p. 461.
- 16 *Influence of Pituitary Extracts on Daily Output of Urine. M. H. Rees, Chicago.—p. 471.
- 17 *Initial and Progressive Stages of Circulatory Failure in Abdominal Shock. C. J. Wiggers, New York.—p. 485.
- 18 *Mode of Action of Food in Increasing Oxidation. W. E. Burge, A. J. Neill and R. Ashman, Chicago.—p. 500.
- 19 Threshold Values in Spinal Frog. Comparison of Flexion Reflex and Nerve Muscle Response. B. R. Lutz, Boston.—p. 507.
- 20 Id. Variations with Change of Temperature. B. R. Lutz, Boston.—p. 515.
- 21 *Effects of Epinephrin on Urine Flow of Anesthetized and Unanesthetized Dogs. R. E. L. Gunning, Chicago.—p. 528.

7. Behavior of Isolated Intestinal Segments.—Five segments excised from different parts of the rabbit's intestine were studied by Alvarez under identical conditions in warm aerated Locke's solution. He found that the segments of duodenum and jejunum have greater tone and contract more after cutting than do the ileal segments. The colon also has a high tone. The duodenal segment is generally the first to begin beating well. The tendency to rhythmic activity is graded from duodenum to ileum. The first few centimeters of duodenum, corresponding to the duodenal cap in man, does

not beat well. The colon is very slow in starting up and it differs greatly from the small intestine in its behavior. The duodenum suffers more from trauma and from adverse conditions than do the other segments. Segments from sickly animals beat poorly and become fatigued early. These changes are often more marked in some segments than in others so that the gradation of rhythm is changed. The gradation of rate of contraction from duodenum to ileum is remarkably constant in normal animals. In one case the gradation was upset by the presence of an inflamed area in the ileum. The bowel in that region contracted 21.5 to 25 times per minute, or twice as fast as normal. After twenty-four hours, the segments beat at a faster rate and maintain the gradient. They continue to react normally to epinephrin and atropin.

11. Mechanism of Action of Anesthetics.—The authors' investigation showed that narcotics of widely different constitution, such as chloroform, ether, chloral hydrate, nitrous oxid and magnesium sulphate, decrease the catalase of the blood, parallel with the increase in the depth of narcosis. A very powerful anesthetic, such as chloroform, decreases the catalase more quickly and extensively than does a less powerful anesthetic, such as ether. Slowly acting anesthetics, such as chloral hydrate and magnesium sulphate, decrease, accordingly, the catalase of the blood more slowly than a quickly acting anesthetic such as nitrous oxid. As a result of the experiments reported in this paper, and of work done previously on the anesthetics in this laboratory, the theory is advanced that narcosis is due to the direct destruction of catalase by the narcotic, with resulting decrease in oxidation, while recovery from anesthesia is brought about by an increase in catalase due to the increased output from the liver, with resulting increase in oxidation.

12. Growth Capacity and Weight at Birth.—Hammett says that the growth capacity of human infants during the first two weeks after birth is in a large degree dependent on the weight at birth. It is roughly inversely proportional to the initial weight. The ability to recover and pass the initial weight after the postnatal decline obviously varies in the same way, so that at the completion of the period studied some 82 per cent. of those infants weighing between 5 and 6 pounds at birth have recovered or passed their initial weight, as compared with 20 per cent. of those weighing from 10 to 11 pounds. The intermediate groups vary inversely as to their weight at birth.

16. Effect of Pituitary Extract on Urine Output.—An investigation was made by Rees to find out, first, whether the subcutaneous injection of pituitary extract will cause any quantitative variation in the daily output of urine; second, whether such injection will in any way affect the quantity of urine excreted, and, if so, to find out if possible the factors involved. He found that subcutaneous injections of pituitary extract do not alter quantitatively the daily output of urine in cats and rabbits, nor do they cause any marked variation in the specific gravity of the urine. The subcutaneous injection of pituitary extracts causes a delay of seven to eight hours before the beginning of the diuresis which follows the ingestion of large amounts of water. This delay, however, does not cause any variation in the total amount of urine excreted in twenty-four hours. The delay in diuresis which is produced by subcutaneous injection of pituitary extract is due in part at least to a delayed absorption from the alimentary canal. The subcutaneous injection of pituitary extract has no influence on the diuresis induced by a continuous intravenous injection of isotonic salt solution.

17. Stages of Circulatory Failure in Abdominal Shock.—The fundamental aim of this research was to analyze the consecutive changes evident in optical records of the right auricular, right ventricular and central arterial pressures. The course of the circulatory failure in abdominal shock is divided by Wiggers into three stages: 1. The initial stage, lasting about thirty minutes after intestinal exposure, during which effective venous pressure and cardiac discharge are apparently not appreciably reduced but the arterial pressure,

as recorded precisely shows distinct alterations not adequately indicated by mean pressure manometers. 2. The progressive stage, lasting two to four hours, during which effective venous pressure falls progressively, cardiac efficiency is impaired and the arterial pressure falls toward a low level. The heart usually accelerates. 3. Complete circulatory failure, marked by a prolonged period during which effective venous pressure has reached its lowest level and the arterial pressure slowly falls further until death supervenes. During this stage cardiac slowing usually takes place. A careful study of the optical tracings of arterial, intraventricular and auricular pressures, accompanied by constant readings of the mean arterial and effective venous pressures during these stages, corroborates the conclusion—in the ascendancy at the present time—that the decreased venous pressure and consequent reduction in minute output is the predominate factor in the pronounced fall of arterial pressure during the progressive stage of shock. The dynamics of the circulation indicate clearly, however, that a reduction in peripheral arterial resistance initiates the fall of arterial pressure and the diminished filling of the arterial trunks before the effective venous pressure and cardiac discharge are reduced. The rôle that a diminished arterial resistance plays in the circulatory failure is therefore directly established for the first time.

18. Mode of Action of Food in Increasing Oxidation.—The authors conclude from their observations that alcohol increases the catalase of the blood by stimulating the pancreas, the spleen, the gastric and intestinal glands and particularly the liver to an increased output of this enzyme. It is permissible, perhaps, to assume that food like alcohol stimulates the production of catalase in the organs mentioned and in this way causes an increase in oxidations.

21. Effect of Epinephrin on Urine Flow in Dogs.—Gunning found that epinephrin in all effective dosages administered intravenously inhibits the urine flow in both anesthetized and unanesthetized dogs. The threshold of the reaction is slightly lower in unanesthetized than in anesthetized animals. Small injections and infusions merely inhibit the flow of urine while larger doses produce a complete cessation of flow. The inhibition usually persists until shortly after the blood pressure reaction is complete. Diuresis succeeding the inhibition was not observed. The rapid return of the flow to normal after prolonged infusions suggests that the drug exercises its inhibition on the kidney function in a way other than by the ischemia produced. During the administration of ether the urine flow is completely checked and recovery under the anesthetic takes place slowly.

Bulletin of Johns Hopkins Hospital, Baltimore

April, 1918, 29, No. 326

- 22 Cinq Ans Après. F. C. Shattuck, Boston.—p. 77.
23 Diabetes; Results of Past Treatment and Future Problems. E. P. Joslin, Boston.—p. 80.
24 *Study of an Auto-Agglutinin Occurring in Human Serum. M. C. Clough and I. M. Richter, Baltimore.—p. 86.
25 *Simple Method for Determination of Venous Pressure. N. W. Brown, Baltimore.—p. 93.

24. Auto-Agglutinin Occurring in Human Serum.—Auto-agglutination, or agglutination of red blood cells by serum from the same individual, was observed by Clough and Richter in the blood of a patient admitted to the hospital on account of a bronchopneumonia associated with chronic mitral endocarditis. Agglutination occurred only at low temperatures (below 22 C.), and broke up if heated to body temperature. Agglutination could be reproduced by again chilling the same preparation. This serum caused similar agglutination of red blood cells from other individuals of the same blood group (Group 3), and also of Group 4. (It contained ordinary iso-agglutinins active at body temperature for cells of members of Groups 1 and 2). The cells of the patient washed free from serum showed no tendency to agglutination, and behaved exactly as did cells from other individuals, Group 3. Hence the phenomenon depended solely on a peculiarity of the serum, and not of the cells. The active substance in the serum had many of the properties of an ordinary agglutinin. It was active in fairly high dilution

(up to 1:500). It resisted heating to 60 C. for half an hour, but was destroyed at 65 C. It remained active after preservation in the icebox for several months. It was not dialyzable. It was not removed by extraction with chloroform. It was precipitated with the euglobulin by 36 volumes per cent. of saturated ammonium sulphate solution. It was absorbed from the serum during the process of agglutination (at low temperatures). It was entirely distinct from the ordinary iso-agglutinins in the serum, since either one could be removed from the serum, leaving the other intact.

The auto-agglutinin differed from ordinary agglutinins in the following ways: 1. It was active only at low temperature, the agglutination breaking up on warming. 2. It was absorbed from the serum only at low temperature, and was liberated from the cells on warming. 3. It was active on red blood cells from all of the different species of animals with which it was tested (man, rabbit, guinea-pig, hen, sheep, cat and pig). That the same substance was concerned in the agglutination of human cells and of cells from these different animals, and that it was distinct from the ordinary hetero-agglutinins, which were also present in the serum, was shown by absorption tests. No autohemolysin was present in the serum. A similar study of rouleaux formation was made in order to differentiate it more clearly from auto-agglutination. The substance causing rouleaux formation resembled the auto-agglutinin in that it, also, was active on cells from other individuals. Both substances were precipitated from the serum with the euglobulin, and neither was dialyzable. Unlike the auto-agglutinin, the rouleaux-forming substance was active only in concentrated serum. Its activity rapidly disappeared on standing, and fresh cells were necessary for the formation of rouleaux. Rouleaux formation occurred equally well at high or low temperature. Heating the serum to 65 C. increased its rouleaux-forming power. This substance was not absorbed from the serum by the cells in the process of rouleaux formation. The presence of the auto-agglutinin was probably not related in any way to the disease from which the patient was suffering. It persisted with slight variation in strength for a period of two months' observation, and was found to be present in the serum of a daughter of the patient. Hence it was probably not pathologic phenomenon, but an individual, hereditary peculiarity.

25. Simple Method for Determination of Venous Pressure.—An instrument for the measurement of pressure within peripheral veins has been constructed by Brown from an ordinary mercurial manometer. The apparatus consists of a single limb manometer in which water, carbon tetrachlorid or bromoform is substituted for mercury. To the manometer is connected a small, saddle shaped cup, 2 cm. in diameter, covered with the thinnest rubber tissue obtainable. This membrane must be loosely applied and should permit free oscillation without tension. A rubber bulb with thumb screw compressor regulates the pressure within the manometer. The use of carbon tetrachlorid or bromoform instead of water is advocated because of higher specific gravity and lower viscosity. The former is preferred for routine observations. The readings are reduced to water pressure. The principle employed is that described by von Basch in 1876 for the determination of arterial pressure.

California State Journal of Medicine, San Francisco

April, 1918, 16, No. 4

- 26 Spasmodic Vasomotor Disturbances of Respiratory Tract, with Special Reference to Hay Fever. G. Selfridge, San Francisco.—p. 164.
27 Colloidal Gold (Lange) Test in Diagnosis. R. W. Harvey, San Francisco.—p. 170.
28 Permanganate Reduction Index of Cerebrospinal Fluid. E. A. Victors, San Francisco.—p. 175.
29 Obstetric Anesthesia. C. B. Palmer, San Francisco.—p. 175.
30 Refraction in Children. E. S. McClelland, Los Angeles.—p. 180.
31 Some Ocular Defects in Mentally Retarded Children. H. Barkan, San Francisco.—p. 183.
32 Congenital Occlusion of Choanae of Nose. H. Y. McNaught, San Francisco.—p. 193.
33 Kidney Infections in Women. W. E. Stevens, San Francisco.—p. 194.
34 Backward Displacement of Uterus. T. O. Burger, San Diego.—p. 197.

- 35 Preoperative Investigation by Group Study Suggested as Method for Lowering of Surgical Fatalities. F. W. Birtch, San Francisco.—p. 200.
- 36 Cardiospasm. T. J. Orbison, Los Angeles.—p. 202.
- 37 *New Device for Holding Fractures of Long Bones. J. A. Simpson, San Francisco.—p. 204.
- 38 Vaccine Therapy. T. H. Glenn, Los Angeles.—p. 205.
- 39 Rectal Hemorrhage. A. J. Zobel, San Francisco.—p. 207.
- 40 Management of Surgical Risk. F. Hinman, San Francisco.—p. 211.
- 41 Acute Gastroduodenal Perforations. E. Butler, San Francisco.—p. 215.

37. **Device for Holding Fractures of Long Bones.**—Believing that the principle of the internal splint is sound, but that its application has been faulty, Simpson has constructed a device consisting of two parts—a screw and a cannula, and is called a bushing screw, as the device is both a screw and a bushing. The length of the screw corresponds accurately with the depth of the bore in the bone (the diameter of the bone) and is threaded only for a short distance at the head end. In oblique fractures no plate is needed; all that is necessary is to expose the fracture by incision, reduce it and with the bone held firmly drill two holes, properly located, pass the screws through and tighten them. In transverse fractures a plate is needed. The advantages of this device are said to be that when applied, it has the effect of a screw with a head on both ends. It gives a firm grip on the plate, if one is used, and on the compact tissue on the opposite side of the bone.

Illinois Medical Journal, Chicago

April, 1918, 33, No. 4

- 42 Attic of Middle Ear; Its Suppurative Conditions. O. T. Freer, Chicago.—p. 189.
- 43 Acute Infectious Diseases Observed in Cook County Hospital in 1917. M. L. Blatt, Chicago.—p. 203.
- 44 Open Treatment of Fractures. W. F. Scott, Oak Park.—p. 208.
- 45 Neglected Leukocyte Count from Diagnostic, Prognostic and Differential Standpoint. M. V. Gunn, Bloomington.—p. 212.
- 46 Problems of Medical Officer of Navy. H. E. Odell, Great Lakes.—p. 216.
- 47 Symptoms, Diagnosis and Treatment of Acute Anterior Poliomyelitis. I. Tumpowsky, Chicago.—p. 218.
- 48 Goiter. J. K. P. Hawks, Bloomington.—p. 221.
- 49 Nitrous Oxid Analgesia in Obstetrics. J. C. Hoag, Chicago.—p. 224.
- 50 Curved Needle Incision in Vaccination, New Technic. W. R. Abbott, Chicago.—p. 226.

Journal of Cutaneous Diseases, Chicago

April, 1918, 36, No. 4

- 51 Eruption of Acuminate Papules in Acute Lichen Planus. D. W. Montgomery and G. D. Culver, San Francisco.—p. 203.
- 52 Ulcerating Granuloma of Pudenda; Report of Two Cases. V. Pardo, Havana, Cuba.—p. 206.
- 53 *Case of Scleroderma Diffusa in Girl, Nine Years of Age. H. Goodman, New York.—p. 210.
- 54 Case of Syphilitic Keratoderma. H. W. Baker, Toronto, Canada.—p. 220.
- 55 Two Cases of Gonorrheal Keratosis. W. H. Brown and A. M. Davidson, London, England.—p. 225.

53. **Case of Scleroderma Diffusa.**—The case reported by Goodman is an unusual example of acute diffuse scleroderma, in a child, 9 years of age. The disease followed a tonsillitis. It appeared first on the back of the neck, and spread so that no part of her body was left free. The heart rate was accelerated, but there was no evidence of cardiac disease. The mentality of the child was not affected. Malfunction of none of the glands of internal secretion could be determined. The child, after five months, had recovered. There remained some hardness of the scalp and of the skin of the thighs. No atrophy was present. Thyroid extract had been given for several months, but discontinued because of its effect on the heart rate and the presence of a tremor. Oil rubs had been given actively. Histologic study was not possible, as a biopsy was refused.

Journal of Nervous and Mental Disease, Lancaster, Pa.

March, 1918, 47, No. 3

- 56 Estimation of Proportions of Gray and White Matter in Human Brain, Made Through Plane of Optic Chiasm by Means of Planimeter. A. E. Taft, Boston.—p. 161.
- 57 Case of Jacksonian Fits in Multiple Sclerosis. H. T. Patrick, Chicago.—p. 176.

- 58 *Leukemic Infiltration in Spinal Canal as Cause of Paraplegia. P. Bassoe, Chicago.—p. 180.
- 59 Charcot-Marie Type of Progressive Muscular Atrophy. G. Wilson, Philadelphia.—p. 191.
- 60 Graphic Representation of Pupils. F. R. Fry.—p. 205.

58. **Leukemic Infiltration in Spinal Cord.**—The case reported by Bassoe is an example of paraplegia caused by purely mechanical compression of the cord by a leukemic tumor growing into the spinal canal. There is no evidence of leukemic infiltration or old toxic degeneration of the cord. The onset of severe pain followed by paralysis evidently occurred at the time when the canal had become too small for the growing leukemic mass Bassoe says. If at that time laminectomy had been performed and the dura merely slit posteriorly, serious injury to the cord might have been avoided. However, at the time it was impossible to ascertain that no cord infiltration or hemorrhage existed and that the symptoms were of purely mechanical origin. The existence of leukemia in any form makes the patient a poor subject for a major operation, but under similar conditions, with sudden onset of signs of cord compression in a leukemic patient previously free from cord symptoms, Bassoe hereafter will at least seriously consider the advisability of an operation.

Kentucky Medical Journal, Bowling Green

April, 1918, 16, No. 4

- 61 Etiology and Pathologic Physiology of Early Tuberculosis. C. S. Rockhill, Cincinnati.—p. 141.
- 62 Early Diagnosis of Pulmonary Tuberculosis. C. L. Sherman, Millwood.—p. 145.
- 63 Latency in Tuberculosis. J. Martin, Cynthia, Indiana.—p. 148.
- 64 Case of Hygroma Colli. L. Kahn, Louisville.—p. 152.
- 65 Diagnosis of Cerebrospinal Meningitis. J. D. Holston, Camp Zachary Taylor.—p. 153.
- 66 Angioneurotic Edema. C. V. Heistand, Merrimac.—p. 154.
- 67 Bronchial Asthma; Etiology, Symptomatology and Treatment. J. F. Dunn, Arlington.—p. 156.
- 68 How the Teacher Can Assist the Physician. J. S. Ragsdale, Paducah.—p. 157.
- 69 Value of Roentgen Ray in Diagnosis. D. Y. Keith, Louisville.—p. 160.

Maine Medical Association Journal, Portland

April, 1918, 8, No. 9

- 70 Incomplete Rupture of Transverse Colon. F. H. Jackson, Houlton.—p. 251.
- 71 Duodenal Feeding and Surgery in Peptic Ulcer. R. F. Chase, Portland.—p. 254.

Medicine and Surgery, St. Louis

February, 1918, 2, No. 2

- 72 Physical Reconstruction and Industrial Rehabilitation of Wounded and Diseased. F. D. Patterson, Harrisburg, Pa.—p. 127.
- 73 Review of Military Surgery for 1917. P. G. Skillern, Jr., Philadelphia.—p. 136.
- 74 Dermatology and War. H. H. Hazen, Washington, D. C.—p. 145.
- 75 Treatment of Infected Wounds with Dichloramin-T. W. E. Clark, Washington, D. C.—p. 152.
- 76 *Hitherto Undescribed Sequel to Measles. W. L. Vroom, Ridgewood, N. J.—p. 156.
- 77 Work in German Base Hospital. H. M. Richter, Chicago.—p. 159.
- 78 Résumé of Six Months' Base Hospital Experience. J. R. Buchbinder, Chicago.—p. 165.
- 79 Fibroma of Tongue with Consideration of Other Tumors of Tongue and Certain Technical Points in Tongue Resections. J. W. Churchman, New Haven, Conn.—p. 173.
- 80 Case of Pedicled Abdominal Transplant for Contracture of Finger. P. G. Skillern, Jr., Philadelphia.—p. 179.
- 81 Gastric Hemorrhage; Etiology, Clinical Manifestations and Treatment. F. Smithies, Chicago.—p. 180.
- 82 Acute Infection of Joints. J. K. Young, Philadelphia.—p. 190.
- 83 Diseases of Pituitary Gland. W. Englbach and J. L. Tierney, St. Louis.—p. 193.

76. **Sequel to Measles.**—In each instance seen by Vroom the early course of the attack of measles was uneventful, pursuing the classical course with headache, rise of temperature, cough, conjunctivitis, and measles eruption over the face and body. On the sixth or seventh day from the advent of the eruption, the patient suddenly developed a sore throat in the nature of an acute pharyngitis: red, engorged and painful, a marked aphonia, a sharp rise in temperature to 103 to 104 F., and pronounced epistaxis. Large moist bronchial râles in both lungs became evident early, accompanied with very acute pleuritic pain, usually in one side. In those cases that event-

usually pursued a severe or fatal course, fine crepitant râles became evident on about the second day, followed with an effusion into one or both pleural cavities; at first serous in character, but with a tendency rapidly to become purulent. Percussion gave no evidence of pulmonary consolidation, nor did postmortem findings reveal such. Expectoration from the first profuse yellow, glairy, with not the tenacity of that of lobar pneumonia; it was very markedly streaked with bright blood, and was not blood stained. In those severely ill, the expectoration became scanty and rather frothy in character, on the third or fourth day, and the fine crepitant râles remained pronounced. Cyanosis was a symptom appearing on the second day after the sudden rise in temperature. The patients complained of a tightness across the chest and would allow themselves to be moved in bed only under protest. The lips became indented and covered with brown crusts. The pulse respiration ratio was 1 to 3. The blood pressure registered 90 to 95 systolic, and 60 to 75 diastolic. Pleural effusions occurred early, often on the second day. The cyanosis, often an early symptom, had every evidence of being a resulting carbon dioxid poisoning from the failure of the highly congested and inflamed pulmonary alveoli to functionate in exchanging carbon dioxid for oxygen. The patients who did not survive, generally died within the first week; those that lived, have passed through a slow and tedious convalescence, the fine crackling râles slowly disappearing and the cyanotic condition passing away. The aphonia has been quite persistent. The pathologic and bacterial findings have not been worked out sufficiently for presentation. The mortality occurring from these so-called bronchopneumonia cases was 27 per cent.

Modern Hospital, St. Louis

April, 1918, 10, No. 4

- 84 Soldiers and Civil Hospitals. S. S. Goldwater, New York.—p. 233.
- 85 Hospital Schools for Crippled Soldiers. D. C. McMurtrie, New York.—p. 235.
- 86 Admitting System in Use at Milwaukee Children's Hospital. H. Gage, Milwaukee, Wis.—p. 242.
- 87 Standardization of Hospitals—Class XVII, Infectious Disease Hospitals. J. A. Hornsby and others.—p. 245.
- 88 Mechanical Equipment of Montefiore Home and Hospital. A. M. Feldman, New York.—p. 248.
- 89 Bookkeeping for Small Hospitals and Allied Institutions. H. K. Carter and C. A. Porter.—p. 254.
- 90 Relation of Hospital Superintendent to Research. H. O. Collins, Minneapolis.—p. 261.
- 91 Helen Newberry Nurses' Home. H. Leck, Detroit.—p. 264.
- 92 New Swedish Lutheran Hospital at Moline, Ill. O. Z. Cervin, Rock Island, Ill.—p. 267.
- 93 An Argument for Beauty in Hospital. H. J. Davison, New York.—p. 277.

New Jersey Medical Society Journal, Orange

April, 1918, 15, No. 4

- 94 Neglect of Internal Secretions as Cause of High Mortality in Many Diseases. C. E. de M. Sajous, Philadelphia.—p. 109.
- 95 Aural Catarrh. T. R. Chambers, Jersey City.—p. 116.
- 96 Transfer of Casualties in War. C. H. Wintsch, Newark.—p. 119.
- 97 Arterial Hypertension. B. Gutmann, New Brunswick.—p. 122.

Oklahoma State Medical Association Journal, Muskogee

April, 1918, 11, No. 4

- 98 Inflammation of Abdominal Tonsil. G. A. Wall, Tulsa.—p. 111.
- 99 Tuberculosis of Kidney. D. N. Eisendrath, Chicago.—p. 114. To be continued.
- 100 Recent Advances in Diagnosis and Treatment of Pneumonia. O. J. Walker, Oklahoma City.—p. 117.
- 101 Tubercle Bacilli in Blood of Tuberculous Animals and Man. H. S. Browne, Norman.—p. 122.
- 102 Thyroid in Uterine Hemorrhage. O. C. Klass, Muskogee.—p. 125.

Tennessee State Medical Association Journal, Nashville

April, 1918, 10, No. 12

- 103 Tuberculosis within Abdominal Cavity; Report of Case. W. O. Floyd, Nashville.—p. 463.
- 104 Acute Pyothorax. B. B. Cates, Knoxville.—p. 467.
- 105 Drug Addiction and Newborn. K. S. Howlett, Franklin.—p. 468.
- 106 Warning against Operations for Varicocele on Applicants for Enlistment. Registrants for Selective Draft and Soldiers. J. C. Bloodgood, Baltimore.—p. 469.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 23, 1918, 1, No. 2986

- 1 *Primary Suture of Wounds at Front in France. A. Bowlby.—p. 333.
- 2 *Gunshot Wounds of Abdomen at Casualty Clearing Station. R. Charles.—p. 337.
- 3 Shell Wound of Pancreas Causing Pancreatic Pseudocyst. J. Morley.—p. 341.
- 4 *Treatment of Infected War Wounds by Magnesium Sulphate. A. E. Morison.—p. 432.
- 5 Postoperative Thrombosis and Embolism. C. J. Symonds.—p. 344.

1. **Primary Suture of Wounds.**—Bowlby presents a summary of the results obtained in the treatment of wounds by various methods and emphasizes one method in particular, that of primary suture of wounds. He says that while success depends on many conditions which are beyond the control of the surgeon, it depends very largely on the surgeon himself. Primary suture of wounds is more likely to end in disaster than in benefit unless the operation is most carefully performed, and this implies, in the first place, the most minute aseptic precautions, such as are commonly practiced by British surgeons in their most serious operations in civil work. No more skin should be excised than is absolutely necessary; even if badly damaged it can often be saved. In the next place, the operation must be done most deliberately and thoroughly, so that no part of the wounded area escapes treatment. This all means a good deal more time than is required for the opening up and cleansing of the average infected wound which is not suitable for suture, but it is time well spent, especially if the case is one of fracture. On the other hand, operation for the excision and cleansing of small superficial wounds can be done quite quickly, and no class benefits more than these by this method of treatment. It is in the class of slightly wounded, with injuries of the soft parts, or flesh wounds, that early and careful operation yields the highest proportion of success. Hitherto, when wounded are numerous, these patients have habitually been carefully dressed but not submitted to operation. Often many weeks or months have elapsed before their wounds have finally closed, and for all this time they have been inmates of hospitals and frequently confined to bed. Some of them have had serious complications as well. Successful suture makes a complete cure of such patients in a time measured by days or weeks instead of by months.

The benefit to the more seriously wounded is still more obvious. Not only are compound fractures converted into simple ones, but the period of confinement to bed and to the hospital is greatly shortened. The absence of sepsis is well seen in the features of the patients, whose good color tells its own tale. There is none of the general loss of flesh, none of the shrunken and stiff, wooden-like limbs seen after prolonged suppuration, none of the stiffness of all the joints of the affected limb which is so long in recovering. Out of a total of 626 cases, 68 per cent. were successfully sutured and healed by first intention. At the observation hospital 123 wounds have been sutured, with success in 83 per cent. In these three separate areas there is a total of 1,202 cases under various surgeons, with success in about 70 per cent. Moreover, in many of the remaining 30 per cent. there was a very early closure of the wound in spite of superficial suppuration. The success obtained in cases of fracture is also very striking, showing 75 per cent. of successes. The amputation cases at the observation hospital have been few, but they also have been very satisfactory. Of eleven cases all the patients have recovered. Seven were amputations through the thigh, two through the leg, and two were Syme's. Ten out of the eleven healed soundly either after immediate suture or after closure of the flaps on the third or fourth day. One failed to unite, and suppurated. Another very satisfactory result is that the whole of the patients have, so far, recovered whose wounds were sutured at the observation hospital. There has as yet been no death in the 175 patients operated on for suture, whether the latter was successful or not. Yet many of these men were very badly injured. More than 40 of the 175 had

fractured bones; 2 of them had torn femoral arteries (but have kept their limbs after ligation of the vessel); 2 had torn posterior tibial arteries; 8 had wounds opening the knee joint, in one of which the patella had to be excised; several had fractures opening the elbow joint; more than 20 had multiple injuries; 2 of them required transfusion of blood. Bowlby does not believe that all these men would have recovered if their wounds had not been closed.

The application of this treatment must remain largely a question of man power from first to last. First, it is only by having enough stretcher-bearers that the British can get in the wounded who cannot walk, and, one must add, enough strong stretcher-bearers. If men are not brought in soon their wounds cannot be sutured, so it is really a race against time and against the microbic infection, which has got the start of both stretcher-bearers and surgeons. Difficulties exist which, though they might not be thought of by the inexperienced, explain why men may arrive too late without any one being to blame. Both many and strong stretcher-bearers are required, and it is difficult to provide too many. It is not clear that delay in reaching a casualty clearing station may be unavoidable. In the second place, primary suture of wounds evidently requires surgeons in proportion to the number of the wounded. The British have already been able to operate on almost all the most serious cases at the casualty clearing stations in recent battles, and one wounded man out of about every three wounded was passed through the room and operated on under an anesthetic. The remaining two thirds were sent to the base, and many of them were in the class of the lightly wounded. In future, the wounds which have been excised but not sutured at the front, as well as probably some not yet excised, will be dealt with by hospitals placed further back than the casualty clearing stations, and thus, if there are enough surgeons, and if wounded are not too numerous, the surgeons hope to be able to insure that a majority of all suturable wounds shall heal by first intention. If their expectations are realized patients will not be so long in the hospital, and there will be less strain on staffs at the bases both in France and in England. Much depends on the incidence of the wounded and on the supply of surgeons. Bowlby puts in a special plea for plenty of medical officers in France.

2. Gunshot Wounds of Abdomen.—One hundred and fifty consecutive operations for penetrating abdominal wounds are analyzed by Charles. He points out that difference of opinion sometimes arises as to whether a gunshot wound of the abdomen involves the peritoneal cavity or not; indeed it is sometimes impossible to tell without a laparotomy, for the signs and symptoms usually associated with these cases are not constant. Experience will usually settle the point in each particular case. The following points taken collectively are important: 1. Position of the injury: It is first necessary to determine if possible the direction of the track. The entrance and exit wounds give an idea of the path of the missile and the structures likely to be involved. The absence of an exit wound does not necessarily mean that the foreign body is lodged in the abdomen. The possibility of its being buried in the parietes must be excluded. 2. The facial expression is usually one of anxiety. 3. Pain is not of great value, and may or may not be present. 4. Tenderness is a very constant and reliable sign. 5. Rigidity, or the absence of it, is often most misleading. 6. The pulse varies in rate; it increases directly with the gravity of the intraperitoneal lesion, and gives an important basis for prognosis. 7. Vomiting is usually present, but not necessarily. Thirst is a most distressing symptom. Roentgen-ray localization affords the most useful guide to the diagnosis of penetrating wounds of the abdomen.

The cases on their arrival at a casualty clearing station may be classified for the purpose of treatment, according to their general condition and irrespective of the class of wound, as follows: 1. In a dying condition, when nothing can be done except to relieve pain and thirst. 2. Showing varied degrees of collapse, but capable of resuscitation. 3. In good condition and operable. Preoperative treatment principally consists in treatment for shock. In Charles' opinion opera-

tion should not be undertaken before the patient has recovered from shock. In patients suffering from shock and hemorrhage Charles has often waited six hours or more, taking the risk of further hemorrhage, with results that have justified the delay. Provided the patient is warm, operation is done at once. Saline is given on the table during the operation.

4. Infected War Wounds Treated with Magnesium Sulphate.—During the past year Morison has been using a preparation of magnesium sulphate, made of the consistency of cream, as soon as the patients arrive in the hospital. To make the conditions as closely as possible resemble those that exist in a casualty clearing station, about 100 cases were dealt with as follows: The dressings with which the patients arrived in the hospital, most of which were applied from two to five days previously, were removed. A culture was taken of the organisms—aerobic and anaerobic—present in smears from the wound, and without any preliminary cleansing of the wound itself or of surrounding parts; magnesium sulphate cream was then applied to the wound under a suitable dressing. The dressing was left untouched for from three to ten days. Bacteriologic and clinical examination was then made of the discharges and the wound. The results have been encouraging. The cream is prepared in the following manner: 1.5 pounds of magnesii sulphas exsiccatus are mixed with 11 ounces of glycerin phenol (1:10). The dried magnesium sulphate is in the form of a fine white powder, which contains 12 per cent. less water than the ordinary. The glycerin phenol is put in a hot mortar and the sulphate added, slowly stirring and mixing with a warm pestle all the time. The result is a thick white cream, so hygroscopic that if exposed to the air it rapidly absorbs moisture and becomes fluid. It must be preserved in a covered jar. The phenol was first added for its analgesic properties, as it was thought that this application without it would be painful. Morison found this precaution to be unnecessary, as the only discomfort of which the patients complain when phenol is not present is that the cream feels cold for a short time after its application.

The wound is packed and thickly covered with the cream, and the dressing of gauze and cottonwool is left unchanged for from three to eight days. A profuse discharge of serum takes place, so that more wool may have to be applied over and around the original dressing. On removing the dressings, any discharge there may be is seropurulent, escapes easily, and the wound surface is covered with bright red granulations, filmed over by a thin layer of greyish lymph containing a few pus cells. A similar dressing is again applied spread thickly on gauze. In the case of deeper wounds, such as fractures, the cream is syringed into the deepest part of the wound by passing a piece of drainage tube attached to the syringe into it, and filling the wound with cream. More cream spread on gauze is applied to the surface of the wound. After a few dressings in this manner, in the case of superficial wounds, a bright red granulating surface presents, covered by a greyish film of lymph. The dressing is now changed to magnesium sulphate solution for a few days, when the edges of the wound are either brought together with sutures, or skin grafts are applied under local anesthesia.

In deeper wounds in which a fracture is also present, after three or four applications of the cream, at intervals of three to four days, the patient is anesthetized, the wound is freely opened up, loose pieces of bone are removed, it is washed out with ether or petrol, then dried with gauze mops and smeared thoroughly with bipp or X. Y. Z. paste—xeroform (bismuth tribromphenate), hydrargyrum ammoniatum, of each equal parts; liquid petrolatum to make a paste. The deeper layers of the wound are brought together with catgut sutures, and the skin edges with retention sutures of double bipped silk passed about 1 inch from the margin and tied over a dossil of gauze on each side spread with one or other paste. In some cases before the sutures are tied the cavity is filled with magnesium sulphate cream. The sutures prevent a too rapid escape of the magnesium sulphate cream by osmosis. The guides to closure of the wound are bacteriologic findings of the discharge and the amount and clinical nature of it.

Dublin Journal of Medical Science

February, 1918, **145**, No. 554

- 6 Half-a-Century of Mortality in Ireland. W. J. Thompson.—p. 65.
- 7 Acute Troubles of Bones. J. S. McArdle.—p. 85.

Journal of Laryngology, Rhinology and Otology, London

March, 1918, **33**, No. 3

- 8 Hairy or Dermoid Polypi of Pharynx and Nasopharynx. A. B. Kelly.—p. 65.
- 9 Fifty Cases of Innocent Laryngeal Growths. A. Wylie and W. Wingrave.—p. 71.
- 10 War Injuries and Neuroses of Otologic Interest. C. E. J. Phillipson.—p. 77. To be continued.

Journal of State Medicine, London

March, 1918, **26**, No. 3

- 11 Feeding Nation in Peace and War. D. N. Paton.—p. 65.
- 12 Problem of Disabled. R. Jones.—p. 77.

Journal of Tropical Medicine and Hygiene, London

March 15, 1918, **21**, No. 6

- 13 Scrotal Operations in Negroes. R. Howard.—p. 57.

Lancet, London

March 23, 1918, **1**, No. 4934

- 14 Therapeutic Influence of Roentgen Rays on Female Pelvic Disease. J. Phillips.—p. 427.
- 15 Ganglion Neuroma of Mesentery. J. B. Sutton.—p. 429.
- 16 Twilight Sleep; Its Advantages and Disadvantages. G. Blacker.—p. 430.
- 17 Radium Treatment of Scars. W. C. Stevenson.—p. 432.
- 18 *After-Effects of Gunshot Wounds on Joints. F. Romer.—p. 434.
- 19 War Neurasthenic. A. J. Brock.—p. 436.

18. **After-Effects of Gunshot Wounds on Joints.**—At the Trowdon War Hospital an examination under anesthesia is undertaken in every suitable case in which there is any undue interference with the function of a part or in which some movable obstruction exists and where the roentgenogram shows no lesion likely to be aggravated by the examination or by the subsequent manipulations. The extent of the disability is determined, the limitation of movement defined; any fibrous adhesions are broken down and any obstruction capable of being rectified is overcome. No undue force is ever used, and in no case has inflammation or notable swelling followed, while considerable improvement has, in practically every case, resulted. Out of the first hundred cases thus operated on seventy-five returned to full duty. Massage is commenced within a few days of the manipulations, light in character if pain be present, more firmly otherwise. The pain from the breaking down is usually quite transitory and passes off in the course of an hour or so. Massage and radiant heat are continued for a week or ten days, when exercises by weights and pulleys are commenced. During the first week of these exercises massage is still continued, as the muscles are often inclined to be stiff from their unaccustomed use. In certain cases a previous attempt had already been made, and some disturbance caused, in consequence of which the joint had been immediately placed at rest on a splint. The disturbance may possibly have been immediately due to a too early interference, or a too vigorous attempt at movement. Early interference is deprecated, where there has been destruction of tissue by gunshot or shell, followed by suppuration. No joint could be forcibly manipulated when a discharging sinus exists in its near proximity.

Romer says that in moving joints under anesthesia the failure to obtain a full range of movement is of small importance, if the limitation is due to contracted muscles or adhesion round the joint, and undue force should not be exerted for this achievement. After-treatment will usually gain the full movement, if sufficient freedom has been obtained under the anesthetic to enable the controlling muscles to act on the joint. The less force it is found necessary to employ the better is the prognosis of a good result. Joints blocked by dense inflammatory products do not respond well to forcible manipulation, but in suitable cases of joint stiffness restoration of function is materially hastened by its employment. The treatment given in the massage department

includes radiant heat, hot-water and contrast baths, the ordinary massage manipulations and movements, besides the faradic, galvanic, and sinusoidal currents, and ionization. The treatment is given daily, in length varying according to the case, the minimum duration being half an hour. Special exercises supplement the massage, and are adapted to strengthen still further the weakened muscles and muscle groups, as well as to increase the range of joint movements. The weakened or injured muscle or groups of muscles are encouraged to act, and assisted in the action by the descent of weight, which has been raised by the sound antagonistic muscles. The repetition of this movement at first is strictly limited and the weight a light one, but as progress is made the weight is increased and the exercise lengthened. As further improvement is effected the range of exercises is extended, and becomes inclusive of those in which the weight, light at first and heavier afterward, is lifted by the affected muscles.

In Romer's opinion voluntary exercises performed on a pulley machine are in every way superior to the automatic movements obtained by mechanical machines based on the Zander type. For if a joint is so stiff that it cannot be moved or be encouraged to move voluntarily it is quicker to loosen it once and for all under anesthesia. In addition to these various forms of exercise swimming is found to be an agreeable and useful remedy in most cases of crippled limbs. As soon as the weakness of the special muscles or muscle groups has been overcome, and in cases in which there is no specialized muscular debility the proper use of ordinary gymnastic apparatus proved of material assistance in restoring the general tone of all the muscles and of thus taking part in the restoration of the lost function. The playing of games such as the throwing of the medicine ball, also aids in regaining the rapidity of action. It is surprising to notice how quickly men seem to forget the existence of disability in the excitement of games.

Medical Journal of Australia, Sydney

March 2, 1918, **1**, No. 9

- 20 *Experimental Study of Duodenal Ulcer. J. L. Jona.—p. 165.
- 21 Analysis of Melbourne Hospital Statistics of Duodenal and Gastric Ulcers for Five Years, 1912-1917. J. L. Jona.—p. 170.
- 22 Induction of Labor at Term by Pituitary Extract. H. C. Wilson.—p. 171.

March 9, 1918, **1**, No. 10

- 23 Differential Diagnosis in Abdominal Lesions. W. J. S. McKay.—p. 187.

20. **Study of Duodenal Ulcer.**—The occurrence of the peptic ulcer (gastric and duodenal) is explained by Jona as being due to the inhibition of the flow of saliva, pancreatic juice, succus entericus, and bile when these should be normally set up. This inhibition is caused by the absorption of toxic substances, which can be experimentally proved to have this inhibitory action. The exact site of ulceration depends on some local condition. Jona claims that duodenal and gastric ulceration can be prevented by preventing the absorption of toxins, abnormal products of tissue breakdown (as in burns) or the products of bacterial action, parasitic or saprophytic. When the ulceration is already established, he would not perform any side-tracking operation, such as gastro-enterostomy, without at the same time making some attempt to find out the cause of the condition and remove or remedy it.

Annales de Médecine, Paris

November-December, 1917, **5**, No. 6

- 24 *Painful Echinococcus Cysts of Liver. A. Chauffard.—p. 561.
- 25 *Dysenteric Abscess of Liver. E. Job and A. Spick.—p. 584.
- 26 *Meningeal Hemorrhage from Air Shock. G. Guillaumin and J. A. Barré.—p. 598.
- 27 *Chronic Dyspepsia in Soldiers. M. Péhu and M. Daguet.—p. 617.
- 28 *Contracture and Paralysis of the Feet. G. Roussy, J. Boisseau and d'Oelsnitz.—p. 647.
- 29 *Malaria in Troops in Macedonia. P. Armand-Delille, G. Paiseau and H. Lemaire.—p. 675.

24. **Painful Echinococcus Disease of the Liver.**—Chauffard remarks that the hydatid cyst in the liver is not a disease of the liver, properly speaking, but an accidental parasitic graft which develops slowly and insidiously, not attracting

attention until the size and weight begin to annoy. Pain does not form part of the clinical picture, but there may be an inflammatory reaction with development of adhesions which bring pain, and may even simulate gallstone mischief. The pain is a warning of superposed infection, as otherwise the parts yield to pressure, without pain. A number of cases are described which led to erroneous conclusions. In one physician of 38 a catarrhal jaundice and what seemed to be gallstone colics compelled an operation, but no gallstones could be found. The common bile duct was enlarged but was not opened. At a later operation, the common bile duct was found full of hydatid cysts and a large cyst found in the liver was evacuated. The findings indicated primary localization of the parasites at both these two points. In differentiation from gallstones, the shape of the enlarged liver, its anterior outline, differ materially from what we see with gallstones. If the liver is not enlarged, differentiation may be difficult, especially if the cyst is pressing on the lumbar plexus or other nerves, deceptively simulating gallstone colic. Or the toxins generated in the cyst may induce reflex pain.

25. Dysenteric Abscess of the Liver.—Job and Spick analyze their experiences with ninety-two cases of dysenteric abscess of the liver in northern Africa. Europeans are affected more than the natives, and the disease is exceptional in the blacks. In an ameba country, enlargement of the liver should always suggest dysenteric abscess, although the patient may not have any history of dysentery. In eighteen of their ninety-two cases there had been no known dysentery symptoms. Polymorphonuclear leukocytosis is an important sign of dysenteric abscess. Radioscopy and puncture aid in the diagnosis. When discovered early, emetin may cure after the pus has been evacuated. Injection of the emetin directly into the liver is advocated, besides. When all else fails, operative treatment should be considered after thorough emetin treatment.

26. Meningeal Hemorrhage from Shell Air Shock.—Guillain and Barré found evidence of meningeal hemorrhage in twenty cases of shell air concussion without direct contact. The clinical symptoms were confirmed by the hemorrhagic lumbar puncture fluid.

27. Disordered Digestion in Soldiers.—Péhu and Daguet report that roentgenography failed to reveal any organic basis for the chronic dyspepsia in 137 of 381 cases. In 139 others purely functional disturbances were observed; in 27 accompanied by much ptosis. In 32 actual ulcer or cancer was found; the other men were convalescing from wounds.

28. Contracture or Paralysis of the Feet.—These writers have published a similar study of the hand; here they discuss psychoneuroses manifested in talipes varus. They regard these crippling deformities as made up of several elements, including an actual traumatic contracture or paralysis, a superposed element of hysteria, and superposed nutritional disorders from the long immobilization and abnormal position. But the mind is the main element involved in the perpetuation of the deformity. When influence can be brought to bear on the mind sufficient to break up the vicious circle, the whole trouble may disappear at one stroke. These acrocontractures and acroparalyses seem to be as curable as any other purely psychoneuropathic disorders, with or without secondary disturbances. Hence the importance and practicability of prophylaxis.

29. Malaria in the Macedonia Expeditionary Force.—Delille and his co-workers declare that the epidemic of malaria that has affected the armies operating in Macedonia forms, if not the most important, at least one of the most important military epidemics known in history. Not since the armies of Xerxes were decimated by malaria in that same region, has there been a situation comparable to that of these modern forces in the Macedonian valleys and marshes. The extreme gravity of the infection, the early and large proportion of pernicious cases, the apparent failure of preventive doses of quinin, the prevalence of malignant tertian malaria—the quartan type was rare—and the frequency of hemoglobinuria, were special features.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 18, 1918, 42, No. 2

- 30 *Hydratation of Diabetic Organs. A. Chauffard, P. Brian and J. Jacobs.—p. 49.
- 31 The Fifth Cusp. E. Jeanselme.—p. 51.
- 32 *War Tachycardia with High Blood Pressure. C. Aubertin.—p. 53.
- 33 Autochthonous Amebic Dysentery. Nobécourt and H. Gimbert.—p. 57.
- 34 Skin Diseases at an Advanced Post. J. Du Castel.—p. 60.
- 35 *Induced Eruption in Incipient Measles. Le Noir.—p. 63.

30. Dehydration in Diabetes.—The research described has apparently demonstrated that there is no dehydration of the organs in diabetes mellitus, even in the young, until the phase of diabetic coma. This entails in a few hours dehydration of the blood and organs.

32. Summarized on page 892.

35. Compare with abstract 39, page 962.

Paris Médical

Jan. 19, 1918, 8, No. 3

- 36 *The Respective Rights of the Wounded, of the Attending Surgeons and of the Pension Department. P. Delmas.—p. 50.
- 37 Local Anesthesia for Herniotomy. A. Schwartz.—p. 56.
- 38 *The Vascular Spasm with Intermittent Claudication. André Thomas and J. L. Valensi.—p. 58.
- 39 Osteomyelitis of Skull after Operation. Phélip.—p. 62.

March 2, 1918, 8, No. 9

- 40 *Roentgenotherapy. E. A. Weil.—p. 161; (Of Uterine Disease). R. L. Lebard.—p. 168.
- 41 *Length of Exposure. G. Réchou.—p. 171.
- 42 Roentgenoscopy of Transverse Heart. E. Beaujard and G. Caillods.—p. 174.
- 43 Roentgenography of Wrist. P. Japiot.—p. 179.
- 44 Fluorescent Screen. L. Delherm and A. Laborde.—p. 183.
- 45 Calculation of Depth of Projectile. G. Foy.—p. 185.
- 46 Side Extraction of Projectiles. A. Rabourdin.—p. 188.
- 47 *Roentgen Signs of Tuberculosis. E. A. Weil.—p. 190.

36. The Rights of the Wounded and of the Surgeon.—Delmas remarks that as soon as the soldier enters the hospital, he steps out from under military discipline, and yet the hospital authorities have no jurisdiction over him. He can accept or refuse needed operations, injections of drugs, etc., at his own will. But almost invariably the wounded or sick soldier trusts absolutely to his surgeon or physician, so long as no foreign element modifies this grateful confidence. There can be only two reasons for refusal to consent to needed measures, fear or ignoble motives—fear of pain, of the anesthetic or of a fatal outcome, and fear of recovery and being sent back to the firing line. Delmas does not hesitate to call the man in the latter case a deserter. The physician or the surgeon should appeal to the man's regimental commander. The man should be sent back to his regiment with a report of his refusal, unless there are grave reasons against his being moved. The presence in the hospital of one such refuser saps the confidence of the other patients. The matter is thus placed in the hands of the military commander who can apply disciplinary measures. The regulations specify that no operation, properly so-called, especially if general anesthesia is required for it, can be done without the assent of the patient. He must be warned that his refusal will be duly considered in determining the amount of his pension. In any event, it behooves the surgeon and physician to write out a detailed report of the incident, under all circumstances. This will fix the respective responsibilities of the surgeon, the wounded and the pension treasury.

38. Intermittent Claudication.—In the two cases described the inability to continue walking came from pain, not paralysis. There seems to be grounds for assuming that, besides the ischemia resulting from the causal arteritis, there is some superposed circulatory disturbance, and this can be only some spasm of some vessel. The facts that the limb grows cold and the oscillometer shows reduced blood supply sustain this assumption of spasm of the vessels. After resting a while, the limb grows warm again and the oscillometer shows renewed circulation. The exercise in walking brings more blood to the region. The blood meets with the obstacle of the endarteritis, and the resulting pressure on the wall

the vessel above sets up a reflex pain and spasm, as when the catheter is arrested by stenosis in the urethra or ophagus. In one of the cases described the colic pain ran from the groin to the sole. Vascular spasm is also an element in the clinical picture of certain war contractures of hand or foot. Treatment for underlying syphilis or malaria, electrotherapy, massage and superheated air may be indicated in different cases.

40. Roentgenotherapy.—This issue of the *Paris Médical* is devoted to roentgen treatment. Weil discusses the general principles involved as modified by the latest experiences. He regards the maximal dose as 10 or 12 H units for the short wave rays, the hardest obtainable, passed through aluminum filters at least 1 cm. thick. With a very small area of exposure, this maximum might be surpassed. Slipping the tube to one side, and crossed-fire exposures might be supplemented by rhythmic swinging of the tube, permitting the rays to fall like an inverted cone on the focus while they are distributed in a circle on the skin. The manufacturers in France have not succeeded yet in realizing a device for this purpose. None of the methods to enhance the local susceptibility to the rays and aid in generating secondary rays have proved effectual.

41. Length of Exposure.—Réchou has devised a disk with arithmetic graduation which shows the proper length of exposure under given conditions of rays, filter, length of spark, amperage and distance from the focus.

47. Roentgen Signs of Tuberculosis.—Weil enumerates among other signs the unchanging aspect of the shadow of the apex during breathing or coughing while the rest of the lung grows lighter. If the shadow of one apex clears up some time before that of the other apex, this must be regarded as suspicious, as also the lagging behind of one half the diaphragm. But the most instructive sign, perhaps, is the fact that with old tuberculosis, tending to fibrous contraction, the apex looks small and pointed, while with active tuberculosis, especially in the young, the congested apex is seen to be larger than normal; the whole lung seems spread out, and the ribs are raised. The ribs make slight no excursions in either case.

Presse Médicale, Paris

Jan. 17, 1918, **26**, No. 4

- *Vaccine Therapy of Typhoid and Cholera. J. Danysz.—p. 29.
- *Flap for Hemostasis in Skull Operations. E. Velter.—p. 31.
- *Sulphur Waters in Treatment of Syphilis. R. D. Fardel.—p. 32.

Feb. 28, 1918, **26**, No. 12

- *Chronic Lumbar Rheumatism. A. Léri.—p. 105.
- *Pulmonary Edema after Skull Wounds. F. Moutier.—p. 108.

March 7, 1918, **26**, No. 14

- *Cavities in Lungs. C. Mantoux and G. Maingot.—p. 125.
- *Thyroglossal-Epiglottic Space Phlegmon. Bellin and Vernet.—p. 127.
- *Treatment of Gonorrhea. P. Chevallier.—p. 128.
- *Masked Amebic Dysentery. M. Decrop.—p. 129.
- *Vincent's Powder for War Wounds. P. Dezarnaulds.—p. 129.

48. Principles for Preventive Vaccination Against and Radiotherapy of Typhoid and Cholera.—Danysz argues that what we know of the infectious diseases acquired through the gastro-intestinal canal justifies the assumption that those persons alone develop the infection who are unable to digest completely the bacteria they have swallowed, that are unable to convert the albumins of the microbes into amino-acids. The course of the infection is determined by the number of bacteria ingested, the intensity and rapidity of the processes of digesting them, and the quantity of normal antibodies already in the blood. By taking into consideration the prevalence of the different types of bacteria, the susceptibility to gastro-intestinal digestion, and the permeability of the mucosa for the products of their digestion, these bacteria fall into four great groups. In diphtheria, the toxin, plus the normal antibodies, acts to cause the disease. When the antibodies are generated in excess, the disease stops. In the gastro-intestinal diseases, on the other hand, the stage of digestion of the bacteria, plus the normal antibodies, forms the period of incubation. The disease never does not begin until the antibodies are generated in

excess. This induces anaphylaxis, and the manifestations of this anaphylaxis form the disease proper. In typhoid, for example, the disease consists of a chronic state of anaphylaxis, or rather, a series of successive anaphylactic crises. Immunity and anaphylaxis are phenomena of every living being, from the microbe to man. A microbe entering a superior organism has to adapt itself to this new environment. It produces an intracellular antibody, then it produces an excess of antibody, and the antibody generated by the host serves as an antigen for the microbe, just as its own antibody is an antigen for the host. The outcome depends on the balance between the degrees of immunity and anaphylaxis of the microbe and of the host organism. When the microbe has fixed a corresponding amount of the host's antibody, on its own intracellular antibody, it is safe so long as it is laved outside by an excess of the host's antibodies. Let the content of host antibody drop below the proportion within the microbe cell, then the cell bursts by an anaphylactic shock. The aim in treatment, therefore, should be to reduce the excess of host antibodies in the host plasma. This can be accomplished by introducing more bacterial antibodies (killed bacteria). The excess host antibodies combine with them and there is no longer any excess of antibodies in the plasma. His practical conclusion is that for all the diseases of gastro-intestinal origin, preventive vaccination is promising, realized by prolonged ingestion of progressively increasing doses of the dead bacteria. The most effectual curative technic would be with specific bacteriotherapy by fractionated intravenous injections or frequently repeated ingestion.

51. Chronic Lumbar Rheumatism.—Léri remarks that the prevalence of chronic lumbar rheumatism may be estimated from the fact that at the date of writing there were seventeen cases among the 200 men in his service. The roentgen rays have shown that there is osteophytic proliferation with decalcification of the lumbar vertebrae. There was nothing to suggest syphilis or tuberculosis in any of the men, with one or two exceptions. The disease seems to come and go, each attack lasting from two to eight or ten months; the pain, tenderness and curvature then subside more or less completely. Many of the men had had previous attacks, but the frequency and intensity of the attacks justify classing this special, strictly localized form of vertebral rheumatism as a war disease. Even when the men are seated, in the trenches, they often have to rest their backs against a damp wall. Long marches in mud, with their equipment on their back, also adds to this "pathology of the back." This lumbar rheumatism is not usually accompanied by rheumatism of the joints, but the man stoops over although on reclining he can straighten his spine. Another feature of the cases is the concave outline of the vertebrae, so that they resemble the toy called the diabolito. Sodium salicylate and immobilization have given the best results in treatment to date.

52. Pulmonary Edema after Skull Wounds.—Moutier calls attention to the acute pulmonary edema which so often develops and proves fatal in men with war wounds of skull and brain. He explains how this is brought about by pathologic excessive functioning of the suprarenals. This causes the blood pressure to run up, the proportionately higher minimal pressure testifying to the specific vasoconstriction. The current practice of giving epinephrin to the wounded would do direct harm in such cases. Treatment should be that for acute pulmonary edema, that is, venesection. The danger is from the lungs, not so much from the skull wound.

53. Cavities in the Lungs.—Mantoux and Maingot give roentgenograms showing different types of shadows cast by cavities, the "porous bread" type, the "hornets' nest" type and the single large cavity type. Nothing suggesting either of these three types was found in 250 "closed" cases of tuberculosis or the suspects.

56. Masked Dysentery.—Decrop emphasizes that persisting diarrhea, even if not severe, but accompanied by pronounced weakness, should always suggest amebic dysentery, especially if there has been any intercourse with persons coming from tropical regions.

Progrès Médical, Paris

Feb. 16, 1918, 33, No. 7

- 58 *Nerves Severed by Projectiles. E. Delorme.—p. 57.
59 *Trophic Lesions Accompanying War Wounds of Nerves. E. Duroux and E. Couvreur.—p. 62.

Feb. 23, 1918, 33, No. 8

- 60 *Genital Complications of Typhoid Infections. A. Cade, E. Vaucher and G. Huchon.—p. 65.
61 Stenosis of Urethra from War Wound. F. Cathelin.—p. 66.
62 *Genito-Urinary Psychoneuroses. Uteau and Sauvage.—p. 68.

58. **Suture of Severed Nerves.**—The experiences with war wounds of nerves have only confirmed Delorme's teaching that the best results are to be obtained by cutting up to sound tissue and drawing the freshened ends together. This requires loosening up the nerve to mobilize it for a long distance, and placing the limb in a position to bring the stumps as close together as possible. Unless the cicatricial tissue in the nerve is resected up into sound tissue, it acts as an impenetrable barrier, so that mere releasing of the nerve from its cicatricial bed does not modify the resulting paralysis or trophic lesions.

59. **Trophic Lesions After Injury of Nerves.**—Experiments on dogs are described and a number of clinical cases, all testifying to the effect that there are no trophic nerve fibers, properly speaking, but that irritation of a nerve induces the trophic lesion, not suppression of the functioning of the nerve. The wearing off of tissue plus infection may induce lesions suggesting trophic disturbances but they are not true trophic lesions.

60. **Genital Complications of Typhoid and Paratyphoid.**—Seven cases of this kind have been published in France in the last three years, and five more are here reported. The orchitis was on one side only in this group of five. In two of the cases the typhoid and in three paratyphoid B bacilli were found. In two of the last three the lesion suppurated, and in one the suppuration kept up a long time, the testicle actually melting away. There were no other signs of disturbance in the urinary apparatus, so the infection was probably blood-borne.

62. **Urogenital Psychoneuroses.**—Two cases are described in young women that might be called cystalgia and urethralgia. In the cystalgia case the disturbances were ascribed to movable kidney, with possible lithiasis, and nephropexy was done although the exposed kidney seemed entirely normal. Nearly three years later the whole train of symptoms reappeared after some emotional stress; after failure of various medical measures, a course of psychotherapy banished them anew. Symptoms of pulmonary tuberculosis then suggested that the cystalgia may have been to some extent a manifestation of incipient tuberculosis. The success of psychotherapy in this case led to the application of similar measures in the urethralgia case. By a kind of psychanalysis it was ascertained that the trouble was the result of a mistaken comprehension of the anatomy of the region, the young married woman supposing that the vagina and the urethra were a single passage, although she had borne a healthy child. After three weeks of psychotherapy she threw off the urethralgia completely, and has had no return during the five months to date. It had been tormenting her for ten years and she had consulted a dozen physicians and taken all kinds of treatment. Uteau and Sauvage advocate a little hypnosis at first, to get the patient's confidences. This does not interfere with rational psychotherapy to follow at once.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 31, 1918, 39, No. 9

- 63 Dermoid Cysts and Sarcoma of the Breast. F. Bindi.—p. 87.
Feb. 7, 1918, 39, No. 11

- 64 Amputating Badly Shattered Limbs. G. Onano.—p. 105.
Feb. 10, 1918, 39, No. 12

- 65 *The Gooseflesh Streak. G. A. Pari.—p. 113.

Feb. 14, 1918, 39, No. 13

- 66 Posterior Enucleo-Exenteration of Eyeball. R. Pardo.—p. 125.

65. **Gooseflesh Streak.**—Pari calls the induced line of gooseflesh, *dermografismo orripilatorio*, and says that it can be so often induced in the healthy that it does not seem to have any diagnostic import.

Pediatria, Naples

March, 1918, 26, No. 3

- 67 *Whooping Cough. O. Cozzolino.—p. 129.
68 *Progressive Ossifying Myositis. G. Caronia.—p. 145.

67. **Contagiousness and Prophylaxis of Pertussis.**—Cozzolino relates that he had 345 children with whooping cough at his dispensary at Cagliari in the first six months of 1913. Nearly 30 per cent. were under 12 months, and only 58.3 per cent. were over 2 years old. His experience confirms the extreme contagiousness of the disease during the primary catarrhal stage; some say it is not contagious after the first week, but he thinks it is better to assume thirty days as the limit. He has never seen contagion of other children from the pertussis children taken into the hospital from the fifth to the eighth week, nor from two in the middle of the third week. None of the children in adjoining beds even developed a spasmodic cough. A change of air and scene is useful in eliminating the nervous and psychic factors which cooperate in maintaining the spasmodic cough. The greater predisposition of girls to pertussis, and the larger number of girls attacked by the disease differ from what we know of acute infectious diseases in general.

68. **Progressive Ossifying Myositis.**—Caronia's case he thinks is the ninety-third on record. His patient was a little girl of 4, otherwise healthy, who had developed bony lumps in various muscles of trunk and arms, the protruding lumps giving the back the aspect of a raised map showing mountain ranges. Several roentgenograms confirmed the diagnosis of progressive ossifying myositis. No benefit was apparent from epinephrin, thyroid, thymus or pituitary extract, as has been the general experience. The literature on the subject is reviewed.

Policlinico, Rome

March 10, 1918, 25, No. 10

- 69 *Prophylaxis of Cholera. D. A. Mazzolani.—p. 221.
70 *Acetic-Sulphuric Acid Test for Albumin. R. Leone.—p. 224.
71 *Prosthesis to Correct Paralysis of Leg. G. Boschi.—p. 226.
72 Successful Ligation of Femoral Artery. M. Sertorio.—p. 227.
73 Dental Service in the Army. E. Giovannini.—p. 228.
February, 1918, 25, Surgical Section No. 2
74 Freezing Injuries of the Feet. P. Perazzi.—p. 33.
75 Experimental Lesions of the Pituitary. A. Chiasserini.—p. 44.
Continuation.

69. **Isolation of Cholera Vibrio Carriers.**—Mazzolani remarks that the *locali contumaciali*, as the quarters for sheltering carriers are called, are proving one of the most effectual of the measures for preventing the spread of cholera. The public appreciate the necessity for this isolation, and it meets with no opposition. The emission of the vibriones is irregular, but as a rule it is continued in convalescence not later than the tenth or twelfth day. Of the 58 carriers or suspects thus interned at Sassari, some showed no signs of the vibrio for three or four days and others not till later than this. They disappeared from the stools of 20 carriers in five days, 12 carriers in ten days, 7 carriers in twenty days, and in 9 others between the twentieth and thirty-fourth days. The intermissions with negative findings were from three to sixteen days in length. One convalescent had five positive periods. Cholecystitis for which the vibriones are responsible may be the cause, or there may be actual reinfection. This suggests the necessity for special measures addressed to the cholecystitis, and to warding off secondary or repeated infection. Hexamethylenamin seemed to hasten the disappearance of the germs.

70. **Test for Albumin in Body Fluids.**—Leone's reagent superposes the precipitating properties of three precipitants. He pours into 100 c.c. of distilled water, heated, 10 gm. of potassium bichromate. After filtering and cooling, 100 drops of glacial acetic acid are added and, a few minutes later, 10 drops of a 25 per cent. solution of pure sulphuric acid. Of the reagent thus prepared, 5 c.c. are transferred to a test tube. Then the urine or other protein solution under examination is added with a pipet. At the zone of contact whitish ring forms. When there is much albumin present delicate whitish threads can be seen extending down into the fluid below like wisps of smoke. The reaction occurs at once or in four or five minutes. There may be further two zones of precipitation, separated by a limpid zone. The reaction

not modified by the presence of iodine, mercury or salicylates in the urine. From the intensity of the whitish ring, its height and the rapidity with which it forms, the proportion of albumin present can be estimated. If there is no albumin, a brown ring forms from the combination of the urea with the reagent. When the whitish ring forms at once, with only a few c.c. of urine, there is always more than 0.5 per thousand albumin present. If the ring takes several minutes to form, there are only a few mg. of albumin.

71. Prothesis for Paralyzed Leg.—The prothesis described with illustrations is designed to correct paralysis of the external popliteal nerve.

Riforma Medica, Naples

Feb. 23, 1918, **34**, No. 8

- 6 *Extreme Meteorism in Soldiers. A. Ceconi.—p. 143.
- 7 *Operative Treatment of Hypospadias. G. Gianturco.—p. 147.
- 8 Early Diagnosis of Sciatica. A. Rocavilla.—p. 149.

March 2, 1918, **34**, No. 9

- 9 War Surgery and Ordinary Surgery. D. Giordano.—p. 162.
- 10 *Linear Stethoscope. G. Tomasinelli.—p. 165.
- 11 Tuberculous and Syphilitic Sigmoiditis. G. Cicconardi.—p. 169.

76. Big Abdomen in Soldiers.—Ceconi remarks that there are three types of meteorism in soldiers, free from digestive disturbance, to explain the extremely distended abdomens. In the first type the trouble is caused by a hysteric, tonic spasm of the diaphragm. In the second type the meteorism is factitious, the men merely swallowing air to induce it. In the third type the meteorism is more in the flanks, and it occurs intermittently, reaching its height in twelve or sixteen hours and lasting for a few hours or days. Roentgenoscopy showed that in the meteorism was mainly in the colon. The respiration in these cases was shallow, and this, with the pronounced bradycardia, gave the clue to the cases as vagotonic phenomena.

77. Operation for Hypospadias.—Gianturco says that the literature has revealed that hypospadias is more common than formerly believed. About 0.5 per cent. of the men seem to be affected with it. He has modified the usual technic for simple hypospadias, and prefers spinal anesthesia for it. He cuts a torpedo-shaped flap in the skin, extending from the urethral opening to the tip of the penis. Then a triangular flap, with the point proximal, is cut below and removed. The edges of the torpedo-shaped flap are brought up over a retracted catheter and sutured to make the new urethra; the proximal end is sutured to the freshened stump of the natural urethra. The skin of the penis is then loosened and brought up to cover the new urethra and likewise the raw triangle left beyond the old urethral opening. The result is a single new urethra, with a linear suture in the lower aspect of the penis. The appearance and functioning have been highly satisfactory in the cases in which he has applied this method.

80. Linear Stethoscope.—Instead of a round opening, Tomasinelli has the stethoscope end in a long bar, the whole thus forming a T. He declares that the findings are more instructive along a line than in a circle.

Rivista Critica di Clinica Medica, Florence

Feb. 16, 1918, **19**, No. 7

- *Vaccine Therapy of Typhoid. F. Micheli and G. Quarelli.—p. 73. Commenced in No. 5, p. 49.

82. Heterologous Vaccine Therapy of Typhoid.—Micheli and Quarelli expatiate on the success of vaccine therapy of typhoid and paratyphoid as an appreciable conquest in the field of therapeutics. The attenuation of the clinical picture and reduction of the mortality (from 30 to 11 per cent. in Mikawa's series and from 12 to 5 per cent. in Holler's) testify to the efficacy of this bacteriotherapy. As typhoid bacilli are so virulent, and as certain other bacilli seem to be fully as effectual for this vaccine therapy, they advise using bacteria of a different species rather than typhoid bacilli. Paratyphoid bacilli cannot be used as they seem to be more toxic than true typhoid bacilli. The vaccine used

must be exactly dosable, with an action that can be accurately graduated, and that is constant. These requirements are filled by vaccines desiccated in a vacuum and kept in fused vials. The writers, and also Moreschi, have been using with great satisfaction vaccines of this type for intravenous preventive vaccination. Small doses, eventually repeated after two or three days, proved most effectual in their experience. They take as a rule, for the initial dose, the amount of heterologous vaccine which in healthy persons induces a manifest thermic reaction. With typhoid bacilli vaccine they take twice this, on account of the greater tolerance in typhoid for the specific endotoxins. Experience has shown that patients refractory to small doses are equally refractory to the largest ones. Contraindications are cardiovascular insufficiency, grave kidney complications, diffuse pneumonia and menace of hemorrhage and perforation of the bowel.

The vaccine used in their tests of this intravenous heterobacteriotherapy was deuteroalbumose, meningococcus vaccine and cholera vaccine. The best results in the twenty-five cases of typhoid or paratyphoid were obtained with cholera vaccine, as the doses of this can be accurately graduated, while this vaccine is only slightly toxic. It is prepared by the Loeffler method (sterilization with dry heat at 100 or 110 C. of a loop desiccated in a vacuum). None of the patients were given more than two injections. The dose was from one-fifteenth to one-fifth of a standard loop, in 1 c.c. of physiologic solution. A chill always followed in from twenty to forty-five minutes. In three of the twenty-five cases a single injection was followed by definite defervescence. In 40 per cent. of the cases defervescence followed in the first to the fourth or seventh day. In another 40 per cent. the temperature only gradually subsided to normal, although the general condition showed equal improvement. Only one patient died, and this was on the thirty-fourth day, long after the vaccine had been given. There was a relapse in 20 per cent. of the cases, about the usual average. These experiences are compared with the work of others in this line.

Anales de la Facultad de Medicina, Lima

January-February, 1918, **1**, No. 1

- 83 Classification of Liver Diseases. E. Odriozola.—p. 1.
- 84 Grahamella Brumpti n. sp. Ribeyro and del Aguila.—p. 14.
- 85 History of Peruvian Verruga. J. Arce.—p. 21.
- 86 Urea. M. A. Velasquez.—p. 56.
- 87 Mnemonic Formulas for Infant Feeding. Eyzaguirre.—p. 65.
- 88 *Insanity in Peru. H. F. Delgado and C. A. Bambaren.—p. 78.
- 89 Bacteriology of Ozena. J. A. Monteverde.—p. 112.

88. Insanity in Peru.—Delgado and Bambaren analyze the experiences at the Lima Hospicio de Insanos. The proportion of paranoia cases has increased in the last twenty-one years from 12.12 to 22.26 per cent. They note that the drunkards who get into the police courts seldom wind up in the asylum. The majority of the candidates for the asylum are those who drink but not to the point of visible intoxication. Some intercurrent disease, moral or traumatic shock or exhausting fatigue opens the portal to mental disease for which there is some constitutional predisposition. The effect of habitual drunkenness shows on the offspring. In prophylaxis they suggest sterilizing by means of the roentgen rays. This would avoid the drawbacks of other methods of sterilizing those unfit for procreation. They remark that this procedure seems so reasonable that they wonder it has not been applied. They have not been able to find any reference in accessible literature to its use for this purpose.

Prophylaxis of the mental causes of insanity is a question of education. The majority of psychoses are rooted in some internal conflict possibly early in life, hence wise training of the young in useful habits and adaptation of the child's mind to real life are the most solid guarantees of mental balance in the future. The writers quote freely from recent articles in THE JOURNAL, and reiterate that heredity is not an immutable law; its effects can be annulled or attenuated as they occur in plastic living beings who can be molded and trained. Peru has already an efficient system of medical school inspection and this promises to be of great aid in prophylaxis of insanity.

Archivos Españoles de Pediatría, Madrid

February, 1918, 2, No. 4

- 90 *Concretions in Child Bladder. P. Borobio.—p. 65.
 91 Treatment of Fever in Children. V. Lefort.—p. 77.
 92 *Causes of Pain in Feet of Children. Riosalido.—p. 84.
 93 Nodding Spasm in Children. C. S. de Los Terreros.—p. 93.

90. **Bladder Stones in Children.**—Borobio has operated in sixty-eight cases of concretions in the bladder of children; only two of the total number were girls. Most of the children were between 2 and 5. The youngest was 20 months. The stone was single in all his cases except three in which two stones were found. The children were invariably from poor families; he has never encountered a case of bladder stone in a child from a well-to-do family. Possibly the overwhelming vegetable character of the food may explain this. Pain, incontinence of urine and hematuria are the symptomatic triad but the pain is the only constant symptom. The suprapubic incision is the preferable procedure. In the fifty-two cases in which he has applied this measure there were three deaths, all during the second week, from infection of the urinary passages. In three cases, that is, in about 5 per cent., concretions formed again two and four years later. He did not operate in one case—a girl of 9—but forcibly dilated the urethra and extracted the stone. The child died the third day from urinary infection. Attempts to enter the bladder through the vagina, besides destroying the hymen, leave a fistula which is hard to cure, while dilatation of the urethra is liable to entail ascending infection.

92. **Pain in Child's Foot.**—Riosalido describes the different forms of disease that may attack the bones of the foot, and the best way to treat them. A roentgenogram should be taken of the foot from the front and side in every case of persisting pain in it. Some anomaly in development may cause disturbance like that in the tubercle of the tibia, or trauma may be responsible for the "apophysitis;" pain is the only symptom, pain in the heel, or a small bunch can be felt in the region. Supernumerary bones are not very rare, but often escape discovery in the roentgenogram. The supernumerary bones in his experience mostly involved the cuboid bone. The symptoms with these supernumerary bones were merely pain along the entire sole in walking, with no appreciable external sign of trouble. He gives roentgenograms showing the various types of apophysitis and of supernumerary bones, and two cases of an inflammatory process involving the scaphoid bone. One child had supernumerary bones in both feet. The tests for tuberculosis and syphilis were negative in the cases on record and in his experience. The inflammatory processes are generally growth disturbances, and usually subside promptly under rest and measures to reduce congestion. Some excessive muscular contraction, effort or trauma readily explains the trouble. In persisting cases it may be well to open and scrape the bone, as has been done for the tubercle of the tibia, to hasten the cure.

Medicina Ibero, Madrid

Jan. 17, 1918, 2, No. 11

- 94 The University and the Medical School in Spain. E. Suñer.—p. 61.
 95 *Treatment of Phagedenic Ulcers. E. A. S. da Aja.—p. 67.

95. **Treatment of Phagedenic Ulcers.**—De Aja explains the phagedenism as the sum total of various microbial associations. Salvarsan or its substitutes, tartar emetic and vaccines attack the lesion from within. Vaccines are more effectual with gonococcus lesions but they may be reinforced with the tartar emetic. The latter is more reliable for ordinary lesions and other venereal lesions. A few cases are described with intravenous injections of from 2 to 4 c.c. of a 2 per cent. aqueous solution of tartar emetic. One patient was a young woman with multiple and extensive syphilitic genital lesions. Three injections of the tartar emetic transformed the phagedenic ulcerations into clean surfaces with healthy granulations, and healing was complete by the end of the month. The lesions had been washed once a day with 1 per thousand permanganate and dusted with iodoform. Three injections of mercury were given also. He remarks in conclusion that phagedenism does not indicate increased

virulence on the part of the causal agent but merely superposed infection, and under causal treatment and mild antiseptic local measures, the prognosis is favorable. Serpiginous lesions, on the other hand, indicate greater resistance on the part of the germs; the infection is occult in its progress and the prognosis is always graver.

Revista de Medicina y Cirugía, Havana

March 25, 1918, 23, No. 6

- 96 *Dilatation of the Duodenum. F. Leza.—p. 147.
 97 Vaccination Against Typhoid in Cuba. M. G. Lebrede.—p. 158.
 98 Abdominal Hysterectomy for Cancer. J. E. Casuso.—p. 172.

96. **Dilatation of the Duodenum.**—Leza regards ptosis and dilatation of the duodenum as an important element in chronic constipation. It is determined in the clinic by pressure percussion and by the "paradoxical pressure." Light percussion does not show whether the tympanism is due to the colon or the deeper lying duodenum, but pressing hard flattens out the colon. Then only the duodenum can be responsible for the tympanism. The paradoxical pressure is realized by pressing with the palm on the abdomen, just below the umbilicus, applying deep and upward pressure. This forces the gases in the small intestine up into the duodenum, and it would seem as if this should increase the tympanism in the duodenum, but, on the contrary, the duodenum gases escape into the jejunum as the angle between them flattens out. This leaves the duodenum free of gases. The evacuation may be facilitated by gentle pressure and deep breathing. Other signs are the tympanism in the ileum from insufficiency of the ileocecal valve. This is ascertained by pushing down with the ulnar margin of the hand the gases in the ascending colon while the other hand palpates the region of the valve. If the valve is insufficient, the gases escape into the cecum; if not, they accumulate below the valve.

Vida Nueva, Havana

March, 1918, 10, No. 3

- 99 *Tuberculosis of the Iris. A. Frias.—p. 100.
 100 Pseudohistology. I. Castellanos.—p. 102.
 101 Roentgen Therapy of Uterine Fibromas. E. Alamilla.—p. 108.
 102 History of Medical Press in Cuba. M. R. Casabo.—p. 114.
 103 Psoriasis and Its Treatment. J. C. Pineda.—p. 117.

99. **Tuberculosis of Iris.**—Frias reports two cases, one in a boy of 10 and one in a female infant of 9 months. In both the eye process seemed to be a primary tuberculosis and the eye was enucleated in each case. There has been no sign of tuberculosis during the six months since in the older child. He is in good health, but the infant seems frail and has bronchitis but nothing to suggest tuberculosis.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Feb. 16, 1918, 1, No. 7

- 104 *Harmless Glycosuria. O. J. Wijnhausen and M. Elzas.—p. 474.
 105 *Chronic Osteo-Arthropathy. J. Munk and C. H. Greve.—p. 486.
 106 *Treatment of Bronchiectasia. H. de Jong.—p. 495.

Feb. 23, 1918, 1, No. 8

- 107 *Mumps Iridocyclitis. H. Weve.—p. 544.
 108 *Gastro-Enterostomy. E. H. Van Lier.—p. 555.
 109 *Blue Sclerotics. G. C. Bolten.—p. 560.

104. **Harmless Glycosuria.**—The glycosuria after sugar puncture, removal of the pancreas or injection of epinephrine is always preceded by hyperglycemia. But the glycosuria that follows after administration of phlorizin is not preceded by any increase in the sugar content of the blood; there is more likely to be hypoglycemia. The glycosuria here is evidently merely the result of increased permeability of the kidney in this case. The sugar content of the blood is the dangerous element, and when this shows no variation from normal or only slight variation after a test breakfast then any glycosuria may be regarded as harmless, even although the sugar content of the urine may be quite considerable. There are only a few cases of this renal diabetes on record but Bang's micromethod has facilitated the search for them so that more cases are being discovered now. In the research here reported, the sugar content of the blood

was determined fasting and again an hour and a half after a breakfast of 150 gm. white bread with a little butter and a cup of tea but no milk or sugar. In the normal, the sugar content fasting was found from 0.8 to 1.15 per thousand. After the test breakfast it increased, but never above 1.45 per thousand. With a tendency to diabetes it rose to at least 2 per thousand. Fourteen cases of glycosuria are described in which the test showed 0.95, 1.04 up to 1.40 per thousand an hour and a half after the test breakfast. The highest figure was obtained in a nervous girl of 16. The other patients were adults from 22 to 40, including a physician and a teacher. The sugar content of the urine ranged from 0.25 up to 0.9 per cent. with 0.5 as the average.

The cases thus respond to the criteria for renal diabetes. Some symptoms suggesting true diabetes were noted in some but they may possibly be explained by the shock of being rejected for life insurance on account of their glycosuria or its discovery otherwise. They apply for treatment and the questions asked by the physician act by a kind of suggestion to elicit symptoms of thirst, fatigue, etc. We must bear in mind, likewise, that persons without glycosuria are liable to have furuncles, neuritis, etc. If the sugar content of the blood keeps within normal range, none of these symptoms should be ascribed to diabetes. On the other hand, persons with true diabetes may never have presented any of these manifestations so that renal diabetes is assumed until the hyperglycemia is discovered. Four other cases are described in which there is glycosuria with low sugar content of the blood, but it runs up a little higher than normal after the test breakfast. The patients keep well, however, with no signs of true diabetes. In another case a farmer of 32 belonged to the first group while his sister, nearly his age, had glycosuria of this second group type.

One example is given of a third type. The urine of the girl of 12 contains 0.9 per cent. sugar but no acetone. Even on a strict diet, the sugar content keeps at 0.3 or 0.5 per cent. On oatmeal days it increased to 2.9 per cent. The blood sugar ranged from 0.88 to 0.95 per thousand but after the test breakfast ran up to 2.38 per thousand. This case illustrates the importance of the test findings as otherwise the behavior of the blood sugar seemed to be normal. A fourth group is described showing what is called paradoxical diabetes. One of the three patients in this group was a young woman, the others were brothers of 10 and 7, with a sugar content of from 1.06 and 1.03 to 1.39 and 1.61 per thousand. It increased after the test breakfast to 1.68 and 1.95 per thousand, while the urine of the older boy contained regularly from 4.5 to 7.8 per cent. sugar and of the other child from 3.07 to 6.65 per cent. Strict antidiabetic diet reduced the glycosuria but then acetone and diacetic acid appeared. The children kept well and did not seem to suffer in any way from their diabetes, even when there were no dietetic restrictions. The highest figures for the glycosuria were obtained in the urine first voided in the morning. A fourth case is described which presented at first the findings of group one and then they changed to those of group four. The course and outcome in the first two and the fourth groups are favorable, but the third group is not so harmless. The diplomellituria of this group stands closest to true diabetes. The others seem to be innocent diabetes; this term is preferable to "renal diabetes." We shall understand more about them if a case becomes known in which this harmless type becomes transformed into actual diabetes, or when the pancreas from a case of this kind can be studied. The patients keep well and need no restrictions, which renders the differentiation of these innocent cases so important. Vynhausen and Elzas insist that they should not be excluded from life insurance. Even the paradoxical type may not require an extra premium. The diet can be liberal. Restrictions are necessary only to prevent direct injury from the high sugar content of the urine. They add, "Beware of attempts to reduce the permeability of the kidneys for the sugar. This free elimination is probably the explanation of the favorable course." The fact that these twenty-four cases have been encountered in a comparatively short time shows that innocent glycosuria is more common than generally

assumed. As there are no symptoms from it, physicians have no chance to encounter it except in examining for insurance, etc.

105. Hypertrophy of Fingers and Toes.—Munk and Greve describe the case of a girl of 15, a typical example of Marie's *osteo-arthropathic hypertrophiant pneumique*. The girl has had tuberculous pleuritis and the drumstick fingers and the enlarged toes are probably the result of a chronic tuberculous osteomyelitis and periostitis with stasis in the peripheral capillaries. The clinical picture resembles and may blend into Poncet's tuberculous rheumatism.

106. Treatment of Bronchiectasia.—The bronchiectasia was of several months' standing, the cough distressing and the sputum extremely malodorous, but no tubercle bacilli were found. One lung seemed normal but the temperature kept subfebrile. The man was in the hospital for nearly four months, growing weaker, and there seemed no hope from an operation. Then de Jong raised the foot of the bed by 40 cm., and gave him potassium iodid freely. At first this slanting position was maintained only one hour in each four, but the benefit was so prompt and so marked that the man begged to have the bed kept slanting all the time. The expectoration diminished, the cough subsided and in seven weeks the man left for his farm completely restored. One young girl given similar treatment was found in robust health a few years later. The iodid and copious drinking diluted the sputum and the sloping position ensured its expulsion. Operative measures are not very promising in treatment of bronchiectasia. The position treatment should certainly be given a trial first. Zaaier has reported a case in which a young woman with bronchiectasia happened accidentally to discover the relief from lying with the shoulders low, and spontaneously assumed this position every morning.

107. Mumps Iridocyclitis.—Weve recalls three cases published by Heerfordt in 1909 in which chronic bilateral parotitis was accompanied by chronic iridocyclitis. Weve then reports three cases personally observed in which epidemic parotitis was evidently responsible for iridocyclitis. He thinks that this is more common than would be supposed from the scanty literature on the subject. This is explained by the fact that the iridocyclitis usually precedes the parotitis by from one to three weeks. The interval was two weeks, nearly three weeks and one week in his own three cases. When the salivary glands swell, the mumps is generally assumed to be an intercurrent infection, its connection with the eye lesion escaping recognition. Now that the parotitis virus is known to localize in the eye, possibly as its first manifestation, more numerous cases will certainly be encountered. Two of his three patients had had their iridocyclitis treated for several months without this connection having been recognized. In the third case, Weve inquired specially as to mumps, and thus the connection was revealed. The patients were a boy of 14, girl of 15 and woman of 28. The swelling of the parotid glands in the boy kept up for several months but then gradually subsided, and the iridocyclitis improved under scopolamin and cold compresses. Then nearly five months after the beginning of the symptoms there came an acute relapse of both the parotitis and the iridocyclitis. Weve then gave the boy four subcutaneous injections of convalescents' serum, but no improvement was apparent. Then he applied radium treatment to the eyes, and prompt benefit followed, the iridocyclitis retrogressing completely. In six weeks of treatment the right eye, which had resisted all treatment for a year, was entirely cured; the visual acuity with correcting glasses was 1.5. The radium treatment was then applied to the other eye with even more rapid cure.

108. Gastro-Enterostomy.—Van Lier's experiments on dogs have confirmed the clinical experience that a gastro-enterostomy near the cardia does not serve its purpose properly. The nearer to the pylorus the better, as this takes advantage of the natural peristalsis of the stomach. He brought the duodenal stump out through the abdominal wall, and also the efferent stump from the gastro-enterostomy. This made it possible to ascertain the exact behavior of both the openings in the stomach. The findings emphasize the superiority of

an opening close to the pylorus, and also the necessity for closing the pylorus, and doing it effectually. If the pylorus is left open, food passes out through it and the food may be returned to the stomach, thus unnecessarily overburdening it. But the principal reason for closing the pylorus is that when food is passed along into the duodenum, by reflex action not only the pylorus is closed but the evacuating movements of the stomach walls slow down. With the pylorus sutured to close it once for all, this retarding reflex does not occur, as it is not elicited by the jejunum. The chance of the vicious circle is also less with the pylorus shut off. Another argument in favor of closing the pylorus is that the duodenal ulcer thereby is spared the repeated irritation from the acid gastric juice.

109. Blue Sclerotics with Other Congenital Anomalies.—Bolten describes a female infant of 16 months with mongoloid idiocy and blue sclerotics. The family reside in Brussels.

Hospitalstidende, Copenhagen

Feb. 20, 1918, **61**, No. 8

110 *Pseudoleukemia. J. Nordentoft.—p. 225. Concluded in No. 10, p. 298.

111 *Protein Therapy in Eye Diseases. C. L. Andersen.—p. 244.

110. Roentgen Treatment in Pseudoleukemia.—Nordentoft reports fourteen cases of Hodgkin's disease or other forms of pseudoleukemia. The tumors were rapidly progressive, as a rule, but under roentgen treatment they melted away. After failure of all other measures, this vanishing of the symptoms and return of apparent health within a few days are most amazing. The disease is not conquered, however; constant recurrence is the rule, but there may be long intermissions and the recurrences generally subside equally promptly under renewed roentgen treatment. The greater the susceptibility to the roentgen rays, the graver the outlook; the more frequent, the more rapid and the more malignant the recurrences. There are a few complete cures to the credit of the roentgen rays, but they are extremely rare, and Nordentoft thinks that in many of them there was a mistake in the diagnosis. In his experience, two of his fourteen patients seem to be cured, but the diagnosis of a mediastinal tumor may have been erroneous in one case; the hemorrhagic pleuritis and adhesions may have been of tuberculous origin. In the other case the diagnosis of Mikulicz' disease seems more probable than pseudoleukemia. No other proliferation of lymphoid tissue was to be discovered except in the parotid glands, and the tumors in them had developed very slowly and were apparently benign. In none of the other cases was a cure realized or even to be anticipated. But the long intermissions between recurrences are equivalent to a cure in many cases. Only one of the total fourteen patients seemed to be refractory to the roentgenotherapy. Necropsy in this case showed necrotic processes for which the roentgen rays may have been responsible. In one young man a tumor in the neck, as large as a man's fist, subsided within a day. The exposure had been made at noon and by evening the subjective and objective improvement was pronounced. One girl of 11 with a large tumor masking the shadow of one lung entirely, gave normal roentgen findings with roentgenoscopy two weeks later. But the toxic action from the subsidence of this tumor was so great that the child died, and the conclusion seems inevitable that the roentgen exposure of the tumor was responsible for the fatality. An interesting feature of the roentgen treatment in some of these cases was that unexposed tumors, at a distance from the one being given the roentgen treatment, subsided along with it. This suggests that possibly the blood may acquire a weak radioactivity, sufficient to act on extremely susceptible tissue. But Nordentoft's experimental research on dogs failed to show any such action even when the negative plate was exposed to the blood for days at a time.

111. Protein Therapy of Eye Disease.—Andersen reviews the history of parenteral protein and nonspecific vaccine therapy and summarizes recent experiences in this line reported in Germany. P. V. Szily and A. Sternberg are very enthusiastic over the brilliant results obtained with a typhoid

vaccine in gonorrheal ophthalmia, and R. Müller with parenteral injection of milk. Frozier and Darier have also reported good results from diphtheria antitoxin given in eye diseases. In contrast to the fine results reported by others, Elschmig called attention in the last half of 1917 to two cases of gonorrheal ophthalmia in which after three injections of milk the central portion of the cornea was cast off, with prolapse of the iris or, after two injections of milk, the surface of the cornea showed infiltration and casting off of the superficial layer. He warned that we cannot trust absolutely to the "magic action of this method of treating gonorrheal ophthalmia."

Hygiea, Stockholm

Feb. 28, 1918, **80**, No. 4

112 *Reduplicative Paramnesia. G. Elander.—p. 161.

112. Reduplicative Paramnesia.—This term or the expression, *déjà vu* phenomenon, is used to designate the sensation sometimes experienced that the incident has been lived through before. It is not very uncommon for persons to have a vague feeling that the persons or incident in question has already been witnessed before. Elander describes a peculiarly pronounced case of this kind in a young man with incipient dementia praecox, admitted to the psychiatric clinic for the first time, who was convinced that he had been in the clinic before, some years ago. Elander explains this illusion of memory as a multiplying of the actual impression. The young man lost this reduplicative paramnesia in a few months, but the dementia praecox continued its progressive course.

Ugeskrift for Læger, Copenhagen

Feb. 14, 1918, **80**, No. 7

113 Surgical Impressions from a Trip to the British Front. V. Meisen.—p. 243.

114 *Dermatitis from Safety Matches. C. Rasch.—p. 258.

Feb. 21, 1918, **80**, No. 8

115 *Progressive Course of Myopia. O. Blegvad.—p. 287.

116 Alcohol-Chloroform-Ether General Anesthesia. G. Fanøe.—p. 298.

117 Movable Cecum with Ileus and Perforation. S. Felding.—p. 301.

114. Dermatitis from Safety Matches.—Rasch has had seven men apply to him during the last four months for treatment of a skin disease resembling a mild burn on the thigh, in size and shape corresponding in each case to the trouser pockets. The hands, fingers and eyes also displayed analogous lesions. All were in the habit of using matches of a certain make and carried the boxes in their trousers pockets. The striking surface on the match box responded to the Mitscherlich test for poisonous white phosphorus. The matter is still under investigation, but all the symptoms permanently subsided when these matches were discarded and other makes used. Since Rasch called attention to this dermatitis from safety match boxes, a number of similar cases of this "match eczema," as it is called have been reported in Denmark.

115. Progression of Myopia.—Blegvad has been investigating the present condition of 155 adults with myopia given correcting glasses before they were 16. He tabulates the findings in 87 cases traced with special care, some examined several times. Of the 50 with full correction, the myopia had continued to progress in 76 per cent. as also in 70 per cent. of the 37 not given full correction. The average progression percentage was 0.44 D. for the full correction cases and 0.33 D. for the undercorrected. From these and other data presented, he concludes that correction has no influence on the progressive course of myopia. The amount of progression of the myopia decreases with age. Near work increases the tendency to myopia and stimulates its progress. This explains why those who leave school at about 16 and do not use their eyes much thereafter find their myopia keeps stationary, while in those who keep on studying or do much near work the myopia continues a progressive course. His charts and curves confirm that the earlier the myopia develops, the greater the degree liable to be reached. Also that heredity and near work explain the prevalence of myopia in all classes of society.

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A SURGEON'S IMPRESSION OF TRIGEMINAL NEURALGIA

BASED ON EXPERIENCES WITH THREE HUNDRED
AND TWO CASES

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There is nothing obscure about trigeminal neuralgia save its origin. The patient has made the diagnosis before the surgeon is consulted, and treatment, to be effective, must include either alcoholic injections or the radical operation. In these few words have been summed up the essential features of this unique lesion of the sensory system.

True trigeminal neuralgia must not be confused with a peripheral neuritis initiated by some infective focus in tooth or sinus, or with the neuritis of toxic or obscure origin. One occasionally hears or reads of the cure of trigeminal neuralgia by the drainage of a sinus, by an intranasal operation or by the removal of an infected tooth. I have never seen or operated on a patient in a case of the major type of trigeminal neuralgia in which there was any reason to suspect any one of these lesions as the exciting cause.

Were I to write on the pathogenesis of the disease, I should describe it as a disease of central, that is, of ganglionic origin, and should hypothecate a lesion in the nature of sclerosis. These are matters, however, of a speculative nature, and I shall not deal with them now. If accepted, they would serve this one useful purpose: Vain attempts to find peripheral lesions as a cause would be abandoned, and patients would be spared many sinus operations and the extraction of a majority of sound teeth in the upper and lower jaws. Most of my patients have been victims of these vicious practices before they came to me for treatment.

The facts presented in these pages are the outcome of my experience with 302 cases of neuralgia of the trigeminal nerve. This includes thirty-nine peripheral operations, ninety-nine alcoholic injections, 130 intracranial operations, and thirty-four cases that were not treated.

The trigeminal neuralgia herein discussed has many typical and characteristic features. To distinguish it from other expressions of pain in the trigeminal distribution, we might call it "surgical" neuralgia. Rarely beginning before the fourth, or more frequently the fifth decade of life, and being only exceptionally bilateral, the pain is first experienced in the second or third division and usually in the terminal distribution of the infra-orbital or the mental nerve. Often two divisions, the maxillary and the mandibular, are even-

tually involved, and, in a minority of cases, all three divisions. Surgical neuralgia is a disease characterized at first by attacks of a few weeks' duration, with remissions of several months. The attack itself is made up of paroxysms and remissions. The pain is shooting, darting, tearing, being likened sometimes to a red-hot iron boring through the bone. Between the attacks the patient is so absolutely free from pain that his spirits are buoyed up with the false hope that the disease has run its course. But as time goes on, the attacks become more frequent, the remissions shorter, the pain more racking. With few exceptions, surgical neuralgia is not a self-limiting disease. It usually does not die out with age, but gradually beats down the patient's morale until he becomes a suppliant at the surgeon's feet.

PRINCIPLES GOVERNING TREATMENT

It is the treatment of trigeminal neuralgia with which this paper is chiefly concerned. There are no grounds for discussing any method of treatment other than alcoholic injection or the avulsion of the sensory root. The surgeon is spared the necessity of discussing other methods of treatment, since, by the time the patient consults him, all the useless remedies — and they are innumerable — have been tried and have failed, and what reserve of morale or funds the patient may have stored up has, in many instances, been exhausted.

Under what circumstances should the alcoholic injection be recommended, and under what circumstances, the operation? The answer to this question must be qualified by the circumstances themselves. We might divide the patients into two groups, in the first those who have long been sufferers, and in the second, those in an earlier stage of the disease. To the latter group I state the facts baldly. The alcoholic injection is of only transitory effect. Properly given, it will arrest the pain immediately and absolutely, and for an average period of nine months. It is in no sense of the word a permanent cure.

The radical operation assures absolute and permanent relief. When I let the patient choose, after presenting the facts to him, he usually chooses the injection. The injection given, he leaves, pitifully grateful, and encourages himself to believe that this is the end of his suffering. But before the year ends, the pain returns. He fights it out for a while and then returns submissively for another injection. Three or four years pass, with as many injections, and either because the injections are becoming less effective, or — and this is the more potent influence — because his courage is failing, the patient, despairing of permanent relief, will have no more injections and wants the operation. This I should say is a very fair analysis of the psychology of the subject of this disease.

Turning now to the second group of patients in whom the disease is of long standing, that is, from five to ten years, we find the situation very different.



Fig. 1.—Cosmetic results in patient after operation. The incision is entirely within the hair line, hidden from view.

For this type of patient there is only one acceptable treatment, namely, the radical operation. Sometimes he has had his alcoholic injection experience; it has

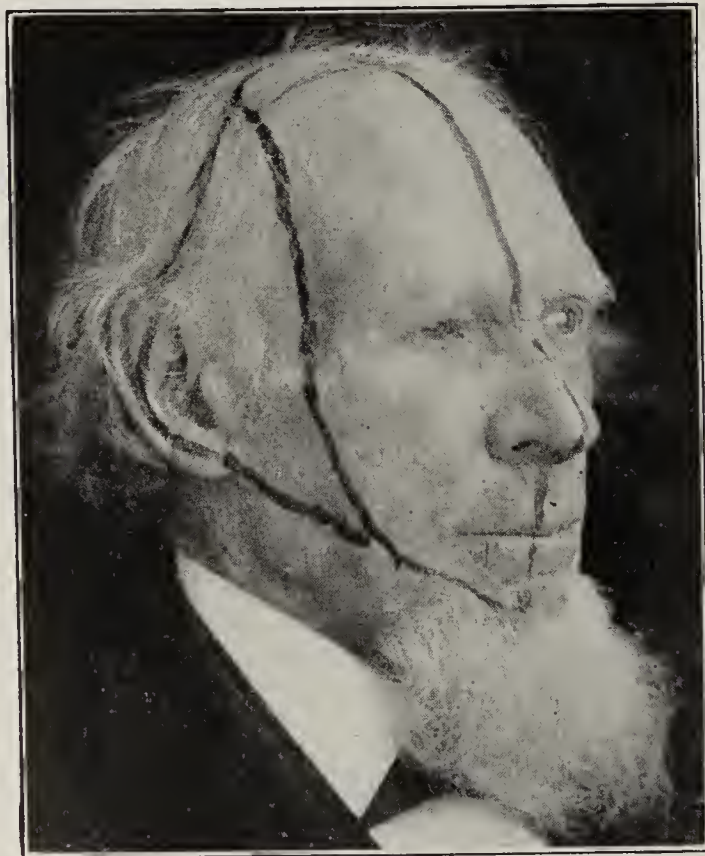


Fig. 2.—First patient on whom the author's operation, "avulsion of the gasserian ganglion," was practiced. The larger area shows the line of regional anesthesia immediately after the operation, and the more restricted area fifteen years later. This contraction of the anesthetic region is not uncommon, although there is never any variation of the line of anesthesia dividing the territory supplied by the trigeminal nerve on one side and that on the other. The nerves of the cervical plexus evidently compensate to a greater or less degree for the loss of sensation in that portion of the trigeminal distribution along the margin of the lower jaw, in front of the ear and in the temporal region, chiefly in the distribution of the mandibular division.

served him in good stead for a while, but it is losing its influence and he dreads another attack. This

patient's invariable comment after the operation is, "Why didn't I have the operation in the first instance and be spared the suffering in mind and body and the years of recurrent attacks and alcoholic injections?" The physician-patient is usually more emphatic in his expression than the layman, and yet, in the early days of his attacks, his mind was not prepared to accept the proposal of a radical operation.

I have said that there are only two methods of relieving a patient with trigeminal neuralgia, the alcoholic injection and the radical operation. Like all rules, this has an exception. There are a few cases in which the pain is limited to the distribution of the supra-orbital nerve. Alcoholic injection of this branch is not very effective; peripheral resection of the nerve may with propriety be employed at first. The intracranial operation in the course of time is usually inevitable. With this exception, the peripheral operation has been altogether replaced by the alcoholic injection. There are, to be sure, certain conditions which might make it unwise to recommend the radical or intracranial operation. A patient whose condition

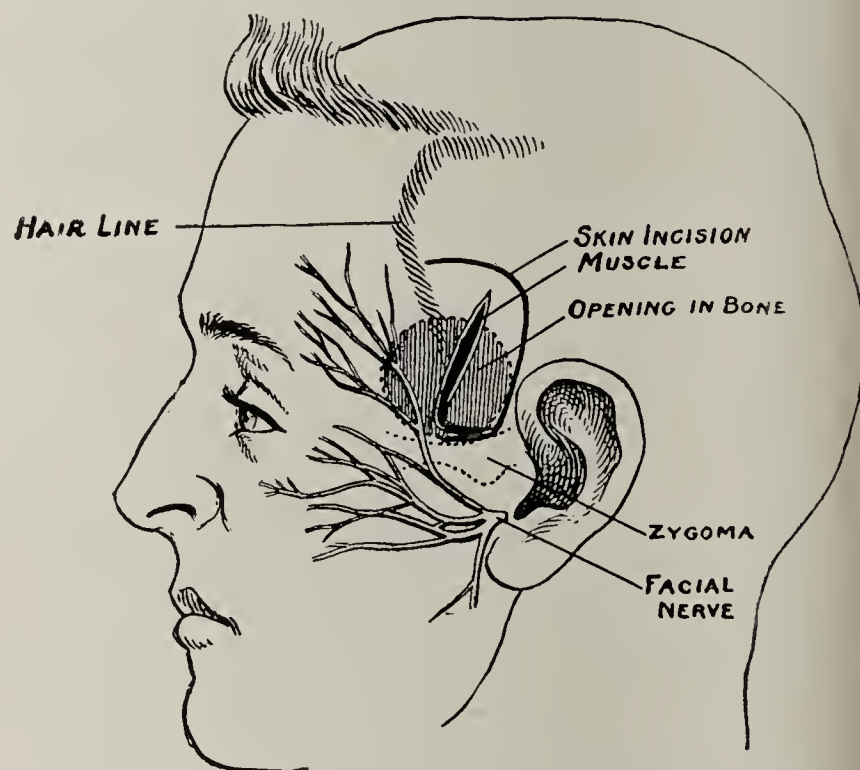


Fig. 3.—Relations of incision to the upper branch of the facial nerve. It is most important that the upper branch of the facial nerve be conserved; otherwise disastrous results might follow from the inability of the patient to close the eyelids. The old-fashioned horseshoe incision assured no protection to this branch.

is manifestly unfit for any radical operation is not a fit subject for an operation on the ganglion, and very old people, near the eighties or still older, whose expectation of life is short, may be made comparatively comfortable with alcoholic injections for their few remaining years and spared the risk or discomfort of operation.

Having stated very briefly the principles governing the treatment of trigeminal neuralgia, I shall make a few commentaries on the subject of alcoholic injections. The untrained physician is no more qualified to employ this nonsurgical method of treatment than he is to perform the operation. In some instances the methods employed by the uninitiated are grotesque, though fortunately harmless, the alcohol being injected directly into the tissues, or other parts in which the patient happens to complain of pain. In other cases, an injection by the inexperienced may leave the patient with a stiff jaw, facial paralysis, oculomotor palsy, or trophic keratitis. In addition to these complications,

the percentage of failures with injection by the inexperienced is high. These passing commentaries are made merely to emphasize the fact that to employ the



Fig. 4.—Patient with paralysis of the upper branch of the facial nerve from a faulty incision.

injection treatment effectively and safely requires training and experience, by which alone the necessary confidence and skill are acquired.

The methods of injection I shall not describe. Each operator will doubtless develop a technic which he varies in one way or another from time to time. I do, however, want to stress the fact that with a confidence born of experience the injection may be made painless. Frequently, and especially when the patient is unnerved from previous unhappy experiences, the operator may use nitrous oxid or very light chloroform anesthesia, and thus rob the injection of its errors. My second commentary on the injection treatment conveys a caution as to the injection of the ganglion. The incidence of corneal complications, apart from injuries to the abducens and oculomotor nerve, is not small. Härtel himself, the originator of this method, had corneal complications in one in every four of his first twenty-four cases. This is too high a toll, and to me it makes prohibitive the treatment by injection of the ganglion, except in the few instances in which the operation may be contraindicated.

We now turn to a consideration of the radical operation. The patient should be in the hospital four or five days before the operation, both for observation and examination. Sometimes mistakes may be made in diagnosis. If the patient is suffering from a neurosis, the surgeon will regret having undertaken to relieve a pure neurosis by any surgical procedure. Many years ago, I had two unfortunate experiences, still fresh in my memory, in which the operation performed on a patient suffering from trigeminal neuralgia failed to relieve the pain. One of the cases was

so evidently a neurosis that I shall mention the bare facts. Two days after the avulsion of the sensory root, the patient said she had as much pain as ever. I reopened the wound and, with the patient conscious, pulled and tugged with a hemostat on the ganglion without provoking so much as a twinge of pain. Unquestionably, at the first operation the sensory root had been divided, but in the patient's mind the pain persisted.

OPERATIVE PROCEDURE

Since 1901, in almost all my cases I have practiced avulsion of the sensory root, the operation proposed by Spiller as a substitute for gangliectomy, and described by the neurologist von Gehuchten, as the physiologic extirpation of the ganglion. Physiologically sound and technically practical, the avulsion or even the division of the sensory root is in every sense a radical cure. Ether is administered by the drop method. The anesthetization is an important feature. The patient is never deeply narcotized; once the root is divided, the use of ether is discontinued, and before the patient leaves the operating room, consciousness is practically restored.

From the first I have used the sitting posture, and believe it is of advantage for these reasons: Less ether is required, there is less venous bleeding, and the position is convenient for the operator. Without leaning or stooping over the table, he may stand erect, and as the plane of the floor of the skull is on the level with his eye, he may look directly at the structures on which he is working.

The approach to the ganglion is a matter of the

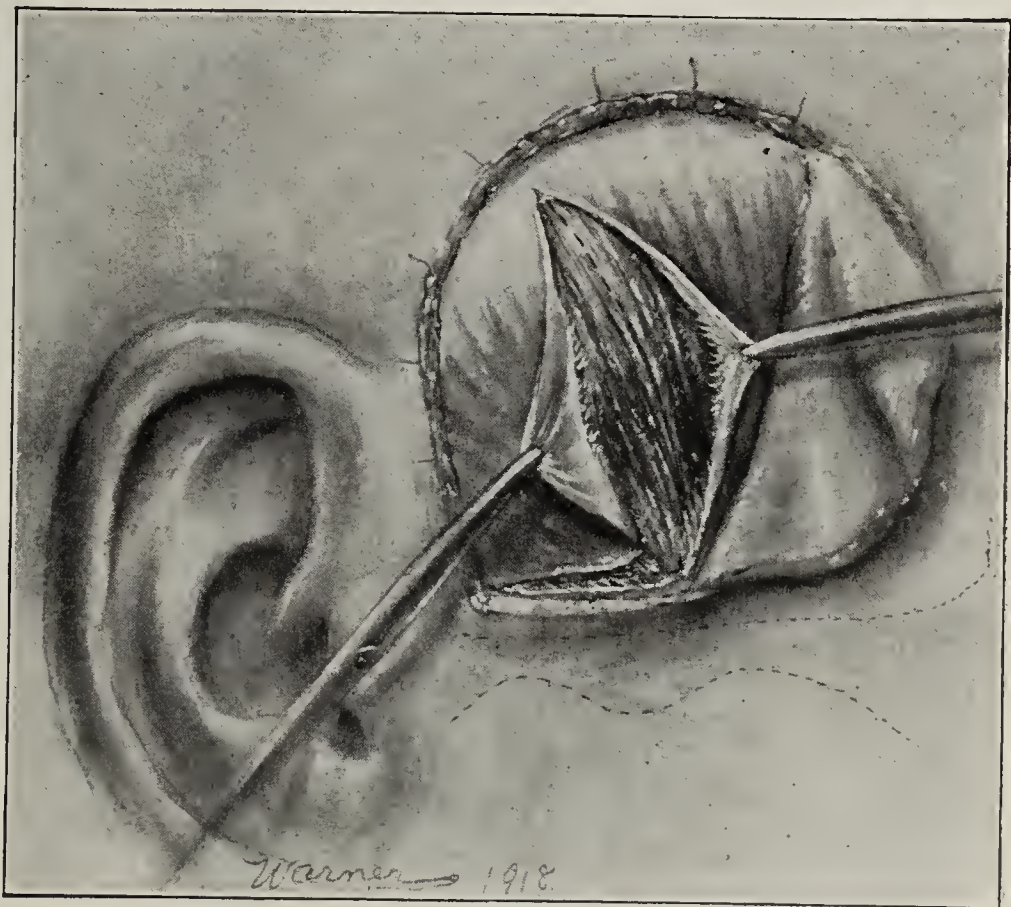


Fig. 5.—Method of approach to the ganglion; cutaneous flap reflected forward. The line of incision in the temporal fascia and muscle is projected so that this musculo-aponeurotic flap may be reflected backward.

utmost importance, and many of the difficulties are obviated if the incision admits of an approach from the middle of the zygoma. From that point to the foramen ovale is the shortest route. The incision is planned with this object in mind, and, of course, must not disturb the branches of the temporal or upper division of the facial nerve. Briefly, the approach is

by a flap method, with a cutaneous flap reflected forward and a fasciomuscular flap reflected backward. The margin of each flap is sutured to a towel surrounding the wound, so that no retractor and no

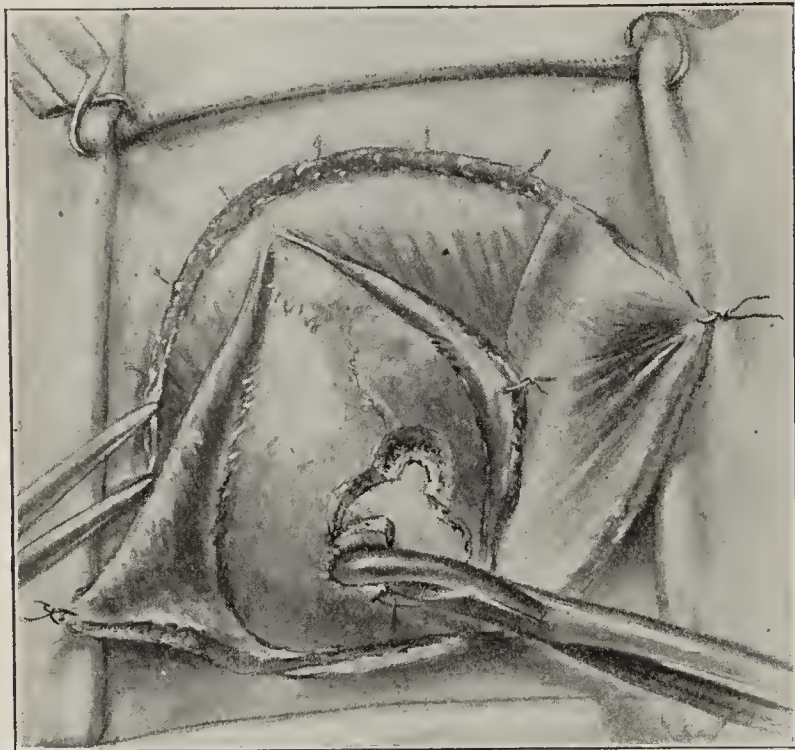


Fig. 6.—Cutaneous flap reflected forward and musculo-aponeurotic flap backward and stitched to towels; opening in skull being enlarged with rongeur forceps.

retraction is required. These are both very practical and important details. The skull is opened with a Hudson drill, and the opening enlarged to that of a fifty-cent piece, the lower margin extending to the base of the skull. This is the end of the first stage, which we may call the approach. The field is now prepared for the second of the three stages of the operation, the intracranial maneuvers, while the third includes the closure of the wound. The dura is separated slowly from the base of the skull as well as

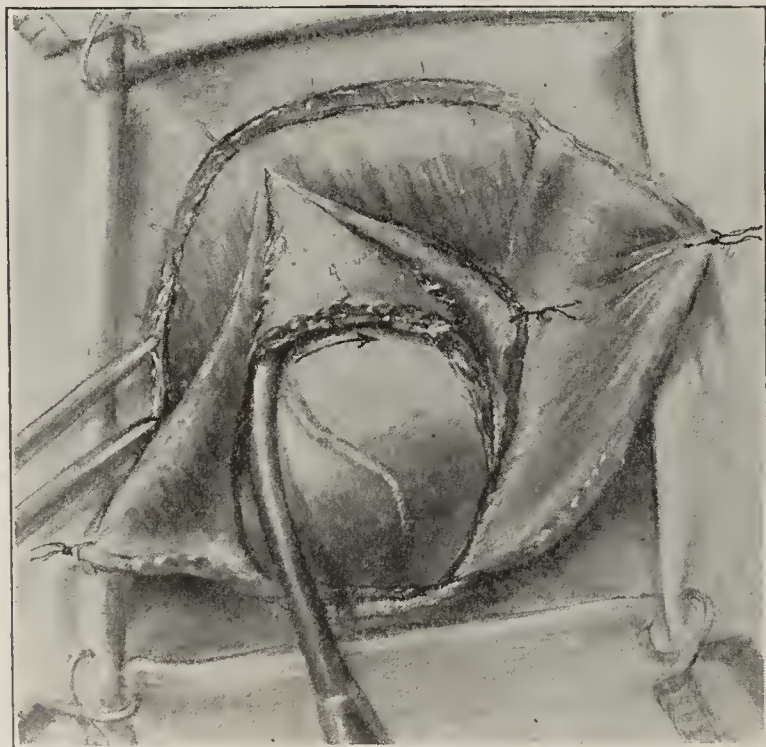


Fig. 7.—Separation of the dura as widely as possible from the margins of the bony opening.

from the temporal bone wide of the bony opening until the foramen spinosum is in sight. This is easily identified. Before the operator divides the middle meningeal artery, which passes through it, he plugs

the foramen with cotton, wax or some convenient material. The next objective is the foramen ovale close by. The dural reflexion over the mandibular division, as it enters the foramen, is cut, and by blunt and sharp dissection the posterior third of the superior aspect of the ganglion is stripped of its dura propria until, at the apex of the petrous bone, one easily recognizes the sensory root. The latter should be completely isolated, the inner as well as the outer aspect, and with a special hook the root is picked up and by gentle traction severed from its central attachment. This concludes the second stage and, as the purpose of the operation is now fulfilled, there remains only the closure of the wound, requiring usually four tiers of sutures.

The convalescence after the operation is surprisingly free from discomforts. In the course of a few days, as a rule, the patient leaves his bed, and by the end of the week the wound is healed, the stitches removed, and the period of surgical care and responsibility is over. To avoid corneal complications, the patient is instructed to wear goggles whenever he

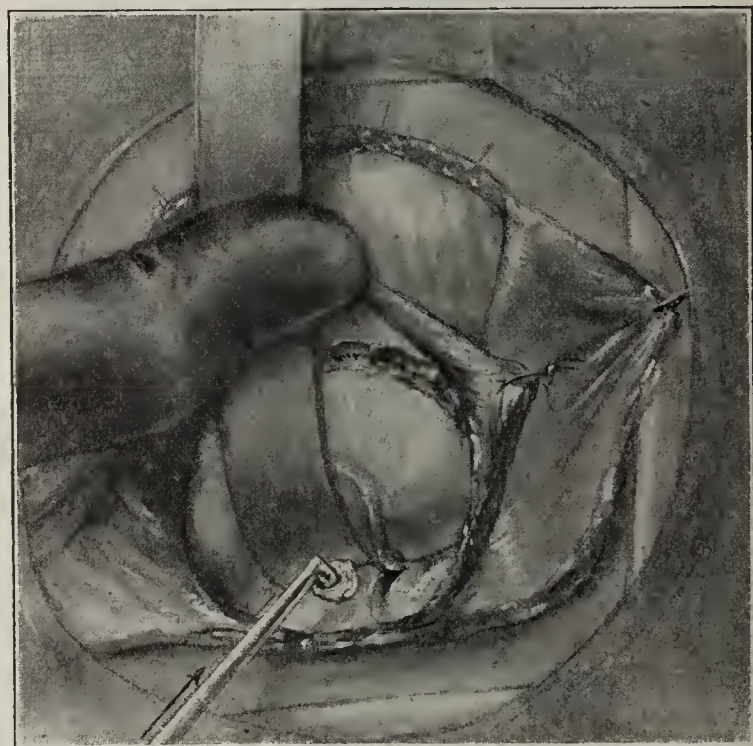


Fig. 8.—Preparation for plugging foramen spinosum with wax on end of special applicator. The foramen spinosum is readily detected by following the groove for the middle meningeal artery on the base of the skull.

leaves the house, throughout a period of at least one year.

The description of the operation has been necessarily brief, and many details and complications have been omitted. As a matter of fact, the operator almost unconsciously varies the technic from time to time, so that I have hesitated to lay down hard and fast rules. Needless to say, some of these operations are much more difficult than others, and considerable resourcefulness is necessary to meet obstacles as they arise. In some instances hemorrhage may be a harassing feature; in others, adhesions of the dura propria to the ganglion, probably the result of previous alcoholic injection or possibly a basilar meningitis of specific origin, may be so dense as to make the exposure of the root difficult; in an exceptional case the root may be so deeply situated that its exposure has been abandoned and the ganglion removed. The operator must always be prepared for any exigency, and to perform the operation with uniform success requires a maximum of patience and resourcefulness. The time

required to expose and divide the root varies from forty-five minutes to more than two hours.

RESULTS

In considering the results, I refer only to the major operation, and will review it from various angles, first as to the permanency of relief, of which there can be no doubt, if the entire root is sectioned. The root cannot regenerate itself. My first operation was performed in 1901, and when last heard of fifteen years after the operation, the patient was free from pain. In all my 121 intracranial operations, I have been called on only once to operate a second time. In this case I found that the inner portion of the root had escaped me. This experience prompts me to warn the operator of the ease with which the inner portion of the root may remain attached to the dura and be overlooked. The fibers of the sheathless root are easily separated one from another, and its inner portion, if adherent to the dura, may be concealed behind the retractor employed to elevate the temporal lobe.

The second result of the operation relates to sub-

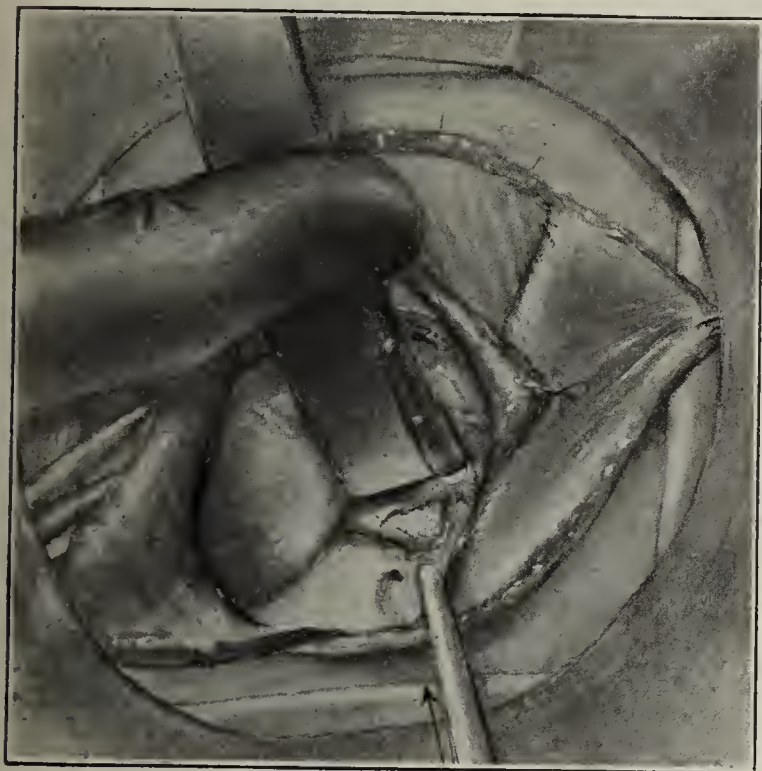


Fig. 9.—The foramen ovale and the mandibular division exposed, and the separation of the dura propria from the surface of the ganglion begun.

jective disturbances. The majority of patients, grateful for the relief afforded, accept the anesthesia and numbness without complaint, soon becoming accustomed to it. To the minority, the numbness continues to be a source of annoyance for some time.

The motor disturbance, following inclusion of the motor with the sensory root, involves loss of function in the temporal, masseter and buccinator muscles. In great many instances I have been fortunate in not being compelled to sacrifice the motor root, and in later years I find an increasing percentage of cases in which the motor root has been saved. There is more or less inconvenience when the function of the buccinator is lost, since food accumulates in the sulcus between the teeth and the cheek because of the anesthesia and the loss of power in the cheek.

These sensory and motor sequelae are of no very great moment, at least when compared with the intense suffering, for the relief of which the operation is performed. The only sequel that might be said to be of serious moment is keratitis. This lesion of trophic

origin will occur once in a while. If promptly recognized and properly treated, the corneal ulcer will heal. If utterly neglected, as it was in two of my earlier patients, the eye may have to be sacrificed. In addi-

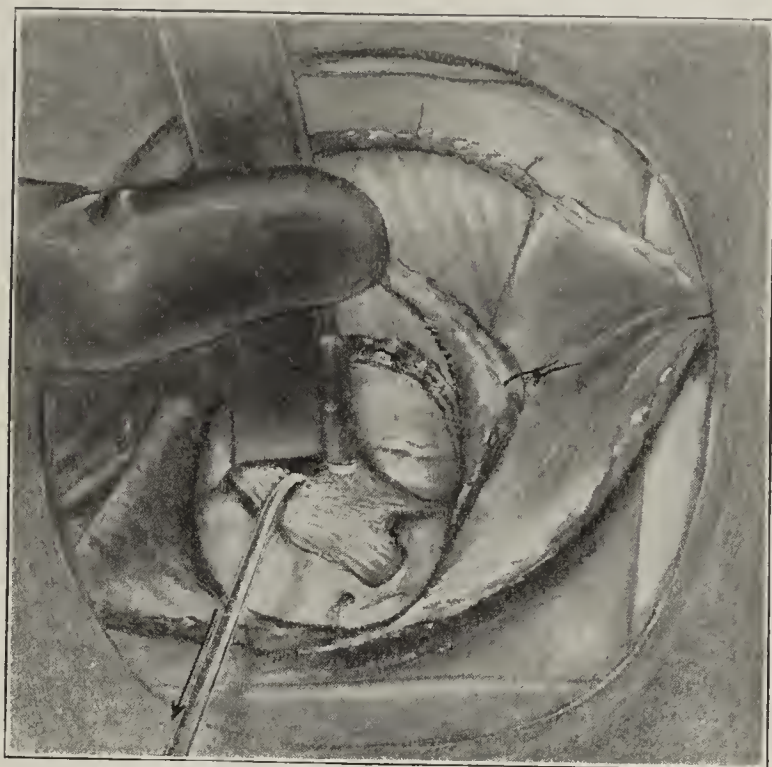


Fig. 10.—The posterior third of the ganglion has been uncovered and the sensory root isolated; it has been encircled with a small, blunt hook preliminary to avulsion.

tion to these sequelae, there were four instances in which it was necessary, for periods of several months to several years, to suture the lids at the midpoint. In this type of case, the patient, even with lids sutured, can see to one side or the other, though not directly in front.

RISKS OF THE OPERATION

In regard to the risks of the major operation, there is naturally a good deal of apprehension on the part of the patient, but usually much more on the part of



Fig. 11.—The sensory root has been avulsed and the free end is lying forward on the surface of the ganglion.

the family physician. The operation, of course, has its attendant risks, which we might suppose to be proportionately greater than in other major operations on patients past middle life. The supposition, however,

has no foundation in fact. There seems to be an extraordinary misconception on the part of the profession as to the present status of the operation on the ganglion or root. It is usually represented as a court of last resort, a sort of kill-or-cure method, as a result of which the patient, if he survives, will be paralyzed on one side of the face and will lose his eyesight. Because of the frame of mind in which the patient consults the surgeon, the former needs some reassuring. In stating the risks of the operation, I shall refer only to my own clinic. Since 1901, there have been, all told, four deaths in 160 operations. Two of these were due to apoplexy, and all of them were among subjects of the 121 intracranial operations. There was one death in 1904, and one in 1910, and there were two in 1912. In a series of eighty-seven consecutive operations there have been no deaths since 1912.

Over other radical operations, such as the removal of the ganglion, the Abbe operation or the Hutchinson operation, avulsion of the sensory root has so many advantages that it should be and is recognized as the operation of choice. It is easier of execution than any other, it subjects adjacent structures to no risk, and it is attended with a smaller percentage of corneal complications and with a lower mortality. On the whole, it is the most satisfactory surgical procedure with which I have had to deal.

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THE CAUSE OF LUMBAR PUNCTURE HEADACHE

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Lumbar puncture headache differs from all others in that, being present when the patient is sitting up, it completely disappears when he lies down. It is throb-

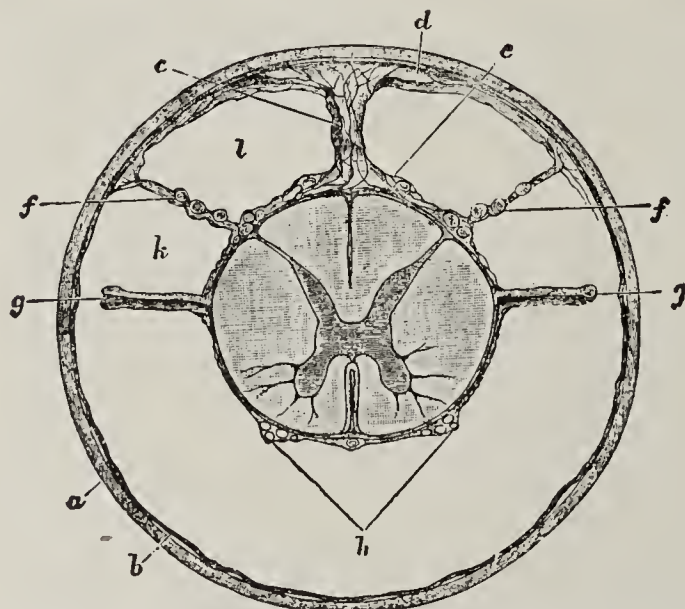


Fig. 1.—Section of the spinal cord within its membranes and sub-arachnoidal space which contains the cerebrospinal fluid (Key and Retzius, Schäfer's Histology): a, dura mater; b, arachnoid; c, l, sub-arachnoidal space.

bing and severe, and felt mostly in the frontal and occipital regions. No drugs give sufficient relief to allow its victim to walk about and attend to his affairs, or even to sit up. The pain comes on quickly when he sits up, being fully present in twenty seconds. It takes about the same length of time to subside when

he lies down. This situation usually persists for about seven days with full severity, and then ends somewhat abruptly in the course of twenty-four hours.

The only effective treatment is a week's stay in bed with the head low. While in this position the patient is quite comfortable, and there are no clinical signs of trouble present.

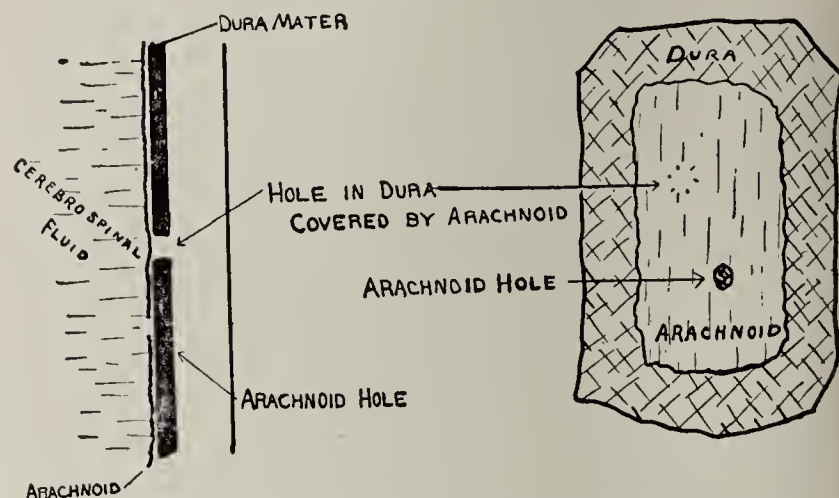


Fig. 2.—Spinal membranes with normal closure of puncture hole: no epidural leakage; no headache.

Regarding causative or influencing factors of the headache, various speculations have been made concerning the importance of such points as the rapidity with which the fluid is withdrawn; the position of the patient during the puncture; the degree of pressure existing in the spinal fluid at the time of puncture; the disease condition of the patient, and his age. All these points are now generally regarded as unimportant.

There are three other points that linger with some observers, and these have been made interesting by discussion. They are: (1) lying flat on the back for twenty-four hours following puncture; (2) performance of puncture when the fluid shows signs of active syphilis, and (3) the amount of fluid withdrawn.

1. It has been our custom at the Neurological Institute to have the patient lie flat on his back for twenty-four hours following lumbar puncture. The small amount of fluid collected for examination must by this time be easily compensated for, and the chances

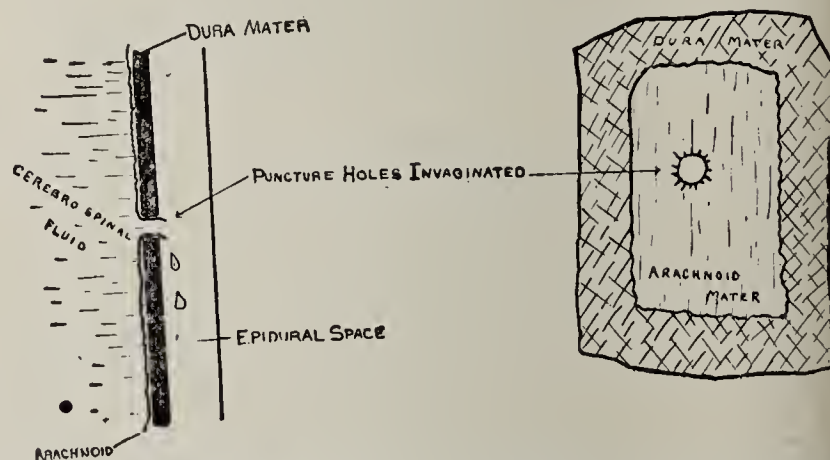


Fig. 3.—Nonclosure of puncture hole, because of arachnoid tissue being pulled through dural opening as needle was withdrawn, resulting in prolonged epidural leakage and lumbar puncture headache.

of headache appearing were expected to be considerably lessened. In the spring of 1915, by a series of thirty consecutive cases in which this procedure should be strictly adhered to, I determined to establish its value. Twelve of the thirty developed the typical severe headache.

2. Some information concerning these thirty cases is included here, to illustrate the fallacy of a statement

frequently heard in connection with the second point, regarding the performance of puncture when the fluid shows signs of active syphilis. This statement is to the effect that headache is unlikely to occur in these cases. In the accompanying table only eight spinal



Fig. 4.—Location of the cisternae and canals of the subarachnoid space (Poirier and Charpy, Howell's Text-Book of Physiology).

fluids may be considered as showing signs of active syphilis, and yet it was in three of these that headache occurred. If this percentage, 37.5, is compared with the 40 per cent. in the whole series, it becomes evident that we may not regard this point as an influencing factor of the headache.

3. The third point—the amount of fluid withdrawn—is interesting.

The liability for headache to occur when only 2 c.c. of fluid are withdrawn, as readily as when 20 c.c. are withdrawn, has often been demonstrated. This has led some to assume and contend that headache did not depend on loss of cerebrospinal fluid. To support their contention, they have cited the fact that headache is not a frequent complaint after spinal cord operations, although much fluid is usually lost during these operations. The fallacy of this illustration becomes apparent when we recall that after spinal cord operations, the patient is kept on his back for at least two weeks; lumbar puncture headache is not in evidence while a patient is on his back, and the situation responsible for it, whatever it is, is never present, even in the worst cases, for as long as two weeks.

Whereas we are far from having any proof that loss of fluid does not cause lumbar puncture headache, and the consensus of opinion is that in some way it must be responsible, it seems ridiculous that when probably 60 c.c. or more are secreted in a day, an alteration in the intracranial situation sufficient to produce violent headache of seven or more days' duration can be made by the removal of from 2 to 5 c.c.

After a consideration of these facts, it was evident that some new point of view must be obtained in order to solve the problem. A critical analysis of the whole

puncture phenomenon brought to light a factor that seems not to have been previously considered. It occurred in answer to the question, After the puncture, is everything within as it was before, with the excep-

OCCURRENCE OF HEADACHE IN THIRTY CONSECUTIVE PUNCTURES

No.	Patient	Diagnosis	Spinal Fluid			Head-ache	No.
			Wass.	Glob.	Cells		
1	B.	Tabes.....	—	w+	3	No	
2	S.	Paresis.....	+	+	51	Severe	I
3	G.	Cerebrospinal syphilis	+	+	35	Severe	II
4	C.	Tabes.....	+	+	35	No	
5	K.	Cerebrospinal syphilis	+	+	20	No	
6	D.	Paresis.....	+	+	144	No	
7	J.	Lateral sclerosis.....	—	—	1	No	
8	H.	Chorea.....	—	—	1	Severe	III
9	G.	Epilepsy.....	—	—	0	No	
10	K.	Cerebrospinal syphilis	—	—	0	No	
11	C.	Permeious anemia....	—	—	0	Severe	IV
12	B.	Multiple sclerosis.....	—	—	5	Severe	V
13	R.	Cerebrospinal syphilis	—	—	1	Severe	VI
14	R.	Tabes.....	—	+	2	No	
15	B.	Hysteria.....	—	—	0	No	
16	P.	Neurasthenia.....	—	—	0	Severe	VII
17	G.	Old hemiplegia.....	—	—	4	No	
18	A.	Paresis.....	+	+	100	Severe	VIII
19	D.	Paresis.....	+	+	8	No	
20	K.	?	—	—	0	No	
21	R.	Neurasthenia.....	—	—	1	No	
22	C.	Sciatic neuritis.....	—	—	3	No	
23	R.	Cerebrospinal syphilis	—	—	2	No	
24	C.	Tabes.....	—	w+	8	Severe	IX
25	G.	Cerebrospinal syphilis	—	—	23	No	
26	Z.	Wood alcohol.....	—	w+	0	Severe	X
27	H.	Epilepsy.....	—	—	0	No	
28	Z.	Chorea.....	—	—	1	Severe	XI
29	P.	Cerebrospinal syphilis	—	—	0	Severe	XII
30	R.	Paresis.....	+	+	44	No	

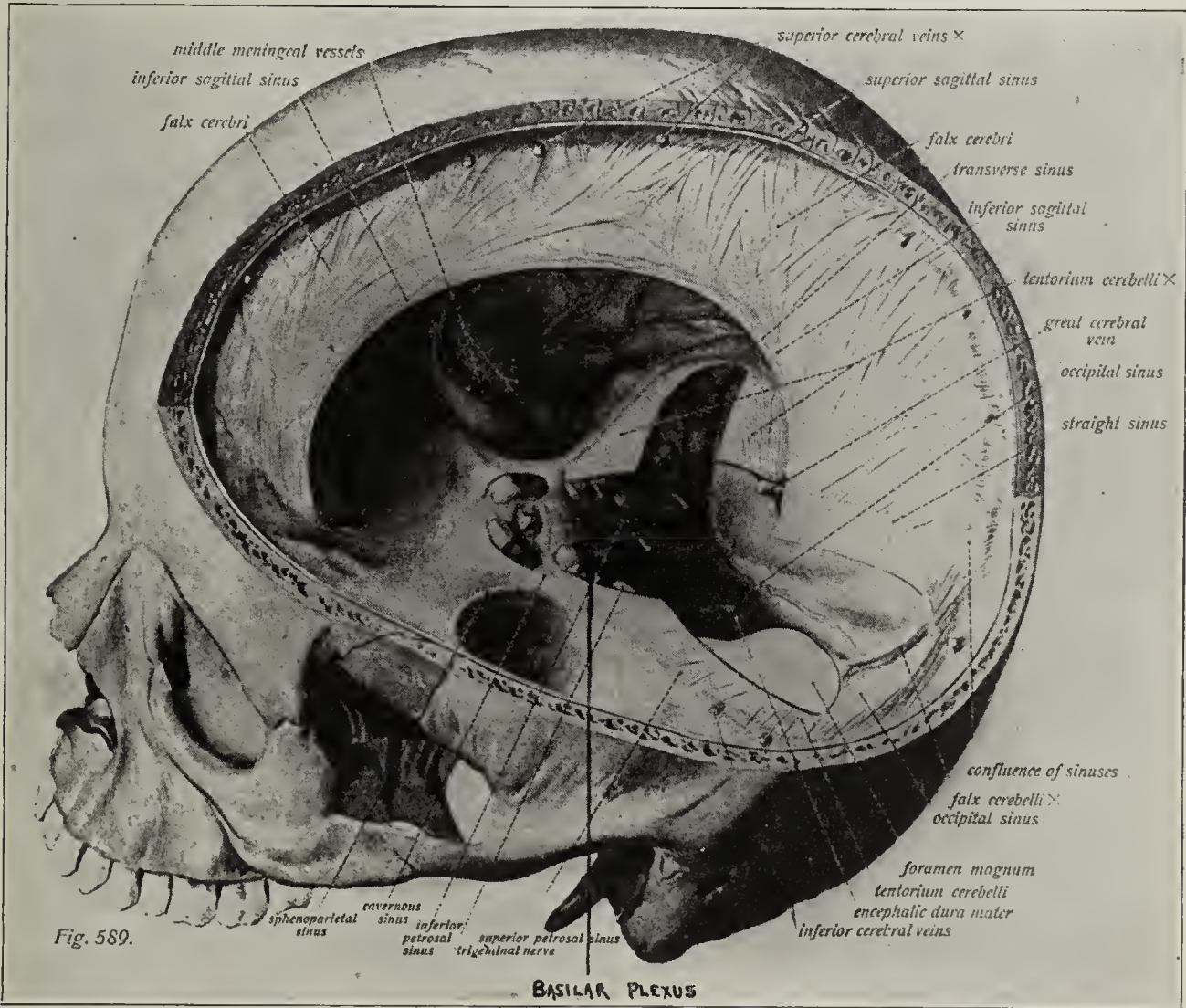


Fig. 589.

Fig. 5.—Location of basilar plexus of veins (from Sobotta-McMurrich).

tion of an absence of a few cubic centimeters of spinal fluid?

To obtain fluid by puncture, the needle must pierce two membranes, the dura and the arachnoid. The dura forms a rigid, tough, fibrous sac, just within the

water-bed. When the fluid leaks away through a hole in the lower end of this sac, the base of the brain loses its supporting fluid cushion. We may expect this support to remain absent until the puncture hole heals and the fluid again fills and distends the sac sufficiently to reestablish this water-bed. The loss of this supporting basal cushion may be regarded as the secondary causative factor in the production of the headache. How does this produce pain?

A headache, which, let us recall, comes on when a patient sits up, and disappears when he lies down, must obviously be mechanically produced. Pressure of the meninges by the brain weight, against the irregular bony surface of the base of the skull, which would ensue when the patient sits up, in the absence of the basal fluid cushion, might be considered to be sufficient cause for headache. However, another explanation appeals to me as more aptly applying to the situation.

A mechanical accident following spinal puncture has caused sudden death in certain brain tumor and other intracranial conditions accompanied by increased intracranial pressure. The withdrawal of fluid deprived the base of the brain of support, and allowed such forcible descent of the pons on the clivus of the occipital bone that prolapse of the medulla through the foramen magnum occurred. In the average normal case if the supporting fluid cushion is completely lost by continuous leakage through a patent puncture hole, we may expect the pressure of the brain weight transmitted through the pons to the clivus when the patient sits up to be considerable.

The basilar plexus on the clivus of the occipital bone is formed by an extensive anastomosis of flat venous plexuses. It is connected on either side with the cavernous and inferior petrosal sinuses, and with the neighboring blood channels (Sobotta-McMurrich). The other venous channels that drain the cranial cavity at the base are rigid inelastic tubes, and they are thus safe from closure by pressure. The basilar veins differ in this matter of security from closure. They depend on the cushion of cerebrospinal fluid to keep off the pressure of the pons, which is directly above.

When the patient sits up, and the cushion of fluid is absent, the weight of a good part of the brain is suddenly imparted through the pons to this communicating plexus. The blood about to leave the skull is impeded, and forced to turn back and travel by other crowded pathways. The resulting congestion causes a sudden rise of venous pressure.

The sudden onset of severe headache when the patient sits up can now be understood as due to the sudden heightened intracranial pressure due to the rise of pressure in the cerebral veins; its entire relief, when the patient lies down, as due to the fall of pressure when the weight is removed from the veins

on the clivus. In the course of a week the puncture hole heals, the fluid is rapidly made in sufficient quantity to fill and distend the entire sac, and the integrity of the brain cushion or water-bed is reestablished. The headache, which was a purely mechanical affair dependent on the loss of that cushion, is gone.

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FURTHER OBSERVATION ON A TRANSPOSED METATARSAL BONE

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AND

C. P. BROWN, M.D.

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In 1916, we reported¹ an experiment (Experiment 1, Dog 7, New Series) in which the second metatarsal bone of a dog 10 weeks old was transposed into the bed left by the removal of the second metatarsal of



Fig. 1.—Right second metatarsal transposed in position formerly occupied by the left, immediately following operation.



Fig. 2.—Three months and twenty-six days after transposition: Bone has not only survived and performed its function, but has actually grown as have the other bones of the foot.



Fig. 3.—Two years after the operation the bone has survived and performed its function, but its growth as shown in Figure 2 did not continue as long as that of the other bones.

the opposite forefoot. As we stated, three months and twenty-six days after the transposition, the bone had not only survived but had actually grown in length and circumference.

A roentgenogram taken recently reveals that the growth of the transplanted bone has not kept pace with the other bones of the foot either in length or circumference, though it has lived and performed its function for two years.

Conclusions have often been drawn from experiments of short duration, when a more prolonged observation would show that there was a handicap because of the transposition that could not be completely overcome. If this experiment had been done on a dog that remained small, or one already fully grown, the point brought out above would have been missed.

1. Brown, W. L., and Brown, C. P.: Experimentally Transplanted and Transposed Whole Metatarsal Bones, *THE JOURNAL A. M. A.*, Oct. 21, 1916, p. 1200.

OPERATIVE TREATMENT IN SELECTED CASES OF CHRONIC PERIPHERAL FACIAL PARALYSIS*

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Not only is the condition of facial paralysis, especially of the peripheral type, a most noticeable deformity, but the resulting contractures in chronic cases frequently impair the speech, mastication and deglutition; inability to close the homolateral eye permits a chronic conjunctivitis to result, and if palpebral contractures occur, then an eversion of the eyelids is a common sequela. In addition to these definite objective impairments resulting from persistent facial paralysis, it should be remembered that the subjective reaction of such a deformity on the patient is very marked—so much so that few patients having a complete facial paralysis persisting over a period of two years and longer show a normal reaction emotionally. They are easily depressed, and they limit their lives

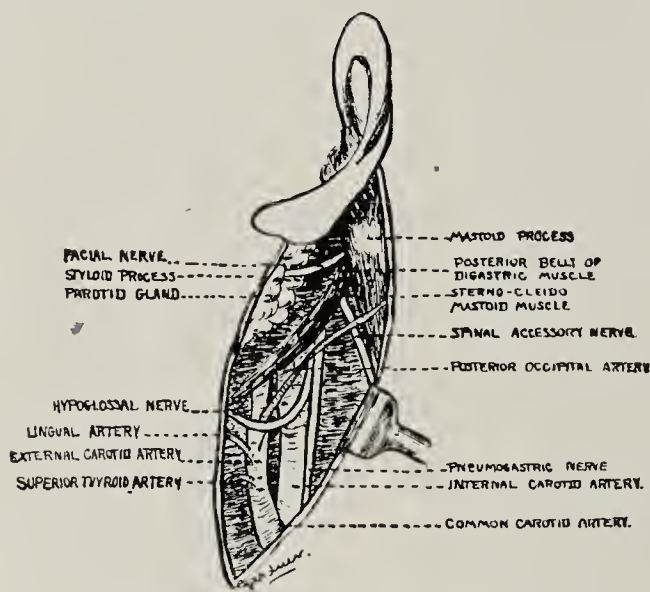


Fig. 1.—Anatomic relation of operative area (schematic), showing the accessibility of the spinal accessory and hypoglossal nerves for the facial anastomosis.

more and more to one of seclusion; particularly is this true of women.

Facial paralysis may be considered of the peripheral type when the lesion exists at the facial nucleus in the pons or at any point along the course of the facial nerve from this nucleus down to its bifurcation into the facial branches within the posterior border of the parotid gland; naturally, a lesion of one of these facial branches distal to this main division would produce a paralysis of the muscles supplied by the individual branch affected, and I shall not consider in this paper the treatment of these individual branch lesions, as it is the same as the treatment of any peripheral nerve injury.

Lesions of the facial or seventh cranial nerve producing a peripheral facial paralysis occur more frequently than in any other single nerve; the paralysis results in almost three fourths of the patients from a so-called "chill" of the facial nerve; in fact, very little is known as to the real cause of this more com-

mon form of peripheral facial paralysis, or Bell's palsy—whether it is an infective process or a simple nerve degeneration or their combination.

The next most common cause of peripheral facial paralysis is otitic disease. Any suppurative process of the middle ear with or without a definite involvement of the mastoid cells may produce an ipsilateral facial paralysis either by direct extension and compression of the facial nerve or by the resulting edematous swelling of the nerve itself within a narrow aqueduct of Fallopius. In this connection I should like to mention the infrequency at present of peripheral facial paralysis following mastoid operations. It still occurs, but the paralysis is rarely a permanent one, since it is due more to an operative edema of the facial nerve than to its complete severance and destruction—a fairly common operative complication as recent as fifteen years ago. This advance is undoubtedly due not only to an improved technic and greater operative care and respect for the facial nerve in mastoid operations, but chiefly to the recognition by the medical profession (and also by the laity) that the operation for mastoid disease is one for a specialist and not the general surgeon.

Another frequent cause of peripheral facial paralysis is fracture of the base of the skull; in these patients, the fracture has extended into the petrous bone either at the internal auditory meatus or more frequently through the aqueduct of Fallopius. The paralysis, however, may be only a temporary one in many cases, due possibly to merely an edema of the facial nerve rather than an actual tear or severe bony compression of it; naturally, in the latter cases the paralysis is a permanent one. During the past five years in a series of almost 500 acute brain injuries¹ with or without a demonstrated fracture of the skull, I have observed a complete *peripheral* facial paralysis in but nine patients, and in only three of these patients was the paralysis a complete and permanent one.

A much less frequent cause of peripheral facial paralysis is to be found in tumors gradually compressing the facial nerve itself (and thus producing a facial paralysis of slow onset), particularly in those portions between the facial nucleus in the pons and the internal auditory meatus. Then again, after the nerve has emerged from the stylomastoid foramen to the point of bifurcation in the posterior portion of the parotid gland; the latter tumors are usually palpable, and thus an early removal by careful dissection of the benign tumors makes a permanent relief possible.

There are numerous other causes of peripheral facial paralysis of the infective and toxic types: basilar meningitis and occasionally syphilis; traumatism during difficult labors and also a bilateral paralysis may occur following many causes; besides, the various war wounds and gunshot injuries are becoming a very common cause of facial paralysis. I shall consider in this paper, however, only the operative treatment in selected cases of chronic peripheral facial paralysis that have persisted over a period of one year in spite of all expectant medical treatment, such as massage, electricity, external heat, and medicine. If, after such a period of one year of intensive rational treatment of a patient having the condition of complete peripheral facial paralysis due to a so-called "chill" or Bell's palsy, otitic complications, fractures of the skull and

* On account of its length, this paper could not be published in full in THE JOURNAL, reprints of the complete paper, however, will be mailed by the author on request.

* A detailed report of the operative patients will be made in a later paper; their improvement has been both rapid and marked, and it is believed that this is due chiefly to the method of operation described in this paper, which is merely a preliminary report.

1. Sharpe, William: Observations in the Diagnosis and Treatment of Brain Injuries in Adults, THE JOURNAL A. M. A., May 13, 1916, pp. 1536-1540.

certain other causes, the paralysis remains practically a complete one for at least the preceding six months, then I feel that such a patient should be given the opportunity of obtaining a definite improvement by an operative procedure of facial nerve anastomosis.

If it is possible (and it rarely is) to decide immediately and without a question of a doubt that the facial nerve has been irreparably damaged, either through being completely severed or permanently impaired by bony compression or an infective process, then undoubtedly the ideal time for the operation would be just as early as the complete permanent damage to the facial nerve could be ascertained. Not only would a perfect nerve anastomosis occur much more easily, but the muscular atrophy and contractures would thereby be avoided; at times, this early operation is possible following a severance of the facial nerve during a mastoid operation or an operation on the neck injuring the facial nerve peripherally to its emergence at the stylomastoid foramen.

There have been several operations devised to improve the condition of complete and persistent peripheral facial paralysis. The object of each of these operations has been to restore volitional and emotional control to the paralyzed facial muscles by making possible the transmission of efferent motor impulses from the central portion of an adjacent motor nerve to the peripheral impaired portion of the facial nerve. That is, in order to "bridge" and thus circumvent the obstructive lesion of the facial nerve, which cannot itself be treated locally by any means now known, and thus eliminate functionally that impaired portion of the nerve, it is the purpose of the operation to connect the cerebral motor cortex, contiguous with the cerebral motor cortex of the facial nerve, to the peripheral portion of the facial nerve itself by means of a peripheral nerve anastomosis. Anatomically, there are only two motor nerves, adjacent to the facial nerve after its emergence from the stylomastoid foramen, that can be used for this anastomosis; these nerves are the spinal accessory and the hypoglossal, as is

clearly shown in Figure 1 their close relationship with the facial nerve makes the various modifications of peripheral nerve anastomosis a practical and a comparatively easy one. The glossopharyngeal nerve is too deeply situated and therefore technically inaccessible for the facial anastomosis.

During the past fifteen years a number of these facial anastomoses and their modifications have been described; those by Ballance, Frazier and Taylor may be mentioned. The results have been encouraging, and yet there has not been a single patient reported in whom the end-result has been a complete return of both volitional and emotional control of the formerly paralyzed facial muscles. In some cases, I feel that this has been due to the operative method of anastomosis, and it is my purpose herein to advocate a certain method of anastomosis in the belief that it may offer a greater ultimate improvement than can be obtained by the operations that have been used.

In order to obtain all of the advantages of an end-to-end anastomosis and at the same time to avoid as much as possible the impairment of paralysis, etc., fol-

lowing the sectioning of an entire spinal accessory or hypoglossal nerve, the method of anastomosis described below has been performed on seven patients with most encouraging results; a period, however, of at least five years after the operation should elapse before a definite opinion of the results can accurately be obtained. From the literature, it would seem that each method of anastomosis produces a definite improvement of the facial paralysis, and yet there has been no case reported in which the improvement has been all that could be desired; it is to be hoped, therefore, that a method may be devised that will produce the greatest ultimate improvement, if not a complete cure.

In the operation to be described, only one half of the hypoglossal nerve is anastomosed to the entire peripheral cut end of the facial nerve; in this manner, not only is the easier and more rapid nerve regeneration of an end-to-end anastomosis obtained, but the hypoglossal nerve remains in continuity and regains its complete function within a period of two months. The latter is made possible by cutting several of the intact nerve fibers of the remaining half of the hypoglossal nerve and approximating them by a single

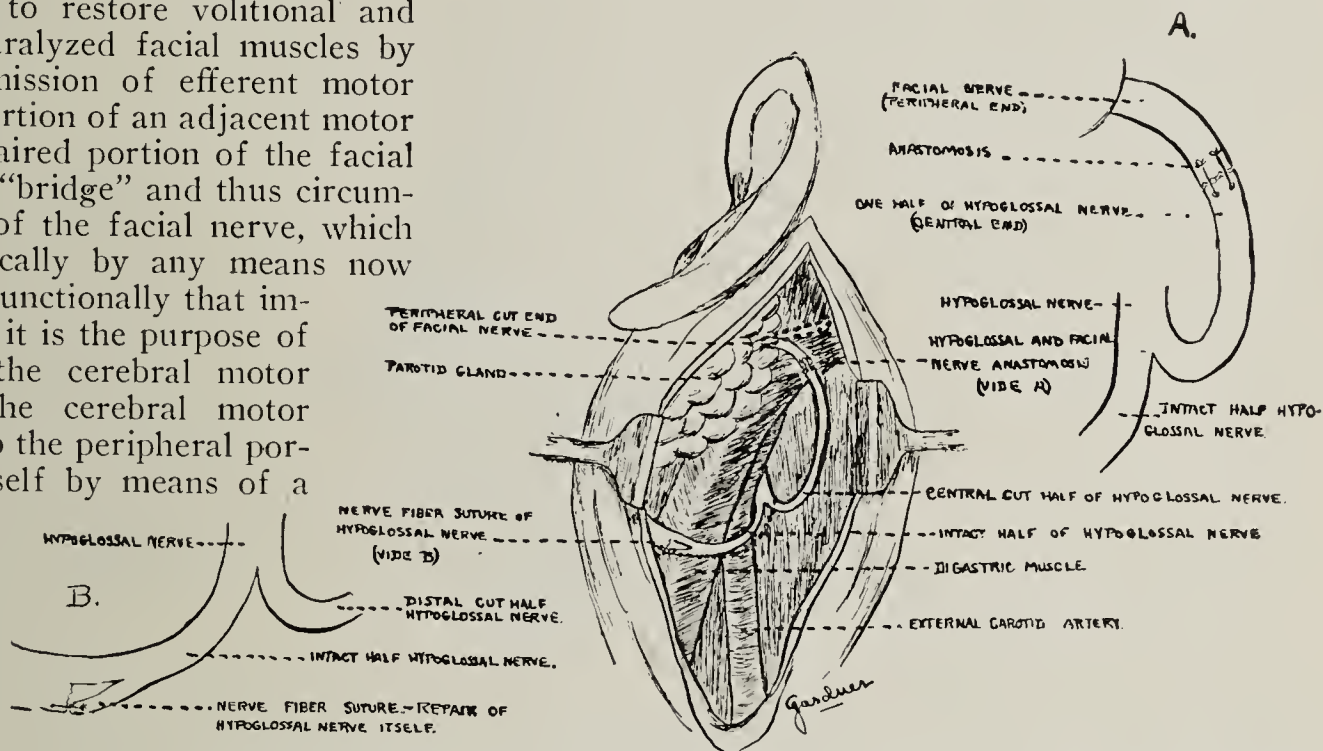


Fig. 2.—Schematic representation of author's hypoglossal and facial nerve anastomosis for complete chronic peripheral facial paralysis; A, enlarged view of anastomosis of central half of hypoglossal nerve to peripheral cut end of entire facial nerve; B, enlarged view of nerve fiber suture of hypoglossal nerve itself.

suture to the peripheral cut portion of the hypoglossal nerve (Fig. 2 B). Thus it is possible to use for the end-to-end anastomosis more than one third of the hypoglossal nerve, and yet only a temporary weakness of one half of the tongue occurs, and no atrophy of its muscles results. I feel, therefore, that this is a distinct advance over the methods formerly used in that all of the advantages of an end-to-end anastomosis are obtained and yet none of the permanent disadvantages of hypoglossal impairment.

TECHNIC OF OPERATION

The operation itself is not a difficult one technically. By means of a small curved incision just posterior to the angle of the lower jaw, and anterior to the mastoid process (the ear lobe being held forward), the facial nerve is exposed as it crosses the styloid process externally; the nerve itself is now severed as close to the stylomastoid foramen as is possible so that a peripheral portion of at least one-half inch is obtained for anastomosis. The facial nerve should always be exposed first, as it has been reported absent or rather, "not

found" in several patients so that an anastomosis was naturally not possible; it is wise, therefore, to expose it before dissecting and sectioning the hypoglossal nerve. Possibly the best landmark to use in finding the hypoglossal nerve is to expose the external carotid artery; just below its occipital branch, the hypoglossal nerve curves forward and to the outer side of the main trunk of the external carotid artery to lie between the posterior belly of the digastric muscle externally and the hyoglossus muscle internally. By blunt dissection, the hypoglossal nerve can be easily exposed forward so that a portion of at least 1 inch, and still better, $1\frac{1}{2}$ inches, is obtained for the anastomosis with the facial nerve. The entire hypoglossal nerve, within its sheath, and being held by its sheath, is now incised longitudinally in its midline by a small, thin-bladed scalpel, and its nerve fibers are now separated in the midline longitudinally for a distance of 1 inch at least; at the distal part of the bisection, the outer half is now severed and its central cut end is brought backward and upward to be sutured, sheath to sheath as much as possible, to the entire peripheral cut end of the facial nerve; small black silk sutures (waxed) on French needles are very satisfactory (Fig. 2 A).

A rather interesting observation has been made in several of the patients on whom the operation had been performed. In six patients, when the impaired facial nerve was divided at the stylo-mastoid foramen, the facial muscles supplied by it twitched from the mere mechanical stimulation to its distal end, and this could be repeated by merely pinching the distal end of the nerve even in those patients in whom a faradic current on the skin failed to elicit a motor response. In four of these patients, however, a faradic current applied directly to the distal cut end of the nerve also caused a mild muscular twitch, though not as strong as when the distal cut end was pinched; that is, it would seem, in these patients, at least, that a mechanical stimulus was more powerful than the electrical stimulus. Also, although a reaction of degeneration had been obtained in each of these patients, it is possible that there had been some nerve regeneration distal to the lesion; these findings, therefore, would tend to confirm the original observations of Ballance and Stewart regarding nerve regeneration in the distal portion of an impaired nerve. In only two patients, however, did the motor power return before the faradic excitability appeared. The fact, also, that in these patients, immediately after operation, the flaccid paralysis of the facial muscles was temporarily even more flaccid, and if contractures were present then these contractures were lessened and the flaccidity increased, also tends to confirm the belief that peripheral nerves regenerate not merely by means of a central to peripheral growth, but also by a peripheral repair itself independent of the central outgrowth.

In order, however, for the distal portion of the nerve to fulfil its complete function, it must be joined to the central portion of the nerve to make possible the central outgrowth and thus complete the entire nerve regeneration and function.

No fat, muscle, blood vessels, Cargyle membrane or foreign material is placed about the anastomosis in the belief that adhesions and fibrous tissues will thus be avoided. If care is used to avoid the soiling with blood of the tissues and the nerve ends themselves so that the operative field is a "dry" one, there is no need of wrapping the nerve ends with various tissues to prevent the formation of adhesions and fibrous tissues. As in all nerve work, if there is little or very gentle handling of the nerves themselves and the adjacent tissues, and, very important, a most careful hemostasis, then there will be little danger of adhesions and fibrous tissue forming. In operations on the brachial plexus in children having a paralysis of the arm following an injury to these nerves at birth (the typical condition of brachial birth palsy),² it has been demonstrated that there is no need to surround the nerve

anastomosis with various tissue and membranes; I believe in many instances that such inserted tissues merely add to the amount of fibrous tissue to be formed; particularly is this true when fat, muscles and blood vessels are used to surround the anastomosis. A possible fibrous "choking" of the nerves by these tissues themselves must also be feared.

After the facial anastomosis has been completed, the small scalpel is again used to separate longitudinally and to cut several nerve fibers of the remaining half of the hypoglossal nerve in the same plane of the

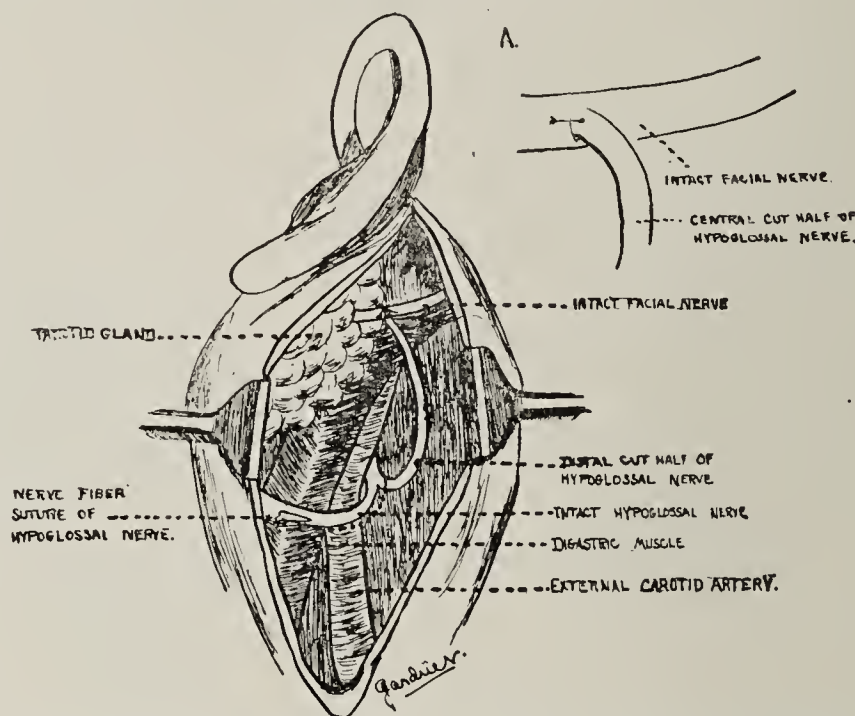


Fig. 3.—Schematic representation of author's method of anastomosis of half of hypoglossal nerve to intact facial nerve for incomplete chronic peripheral facial paralysis: A, right angled slit for insertion of central cut half of hypoglossal nerve into intact facial nerve.

former incision (Fig. 2 B). The central cut end of these fibers is now approximated to the peripheral cut portion of the outer half of the hypoglossal nerve by a single suture through their sheaths; in this manner, the impairment of the hypoglossal nerve is only a temporary one, the weakness of one half of the tongue persisting not longer than eight weeks, and in two of my patients only for two weeks. It would seem, therefore, theoretically and in this one nerve at least, that the immediate anastomosis of the cut ends of the same nerve, even if a part of that nerve has been removed, occurs very quickly and the entire function is easily regained; especially is this so if several of the more medullary fibers are sutured to the more peripheral ones. Naturally, just as with the facial anastomosis, no body or animal tissues are wrapped about this nerve suture. The operative area is now gently washed with warm physiologic sodium chlorid solution so that if a small amount of blood has soiled the adjacent tissues it will be removed. The wound itself is not sutured until all oozing of blood has ceased after the retractors

2. Sharpe, William: The Operative Treatment of Brachial Plexus Paralysis, THE JOURNAL A. M. A., March 18, 1916, pp. 876-881.

have been removed; warm saline compresses usually suffice. Several sutures are used to close the incision, but not tightly, so that if any oozing of blood occurs while the patient is recovering from the effects of the antesthesia, then it can escape from the operative area and thus lessen the danger of the formation of adhesions and fibrous tissue.

The postoperative care is practically the same as with other operations on the neck. As soon as the incision has healed—a period of from ten days to two weeks after the operation—external heat should be applied to the impaired facial muscles, and galvanism and gentle massage used, in fact, treatment similar to that given before the operation, so that within a month after the anastomosis the same treatment as before the operation should be possible. It is interesting and instructive to observe, after the first week following the operation, an almost daily improvement in the use of the tongue. As the motor power begins to return to the paralyzed facial muscles (usually within four months), galvanism should be replaced by faradism in the treatment.

A modification of this operation might be used in selected patients having only *partial* peripheral facial paralysis, in whom the reaction of degeneration is not present and yet the paralysis is of such a character, owing to the deformity, contractures, conjunctivitis and other complications, that an attempt might be advisable to improve the condition by an operation. In these patients, after the facial nerve is exposed but *not cut*, the central cut portion of one half of the hypoglossal nerve (just as in the preceding operation) could be inserted into the *intact* facial nerve through a small *right-angled* slit of its sheath and adjacent nerve fibers—an incision just large enough to admit the central cut end of the hypoglossal nerve by means of a single black silk suture (Fig. 3 A). The operation would be a simple one technically, and no damage to either the hypoglossal or facial nerve would result. A right-angled cut is made in order to sever completely several of the nerve fibers of the facial nerve and thus facilitate and insure a more possible anastomosis with the fibers of the hypoglossal nerve; the mere insertion of the end of a nerve (in this case, the hypoglossal nerve) into a small *longitudinal* slit of another nerve (in this case, the facial nerve) without cutting any of the fibers of the latter nerve does not seem to be a practical method of anastomosis; just why uncut and intact nerve fiber bundles (if only a small longitudinal slit into the facial nerve is made) should be stimulated to grow beyond their intact sheaths into the cut ends of the fibers of the hypoglossal nerve does not seem logical or even theoretical, and yet a definite improvement has been reported following this method of anastomosis. For these reasons, a right-angled slit is made so that several fibers, at least, of the facial nerve will be completely severed and thus their union with the sectioned fibers of the hypoglossal nerve will be made more possible and more complete. Even if no marked improvement of the facial paralysis results from this procedure, at least no harm has been done: from the reported cases of similar grafting of other nerves, however, a definite improvement has been obtained. It would seem wiser, therefore, in the selected patients of only partial facial paralysis to attempt this method of anastomosis first, and then if no marked improvement follows within a year, the former method of facial hypoglossal anastomosis might be considered.

On account of the world war during the past three years, the number of traumatic cases of peripheral facial paralysis has greatly increased. Fortunately, however, in the majority of these facial paralyses the nerve lesion is external to the stylomastoid foramen, so that a close anastomosis of the cut ends of the facial nerve is possible in many of the patients following stab wounds and similar injuries; and, if the ends of the divided facial nerve cannot be approximated more closely than one-half inch, as in shrapnel and gunshot wounds, an anastomosis of these ends is still possible by merely connecting them by two, or better, three black silk sutures; it is then possible for the central end of the facial nerve to grow along the sutures and thus effect a union with the peripheral cut end. I have one patient in whom this occurred after nineteen months had elapsed following the operation. Naturally, all fibrous tissue about the nerve ends must be removed, and the ends themselves peeled back until normal nerve bundles are distinctly visible—otherwise no anastomosis would be possible; as in all nerve work, a most rigid hemostasis is essential. Those other patients having a peripheral facial nerve lesion in the petrous portion of the temporal bone due to a fracture of the skull, gunshot injury and similar wounds should be treated according to the permanence of the facial impairment; if it can be definitely established that the nerve is completely severed or irreparably damaged, then an early facial-hypoglossal anastomosis is advisable. But no patient should be operated on, no matter how complete the facial paralysis, unless it is definitely ascertained that the facial nerve is permanently injured, or a period of intensive treatment of at least one year following the injury has elapsed without a definite improvement of the condition.

20 West Fiftieth Street.

A COMPARISON BETWEEN CLINICAL AND ROENTGEN FINDINGS IN DISEASES OF THE CHEST

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The difficulties of interpreting physical signs in the chests of infants and little children are sometimes very great. As the questions of diagnosis, prognosis and treatment are all involved, any methods of throwing light on doubtful problems should be carefully studied. Investigations made by various observers on the interpretation of roentgenograms of the chest contents have already given promising results. The present study is in the same line of inquiry, namely, how much or how little can be learned from roentgenograms, and how the latter can fortify or throw doubt on the diagnosis made from physical examinations.

THE HEART

In the growing child, the heart not infrequently affords ground for much difference of opinion in diagnosis and consequently in treatment. The muscle is soft and subject to dilatation in disease or even from overexertion. The adventitious sounds are various and not always easy to interpret. A study of the shadow formed by the contour of the heart may help to decide whether murmurs are hemic, muscular or valvular. It is often hard to interpret properly the heart shadow in little children owing to the difficulty

of keeping them quiet during exposure. A twisting of the body may cause such a rotation of the chest as to exaggerate a heart shadow in any direction. Before reaching conclusions, one must thus study the anatomic points to be sure that the chest was kept straight during exposure.

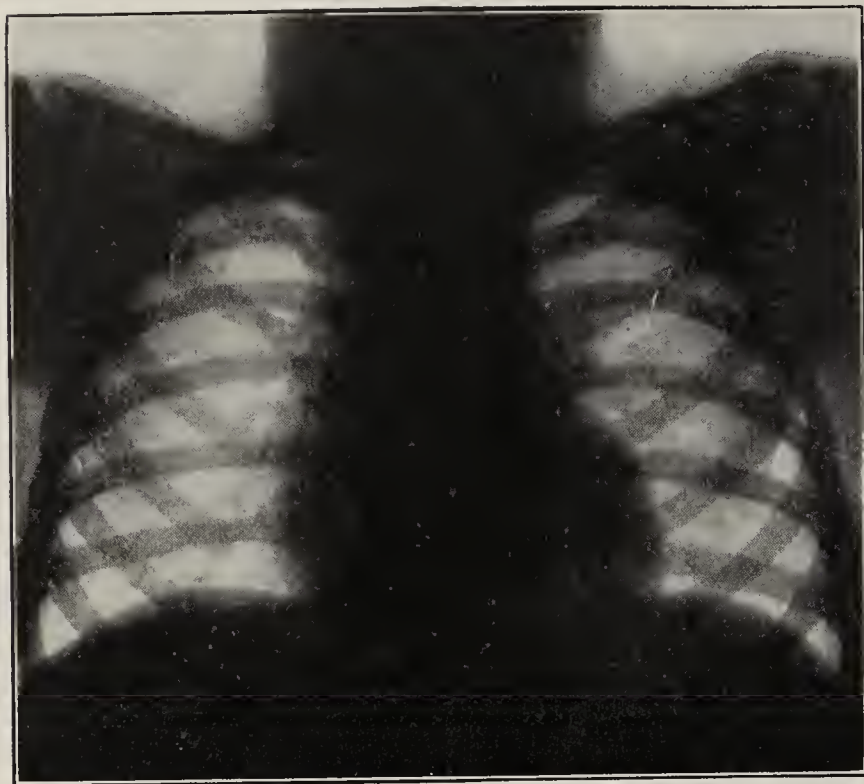


Fig. 1 (Case 1).—Normal heart; slight infiltration of hilum.

A comparison was made in fifteen cardiac cases between the roentgen-ray findings and the results of physical examinations. Seven of the cases showed practical agreement, one partly agreed, and seven failed to correspond in the conclusions reached by

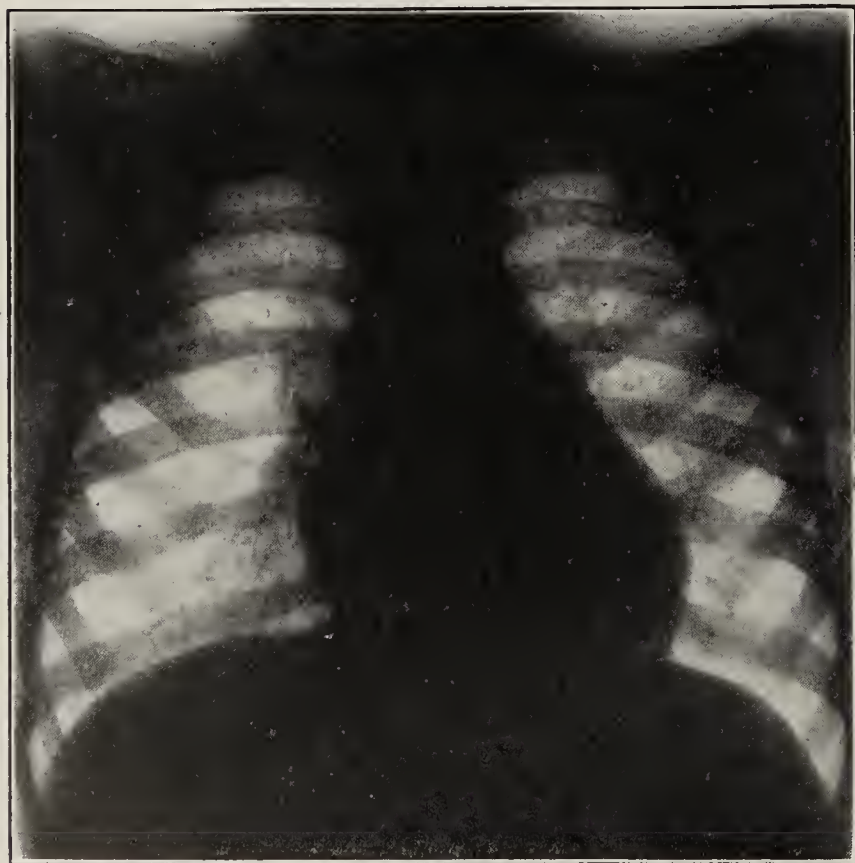


Fig. 2 (Case 2).—Heart spherical, with accentuation of left auricular and pulmonic curves and aortic recession, pointing to an early mitral lesion.

these two methods of examination. The following will serve as types of the comparisons:

CASE 1.—J. L., a boy, aged 5 years, with osteomyelitis, was found both by physical and roentgen examination to have a

normal heart. The left auricular and pulmonic curves were shown to be placed well within a line drawn from the most prominent part of the aortic arch to the outer curve of the

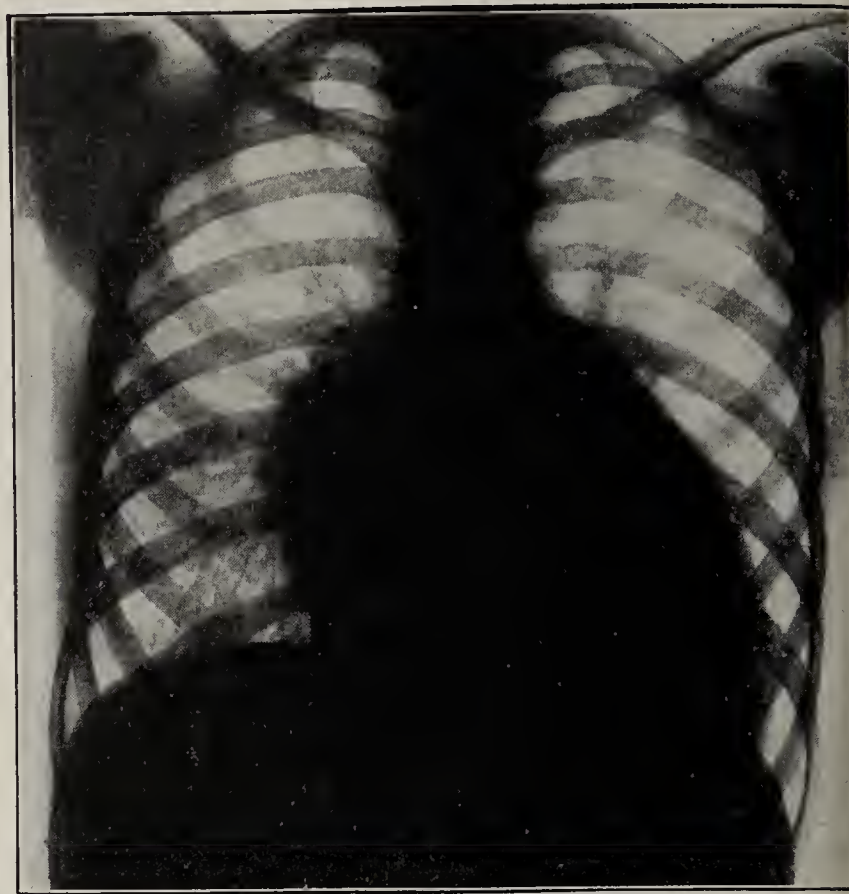


Fig. 3 (Case 3).—Marked enlargement, exemplifying the severest type of mitral disease.

left ventricle. The roentgenogram revealed also a slight hilum infiltration.

The interpreter of the roentgenogram of the heart considers that an early mitral lesion causes an accentuation of the normal left auricular and pulmonic curves, producing a spherical or rounded appearance.

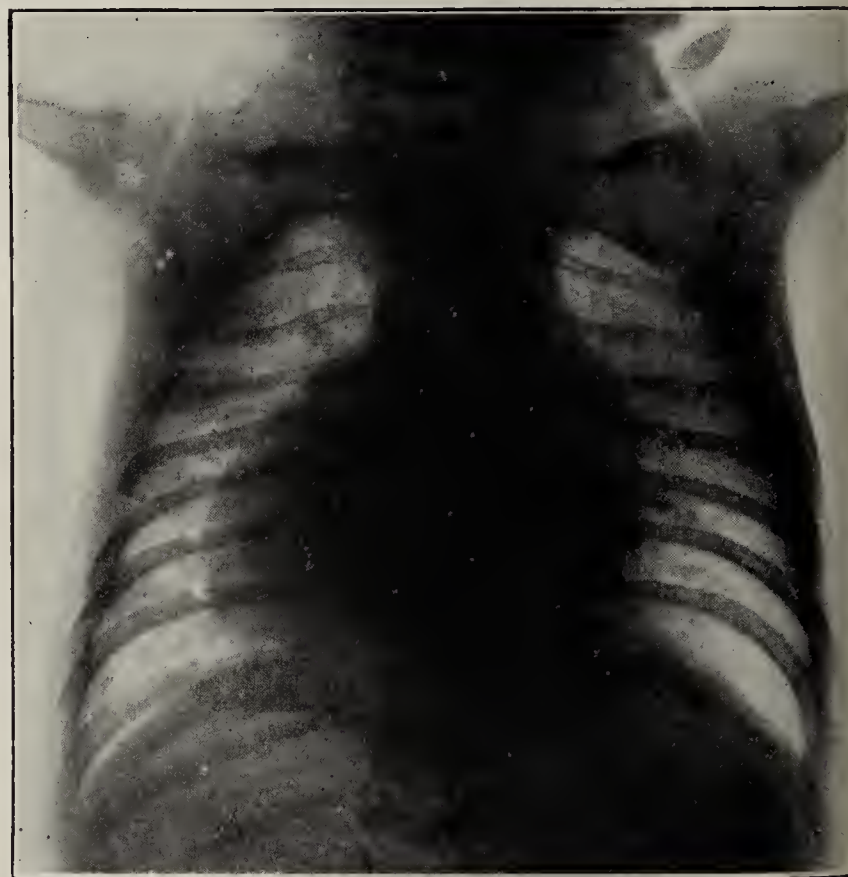


Fig. 4 (Case 4).—Increase of heart shadow to right; enlargement of right auricle, suggesting a patent foramen ovale; enlarged thymus.

CASE 2.—L. S., a boy, aged 9 years, had had rheumatic pains for the past six months. The teeth were bad, but the tonsils were not diseased. Several clinical examinations by three observers on different days showed a difference of opinion as to the condition of the heart. One found a

roughened presystolic sound, another reported a functional murmur, and a third considered the heart to be normal. An electrocardiogram revealed nothing abnormal. The roentgenogram, however, gave the heart a spherical appearance



Fig. 5 (Case 5).—Increased intensity and irregularity in outline of the hilum, especially on the right side; enlarged nodes and calcific deposits in the hilum.

with accentuation of the left auricular and pulmonic curves and aortic recession, pointing to an early mitral lesion.

CASE 3.—E. W., aged 13 years, who had mitral insufficiency with hypertrophy, showed a very marked enlargement on the roentgenogram, the shadow exemplifying the severest type



Fig. 6 (Case 6).—Marked infiltration of the hilum on both sides, with enlarged nodes and calcific deposits.

mitral disease. There was a bulging out of the auricular and pulmonic curves.

The following case was considered congenital:

CASE 4.—I. G., aged 3 months, a Mongolian idiot, was not anoxic. There had been a cough for eight weeks. The

heart was enlarged to the right. There was a systolic murmur over the base. There was dullness over the upper part of the sternum. The roentgen ray revealed the heart shadow increased to the right and enlargement of the right auricle suggesting a patent foramen ovale. The thymus was enlarged.

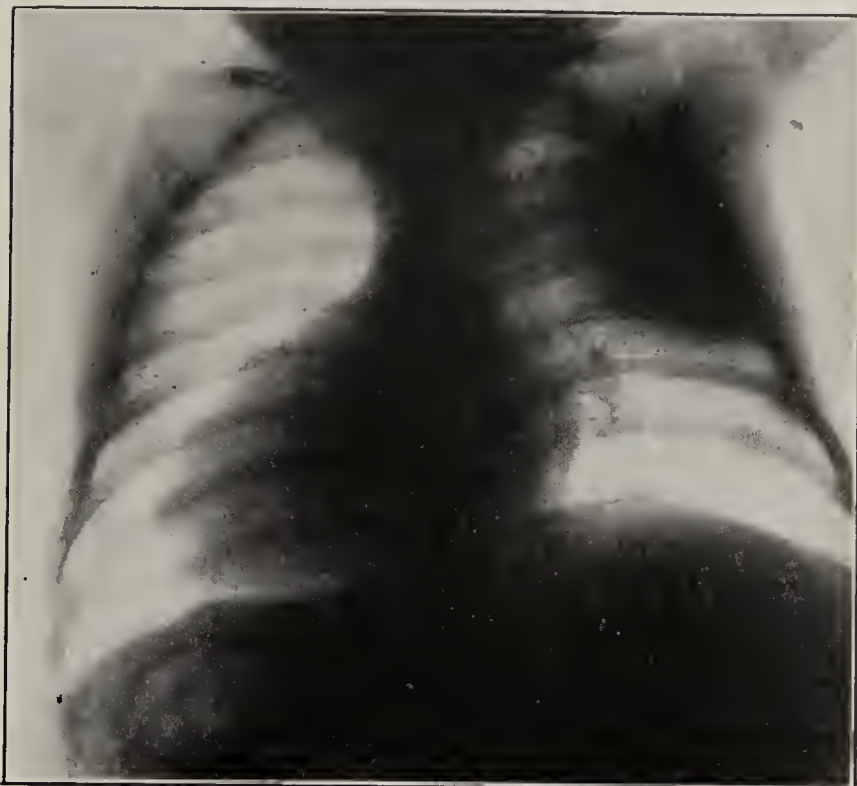


Fig. 7 (Case 7).—Partial consolidation of right upper lobe.

HILUM, LUNGS AND PLEURA

From the point of view of the lungs, the combined study of the physical signs and roentgenograms was made in ninety-seven cases, with a substantial agreement in seventy-seven and a disagreement in twenty of the cases. As examples of the latter, five gave roent-



Fig. 8 (Case 8).—Consolidation of right upper lobe.

genographic evidence of lobar pneumonias that were not detected by physical signs, two gave physical signs of lobar pneumonia that were not confirmed by the roentgen ray, three showed physical signs of broncho-pneumonia not exhibited by the roentgen ray, and two

failed to show the presence of fluid in the pleural cavity by physical signs when it was exhibited by the roentgen ray.



Fig. 9 (Case 9).—Partial consolidation of lower peripheral portion of right upper lobe.

As a general rule it was found that the roentgen ray would often give a showing in the absence of physical signs in congestions, small consolidations, hilum infiltrations, interlobular pleurisy, miliary tuberculosis and mediastinal tumors. The roentgen ray may be very helpful in these conditions when the physical signs are insufficient for a diagnosis.

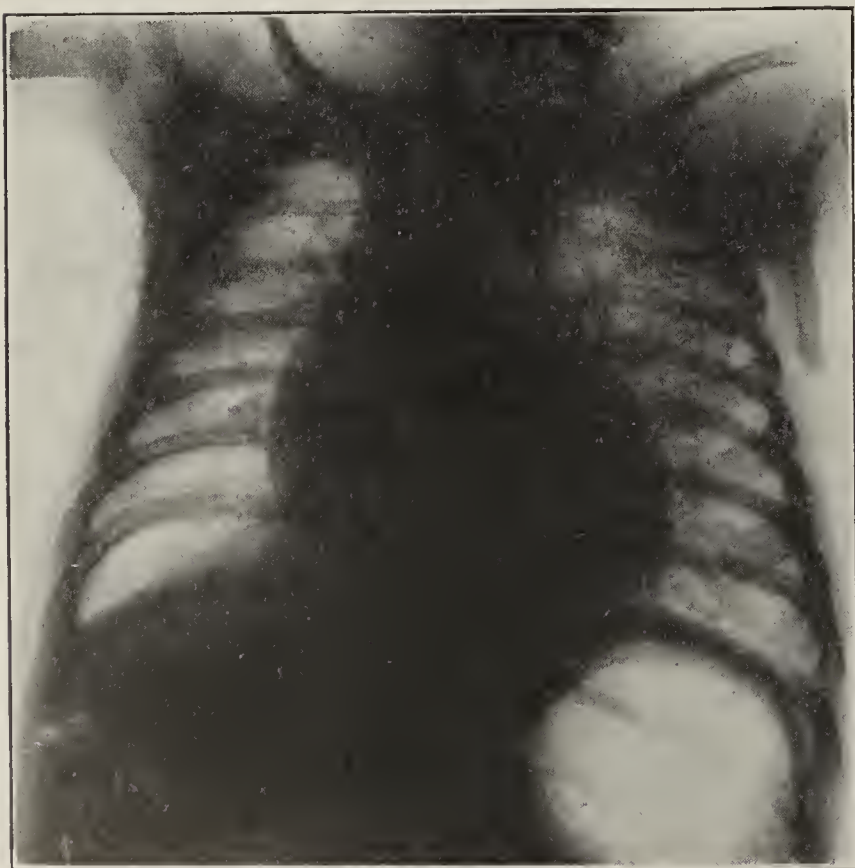


Fig. 10 (Case 10).—Peribronchial infiltration, extending from the roots into the right upper and lower lobes.

Auscultatory physical signs are, of course, not so apt to be accompanied by roentgen-ray shadows as are the percussion signs.

The following types of pulmonary affections may serve as examples of this study:

CASE 5.—S. W., aged 2½ years, had increased breath sounds and moist râles posteriorly on the right, and sonorous râles on the left. The d'Espine sign was noted to the third dorsal vertebra. The von Pirquet test was positive. The roentgenogram revealed increased intensity and irregularity in outline in the hilum, especially on the right side. There were enlarged nodes and calcific deposits in the hilum. There was interlobular pleurisy between the upper and middle lobes on the right side. The triangle here shown with the base at the root of the lung is not due to pneumonia but to tuberculous infiltration. This form of shadow is not usually due to pneumonia at the base.

CASE 6.—J. A., aged 9 years, was shown by the roentgen ray to have marked infiltration of the hilum on both sides with enlarged nodes and calcific deposits.

The difficulty of diagnosing hilum infiltrations and enlarged nodes in the mediastinum by physical signs is very great. The roentgen ray is here distinctly helpful. A study of the transmission of voice sounds

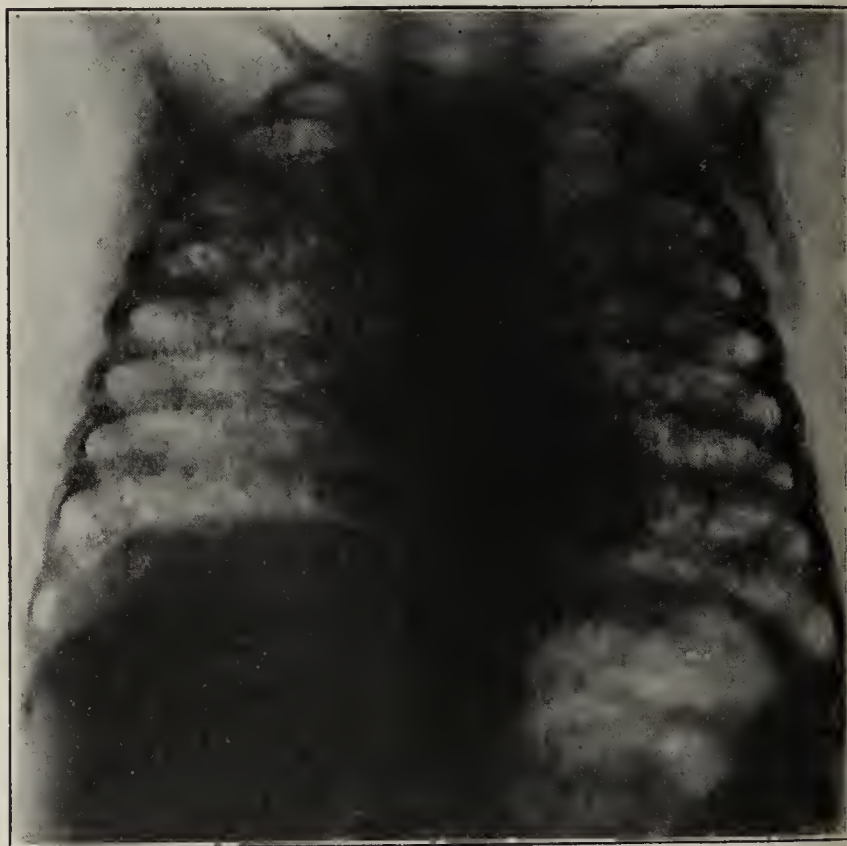


Fig. 11 (Case 11).—Diffuse miliary infiltration through both lungs.

below the seventh cervical vertebra, known as d'Espine's sign, in connection with roentgenograms, was made in eighteen cases by Dr. Edelman in our clinic.

The ages of the children varied from 2 years to 13 years. Five gave a tuberculous history and the rest were negative. All of the patients gave the d'Espine sign from the second to the fourth dorsal vertebra. The roentgen ray showed hilum infiltrations in fifteen of the cases. The von Pirquet test was positive in sixteen of the cases. Twelve of the children had had measles. Eight had had whooping cough, four had had both of these diseases, and four had had pneumonia. Fourteen of the patients had persistent cough, twelve had loss of weight, ten had fever, and three had night sweats. Eleven out of the eighteen patients had enlarged tonsils, and eight had decayed teeth.

The comparison here made shows that d'Espine's sign has considerable diagnostic value in diseased conditions at the root of the lung.

CASE 7.—C. G., aged 8 months, had dulness over the right apex posteriorly, with slight increase in voice and breath sounds. There was no bronchial breathing. The roentgen ray revealed partial consolidation of the right upper lobe which did not extend to the root.

The physical signs and the shadow exhibited in this case confirm the observation of Dr. Mason that bronchial voice and breath sounds do not appear until the consolidation reaches the root. This is explained by the fact that sound is conducted much better through a medium of uniform density than in one of varying density. From studies made by Dr. Mason, he believes that the consolidation of pneumonia always begins in that portion of the lung that lies close to the pleura.¹

CASE 8.—S. S., aged 2 years, had harsh respiratory sounds over both lungs. There was dulness over the right apex, with bronchial breathing. The roentgen ray revealed complete consolidation of the right upper lobe.

CASE 9.—J. W., aged 11 months, according to the clinical diagnosis had central pneumonia. There was no bronchial breathing. The roentgen ray revealed a partial consolidation of the lower peripheral portion of the right upper lobe. This case also exemplifies the contention that what is supposed to be a central pneumonia is really peripheral at the start. The absence of bronchial breathing is explained by the fact that the inflammation has not yet reached the root of the lung.

CASE 10.—J. G., aged 8 months, had subcrepitant and sibilant râles all over the chest. There were irregular spots of dulness on the left side, and congestion of the left upper lobe. The roentgen ray revealed an infiltration, peribronchial in distribution, extending from the roots into the right upper and lower lobes. This was a case of bronchopneumonia.

In most of our cases the shadow of the heart was increased in pneumonia, especially in lobar pneumonia. The enlargement was usually most marked in the right heart.

CASE 11.—P. S., aged 16 months, had a large number of moist and crackling râles over both lungs. The roentgen ray revealed diffuse miliary infiltration through both lungs.

The cases included in this study were taken from the New York Post-Graduate Hospital and Dispensary. Dr. William H. Meyer, head of the roentgen-ray department, took and interpreted the roentgenograms. I am also indebted to Dr. Edelman for aid in collecting the cases, and to Drs. Walker and Davison of the house staff.

51 West Fifty-First Street

THE LIVER AND ITS CIRRHOSES

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The liver is the central metabolic laboratory of the human body responsible for the final preparation of nutritive material for conversion into tissue-building and energizing substances. A brief review of some of its anatomic and physiologic characteristics may not be out of place. The weight of the average liver in man is 50 ounces, with a normal variation of about 10 per cent. It may be assumed, therefore, that a liver weighing more than 55 ounces is increased in size and might properly be called hypertrophic, and one weighing less than 45 ounces might be called atrophic, unless such difference could be explained by the size, above or below the normal, of the person. If the weight of the liver is an indication of its metabolic activities, the liver of the female should be larger in proportion than that of the male, made so by the necessity of taking care of herself and her unborn child. As a matter of fact, the liver of the female is only one fortieth of the body weight, while that of the male is one thirty-sixth of the body weight. The hepatic artery is relatively a small vessel and has no corresponding veins. It is supposed to nourish the liver itself and, so far as its framework, the biliary channels and the gallbladder are concerned, this is undoubtedly true; but I have not seen anatomic proof that the liver cells are nourished by the hepatic artery. It would appear that the liver cells, in the process of acting on the blood brought to them through the portal circulation, receive nourishment direct, and that there is no distinction in this respect between the blood of the hepatic artery and that of the portal vein.

The portal system is made up of the gastromesenteric veins and the splenic vein, and it should be noted that the normal splenic vein carries to the liver from one eighth to one sixth of the total quantity of portal blood. The enlarged spleen has vessels in accordance with its size. The large spleens in certain splenomegalias may have vessels the size of the superior mesenteric artery and veins. This is most important, as it indicates that removal of the spleen relieves the liver of a large load of blood and, as shown by the results of splenectomies, this diversion to the general circulation may be sufficient to relieve the subnormal liver of its overload and enable the patients to return to a fair degree of health in otherwise fatal cases. Splenectomy establishes a new principle of treatment, namely, a reduction instead of a diversion of portal circulation, as accomplished in the experimental Eck fistula and the Talma,¹ Drummond and Morison² operation. The stomach and rectum each have a double vascular circulation, portal and systemic. Double ligation and division of the inferior mesenteric artery and vein where they cross the left common iliac vein or just beyond at the promontory of the sacrum, where the artery takes the name of the superior rectal, would greatly reduce the portal circulation. The artery is as large as the brachial, and in two-stage operations for cancer of the rectum, experience has shown that an enormous compensatory circulation is established with the general circulation through the middle and external

1. Talma, S.: Chirurgische Oeffnung neuer Seitenbahnen für das Blut der Vena porta, Berl. klin. Wehnschr., 1898, **35**, 833-836.

2. Drummond, D., and Morison, R.: A Case of Ascites Due to Cirrhosis of the Liver Cured by Operation, Brit. Med. Jour., 1896, **2**, 728-729.

1. Mason, H. H.: Lobar Pneumonia in Children; Roentgen-Ray Findings and an Explanation of Bronchial Signs, Am. Jour. Dis. Child., March, 1916, p. 188.

Control of Communicable Diseases.—*Public Health Reports*, Oct. 12, 1917, contains the report of a committee of the American Public Health Association on standard regulations concerning the control of communicable diseases. This report, which is an extensive one, gives a list of the diseases communicable and reportable, and sets forth in detail information about each, covering the infective agent, source of infection, the mode of transmission, incubation period, period of communicability and methods of control. As a guide to health authorities in the preparation of local regulations regarding these diseases, the committee has established definitions of terms such as the following: cleaning, contact, delousing, disinfection, education in personal cleanliness, fumigation, isolation, quarantine, etc. Inasmuch as the laws under which the various departments of health operate require differences in the legal phraseology of rules, etc., formal regulations have not been prepared by the committee concerning each disease.

hemorrhoidal vessels. Some effect might be produced by tying the superior coronary vessels of the stomach, thus increasing the return circulation about the esophagus, but this would be relatively unimportant and might increase the tendency to gastric hemorrhage.

To the liver has been given wonderful power of regeneration. If a considerable portion of the organ is removed, it will be restored by the remaining liver cells. Such regeneration has not been given to any other organ in the human body. When the necessity for work compensation is thrown on other organs, it is by hypertrophy of preexisting elements, not cell hyperplasia, that the stress is met. The outstanding feature of the hepatic cell is that there is no differentiation of the cells. Each liver cell is exactly like every other liver cell, and each normal liver cell is fully capable of bearing its portion of the work, here again differing from every other similar organ in which groups of specialized cells are to be found.

FUNCTIONS OF THE LIVER

Our knowledge of the function of the liver is very imperfect. We have learned something from experimentation. About postmortem conditions we know a great deal, but, as the liver cannot be removed in life, and as no attempt is made to remove any considerable portion of it except for disease, which vitiates the testimony, its functions have been most difficult to ascertain. The liver has five chief functions: (1) The metabolism of carbohydrates, (2) the metabolism of proteins, (3) the metabolism of fat, (4) the production of bile, and (5) the defense against bacteria, protozoa, and toxic chemical substances.

1. The glycogenetic function of the liver is most important in the final conversion and storage of carbohydrate derivatives in a form from which energy is most readily produced. The monosaccharids might be called the body coal which heats and energizes, the ash end-product, the carbon dioxide, being carried out of the system by the ventilating function of the lungs. Sugar is a threshold body always existing in the blood but appearing in the urine only when in excess of a definite percentage.

2. The amino-acids from protein digestion, of which eighteen have been described, are carried to the liver by the portal vein and, among other changes, the nitrogen-containing portion of the molecule is there converted into urea. The conversion of the nitrogen-containing portion of the amino-acids into urea is not carried on exclusively in the liver, but the liver seems to have a greater capacity than any other tissue for this reaction. Experimental work on the development of urea is most interesting and indicates that possibly the blood urea may act as a hepatic hormone in relation to protein metabolism. Cushny³ states that urea is not a threshold body in the blood; that is, it is always to be found in the blood and in the urine. The amino-acids are used in tissue building. They are also converted into fuel and energy-producing substances. Plummer and Kendall⁴ have shown that cellular activity is sparked, so to speak, by the thyroid secretion, hyperthyroidism overenergizing this activity, and resulting in a burning up of the tissues.

3. The fat function of the liver is not well understood. We know that sugar and fat are stored temporarily in the liver, ready for immediate use. It is

probable, under certain circumstances, that carbohydrates are converted into fat in the liver. It has been shown that by forced overfeeding of carbohydrates the liver of the goose may be caused to become enormously fat, constituting a well known Teutonic delicacy. Osler⁵ has pointed out that the carbohydrate value of beer, although small, is sufficient when enormous quantities are drunk to cause an immense storage of fat in the human liver, and that when this fat exists in connection with a deposit of connective tissue the portal cirrhosis which follows will develop a hypertrophic instead of an atrophic liver. In acute stress, such as occurs in phosphorus and chloroform poisoning, and massive infections, the liver may undergo a most rapidly fatal fatty degeneration. Its usual response to destructive insults appears to be acute fatty degeneration. In these first three functions, namely, the metabolism of carbohydrates, proteins and fat, the liver completes a process started in the gastro-intestinal tract. In the next two—the bile and defense functions—the spleen is associated with the gastro-intestinal tract.

4. It is difficult to state whether the production of bile is purposeful or a waste which contains by-products valuable in intestinal digestion. The bile pigments are derived from destroyed red corpuscles carried to the liver, partly from the spleen. At one time, the red blood cells of the body were supposed to be completely regenerated in from seven to ten days, the estimation being based on the total amount of pigments excreted in the bile. Recent investigations, however, cause some doubt regarding the accepted opinion that the bile pigments are all derived from destroyed red cells, and indicate that the red cells have a much longer life. The latter view agrees with the known results of blood transfusion in the anemias. When enormous quantities of blood are destroyed, as in hemolytic icterus, the liver, as well as the spleen, becomes greatly enlarged—a condition that has been confused with biliary cirrhosis. Accumulating evidence, however, goes to show that, while such a liver may contain an increased amount of connective tissue, it is not necessarily related to the biliary channels, and to a very large extent, the enlargement may be looked on as a work hypertrophy with hyperplasia of the liver cells. An interesting constituent of the bile is the lipid cholesterol; a certain amount of cholesterol is always to be found in the blood, but the amount excreted in the bile varies greatly with the condition of the patient. In the pregnant female, as reported by Aschoff, cholesterol is greatly increased; this suggests its relation to gallstones, which are four times as common in women as in men, at the same relative ages, and in 90 per cent. of the female patients with gallstones, the first symptoms are related to a pregnancy.

5. The defense function of the liver is most important. Bacteria are constantly being carried to the liver from the portal circulation, and pigments of these slaughtered bacteria are found as nonhematogenous hepatic pigment areas (Adami⁶). The spleen strains out many bacteria, as in typhoid, and protozoa, especially the plasmodium of malaria and the spirochete of syphilis; but it may be unable to destroy these organisms, and they are sent to the liver for destruction. It seems fairly clear that, at least so far as portal cirrhosis is concerned, it is related to the defense func-

3. Cushny, A. R.: *The Secretion of Urine*, New York, Longmans, Green & Co., 1917.

4. Plummer, H. S., and Kendall, E. C.: Personal communication to the author.

5. Osler, W., and McCrae, T.: *Modern Medicine*, Philadelphia, Lea & Febiger, 1914.

6. Adami, J. G.: *The Principles of Pathology*, Philadelphia, Lea & Febiger, 1908.

tion; the liver, losing power to absorb and eliminate diffuse poisons, attempts to encapsulate them, thus introducing the connective tissue. The spleen has been compared by Rowntree⁷ to the glomeruli of the kidney, and the liver to the tubules, the one straining out the degenerated cells, micro-organisms and poisons, and the other acting on the material brought to it. The interrelated pathologic condition of the spleen and liver follows closely this interrelation of function.

CLASSIFICATION OF CIRRHOSES

The foregoing most prominent facts connected with the anatomy and physiology of the liver have been reviewed with the idea of throwing some light on the connective tissue diseases of the organ. First inaptly called cirrhosis by Laennec, on account of a tawny or yellow color which sometimes exists, cirrhosis is a term applied indefinitely and indiscriminately to almost any condition of the liver which is not understood, but in which there is an excess of connective tissue. The outstanding feature of all liver changes, the result of chronic irritation without regard to cause, is the deposit of connective tissue. This is well shown in the local cirrhotic processes which may accompany cancer, syphilis and tuberculosis of the liver.

The pathologic classifications are based on morphology, and the morphologic pictures are sometimes differently interpreted by the various authorities. To one who makes an attempt to understand the cirrhosis and who is interested in the living rather than the dead body, the pathologic descriptions are certainly far from illuminating. It is sometimes of benefit to be an amateur, in that an amateur may be able to see more clearly the larger elements, which are often lost in details; in other words, a better perspective is obtained. Generally speaking, fundamental types of cirrhoses may be distinguished; the others represent combinations or variations, rather than entities.

The two types are:

1. Portal cirrhosis, in which the chronic irritants, probably biochemical substances, are introduced through the portal vein, and in which circulatory disturbances are the most prominent clinical features, causing gastric hemorrhages, and especially ascites. Jaundice is seldom present and only as a terminal symptom.

2. Biliary cirrhosis, in which jaundice is clinically the chief symptom, ascites being absent or, if present, being a terminal condition, with the evidence pointing to an infectious cause.

In portal cirrhosis the connective tissue is introduced about the radicles of the portal vein, and in biliary cirrhosis, about the bile ducts. In both portal and biliary cirrhosis the spleen is often enlarged and has a causative relation in many cases, such as the terminal portal cirrhosis of the splenic anemias, the so-called Banti's disease.

I have never seen a case I could call Hanot's cirrhosis, and, so far as I know, this type of cirrhosis has no pathologic basis and little clinical evidence to support its existence. The large majority of cases that have taken the term of Hanot's cirrhosis are either hemolytic icterus or the ordinary type of biliary cirrhosis. As a matter of fact, hemolytic icterus, primarily a splenic disease with a work hypertrophy of the liver, has been confused with biliary cirrhosis and, as gallstones with recurring exacerbations of infections have existed in something like 60 per cent. of

the cases in which we have removed the spleen for the cure of hemolytic icterus, this confusion has not been entirely without excuse. If we constantly bear in mind that, without regard to the nature of the irritant, the response in the liver is connective tissue formation, and that this may involve the whole liver or that it may exist locally, it may readily be seen where confusion has arisen. While typical portal cirrhosis, on the one hand, and typical biliary cirrhosis on the other, are well defined, atypical forms exist from mixed causes, as portal cirrhosis with secondary biliary cirrhosis from gallstone infections.

If hemolytic icterus is split off from the cirrhoses, and if it can be shown by further investigations, which our somewhat limited experience leads me to believe, that the enlargement of the liver which often exists in hemolytic icterus is a work hypertrophy and that the connective tissue formation present is not specific, much will have been accomplished in clearing up a vexed question.

Comparatively little work has been done on portal cirrhosis since the eighties, but during that period many interesting papers were written, especially by the French and English. Hilton Fagge⁸ calls attention to a number of cases in which persons apparently in perfect health died suddenly from accidental causes and were found at necropsy to have had an extensive cirrhosis of the liver, suggesting some unknown factor not properly estimated. At operation I have occasionally found extensive cirrhosis of the liver unrelated to the condition which called for the operation and apparently not of immediate clinical importance.

COMPARISON OF PORTAL AND BILIARY CIRRHOSES

It is probable that the relation of stimulants to cirrhosis of the liver, at least in this country, has been exaggerated. I have seen a considerable number of cases of portal cirrhoses in nonalcoholic young persons. Fagge shows that in Guy's Hospital for twenty-five years 14 per cent. of those dying from portal cirrhosis with ascites had complicating tuberculous peritonitis. Cheadle⁹ and others have shown that, while the Laennec type of atrophic cirrhosis stands at one end of the group, representing the typical gin or hobnail cirrhosis of the liver, as many cases are to be found in which the weight of the liver is increased as there are those in which it is diminished, and the belief that such huge livers finally contract down to the Laennec type is unfounded. It is, of course, quite probable that, in the hepatitis which early accompanies the deposit of connective tissue, the liver would be somewhat enlarged before contraction. But that this is at all true of the massive livers, and especially of those containing quantities of fat, as seen in the beer drinker, cannot be credited. Our better understanding of the atrophic type of portal cirrhosis has led us to underestimate the frequency with which the cirrhotic liver is increased in size and weight. In biliary cirrhosis the liver is always enlarged. The margin of safety in the liver is very great. The patient with portal cirrhosis rarely dies from insufficiency of hepatic tissue, but death is usually brought about through changes in the circulation, and secondary complications, while in biliary cirrhosis death results from chronic jaundice and cachexia. The establishment of compensatory circulation by which blood would be passed from the portal

8. Fagge, C. H.: Principles and Practice of Medicine, Philadelphia, Blakiston, 1886.

9. Cheadle, W. B.: Some Cirrhoses of the Liver, Brit. Med. Jour., 1900, 1, 754-757; 824-826; 893-898.

7. Rowntree, L. C.: Personal communication to the author.

vein around the liver into the general circulation, as advanced and pictured by Talma, Drummond and Morison, has given marked palliation in suitable cases. Sappey has most accurately described the venous avenues by which such compensatory circulation is brought about through nature's unaided efforts. Eck's fistula, that is, the establishment of a bypath between the portal vein and the vena cava, is purely experimental. It is of interest that in all the cases I have seen in which portal cirrhosis accompanied splenic anemia, the cirrhosis was of the atrophic type of Laennec.

In fifty-one cases of splenic anemia, in which we have removed the greatly enlarged spleen, the relief to the portal circulation has been immediate. In those cases in which cirrhosis was present, the ascites has now disappeared and several patients have lived for years, one for more than seven, in excellent health. The evidence here points to the fact that the original poison was carried to the liver from the spleen and theoretically is probably a protein derivative, filtered from the blood. But in five cases of portal cirrhosis with ascites, in which I removed the enlarged spleen, the four patients who recovered were greatly improved both as to their general condition and as to the relief of the ascites. On first thought, it seemed probable that in the removal of such a spleen I had checked the source of poisoning. On further consideration, another explanation appears possible or even probable. With the removal of the spleen, all the blood from the general circulation, which otherwise would have been sent to the liver through the splenic vein, was prevented from going there, and in this manner sufficient blood had been diverted from the liver to relieve the portal circulation. Possibly both views are more or less correct. The results in these cases should encourage us to splenectomy in suitable cases of portal cirrhosis in the future, especially when the spleen is enlarged.

Biliary cirrhosis, of the obstructed or acutely infected type, is easily understood. It exists in connection with gallstones, particularly those in the common duct, and jaundice is an early and continuous feature. In many of these cases, however, the patients are not cured by the removal of gallstones and biliary drainage. More or less permanent damage has been done to the ducts, resulting in chronic areas of infection and often in deposits of stones in the bile ducts, until thousands of such stones may be found in the liver. A second type, which is not so well understood, accompanies certain chronic biliary infections. In these it would appear that either primary hematogenous infection of the bile ducts took place or that there was an extension from a chronically infected gallbladder to the ducts. Rosenow's¹⁰ work in revealing the specificity of bacteria, and in showing that the bacteria, usually streptococci, are to be found in the walls of the gallbladder and ducts and not in the bile, is most important. Large, soft lymphatic glands are usually to be found along the common duct and in the fissure of the liver. In chronic biliary cirrhosis, the liver is large and the walls of all the biliary ducts are extremely thick. In one instance, the lumen of the common duct was reduced at least one half by the deposit of connective tissue in the wall of the duct. Every grade of biliary cirrhosis may be found in this chronic type, which is much more liable to be accom-

panied by an enlarged spleen than those dependent on the more acute infections of the common duct. Not infrequently, chronic pancreatitis will be present from coincident infection. I have seen cases of this description in which there was apparently much improvement by prolonged biliary drainage to the surface, or by a cholecystogastrostomy or cholecystoduodenostomy; but as the clinical course of these patients is very chronic, I am not at all sure that cause and effect are properly related. In five cases of this type, in all of which the spleens were enlarged and the patients were more than 35 years of age, I performed splenectomy. All were improved, the jaundice was greatly reduced, though it had not entirely disappeared in any case, and the liver remained more or less enlarged. There are two possible explanations of this improvement: 1. The source of the chronic infection may have been focal at some point in the body and the toxic material resulting may have been continuously strained out in the spleen and sent to the liver, continuing the infection there. Such cases are occasionally seen in diseases that follow infectious diseases, for example, pneumonia. 2. When the spleen was removed, there was a large reduction in the necessary work to be performed by the liver.

The confusion which has arisen between biliary cirrhosis and hemolytic icterus has somewhat of a parallel in the failure to differentiate those ascites due to polyserositis (Concato's disease) and portal thrombosis from portal cirrhosis. Fagge states that for every three cases of portal cirrhosis with ascites, he saw one of ascites from polyserositis. Concato's disease may be recognized by the thick white peritoneum, by the intestines with greatly shortened mesentery clustered about the spine, and by the encasement of the liver and spleen in a thick white fibrous membrane. Free fluid is usually to be found in both pleural cavities. Pick's syndrome often exists, in which pericardial adhesions hamper the heart's action. The fact that, in some of these cases, the liver is completely encapsulated leads the uninitiated to believe that some form of cirrhosis is present; but, on excision of the strangling membrane, the liver will be found normal.

Warthin¹¹ has pointed out that thrombosis of the portal vein or some of its branches occasionally occurs with ascites, being a chronic malady accompanied by liver changes and splenomegalia, and usually confused with portal cirrhosis or splenic anemia.

11. Warthin, A. S.: The Relation of Thrombophlebitis of the Portal and Splenic Veins to Splenic Anemia and Banti's Disease, *Internat. Clin.*, 1910, 4, 189-226.

Egg Substitutes.—Cooking tests and analyses of egg substitutes were made by the laboratory of the Kansas State Board of Health, the results of which are given in the *Bulletin* for March. In the experiment of making sponge cake with no baking powder and replacing half the usual number of eggs with egg substitute, the cake stuck to the pan when done and did not have the other characteristics of true sponge cake. In another test, baking powder was used instead of eggs and egg substitute, with a like result. Averaging the price of seven egg substitutes, the analyses of which are given, the *Bulletin* says the consumer pays more per pound for the substitute than he would per pound for the dry material of hen's eggs calculated at 40 cents a dozen. The so-called substitutes are chiefly starch (70 to 90 per cent.), whereas the dried matter of eggs is essentially protein and fat. An analysis of a substitute called "eggette" showed to be false the manufacturer's assertion on the carton that the contents of the package was equivalent to twelve eggs. On the basis of protein value, the substitute was shown to be equal to only 1.7 egg; on a basis of fat, it was equal to only 0.14 egg, and in fuel value it was equal to only 2.6 eggs.

10. Rosenow, E. C.: The Etiology of Cholecystitis and Gallstones and Their Production by the Intravenous Injection of Bacteria, *Jour. Infect. Dis.*, 1916, 19, 527-556.

IMPORTANCE OF SIGMOIDOSCOPE IN
DIAGNOSIS OF DISEASE IN TER-
MINAL COLON AND RECTUMWITH A DISCUSSION OF TWO HUNDRED AND
FIFTY-ONE CASES

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This study is based on a series of patients whom I examined with the protoscope or sigmoidoscope while at the Mayo Clinic, 1917. The patients, with few exceptions, had not been examined with special instruments, though nearly all of them complained of some symptoms referable to the terminal bowel or to some disease in this region. The failure to detect early the large number of diseased conditions in the terminal colon results from a neglect to examine all patients with the sigmoidoscope, however slight the symptoms. At the time of examination, I noted the chief complaints and findings, and, after the discharge of the various patients from the clinic, I reviewed carefully the histories, noting the findings, diagnoses and results of treatment. In Table 1, I have classified all cases examined, as shown by the final diagnosis, but in this paper, shall take up only those grouped under A, B, C and D, because of a lack of space for lengthy consideration of all cases, and because of the greater importance and gravity of the diseases in these groupings.

Disease of the large bowel is most commonly located (exclusive of the appendix) in the rectum and sigmoid; consequently, its presence may usually be determined by inspection of this region. Leichtenstern¹ states that in 770 cases of intestinal carcinoma, 616 were in the rectum, 89 in the colon, 32 in the cecum and appendix, and 33 in the small intestine. Out of 89 cases of colon carcinoma, 42 were in the flexura sigmoidea, and 30 in the transverse, 11 in the descending, and 6 in the ascending colon.

While a number of disease conditions may be discovered by the examining finger, yet inspection by means of a protoscope is necessary in the majority of cases before a definite diagnosis may be made. The majority of carcinomas are beyond reach of the finger, yet well within observation by the protoscope or sigmoidoscope. In a series of 100 consecutive cases of carcinoma of the rectum and rectosigmoid removed at St. Mary's Hospital, 63 per cent. involved the recto-sigmoid region.²

Twenty-two cases of my series (Table 1 A) were diagnosed carcinoma, and in only one was the carcinoma located beyond reach of the sigmoidoscope. This was removed after a roentgen diagnosis of probable carcinoma or diverticulitis, the carcinoma being located in the upper part of a long sigmoid. The appearance of carcinoma is usually quite characteristic, with an annular or oval ulcerated growth elevated at the edges, and a cauliflower-like appearance of the granulation tissue. In later stages, the growth may produce an almost complete stenosis of the bowel; but careful inspection of the everted edge and irregular surface of the ulcerated growth, which is hard, friable, and either circumscribed or diffuse, establishes the diag-

nosis. The appearance of carcinoma after radium exposure is somewhat different. The surrounding tissues are edematous, somewhat indurated, and instead of the ulcerated surface having a cauliflower-like appearance, it is quite smooth and glistening, while the new growth is less resistant, edematous and not so sharply circumscribed. The history of the disease and the application of radium, in connection with the proctoscopic examination, will enable the making of a definite diagnosis, and only in exceptional cases is it permissible to remove tissues for microscopic examinations.

The chief complaints in these cases (Table 1 A) were blood in 21, constipation in 15, pain in 10, usually in the rectum but in 1, in the lower abdomen, pencil stools in 9, hemorrhoids in 5, and, in 2 cases, a long existing diarrhea. The duration of symptoms was about eight months, though in four cases, the average was only three months. In a review of 491 cases of carcinoma of the rectum and pelvic colon, Lynch³ found the average duration to be more than eight months.

In twenty cases of chronic colitis (Table 1 C) the *Endameba histolytica* was found. The appearance of the bowel in colitis due to the ameba is not characteristic, but in some cases in which there are multiple small oval or round ulcers, some mucus, a hyperemic, easily bleeding surface, and some edema of the wall, the ameba may be correctly diagnosed as the cause. Many cases proved amebic are of slight severity or are limited to a slight proctitis, the sigmoid appearing normal. In two of these twenty amebic cases, the moderate inflammation was limited to the rectum, and roentgenoscopy revealed no changes in the colon. From the experimental production of amebic colitis in kittens, Dale and Dobell⁴ found the upper and lower third of the colon most involved, especially the latter. Lynch and McFarland,⁵ in reporting chronic colitis with negative stool examination, state that in the unclassified nonamebic colitis, the sigmoid is most involved. Some of the amebic patients examined had evidences of previous severe inflammation in folds of hypertrophied or atrophic and scarred mucosa, two patients having generally contracted and rigid colons. Considerable care was used, especially in the latter cases, in passing the sigmoidoscope, to prevent tearing the mesentery or wall.

The chief complaints in the twenty amebic colitis cases were diarrhea in 14, epigastric or diffuse abdominal pain in 11, rectal pain in 1, blood in 6, mucus in 4, alternate constipation and diarrhea in 2, constipation in 1, pus in 1, gas in 1, and frequent urination in 1. Sanford⁶ found in 41 per cent. of persons affected with ameba in the temperate climate a history of constant diarrhea, in 33 per cent., intermittent diarrhea, and in 26 per cent., no bowel trouble at all except constipation, the whole syndrome being less severe than in the South or the tropics. Whitmore⁷ emphasizes the grave danger of the rapidly increasing number of carriers of *Endameba histolytica* in camp life, including many who have no intestinal symptoms. He states that from 20 to 25 per cent. of dysentery on the East-

3. Lynch, J. M.: Cancer of the Rectum and the Pelvic Colon, THE JOURNAL A. M. A., Nov. 24, 1917, p. 1775.

4. Dale and Dobell: Experiments on the Therapeutics of Amoebic Dysentery, Jour. Pharmacol. and Exper. Therap., 1917, 10, 397.

5. Lynch, J. M., and McFarland, W. L.: Colonic Infections, THE JOURNAL A. M. A., Sept. 23, 1916, p. 943.

6. Sanford, A. H.: The Geographic Distribution of Amebiasis, THE JOURNAL A. M. A., Dec. 23, 1916, p. 1923.

7. Whitmore, E. R.: Dysentery and Its Relation to Camp Life, Pennsylvania Med. Jour., 1918, 21, 273.

1. Leichtenstern, in von Ziemssen's Handbuch, Ed. 1, 7, quoted by Strauss: Procto-Sigmoidoscopy, Leipzig, 1910.

2. Mayo, W. J.: A Study of the Recto-Sigmoid, Surg., Gynec. and Obst., 1917, 25, 616.

ern front is due to the endameba, and that carriers are very resistant to treatment.

Thirteen patients with chronic colitis (Table 1 D) showed no specific organism on repeated stool examinations; consequently, they are grouped separately. Four of this group were clinically diagnosed as having amebic colitis, the remainder being classed under unknown etiology. In comparing the unclassified with the amebic group, I found the severity of the colitis much less in the latter. Only one amebic case was severe enough to require ileostomy, while in the much smaller number of unclassified chronic cases, two patients were operated on in this manner. This severe chronic colitis must not be confused with the mucous type, in which no actual inflammatory changes are seen, and for which Simon⁸ has suggested the name myxoneurosis. There is a true inflammation of the mucous membrane in these chronic cases of colitis, complicated by infiltration of the wall, and perhaps by peritonitis, with oftentimes erosions and ulcers as secondary changes. The stage between a simple and a severe colitis is a very gradual one.

in the ileum after a meal, and accelerated in the colon, others having found the same to be true.

The chief complaints found (Table 1 D) were diarrhea in 12, blood in 7, abdominal pain in 3, mucus in 4, some incontinence in 2, and alternate constipation and diarrhea in 1. Concerning the etiology of severe colitis with negative stool examinations, it is significant that Strauss¹⁰ in working on the serologic reaction, found a positive agglutination test consistently against the various types of dysentery, paratyphoid and typhoid bacilli in both acute and chronic cases. In only one case, that of an acute type, did he find the corresponding organism in the stool.

POLYPI AND CARCINOMA

An interesting group is seen in Table 1 B, and is elaborated on in Table 2. In this series are thirteen cases, in twelve of which polypi were present and in one of which there was no recurrence observable from the base of a polypus removed several months before. In one (Case 9) there was a recurrence of a polyp fulgurated ten months previously. Severe multiple

TABLE 1.—CONDITIONS FINALLY DIAGNOSED, AND MOST FREQUENT COMPLAINTS IN TWO HUNDRED AND FIFTY-ONE CONSECUTIVE CASES

Conditions Present	Number of Cases	Blood	Diarrhea	Constipation	Constipation and Diarrhea	Average Duration of Symptoms, Months	Remarks
A. Carcinoma	22	21	2	15	..	8	
B. Polypi	12	7	4	..	..	16	
C. Amebic colitis.....	20	6	14	1	2	56	Three had slight proctitis, one of them a polyp
D. Unclassified chronic colitis.....	13	7	12	..	1	14	Several had advanced hemorrhoids
Proctitis	7	..	..	..	..	...
Benign stricture.....	4	1	..	..	3	...	
Rectal urinary fistula.....	2	..	..	..	..	...
Fistula in ano.....	14	..	..	..	..	12	
Ischiorectal abscess.....	6	..	2	3	..	...
Prolapse of rectum.....	13	3	..	3	..	...	One case was prolapse of sigmoid
Relaxed or incontinent sphincter.....	3	2	2	1	..	...	These were all the result of some operation
Inflamed or ulcerated hemorrhoids.....	10	5	..	..	..	103	
Hemorrhoids (definitely enlarged).....	50	30	4	6	..	96	The most frequent complaint was of hemorrhoids
Recurrent hemorrhoids.....	2	..	..	..	..	...
Fissure in ano.....	7	2	..	2	..	4	
Anal inflammation (syphilitic).....	1	..	..	..	..	...
Diverticulum of rectum.....	1	..	..	..	..	...	Prolapse of rectum and hemorrhoids, 20 years
Miscellaneous diseases.....	6	..	..	..	..	...
Absence of disease, or slight hemorrhoids	58	..	..	..	..	...

Roentgenoscopy is of value in chronic colitis because of its aid in determining predisposing causes, as stasis, chronic obstruction, and diverticula, or in estimating the extent and amount of involvement due to secondary changes. Kienböck⁹ describes two types of colitis ulcerosa as determined by the roentgen ray from five to twelve hours after the meal, immediately after, and one hour after, an opaque enema. (The use of the enema for roentgenoscopy should be avoided in very acute or severe chronic cases, as it may lead to perforation.) The colon, in the first type described by Kienböck, is narrow, may be spastically contracted, and is nearly or entirely haustraless with uneven flecking of the edges; in the second type, it is relatively broad, and almost invisible, owing probably to its being filled with slimy mucus and nearly bismuth-free contents; or, if visible, it presents the appearance of a very light, haustraless cylinder, owing to its being filled with air, and has a characteristic uneven bismuth flecking throughout. In chronic ulcerative colitis, Kienböck found the progress of the bismuth retarded

polyposis was found in one (Case 11) in which deep ulcerations and a severe inflammation of the colon later became complicated by multiple perforations and ended in death. In the remaining cases there were only solitary or a few scattered polypi; however, there is significance in the fact that in three of these (Cases 2, 3 and 7) a carcinoma was also present. While multiple polyposis of the colon has been recognized for many years as a serious disease because of the frequent consequent development of carcinoma, the importance of the association of isolated or of a few scattered polypi with carcinoma has not been emphasized; consequently, the treatment of these polypi, and of local inflammation, has been neglected.

Whether the same conditions call forth both carcinoma and polypi, whether the carcinoma is secondary to the polypi, or vice versa, has not been established. Recently, Soper,¹¹ in reporting a case of his own, reviewed the literature of multiple polyposis, and found sixty cases. Carcinoma was present in 43 per cent. of these, appearing much more frequently in the rectum. The etiology of multiple polyposis is not

8. Simon, S. K.: Mucous Colitis and Its Treatment, New Orleans Med. and Surg. Jour., 1916, 69, 25.
9. Kienböck, R.: Zur Röntgendiagnose der Colitis, ulcerosa, Fortschr. a. d. Geb. d. Röntgenstrahlen, 1913, 20, 230.
10. Strauss, H.: Zur Aetiologie der Dysenterie und dysenterieähnlicher Erkrankungen, Arch. f. Verdauungskr., 1915, 21, 16.
11. Soper, H. W.: Polyposis of the Colon, Am. Jour. Med. Sc., 1916, 151, 405.

clear. Although most frequent in young persons, yet even here there is early carcinoma involvement. That there may be some familial relationship between carcinoma and multiple polyposis is shown by Doering,¹² who reports that out of fifty patients, eight were members of families in which other members had died from carcinoma of the rectum. The polypi vary from the size of a pigeon's egg to very minute dimensions.

Most authors classify two chief types of polypi and believe that either type may occasionally be multiple, producing the disease multiple polyposis. In the first type, the adenoma or increased gland formation may form a superficial infiltration into the wall, or else project as a polypus. In the second type, the polypoid tumor is composed of solid connective tissue from the submucosa, or of branching tufts covered with more

that there is no sharp line between these tumors and carcinomas.

It is the belief of many that these polypi originate from congenital rests, and are absolute new growths.¹⁶

Versé¹⁷ assumes a congenital predisposition of the epithelial cells to increased proliferation, which through stimulation by chronic inflammation leads to polyp formation. Borelius and Sjoval¹⁸ conclude that all supposed characteristic differences between polypi of primary new growth and those secondary to inflammatory origin are shown untenable, and that there is no hindrance to the belief that all intestinal polypi can start on an inflammatory basis. Wechselmann¹⁹ thought that the inflammatory hyperplastic polyposis, as contrasted with new growths, was limited to the mucosa possessing no pedicle from the submucosa.

TABLE 2.—THIRTEEN CASES, IN TWELVE OF WHICH ISOLATED OR MULTIPLE POLYPI WERE PRESENT

No.	Chief Complaints	Polypi	Number of Polypi	Age	Sex*	Complications	Remarks
1	Blood in stools, diarrhea and bowel distress, 1 year	1 in rectum; 4 or 5 in lower sigmoid	5-6	26	♂	Severe colitis	On examination, one polyp found to be an adenoma
2	Blood and hemorrhoids, 10 years; pain in rectum, 1 year	5 or 6 in rectum and lower sigmoid; bean sized to hazelnut	5-6	43	♂	Carcinoma, 5 cm. up rectum	Kraske operation done
3	Hemorrhoids, 10 years, constipation and blood, 9 months	1 sessile pea sized rectal polyp	1	47	♂	Carcinoma, 3 cm. up rectum	Metastases found in liver; chronic inflammation in polyp
4	Abdominal pain, diarrhea and mucus	1 in lower sigmoid	1	39	♂	Spastic sphincter	
5	Diarrhea, 3 years	1 small polyp in lower rectum	1	35	♂	Ameba histolytica present	On examination, polyp shows chronic inflammation
6	Constipation and hemorrhoids 20 years; blood, 1 year	1 lower sigmoid, bean size; 2 small ones, lower rectum	3	59	♂		
7	Hemorrhoids, pain, blood and ribbon stools, 1 year	1 bean sized in lower rectum	1	67	♂	Carcinoma, 8 cm. up rectum	Tube resection of bowel done (peritonitis)
8	Piles and spasm of sphincter	1 bean sized in lower rectum	1	50	♂	Hemorrhoids	
9	Slight incontinence of feces	1 pea sized, upper rectum, recurrent; 2-3 small ones, lower sigmoid	3	38	♂		Reurrence of one polyp fulgurated 10 months before
10	Diarrhea, constipation, mucus and blood, 2 years	1 bean sized in lower rectum	1	50	♀	Severe ulcerative colitis	No amebas found
11	Severe pain, diarrhea, blood and mucus, 8 months	Extensive, ulcerative, polyposis colon	Multiple throughout colon	35	♀	Multiple perforations one month later	Pathologically, extensive diffuse papillomatous colitis with multiple ulcers and perforations
12	Severe anemia and loss of strength	1 bean sized, upper rectum; 1 smaller, lower sigmoid	2	63	♂		
13	Rectal distress	Polyp previously removed and hemorrhoids operated on 3 times	None now seen	45	♂		Previous removal of polyp and hemorrhoids; no recurrence

* In this column, ♂ denotes male and ♀ female.

or less indifferent mucosa. Here, also, there may be tubules lined with cylindric epithelium resembling an adenoma.¹³ Some authors¹⁴ think that the condition of multiple polyposis does not originate in the isolated type of polypi, and that the multiple polyposis tends specifically to the development of carcinoma. In gastric polyposis, Finney and Friedenwald¹³ report that polypi of the stomach are usually benign in character; but they observed one of two cases reported to be undergoing carcinomatous degeneration. Delafield and Prudden¹⁵ state that in some adenomas of the colon the tubules are irregular in shape and arrangement, and the growth infiltrates the surrounding parts, and

Borelius and Sjoval, however, showed that in a case with varying degrees of inflammation, both conditions were present, the pedicle coming from the submucosa as a result of the more extensive inflammation. Multiple polyposis of the colon may occur secondary to inflammatory changes in the mucosa, by the scarring and the mucosal excrescences in dysentery and tuberculosis.¹⁵

While the adenomatous type of polypi may degenerate into carcinoma more frequently, the connective tissue polyp is also associated with malignancy; and while the epithelium may appear indifferent, the polyp or the conditions producing it may also predispose to

12. Doering, H.: Die Polyposis intestini und ihre Beziehung zur carcinomatösen Degeneration, Arch. f. klin. Chir., 1907, 83, 194.
13. Doering (Note 12). Finney and Friedenwald: Gastric Polyposis, Am. Jour. Med. Sc., 1917, 154, 683.
14. Earle, S. T.: Diseases of the Anus, Rectum and Sigmoid, 1911.
15. Delafield and Prudden: A Text Book of Pathology, Ed. 10, 1914, p. 689.

16. Kaufmann: Spezielle pathologische Anatomie, Ed. 5, Berlin, 1909. Hauser, Schmoler, Schwab and Lahm, quoted by Borelius and Sjoval (Note 18).
17. Versé, quoted by Kaufmann (Note 16).
18. Borelius and Sjoval: Ueber Polyposis intestini, Beitr. z. klin. Chir., 1916, 99, 424.
19. Wechselmann, quoted by Borelius and Sjoval (Note 18).

carcinoma. In Table 2, Case 1, in which a severe colitis existed, one of the polyps was found to be adenomatous. In Case 11 it was papillomatous in type, while in Case 3 there was found chronic inflammation in the polyp associated with a cancer.

A few writers report solitary or a few scattered polypi associated with carcinoma, but mention their benign character. As mentioned above, in three of my cases (Table 2, Cases 2, 3 and 7) a carcinoma was present when there were solitary or a few scattered polypi. The unusual frequency of carcinoma with solitary or scattered polypi should be emphasized, for there probably is only a difference of degree in the proper stimulation, such as chronic inflammation or trauma for producing either solitary polypi, or a very grave disease, multiple polyposis. Since carcinoma develops early in about one half of the cases of multiple polyposis before they terminate in other complications, some specific predisposition must exist. Prophylactic treatment against all causes of chronic irritation or inflammation of the rectum and sigmoid, and active treatment in all stages of polypi, are advocated.²⁰

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Clinical Notes, Suggestions, and New Instruments

REPLACEMENT OF SCALP ON A DENUDED DRY SKULL BY GRANULATIONS SECURED THROUGH HOLES DRILLED IN THE BONE

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In this case there was successful development of a covering of granulation tissue and epithelium over a skull dome, the bones of which were exposed, dry and undergoing necrosis. Grafts could not be attempted because of the bones' condition, and the usual tissue and blood supply for flaps in this area had also been destroyed.

The clothing of a girl of 6 caught fire. She threw herself, face downward, under the bed and protected her face by her right arm. The lower edge of the burned area extended across her back from the right lower costal margin to the angle of the left scapula. From this line the burn extended upward and, besides the head and neck burns, involved the back of both shoulders, more especially the right, and the extensor surface of the right arm. On the head and neck the burns and resultant sloughs involved the nape and right side of the neck, the scalp over the occiput to an irregular height of about 1 inch above the occipital protuberance, and the right ear. A ribbon-like burned area about an inch wide and an inch above the eyes extended across the right temple and forehead and caught the left ear in its subsequent scar. The left postauricular area was the only part of the base of the scalp that did not later slough, and the left posterior auricular artery was the only blood supply to the scalp not destroyed. The face, protected by the arm, escaped injury and remained uninvolved throughout. The scalp above the occiput, except for the ribbon-like burn, escaped immediate injury, though later sloughing.

At the time of the child's admission to the hospital, three weeks after the burn was received, the burned area was a mass of infected, sloughing tissue giving off a very offensive odor and, because of the child's intractability, requiring six nurses to dress. The burns were treated antiseptically until healthy, and then those on the back, shoulders, neck and right arm were successfully skin-grafted. Because of the lack of any blood supply except the left posterior auricular artery, the scalp over the crown, above the burned area, underwent dry gangrene, and, much like a piece of leather, was painlessly pulled off by the attending surgeon two weeks after the hospital admission, the pericranium sloughing with the mass. The removal of the slough left the bone bare for an area of approximately 4 by 6 inches. The wounds around the bare bone became healthy; granulations spread out, but, for the lack of circulation, they extended only a short distance over the denuded area. The bone began to undergo necrosis and softened in spots, but at the same time granulations appeared through the two parietal foramina and, to a slight extent, through the suture line between the two parietal bones. This suggested that if there was enough foramina there would be enough granulation to cover the surface. Skin for flaps was not available, the skin of the neck having already been destroyed; Tiersch and pinch grafts would not grow on the dry and softening bone. So, instead, I drilled about fifty holes through the dry calvarium at the intersection of squares measuring 1 cm. each way. The purpose of the drilling was to obtain a blood supply; so when blood was drawn the drilling stopped. In the softened areas, over the parietal eminences, the drill at times went through more quickly than expected, punctured the dura, and permitted the escape of cerebrospinal fluid.

The immediate postoperative reaction was a rise of temperature reaching a maximum of 105 F., but lasting only twenty-four hours. Aside from this there was no postoperative symptom nor suggestion of meningeal complication.

Careful daily observation of the drill wounds was made. On the fifth day granulations began to appear in many of the holes; in other holes, granulations were delayed; and through some of the holes in the softened areas over the parietal eminences no granulations appeared at all. The granulations grew rapidly, spread out, mushroom-like, over the denuded area, and where they met they fused, thus gradually, over a course of weeks, covering the whole area. In trimming off exuberant granulations, the scissors encountered gritty resistance, as though from developing bone. The epithelium, unaided by grafts, extended from the slough edge upward over the granulations toward the dome for an irregular height of from 1½ to 2 inches. The remainder of the area over the vertex was covered in by pinch grafts, three attempts in all being necessary. Tiersch grafts, first tried, were entirely unsuccessful in this area, though successful on the back, arms and neck. It was impossible to control the child, and she destroyed many of the grafts mechanically.

Over the right parietal eminence there appeared a thickening which threatened to become a bony tumor. This stopped growing after the area covered over, and though it persists, it is not enlarging. A slight growth of hair, irregularly distributed, has appeared over the grafted area.

The child was admitted to the hospital in December, 1915, and was discharged the following July.

The Uric Acid Theory.—It is an extraordinary attribute to Alexander Haig that the curious heresy which he invented and preached should have been blindly accepted by two generations of his medical brethren, and have ultimately become an obsession with the laity. And the tribute is the more astounding from the fact that the treatment which the heresy demanded entailed, according to the hitherto accepted standards, very considerable self-denial. Moreover, the heresy appealed not only to the faddist. The sane, sober, commonsensical doctor accepted it, in spite of the fact that he had never been taught it in the schools. The awakening was a long time in coming; but it came, and now one seldom hears of uric acid, except from a patient.—Sinapis in *Medical Press and Circular*.

20. In addition to the references already given, the following will be found of interest:

Rosenheim, L.: Zur Kenntnis der infiltrierenden Colitis und Sigmoiditis, *Deutsch. med. Wchnschr.*, 1907, **33**, 411.

Schwarz and Novascinsky: Eigenartige Röntgenbefunde von Dickdarm bei tiefgreifenden chronisch entzündlichen Prozessen, *Wien. klin. Wchnschr.*, 1912, **25**, 1447.

McMahon and Carman: Chronic Colitis and its Roentgenologic Findings, *Jour. Lab. and Clin. Med.*, 1917, **2**, 328.

Cripps, W. H.: *Disease of Rectum and Anus*, Ed. 3, 1917.

Military Medicine and Surgery

THE WAR NEUROSES

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Few subjects have attracted more attention in medical circles since the beginning of the war than the war neuroses. Each belligerent nation has been confronted with the problem of caring for large numbers of soldiers afflicted with marked nervous manifestations resulting from the strain of war.

The careful consideration of this form of nervous and mental instability was found to be of military as well as of medical importance. The military authorities wished to know how this condition might be prevented, what percentage of men would be cured and how soon, and to what degree an individual was responsible for his actions while he was so afflicted.

The armed forces of the United States must now, by force of circumstances, consider the same problem, and while much has been written concerning this matter, I believe that a description of how the condition is actually cared for in the English army at the present time may be of value.

NOMENCLATURE

There being no definite knowledge of the neurologic pathology of this disease, and the psychologic processes being largely surmise, numerous terms have been suggested. Most of these are simply an effort to suggest a name that is descriptive of a syndrome, and many of these names depend to a large extent on an individual view regarding neuroses in general. Eder makes use of the term "war strain," and then subdivides this into groups classified according to eudian principles.

Babinski has originated the word "pithiatism" to describe a hysteroid state in which the symptoms are the result of suggestion and may be relieved by suggestion. All other forms of the war neuroses he has designated as "reflex nervous disorders," and believes that they are on the border line between functional and organic disease.

The British medical offices consider the disease as purely functional in nature, and employ the terms "shell shock" and "neurasthenia" as a classification. The differentiation depending primarily on whether or not the individual has been exposed to extraordinary strain.

The statement has been made that the use of "shell shock" as a diagnosis has resulted in an increase in the prevalence of the disease, and chiefly because of the name is not used until the patient has been carefully examined in a hospital especially devoted to the treatment of nervous disorders, and not then until information has been obtained from his unit verifying his own statement as to how his illness arose. It is conceivable that malingerers will attempt to imitate this condition when it is remembered that many men at the front suffer from mild forms of it, and that a man who wishes to shirk his duty may easily exaggerate these mild symptoms. Such cases are usually covered either by the battalion medical officer, or at a casualty clearing station, and the men are from there returned to their units. Such, however, is not

always the case, and therefore, until a decision is reached that there can be no doubt as to the genuineness of a man's complaint, he is classified as "N. Y. D. N.," or "not yet diagnosed, neurotic."

PREDISPOSING CAUSES

It should be understood that to suffer from shell shock does not necessarily stigmatize an individual as neurotic, although it is undoubtedly true that many of these patients have suffered from various forms of mental instability in civil life and that others are burdened with a bad family history. A certain number of cases occur in men whose life history evidences an inadequacy in coping with the ordinary difficulties of life. Laudenheimer states that 90 per cent. of the patients were predisposed before joining the army; Forsythe says 100 per cent.; Mott, 66 per cent.; Eder, 30 per cent. However, some of the most courageous men apparently free from all neurotic tendencies, are afflicted with this malady. The disturbance occurs among commissioned officers, noncommissioned officers and privates, and if there was a question as to the frequency of occurrence in the various ranks I would be inclined to say that a relatively larger percentage of the noncommissioned officers were affected than of the others, and yet the noncommissioned officers are men chosen especially for their bravery and dependability.

To understand shell shock it is necessary to understand the conditions under which the men live at the front. They are constantly under a strain, both from a physical and mental standpoint. For several miles behind the line there is no place of absolute safety; sleep is often out of the question, not only because of the enemy's shells but also because of the noise of their own guns. The shrill shriek of the shell is a distinctly unpleasant sound, and the knowledge that bombing experiences, such as they have already passed through, may be repeated at any time does not tend to increase their mental composure. The men often continue to dodge shells after being admitted to a hospital, so vivid is the memory of them; nor is it so very unusual for a man, dazed by his experiences, to assert that bombs were dropped near him the night before, when as a matter of fact none have fallen in the vicinity for days. Fatigue is also a very important predisposing cause. It is not unusual for a man to state that he has had very little rest for several days previous to the development of his neuroses.

It should be remembered that one of the greatest factors in the development of a neurosis is intense and frequently repeated emotion; indeed, it is very doubtful if psychoneuroses occur as the result of fatigue unless associated with intense emotion. Fear is one of the strongest of the emotions; and while it may be repressed, nevertheless it exists and exerts its influence on the individual. Connected with this will be found sympathy for fallen comrades, disgust caused by death and dirt, anger, depression, concern about the relatives at home and in the army, remorse for past conduct, and fear that one will not be able to do one's part in the future as bravely as one might wish. And all the time the soldier must necessarily smother these thoughts in his own bosom.

It is true that the men at the front are all more or less subjected to the same physical and mental strain, but it is conceivable that a psychoneurosis can be produced by stress of external conditions acting on a

mind only a degree more sensitive than that of the average person.

REPORT OF CASES

The following case histories are related in order that the picture of the condition may be made as clear as possible:

CASE 1 (No. 242939).—An infantryman, aged 35, whose civil occupation was that of a window draper, whose total service in army was eight months, and who had been in France four months, had always been of a nervous disposition. He was married, and had two children, both of whom were well. He was very fond of athletic sports. His father was a drunkard. The patient had taken part in two raids on the enemy's trenches, and was once caught in a barrage fire, but was able to carry on his duties without feeling any ill effects.

While he was in a strong point in the front line trenches, with a machine gun squad, a shell fell within 6 feet of him; his companions were killed, he was buried, and he then lost consciousness for several hours.

He complained of being nervous and jumpy, had a severe occipital headache, was partially deaf, was dizzy, his teeth were very sensitive, he was constipated, he slept very poorly in the daytime, waking up with a start, and he could not sleep at all during the night. The pulse was 100, and the respiration, 18. The heart was three-fourths inch to the left of the midclavicular line. The hands were cyanosed, the strength less than the development, there were fine tremors of the fingers, the deep and superficial reflexes were lively, and the pupils were normal in size and reaction.

This is a typical mild case. The patient returned to his unit a few weeks after admission. The next was more severe:

CASE 2 (No. 74963).—An artilleryman, aged 29, whose civil occupation was that of a blacksmith, whose total service was eighteen months, and who had been in France seven months, had suffered from a mental breakdown seven years before, during which he was compelled to stop work for a few months. The family history was negative. He had been in many dangerous places since his arrival in France, and had been repeatedly shelled. He was stepped on by a runaway horse a year before admission.

He was in the trenches for three days, during which time his position was continually under shell fire. The second day a shell fell about 10 yards from him and he was almost smothered by the flying dirt. The next day another shell burst near him; he was knocked over, became unconscious and had to be carried to the dressing station.

He complained of pain in the left side of his chest, the legs ached and felt useless, he had frontal headache, he was dizzy, weak and tremulous, there was a mist before the eyes, and there was frequent urination and excessive perspiration. The pulse was 90, the blood pressure: systolic, 116; diastolic, 80. The heart and lungs were negative, the hands cyanosed, the patella reflex was diminished, the pupils were dilated, there were photophobia and slight exophthalmos, he was dazed, and strength was less than development.

It should be noticed that the explosion of the first shell apparently did not affect him. This is often the case. A soldier may be blown up several times without feeling any ill effects, and then finally become completely incapacitated by a shell bursting near him. I have seen one patient who was knocked over five times by bursting shells within the period of fifteen minutes. A man is not always overcome at the time of an explosion of a shell near him; he may carry on his duties for several days before he finds it necessary to report sick, or he may not report sick until his condition is noticed by one of his officers, who orders him to see the medical officer.

CASE 3 (No. 13582).—An infantryman, aged 32, whose civil occupation was that of a farmer, who had been in the army three years, and in France nineteen months, had never been seriously ill in his life, and did not know what it was to feel nervous. The family history was negative. He was married and had two children. He had been in five engagements with the enemy, over the top three times, and had been wounded twice. He had been decorated for bravery.

He was selected to go on a raiding party carrying hand grenades. During this expedition a shell exploded near him, and he was partially buried. He returned to the trenches and awoke the next morning feeling queer, and found that he was weak and dizzy. Twelve hours later he fainted, became unconscious, and was carried to the dressing station.

He felt very nervous, jumped at the least noise, was dizzy, urinated very frequently, had no appetite, could not sleep, was somewhat deaf, and could not see distinctly at times. The pulse was 90, the blood pressure: systolic, 120; diastolic, 80. The hands were cyanosed, the strength was less than development, the heart was slightly dilated but otherwise negative, there were fine tremors of the fingers, and the patient had a left-sided facial tic.

This was a very stubborn case; the patient remained in the hospital over seven weeks, improving very slowly.

It is by no means necessary that a man be actually knocked over by a shell before developing shell shock. The following history is fairly typical of many cases:

CASE 4 (No. 96430).—A member of a labor company, aged 29, in civil life a mechanic, who had been in the army three years and in France sixteen months, said: "I grow very weak now; shell fire upsets me; I cannot sleep, and I have no appetite." His nerve had always been good. The family history was negative. He was married, and had three children. He had been wounded twice. The second time he was placed in a labor company, as he was not considered fit to be sent to a combatant unit. He had been in three engagements, and had been over the top twice. In 1916 a shell fell near him but it did not bother him.

He was with a party bringing up rations. The road was being shelled; shells were bursting all around him, but he was not blown over by any of them. When he returned to the camp he felt very queer, he began to tremble, and then lost consciousness for a few hours.

He was now suffering with a headache, he was very dizzy and weak, both legs ached, he urinated very frequently, his eyes ached, he slept very badly, his hands and feet felt cold, and he perspired excessively. The pulse was 118, the heart dilated, there was a functional cardiac murmur, the lungs were negative, there was exophthalmos, the hands were cyanosed, and there were tremors of the fingers, tongue and eyelids. The reflexes were lively, the pupils dilated and reacted to light slowly, the strength was less than the development, there was a positive Romberg sign, he walked on a wide base, he would fall down on turning around quickly, and he was dazed.

Quite a few men admitted into the hospital have had shell shock previously; some are recurrences and in others the patients are suffering from a second shock. Approximately 25 per cent. of the patients that I have examined during the last few months have suffered from shell shock previously. The following is the history of a soldier who had three distinct shocks:

CASE 5 (No. 5557).—A tunneller, aged 26, in civil life a contractor, who had been in the army seventeen months, and in France nine months, reported: "I have been shell-shocked again." The first shell shock occurred in 1916, and the second in February, 1917. He said he had recovered fully from both. Previous to joining the army his nerve had been good. He was married. He took an active part in all forms of sport. His mother was insane.

He was in camp when the enemy flew over dropping bombs, and while he was running to shelter a bomb fell near him and he was knocked over. He felt very weak and was carried to the medical officer. He was now suffering from a very bad occipital headache, he did not sleep well at night, he got a little rest in the daytime. If he did go to sleep at night, he was apt to wake up walking around in his sleep. He had diarrhea and had been so affected each time that he had shell shock; he was dizzy and weak, urinated very frequently, perspired excessively, and at times his vision became blurred. The pulse was 128, the heart dilated, the hands were tremulous, the strength was less than development, the reflexes were normal, the pupils normal, the eyes prominent, the skin very rough, the hair coarse, he stammered, the fingers and thumbs were very long, and there were fine tremors of the fingers, tongue and facial muscles.

It is sometimes the case that a man attempts to run away from what appears to be a dangerous position and goes into one that is more dangerous, as was the case in the preceding history. I know of one officer who had suffered from shell shock previously but had recovered and was on duty in a hospital, who ran out into the country one night to escape the aeroplanes that were immediately over his hospital. While passing through a village 5 kilometers away the planes dropped bombs near him. He developed a severe case of shell shock and was carried to the base, and here again the enemy bombed the town. He was then taken to the United Kingdom and arrived there a few days before bombs were dropped.

A soldier often recovers from shell shock, returns to duty and renders valuable service to his country. The following is an example of such a case:

CASE 6 (No. 7490).—A sergeant and pilot in the Royal Flying Corps, aged 20, whose civil occupation had been that of office boy, and who had been in the army two years, and in France, seventeen months, had suffered from shell shock twelve months before. It was so severe that he was sent to England for two months. He had fully recovered when he returned to France. He was never nervous before he entered the army. The family history was negative. He was very fond of sports. He had been a pilot since February, 1917. During this time he had been officially given the credit for going to the ground nine enemy aeroplanes.

In July, 1917, he was over the line doing patrol duty when his squadron was attacked by the enemy, he was cut off from his comrades, three planes attacked him, his observer was killed, and he came down 12,000 feet with his machine not under control. A few hundred feet above the ground he managed to gain control of his machine and effected a landing near the British line.

He was now very weak, was unable to walk, could not even stand alone, the muscles of his face, neck, arms and thighs were constantly twitching, he had a very severe headache, his hands trembled, he felt very dizzy, and he was constantly living through the fight in his memory. The pulse was 70, the blood pressure: systolic, 110; diastolic, 70. The heart was normal, the deep reflexes exaggerated, the pupils dilated and reaction sluggish, the strength less than development, and he was apprehensive.

This has proved to be a very stubborn case. The patient has been in the hospital over nine weeks and he is improving very slowly. As I review the case histories that I have taken, I feel quite sure that those patients who have suffered from shell shock previously do not recover as a rule as rapidly as those that have no previous attack.

It has been said that shell shock does not occur among the wounded. This, I am sure, is a mistake, I believe that a severe case is comparatively rare among the wounded, although I have often seen

wounded men in the hospitals suffering with mild forms of it.

There is yet another form of this condition which I myself have not seen, but which has been described by medical officers who are with battalions at the front. They say that death may be caused instantaneously by a shell bursting near a man, although most careful examination fails to show any cause for his death.

SYMPTOMS

I wish to emphasize the fact that shell shock is not a new disease to be added to the long list already puzzling the psychiatrists and neurologists. There is not a single new symptom to distinguish this malady, and it is certainly true that a similar complex of symptoms is frequently found in civil life. The disorder is peculiar in the acuteness of the symptoms and in the nature of the conditions giving rise to them. The war has enabled us to see examples of almost all varieties of hysterical manifestations, such as a special hospital in times of peace would only be able to exhibit in the course of years.

I have analyzed a hundred case histories in an attempt to discover the relative frequency of the symptoms, with the results given in the accompanying table.

RELATIVE FREQUENCY OF SYMPTOMS

Symptom	Percentage	Symptom	Percentage
Headache	85	Tinnitus	14
Tremors	70	Apprehension	14
Insomnia	62	Memory defect	14
Vertigo	55	Pupils dilated	12
Debility	44	Depression	12
Period of unconsciousness...	41	Mutism	11
Cyanosis	35	Precordial pain	11
Hyperhidrosis	32	Stammering	10
Backache	30	Dyspnea	9
Heart dilated	29	Deafness	9
Reflexes exaggerated.....	28	Diarrhea	8
Tachycardia	26	Constipation	10
Appetite poor	24	Photophobia	6
Frequent urination	23	Tic	4
Eyes prominent	20	Spasticity	3
Nausea	16	Confusion	4

Besides the more common symptoms, there may be found areas of anesthesia or hyperesthesia, hysterical contractures, amblyopia, astasia abasia, hallucinations of sight or hearing, twilight states, hysterical convulsions, autopsychic amnesia, palpitation, and a tendency toward day dreaming.

These patients very often exhibit a marked impulse to flight; while they are being examined they may attempt to run away. If guns are fired in the vicinity of the hospital, or if the enemy's aeroplanes are in the neighborhood, many of them will become greatly excited. Following this excitement their symptoms are worse. After and during a bombardment, the sounds of which are heard in the distance, and although they realize that they are safe, nearly all of them complain that their headaches are much worse. They are easily startled and will jump at the least unexpected sound.

These individuals are very emotional; they might be described as being childish. They wish to be sympathized with, and very often if they are given the least opportunity, they will become lacrimose. They themselves are often at a loss to understand their condition and fear that they are going insane, and it is in such cases that the intelligent explanation of the medical officer is of great assistance.

Headache is probably the most constant symptom. It may be located over the frontal, temporal or occipital regions, but the last is the most constant and the

most troublesome. A man often complains that his head is worse when he is in a recumbent position, and it is also usually worse at night than during the day.

Insomnia is quite common. The patient may be able to sleep during the day but is unable to do so at night, although he will usually fall asleep near dawn. A sleepless night tends to make the other symptoms worse.

The cyanosis of the hands is quite noticeable. Frequently in a severe case a man's hands and forearms will be a dark purplish blue, the color resembling that seen in Raynaud's disease. This cyanosis may develop several days after the patient's admission to the hospital, and is worse in the morning than later in the day.

About one fourth of the patients suffer with tachycardia. When they are admitted to the hospital their pulse rate may or may not be rapid; but under favorable conditions, such as exercise or excitement, it will become so. Some patients are admitted who have a very slow pulse; as they improve, their pulse may become normal, or frequently after they have rested a few hours a tachycardia will develop in place of the bradycardia.

BLOOD PRESSURE

With a view of ascertaining the blood pressure, 200 patients were examined; in all, over 800 observations were recorded on these patients. Some of these patients were only passing through the hospital, so that it was possible to take the blood pressure once, while others remained six weeks and the pressure of some of these was taken on ten different occasions. Usually the observations were made under as nearly the same conditions as possible, three or four days elapsing between examinations. A record was kept of the pulse rate at the time of each examination. In deciding if the pressure was raised, the age and physical condition of the patient were considered. A pulse of a hundred or more was usually considered rapid, and a systolic pressure of 140 or greater was considered raised, although in each case an effort was made to ascertain if the physical status of the individual justified his blood pressure.

The patients were classified according to the severity of their symptoms on admission as, A, exceptionally severe; B, severe; C, moderately severe, and D, mild.

Out of sixteen exceptionally severe cases, in twelve there was a high blood pressure and a rapid pulse, in three a normal pressure and pulse, and in one a blood pressure of 110 systolic and 68 diastolic, and a pulse rate of 52. The average pressure and pulse rate for the group was: systolic, 158; diastolic, 99, pulse pressure, 59, and pulse rate, 127.

In a group of twenty-nine severe cases, in twenty-two there was a blood pressure above normal, and in nineteen of these a rapid pulse. The average for the group was: systolic, 144; diastolic, 85; pulse pressure, 59, and pulse rate, 90.

There were sixty-six cases classified as moderately severe; in forty-eight of these the blood pressure was raised, and in twenty-eight there was a rapid pulse. The average for this group was: systolic, 135; diastolic, 88; pulse pressure, 47, and pulse rate, 90.

There were ninety-nine mild cases; in twenty-nine of these the blood pressure was raised, and in fourteen there was a rapid pulse. The average for the group was: systolic, 125; diastolic, 81; pulse pressure, 49, and pulse rate, 85.

It was difficult to draw any reliable conclusions from these observations, other than to say that the

blood pressure and pulse rate in the severe cases were usually higher than in the mild cases; that there was a noticeable vasomotor instability in most of the cases, that as the condition of the patient improved, the blood pressure and pulse rate usually fell, and that the blood pressure was more persistently high than was the pulse rapid. It was noticed that the milder the case the quicker the blood pressure fell, and that convalescence took longest in those cases in which the blood pressure was persistently high. However, there were severe cases in which blood pressures and pulse rates were never above normal.

The effect of fright on the symptoms was very noticeable. The following is an example:

CASE 7 (No. 68974).—A patient, aged 26, on admission, Aug 12, 1917, could not walk or speak. The blood pressure was: systolic, 160; diastolic, 100; the pulse rate, 140. August 13, his condition was improved; the blood pressure was: systolic, 156; diastolic, 100; the pulse, 140. August 14, he had recovered the use of his voice and of his legs; the blood pressure was: systolic, 150; diastolic, 100; the pulse rate, 120.

August 21, six hours after an air raid, he was too weak to walk, and he stammered when he talked; the systolic pressure was 180, diastolic, 100, and pulse rate, 170. The blood pressure and pulse remained persistently high after this, and he was finally transferred to the base.

SYPHILIS

At one time it seemed desirable to know if syphilis played any part in producing the war neuroses. Therefore a Wassermann test was made in fifty consecutive cases of shell shock seen at the hospital. Seven cases out of fifty, or 14 per cent., gave a positive reaction. The spinal fluid was positive in three of these cases, although there were no symptoms suggestive of cerebrospinal syphilis.

This percentage of positive serums and spinal fluids is probably higher than is usually found among civilians, but the findings would not justify the conclusion that syphilis plays a part in causing shell shock.

TREATMENT

The treatment outlined here is simply a description of the methods of handling these patients in the two hospitals in which I was stationed. However, I believe that they are the methods in general use.

The patients are admitted, bathed and sent to the receiving ward. They are then examined and assigned to other wards; this has been always done within eighteen hours after admission to the hospital. At the time of the examination the following form is filled out:

Date. Name. Age. Civil occupation. Occupation in Army. Service in Army. Service in France. Adaptability to service. Family history (briefly).

Personal History: Education. Illnesses. Married or single. Active participation in sports. (Attempt to form some idea of the individual's personality.)

Previous Strain: Decoration for bravery, participation in raids, wounds, effect of shell fire, comrades recently killed, trouble at home.

Shell Shock: A complete story of what happened to him, where he was, what he was doing, and when it was. This is very important, for these facts are sent to his commanding officer for verification.

Symptoms: Headache, backache, weakness. Dizziness, dyspnea; nervous tremors, spasmodic movements, etc.

Physical Examination: This must be carefully made, for it is often necessary for the medical officer to state definitely whether or not the man is malingering.

Summary as to the severity of the case.

Treatment.

The patients are assigned to wards according to the severity of their condition. Cases of the same kind are grouped together, with the exception of the stammerers.

Military discipline is never relaxed for an instant in a shell shock hospital. The patients are not allowed to leave the grounds without a pass. These men are seen each day by a medical officer who makes a note in their record of their condition, prescribes the necessary treatment, and disposes of them as their condition justifies it.

Drugs are of very little use in treating this condition. Veronal (veronal) is sometimes given for insomnia. Acetylsalicylic acid and also phenacetin are given for the headache. Bromids may quiet the patient for a while, but from my experience I do not believe that they are of much value. Digitalis appears to have very little effect on the pulse rate.

In the acute cases, several hours in a hot bath seems to be more beneficial than almost anything else. A man who says he has not slept for several nights will relax and go to sleep while in the bath, and probably sleep soundly for eighteen hours afterward, usually awakening much improved. The hot bath is especially good in the cases of mild hallucination and for those markedly apprehensive patients who lie curled up in a ball under the cover, as well as those whose thigh, arm and back muscles are spastic.

The patients should be reassured, the nature of their condition should be explained to them, and the medical officer should do everything possible to secure and keep their confidence, for many of these men remind one of children who must be taught to walk, to talk, and to adjust themselves to their environment.

Practically the same methods are employed as in civil practice in teaching the stammerers to talk. They are taught to breathe properly, to pronounce consonants and vowels, and finally to repeat simple sentences.

I have not seen a shell shock mute who failed to recover his speech; but the longer he has been mute, the more difficult it is to get him to talk. It is important that, once one attempts to make a man talk, one should not desist from the effort until one succeeds; otherwise the patient will become confirmed in his opinion that he cannot talk. The quickest and most effective method, though it may appear brutal, is to stimulate the patient with a faradic current, rapidly increasing its intensity, having explained to the patient beforehand that there is nothing the matter with his voice, that he can talk, and that the strength of the current is going to be increased until he does talk. As the current becomes stronger the man will begin to stir and will either immediately recover his voice or will make some sound, a long "Oh!" being the most frequent. In the latter case he is told that if he can make any sound at all he can talk; and the stimulation is continued until he does talk. This method is very effective and will work when all others fail, but it is subject to the criticism of being brutal.

Another very successful method is to instruct the patient to cough; if he cannot cough, his pharynx is irritated and he is made to cough. Then he is instructed to cough out an "ah," then "a," then "oh." He can usually then be made to pronounce these sounds without coughing. Then with a little encouragement he can repeat the alphabet, then simple words like "mama" and "papa," and so on until he can talk; but this is often a very long and difficult process to carry out. Hypnotism has been advocated, and so has the

anesthetizing of the patient to the stage of excitement. Both are fairly successful.

I have seen hypnotism used in treating the symptoms of these patients with more or less success, but I do not believe that the claims of the advocates of hypnotism are justified.

A patient who says that he cannot walk is made to get out of bed and take the hands of the physician, who teaches him to walk in much the same way that a baby is taught.

Those patients who are not recovering from their hysterical symptoms are frequently stimulated with the faradic current, for it is undoubtedly true that many of these patients cannot see the need of hurrying their recovery, when they realize that as soon as they are well they will be returned to the front.

As soon as the patient is strong enough he is made to take physical drill, and as his condition improves, the exercises are made more difficult. They are also sent on long route marches daily. Besides this exercise they are encouraged to play cricket, golf, tennis, football, to swim and to take part in the track sports. Other amusements are furnished in the form of concerts, cinema shows and reading rooms.

As the patient's condition begins to improve, a long, confidential talk with the medical officer will often do much to hasten recovery.

DISPOSITION OF PATIENTS

If it is decided that a man will need careful treatment for several months, he is usually sent to England; otherwise he remains in France.

As the patient's condition improves and he becomes strong enough to leave the hospital, he is sent to a special convalescent camp, where he remains for several weeks before returning to his unit.

In some of the mild cases the men are practically well in a few days, and are returned to their units forthwith.

A man who has had several recurrences is usually unfit for the line, and he is often given work to do at the base.

It has been found beneficial to send patients out on farms to work rather than to convalescent camps. A man is in better condition to return to his unit after a month on a farm than after the same length of time spent in a convalescent depot.

Review of Public Health Work.—The year book of the Indiana State Health Department for 1917 contains a review by the secretary, Dr. J. N. Hurty, of public health work since the passage of the first health law in 1881. Efforts to establish a state board of health and laws under which it should operate were begun in 1855 in the Indiana State Medical Association, and it is to the organization that Dr. Hurty gives credit for all subsequent legislation. The efforts in 1855 failed, and not until 1875 was a committee appointed on state board of health. This committee drafted a bill which was introduced but failed in the legislature of 1875, and it was only in 1881 that the first law was passed and the board created. The latter made its first report in 1882. The law was amended in 1891 and again in 1909, and the state now has a board and a set of health laws and a health organization that is in the front rank among all the states. Among the important pieces of health legislation now on the statute books are a quarantine law, passed in 1903; a pure food and drug law, 1907, amended in 1911; a law for the prevention of infant blindness, 1911; laws enacted in 1913 relating to vital statistics, sanitary schoolhouses, public water supply, clean milk cans, public playgrounds, establishment of sanitary districts, housing plans, false advertisement law, schoolhouse recreation centers, and child neglect, and amended in 1915; also, among many others, an antituberculosis law passed in 1915.

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SATURDAY, MAY 11, 1918

VOLUNTARY REGULATION OF THE HEART BEAT

The frequency of the heart beat, which expresses itself in the pulse rate, is one of the various vital phenomena over which conscious control is not ordinarily exercised. There may be marked differences in the pulse rate found in different individuals without their having any pathologic significance attached to them, although the newer studies in nutrition, notably those of F. G. Benedict at the Boston Nutrition Laboratory of the Carnegie Institution of Washington, have tended to show a surprising parallelism between pulse rate and the intensity of metabolism. It is well known that the heart beat is quickened by warmth and diminished by cold applied to the surface of the skin of the vagus. The act of swallowing causes a reflex increase in heart rate by inhibition of the tonic action.

The function of the nervous system in the control of the frequency of the heart beat is familiar to every student of medicine. He has seen the inhibitory effect of vagus stimulation, the abolition of the tonic influence of the vagus by injury to the nerve or destruction of its center, and the augmentor effect of stimulation of the accelerators of the heart. Such demonstrations are experimentally produced effects. There are, however, published records of thirteen persons who possessed the power to accelerate their heart beat at will, the earliest authentic account dating back to 1872.¹ The newest case, in the person of a skilled observer,² has been carefully studied with a view to ascertaining the nature of the mechanism of acceleration. The uncertainty regarding this has wavered between the possibility of a removal of vagal influences, or of a primary action through the accelerator nerves, as the explanation of the voluntary acceleration. In the instance of Favill it begins almost immediately after the subject has willed it to begin, and as soon as one

second after the command is given by the observer. The acceleration does not reach its maximum at once, several beats occurring before the high mark is attained. The degree of acceleration is greater, the stronger the impulse and the fresher the condition of the subject. The greatest acceleration recalled was an instance in which the pulse rate rose from 104 to 200, this paroxysm lasting for thirty seconds. According to the subject, it seems impossible to describe the sensations attending the production of the acceleration any more than one can describe the conscious effort in voluntary movement of the arm. With the onset of the tachycardia there is a feeling of "fulness" or tingling over the whole body. A mild exhilaration follows in a few seconds, and moderate fatigue results if the paroxysm is induced several times successively, or for any period longer than a very few seconds. The acceleration is dependent on a distinct effort of the will, and the strain is as tiring as that produced by holding up a heavy weight; it is not a succession of efforts, but one that is continuous. Distinct relief is felt with the cessation of the acceleration.

The physiologic investigation of this subject showed that with the onset of the acceleration there is no apparent change in the situation of the "pacemaker"—that collection of peculiar muscular tissue in intimate relation to the nerves entering the heart, and from which the normal beat is now believed to arise. The changes in the electrocardiographic deflections during the acceleration are those that are known to occur when the sympathetic nerves are stimulated experimentally. The ability to accelerate the rate of the heart beats persists after the suppression of vagus action by atropin. The evidence available suggests that the voluntary increase of the heart rate is the result, in great part at least, of the action of the accelerator nerve mechanism, and that it is not due solely or chiefly to the withdrawal of vagal action.

MEDICAL PRACTICES IN SOME PHILIPPINE PROVINCES

The history of medicine shows that at practically all stages of civilization, and among the most diverse types of races, man gradually learned by experience to appreciate the effects of certain agencies for good or harm in relation to his own person. In his story of the growth of medicine from its earliest period, Buck¹ has portrayed how the powers of observation and the reasoning faculty presumably have been applied to the avoidance of bodily dangers and the relief from physical suffering. Buck suggests how man "gradually learned that cold, under certain circumstances, is competent to produce pain in the chest, shortness of breath, active secretion of mucus, etc., and his instinct led him, when he became affected in this manner, to

1. Tuke, D. H.: *Illustrations of the Influence of the Mind upon the Body in Health and Disease*, Designed to Elucidate the Action of the Imagination, London, 1872. Tarchanoff, J. R.: *Arch. f. d. ges. Physiol.*, 1885, **25**, 109. Pease, E. A.: *Boston Med. and Surg. Jour.*, 1889, **120**, 525. Van de Velde, T. H.: *Arch. f. d. ges. Physiol.*, 1897, **66**, 232. Koehler, M.: *Ibid.*, 1914, **158**, 579.

2. Favill, J., and White, P. D.: *Voluntary Acceleration of the Rate of the Heart Beat*, Heart, 1917, **6**, 175.

1. Buck, A. H.: *The Growth of Medicine from the Earliest Times to About 1800*, New Haven, 1917.

grave the local application of heat as a means of affording relief from these distressing symptoms. Again, when he used certain plants as food he could scarcely fail to note the facts that some of them produced a refreshing or cooling effect, that others produced a sensation of warmth, and finally that others killed, by reason of their poisonous properties, did actual harm. Sooner or later, such phenomena as nausea, vomiting and diarrhea would also be attributed by him to their true causes. In due course of time his friends and neighbors, having made similar observations and having tried various remedial procedures for the relief of their bodily ills, would come together and compare with him their several experiences; and so eventually the fact would be brought out that the particular method adopted by one of their number for the relief of certain symptoms had proved more effective than any of the others. Thus gradually this isolated community or tribe of men must have learned how to treat, more or less successfully, the simpler diseases to which they were liable."

To us living in what we delight to designate an age of enlightened progress, the story of "trial and error" is a primitive ring. We scarcely realize, until we are brought face to face with the actual experiences, that even today much if not most of the oriental medical theory or practice still partakes of the pristine character. Whether it be in India or China, folklore and superstition are mingled with tested procedures in the healing arts. Exhortation of spirits, incantations, acupuncture and cauterization find a place only in a system in which modern pathology is unknown. Yet in our own provinces in the Far East we may still find elaborate instances of a sort of medical practice that can only be explained in primitiveness with the procedures of centuries ago.

One need only read the first of a series of reports on the local medical practices in the Department of Mindanao and Sulu, Philippine Islands, to verify this statement.² The customs in Cotabato, the largest province in area in the islands, are said to be characteristic of the practice of the Mohammedan (Moro) population. Disease is attributed to a variety of causes, such as poison, hunger, wind, sun, unfulfilled promises or oaths, and animalcules; but the most frequently alleged causes are malignant spirits. To avert the influence of the unkind or harmful incantations of another, the Moros place under the mattress of their beds a goat skin with various colors, and offer prayer before going to bed as well as after leaving. The mode of establishing the prognosis in disease seems decidedly simpler than the elaborate information of our own judgment of the probable outcome of diseases. It is found by opening the Koran and determining the hour, day, month and tide in which the disease began. A disease that begins with high

tide is liable to be serious, whereas one that begins with low tide is more likely to be mild. Thus there is something lunar, if not lunatic, in the prognosis.

The treatment of diseases among these people, according to Gomez, is a mixture of religion, superstition, and medicine concocted by the medicine man from plant forms. In addition to this his therapeutics include prayers and cabalistic signs. Amulets are freely used. The prescriptions for curative potions are too elaborate to be repeated here. The directions for the management of malaria will suffice as an illustration. Thirty leaves of yerba buena having the letter *alip* written on them are used to rub the body. Furthermore, bamboo shoots are to be cooked in water, honey is to be added, and the mixture drunk. Gomez states that no surgery is performed by the tribes he has studied. They have no idea of infection, and seem to regard pus as a natural secretion of a wound. An abscess is treated by means of hot water or fomentations of some sort; subsequently the point is opened and tobacco or fine shavings of coconut stalk are applied to drain the pus. The Maguindanaos understand, however, how to pull and medicate carious teeth. To the latter they apply ginger and salt heated together and placed while hot in the cavity. They can even put on crowns of gold and silver which silver-smiths manufacture. The transmission of communicable diseases is favored by the ignorance of the people, their unhygienic surroundings, poor nutrition, personal habits and frequency of travel. Religious sanctions add further difficulties. Here, indeed, are problems that tax the ingenuity and patience of the modern sanitarian to the utmost.

INTESTINAL INTOXICATIONS IN INFANCY

If some semblance of an orderly and logical conception of the possible nature of the so-called intestinal intoxication, or diarrhea with toxic symptoms, in infants is beginning to arise out of the chaos of past uncertainties, we owe it largely to the more exact methods of recent clinical study. Phenomena suggesting toxicity and occurring in association with profound nutritional disorder in infants have long been recognized; but mere empiric observations, and routine measurements of pulse and temperature, casual inspection of stools, and manipulations of diet have not promoted any noteworthy advance in the understanding of a clinical entity. It is due to the persistent and often little appreciated efforts of a small group of investigators in the domain of pediatrics, notably in American laboratories, where successful methods have been so skilfully developed in the past few years, that substantial progress is being recorded.

If this statement needs to be justified, let us consider a few of the recent contributions with reference to their pertinence. In one of the latest experimental

Gomez, L.: Mohammedan Medical Practices in Cotabato Province, Philippine Jour. Sc., (B), 1917, 12, 261.

studies of intestinal intoxication, Schloss¹ has written:

There is a close analogy between intestinal intoxication and uremia. Indeed, all of the evidence points directly to the fact that their nature is essentially the same. In uremia the kidney fails to fulfil its proper function, owing to an anatomic lesion. In intestinal intoxication the same result is brought about through loss of fluid. Waste products normally excreted by the kidneys are retained because there is insufficient water for diuresis.

Similar to uremia, based on symptomatology, there are two groups of cases of intestinal intoxication. In one group convulsions, involuntary muscular movements, muscular twitching and coma are present. The onset is usually acute and the infant is not greatly emaciated. Diarrhea may be slight and is absent in some cases. Food or water is usually refused and is vomited if taken.

In the second group the onset is less acute, but occurs following vomiting and diarrhea of some days' duration. Convulsions rarely occur and the infant is somnolent or semistuporous instead of comatose. Wasting is very marked and the patient presents the shrunken appearance which is so characteristic of great loss of fluid.

The negative water balance of the body and the consequent oliguria particularly found in children, in whom the losses of water through vomiting and diarrhea may be unexpectedly large, have received all too little attention because they were not accurately ascertained and thereupon adequately appreciated. Part of the new evidence consists in the now well established demonstration of a marked increase in the nonprotein nitrogen and urea of the blood in infants suffering from typical intestinal intoxication. At first thought one would naturally ascribe this to an impairment of renal function as the result of kidney lesions. Schloss is not inclined to accept such an explanation. In his judgment the character of the urine examined in such cases does not justify the assumption of severe anatomic lesions. That these are no longer to be regarded as the sole criteria of kidney malfunction in infancy is further supported by Howland and Marriott's² study of acidosis occurring with diarrhea. They, too, note that in severe diarrhea the urinary secretion may be markedly diminished even to the point of complete anuria, the kidney becoming functionally more or less inactive, even though no organic changes may be present.

Aside from a definite kidney lesion, the most probable cause of the retention phenomena appears, as Schloss has argued, to lie in a depleted water supply of the body. In corroboration of this it is known that water is a most effective diuretic; and latterly it has been found that the proper administration of water is an efficacious method of combating some of the severe nutritional disorders of infants. In attempting to explain the deficient secretion of urine on a new basis, Schloss argues thus:

The oliguria may be due to the fact that the dehydrated tissues hold as much water as possible so that none is avail-

able for the formation of urine. Other factors, dependent mainly on the loss of water, which may play a rôle are: (1) an increase in the concentration of blood colloids to such degree that their osmotic pressure is greater than the arterial pressure in the kidney; (2) a diminution in the total blood volume leading to decreased blood flow through the kidney.

What, then, is the significance of the acidosis that has been associated so clearly with such diarrheal disorders in infancy? Howland and Marriott² assert that it is not due to the presence of acetone bodies; nor has it been shown to be due to the loss of a base, that is, alkali depletion in the strict sense. Schloss agrees with them in the conclusion that the acidosis which is exhibited in intestinal intoxication is due to defective secretion, probably of acid phosphate, by the kidneys.

The improvement that occurs after the administration of sodium bicarbonate may, then, have a twofold explanation. In part it may be due to a direct correction of the acidosis by alkali; in part, furthermore, the associated intake of water may contribute to betterment. In any event, it seems quite rational to replace water lost in the consequence of the symptoms already referred to. The vomiting and diarrhea often prevent its administration by the conventional methods through either mouth or rectum. At Howland's suggestion, Blackfan and Maxcy³ of the Johns Hopkins Hospital have tested the possibilities of intraperitoneal injections of saline solutions. They recognize the technical difficulties of any intravenous procedure; and the subcutaneous method is rejected as slow and unreliable in respect to the extent of actual absorption. The intraperitoneal procedure requires great care and strict aseptic precautions; but in the hands of skilled manipulators the results are reported to be highly satisfactory.

THE ORIGIN OF PROGRESSIVE MUSCULAR DYSTROPHY

Progressive muscular dystrophy must at present be classed among the relatively uncommon disorders of man. Despite a group of frequently described clinical symptoms, including dryness and abnormal pigmentation of the skin, brittleness of the hair, hypertrichosis, trophic changes in the nails, unusual distribution of the subcutaneous fat, and both hypertrophy and underdevelopment of the genitalia, in addition to the muscular phenomena, the cause of these manifestations has not yet been unraveled. At one time it was customary to assign the etiology of muscular dystrophy to a defect in the nervous mechanism through the innervation of which the contractile tissue is set and maintained in activity. Neither a purely nervous origin nor a causal factor limited to the muscle structure itself can be defended as affording a complete explanation of the disease. The accompaniments of

1. Schloss, O. M.: Intestinal Intoxication in Infants: The Importance of Impaired Renal Function, *Am. Jour. Dis. Child.*, March, 1918, p. 165.

2. Howland, John, and Marriott, W. M.: Acidosis Occurring with Diarrhea, *Am. Jour. Dis. Child.*, May, 1916, p. 309.

3. Blackfan, K. D., and Maxcy, K. F.: The Intraperitoneal Injection of Saline Solution, *Am. Jour. Dis. Child.*, January, 1918, p. 19.

that might be interpreted as defects of either the muscular or the nervous apparatus of the body are too varied and significant to permit so simple a statement of the pathology of muscular dystrophy.

Quite independently, two groups of American investigators¹ have recently expressed the belief that muscular dystrophy may originate as a result of abnormal functioning on the part of endocrine organs. To substantiate this hypothesis, certain accurately ascertained facts have been marshaled. In the cases observed at the Montefiore Home and Hospital, New York, Janney, Goodhart and Isaacson have reported the following disturbances: marked decrease in the excreted creatinin in the urine, abnormal presence of creatin in the urine, low values of creatinin in the blood, normal amount of creatin in the blood, hypoglycemia and delayed glucose utilization. McCrudden of the Robert B. Brigham Hospital, Boston, has emphasized these features: low blood sugar, and, following suitable treatment, a rise in blood sugar accompanied by an increase in strength; creatinuria; low cholesterol content of the blood—three independent testimonies, as he says, of disturbed carbohydrate metabolism.²

It is asserted, with not a little justice, that practically all the clinical symptoms and metabolic signs already referred to have been observed in well known hypofunctional conditions of the ductless glands. The lowered content of sugar in the blood has, indeed, repeatedly been associated with such conditions, for example, in the hypoglycemia of dyspituitarism.³ One might reasonably ask whether the hypoglycemia is not a consequence of the disuse of muscles and a consequent "lessened requirement for carbohydrate." From studies of McCrudden and Sargent² the answer seems to be in the negative; for in the somewhat similar condition of progressive muscular atrophy the blood sugar was found to be normal. The New York investigators are further inclined to charge the excretion of creatin, always an unusual metabolic result in the adult, to an insufficient supply of carbohydrate in the muscles. As we have occasionally pointed out, however, the interrelations of creatin-creatinin metabolism and carbohydrate transformations in the body are as yet by no means clear.⁴

The hypothesis as portrayed by McCrudden is suggestive in many ways. The facts, he concludes, indicate that the myasthenia of progressive muscular

dystrophy is due to hypoglycemia; that the hypoglycemia and fatty infiltration are due to impaired glycogenesis, the carbohydrate of the food being probably changed largely to fat instead of glycogen; and that this impaired glycogenesis is the result of suprarrenal or other endocrine disease. Realizing the complexity of the manifestations, and appealing to analogies in other diseases that involve growth, adiposity or defective bone formation, Janney, Goodhart and Isaacson go even further. We must face the possibility, they declare, of muscular dystrophy and perhaps other so-called primary myopathies being in reality merely syndromes caused by deficient function, not of one but of various endocrine organs separately or coincidentally affected.

Current Comment

THE NEED OF MEDICAL OFFICERS FOR THE ARMY AND NAVY

As one reads the reports of the war conference of the secretaries of the state medical societies held in Chicago recently and published in *THE JOURNAL* beginning with last week's issue, it becomes quite apparent that one reason why physicians are not volunteering for the Medical Reserve Corps is a lack of information. This includes a lack of information relative not only to the actual needs of the government services, but also on matters relating to the individual himself. This is borne out by the hundreds of letters that are being received at *THE JOURNAL* office. The writers ask for information regarding the needs of the service, the pay of officers, the cost of equipment, the duties, the arrangements for the care of dependents, the disposition of leases, insurance—in fact, on almost every subject. A great many have even detailed all the personal facts concerning themselves and have asked *THE JOURNAL* to make the decision as to whether they should enter the service. *THE JOURNAL* is not able to make the decision, but it has been trying, both by letters and in the columns of *THE JOURNAL*, to supply the information asked for. As to the needs: The fact is that the Surgeon-General of the Army is calling for 5,000 more volunteers for the Medical Reserve Corps and that the Surgeon-General of the Navy is asking for 100 volunteers a month for that service, or until he has another 1,000 medical reserve officers. The fact that officers of the Medical Reserve Corps in some communities have not yet been ordered to active duty has caused other physicians not yet in the service to believe that there is no need for more medical officers. This impression is erroneous. While it is true that the present and immediate needs are supplied, there is need for an adequate reserve and that need is urgent. It is for this reserve that the Surgeon-General is now appealing to the profession. Let every reader ask himself the question: Is it my duty to volunteer? And then let him answer it honestly.

1. Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, *Arch. Int. Med.*, February, 1918, p. 188. McCrudden, F. H.: The Nature of the Pathologic Process in Progressive Muscular Dystrophy, *ibid.*, p. 256.

2. McCrudden, F. H., and Sargent, C. S.: Hypoglycemia and Progressive Muscular Dystrophy, *Arch. Int. Med.*, April, 1916, p. 465; Chemical Changes in the Blood and Urine in Progressive Muscular Dystrophy, *Progressive Muscular Atrophy and Myasthenia Gravis*, *ibid.*, February, 1918, p. 252.

3. Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, 1910, p. 130.

4. What Conditions Determine the Excretion of Creatin? editorial, *THE JOURNAL* A. M. A., March 10, 1917, p. 784; Creatin and Creatinin in Blood, Aug. 25, 1917, p. 648.

A MILITARY MEDICAL SURVEY

The first step in the campaign to secure additional Medical Reserve Officers is to ascertain the conditions in the various parts of the country, i. e., to know the proportion of physicians to the population, the number of physicians in a community who are available so far as age is concerned, the number who are already in the service, and the needs of the civilian population. When these and similar facts are known, there will be dependable information available for systematic and logical procedure in securing the number of physicians needed to supply the demand. Such a survey is in course of preparation by the Association; it will give the number of physicians in every county and large city in each state, the number of physicians under 55 and under 45 years of age, and the number and names of those who are now commissioned. It was hoped that it would be ready for publication before this time. However, a survey such as is in preparation is a difficult and tedious task; it requires not only the compilation of a vast amount of data, but also much checking and verification. This survey will appear in *THE JOURNAL* for May 25 or June 1. It will show what each county has done, and will undoubtedly reveal that many communities have supplied more than their quota, while many have not done their share. Meanwhile, it is obviously unnecessary for any one who desires to volunteer for the Medical Reserve Corps to wait for the publication of this survey. Application blanks, lists of examining boards and information will be sent on request.

INFORMATION REGARDING MILITARY MEDICAL SERVICE

Many physicians are hesitating about applying for a commission in the Medical Reserve Corps; they are anxious regarding the care of their families. Even the pay of a lieutenant in the Medical Reserve Corps, \$2,000 per year, with commutation, if he has dependents, of from \$400 to \$600 per year, while not sufficient to support some families in the style to which they have become accustomed, at the same time is far from a starvation income. It should be distinctly attractive to the physician without dependents. As *THE JOURNAL* stated two weeks ago, the physician who volunteers for the Medical Reserve Corps today is volunteering under different conditions than existed a year ago when our country entered the war. Recent constructive legislation has removed many of the obstacles that confronted the physician at that time. Of course, while commenting on the material aspects of the matter, we realize that patriotism and a desire to help win this war will certainly outweigh what sacrifices may have to be made in this regard. Application blanks, a list of examining boards and information will be sent on request.

Recognizing the Rights of Children.—The higher a nation stands on the stage of culture and civilization, the stronger is its race consciousness; the more clear its recognition of its duty to future generations, and the more pronounced and emphatic its assertion of the rights of children as members of society.—*Public Health* (Mich.).

Association News**WAR CONFERENCE OF SECRETARIES OF THE
CONSTITUENT STATE ASSOCIATIONS
OF THE AMERICAN MEDICAL
ASSOCIATION**

*Held at the Headquarters of the American Medical Association,
April 30, 1918*

(Continued from page 1306)

Below are continued the reports of the state secretaries at the war conference held in Chicago, April 30. The reports of the states in alphabetical order from Alabama to Missouri appeared last week:

MISSOURI

Dr. E. J. Goodwin, Missouri, said: Missouri makes it unanimous so far as inability to accomplish anything harmoniously or coordinately, so far as definiteness of information is concerned. In spite of such difficulties, however, we have obtained our quota of applicants. I do not think they have all been commissioned. In St. Louis some work is being done, but not by the state organization. There has been no work conducted by the state organization in any part of the state. The state secretary has endeavored to include the state association in his work, but has never been able to get out the work through the state association, because the information given out from Washington is often inaccurate and has to be corrected; so we ceased giving it out. In Jackson County there has recently been a successful campaign conducted under Dr. McAlester, and that was done through the cooperation of the Jackson County Medical Society. It is well for us to know how it has been done in all the states. I should like to hear from all the states what the past has been, and then we can judge as to what the future work may be and how we can go about it.

When the announcement came from the Surgeon-General that he desired and was anxiously hoping to have the cooperation and assistance of the American Medical Association and the state and county societies, a great sigh of relief went up from more than one man in the state of Missouri, because we believe that anything that comes from the American Medical Association has been well digested and has the advantage of knowledge of conditions in every part of the country; and a knowledge of the individual characteristics of pretty nearly every doctor in the country, and what is done will be done with justice to all. And this is what we want to formulate, so that in future the things to be done by the medical profession will be done with accuracy and justice to all of us.

The chairman introduced Dr. A. W. McAlester of Kansas City, formerly secretary of the Missouri State Medical Association, who said: We have been fortunate in having Dr. Jabez N. Jackson a member of our advisory board. Dr. Binney was the chairman of our local council of physicians, but was called into service at a base hospital. I was connected with the aviation service and he asked me to take over the work. He told us that he wanted everything the government had asked of physicians. We prepared a questionnaire which is practically the same as the blank the government sends out to applicants for the Medical Reserve Corps. We added to that inquiries about the number of dependents, the amount and conditions of personal indebtedness, whether any of his dependents had an income, whether there was income from other than professional sources, etc. We looked for authority for this, and found that the act of Aug. 20, 1916, gave the government the right through its Council to ask physicians these questions. That act is very much like the constitution of the American Medical Association. We can spread it out to cover almost any activity. We sent out notices published in *THE JOURNAL*, with the telegram from the Surgeon-General stating the need for 8,000 physicians, along with this questionnaire. We appointed a man in each ward who saw every man in his district, presented him with the list of interrogatories, and had these turned in in five days. And we have them. We are now prepared to tell you the status of every physician in Kansas City. We are in a position to draft them. What they are willing to do, we know. The town has been thoroughly cleaned up.

MONTANA

Dr. E. G. Balsam, Billings, said: I think there are too many committees doing the same work. If I should tell you all the committees of which I am secretary, I would tire you. As long as the American Medical Association is so well organized, there is no better body of men able to take care of this thing without friction, and do it in an efficient manner through the different state organizations, and they in turn through the county societies. We do not need any more committees. Each one of us in each county is able to do the work, and he is the man on whom we can depend, and our reports may be returned to the secretary of the American Medical Association. We have in Montana forty-seven counties, only sixteen of which are organized and thirteen thoroughly organized; so you can see what a proposition it is to handle the state of Montana. Our difficulty is how to get the physicians from the cities to enlist and to meet the men who are in the country places in their respective towns. We have one city in which fourteen men have enlisted, and since fourteen men have gone, ten men came in from the country to fill the positions these men occupied in the cities. We need these men in the country towns because there are counties in Montana with an area of 5,000 square miles without a physician. How can we best get a man there and keep him busy and satisfied? We must arrange to keep men in these places. At our last annual meeting, through the efforts of the Council of National Defense and through the state organization working continually, we passed a resolution unanimously favoring conscription or the selective draft of physicians in our state. Every man of the 125 in our meeting rose to his feet when the resolution was passed.

NEBRASKA

Dr. Joseph M. Aikin, Omaha, said: It is fruitless for me to state the situation in Nebraska other than to refer to the remarks of the previous speaker with reference to conditions in his state, and also to what was said by the secretary of the Michigan State Medical Association. In Nebraska we have only fifty-three or fifty-four counties out of possibly ninety-four or ninety-three that are organized, and the great question asked of the state secretary by medical men is, What am I to do? When shall I be called after I have my commission? Another question asked is, Why do you ask for another 5,000 physicians plus 2,000 when a number of the men in Nebraska commissioned are not being called? We have been up in the air between the work of our state association and the taking of orders from the Council of National Defense at Washington and the Nebraska State Medical Society Council to know just how we should work with a multiplicity of committees. Our State Council of Medical Defense, Medical Section, has done practically nothing in Nebraska. I have not known just why. The consensus of opinion in Nebraska is, that now is an opportune time for the American Medical Association to take its stand in a cause in which our services are so much in demand, in order that the work to be done by medical men shall be intelligently done and propagated through the office of the American Medical Association in Chicago. We feel that as a result of this conference between the committee from the Board of Trustees of the American Medical Association and the state secretaries, whatever resolution is introduced here and adopted is the consensus of opinion of the best body of medical men that can be gathered together in the United States or in the world should be handed to the state secretaries of the United States as the plan of action for medical associations. Let each secretary take the matter up with his county secretary, adopting their own line of procedure, going right back to the unit of our organization, the county society.

NEVADA

Dr. M. A. Robison, Reno, said: There has really been nothing done in Nevada on an organized basis. The medical defense had one meeting and organized; we had another meeting and there were only three present. That is all that has been done in an organized way. Dr. Sinclair was commissioned and has examined other volunteers throughout the state. He reports to me that he has examined thirty-two, and several of them have received their commissions, he thinks. I notice from the report of the secretary of the American Medical Association that there are twenty-nine who have been given commissions. A report I received two days ago states that there are nineteen in the active service. Our state is much like Arizona, only more so. I believe we should work for a change in the appointments and ranks, and

that this thing should be put under the direction of one man. Have the secretary of the county society or let the secretary of the state association designate who will do it; get up the questionnaires and report to the American Medical Association and let a man be called before the committee and say, "We want you."

NEW HAMPSHIRE

Dr. D. E. Sullivan, Concord, said: I attended a county meeting of our society last Friday, and at that meeting I found out where our state stood from the official bulletin at Washington. That thing demonstrated to me that a physician can belong to the parent society, be secretary of the state society and secretary of the state committee of national defense, as I am, and yet not be able to keep in touch with the men who are going into the service. The only information I have is what I pick up here and there. It is necessary that a secretary should know what men have gone into the service and those who have not. It is difficult by means of appeals to get some men to enter the service. They hear all kinds of reports of men being in camps, lounging about with nothing to do. I am satisfied that good results must come from direct personal appeals. With the American Medical Association at the head, it must be thoroughly and efficiently supplemented through the efforts of local men who come in close cooperation, hand to hand, with the men whom we need.

NEW JERSEY

Dr. Thomas N. Gray, East Orange, said: New Jersey has been gone over with a fine tooth comb to raise the quota established by the state through the efforts of the Council of National Defense, Medical Section, and the committee of the state society. The chairman of that committee is one of the vice presidents of the society, and the secretary of the state society is a member, so that there is no clash between local defense and state defense. They left me to plan out a line of procedure. In my office as secretary of the state committee I sent out questionnaires and circular letters. I have written questions to young practitioners and have made it my business to go into their offices to find out that the questionnaires I sent them were thrown into the waste paper basket, and I said, "What is the use, they do not read them." Let us devise some plan by which we can approach these men. We have divided the work in this way: I, as secretary of the state society, would appoint a meeting for the county society, and as secretary of the state committee of national defense, I would arrange meetings in private local societies where we would meet the men who are not members of the state society. In our state we have 1,750 members out of 3,000. We can reach in the county societies other men we could not reach in the local society. We have visited all county and local societies repeatedly with officers from the department at Washington. We had no trouble in the rural communities if there was one more man that could go. Our trouble was to get a number of men in the big cities. In addition to appealing to those men, we went out, each in our own counties, and did all we could by personal work. I have had conversations with 450 young men in the late twenties and early thirties who I know have not had and cannot have in the whole of their practices of a few years an income to exceed \$1,500, and most of them not more than \$700. It is our conviction that every man in New Jersey who is willing to give his services to the government has enlisted, and if we are to get any more men from New Jersey we will have to conscript them. I believe the only way to get the men will be sooner or later to conscript them. If the American Medical Association through its influence cannot induce them to join the service, then as secretary I will take off my coat and use a finer tooth comb; but I do not believe I shall be successful.

NEW MEXICO

Dr. R. E. McBride, Las Cruces, said: New Mexico occupies the same position as Arizona. Out of 440 and odd physicians in New Mexico, 40 per cent. are sick men, and another proportion of them are men who have gone there with some members of their family sick, some of them bedridden. According to the *Bulletin*, New Mexico has 210 members of county societies, and among that number there are 198 in good standing in the state society. Forty per cent. of them are either over age or sick, so that when it comes to the eligibles for military service, the figures do not quite give the exact condition of affairs. There are not over 125 men in the whole state of New Mexico who are fit for the work of the service. Out of those 125 there have been fifty-four commissioned, but they have not all accepted their commissions.

To give you an idea of some of the conditions we have to contend with, take the county from which I hail (Dona Ana County). We have sixteen men in the county, eleven of whom are ill or over age. Three of those over age may be ill. Out of the remaining five, four have been commissioned. Two have accepted their commissions, and two have not. Why, I do not know. I believe that in the state of New Mexico today, with the proper agency, we could secure probably sixteen or more recruits for the service. I myself am heartily in favor of making one final personal appeal. I believe, however, that the personal appeal would be more effective if backed up by some force from the national government.

NEW YORK

Dr. Floyd M. Crandall, New York, said: Soon after the beginning of the war the governor instituted a medical staff, and the adjutant-general gave it official force, with certain laws back of it, so that a census was carried out in a most thorough manner. A very thorough questionnaire was sent out; at the same time, the medical branch of the New York State Committee of National Defense began a campaign of education both by literature and by men. They sent half a dozen men through the state to address small and large societies. They not only spoke to men, but also came in close contact with them and got enlistments right there. The whole committee, fifty of them, were scattered all over the state. The committee did not stop with that questionnaire. We adopted a method which I think was used elsewhere, but I have not heard it spoken of. As soon as the questionnaires were completed, they were assorted and every man of proper age, who was certain that he had 10 per cent. surgical work, had his questionnaire sorted out. These different men were brought up and considered, and it was impressed on them that what was said was to be confidential, and they were to tell the truth about the men they knew in their locality, such as the personal character of the men, their professional ability, how they stood in surgery, what their executive ability was, and the amount of experience they had had. They took up the question of adaptability, because that is important. Some men were marked down because they were cantankerous and could not get along with others. They were reduced in position. The question came up whether a man did or did not use gloves in operating. All these points were considered in connection with the acceptance of men for medical service. New York state has approximately 14,000 physicians, and of this number there are 8,068 in the state society. The committee believes there are 143 now available for service. Our quota is given here as 17 per cent. We have done very well because of the large foreign population and because New York is the most mixed up of any state in the world, and there are hundreds of men not available. The Italian physicians have gone with their own army, and French physicians have done likewise. Five hundred additional men are required for the Army and 500 for the Navy from our state. About two weeks ago the committee started sending out letters. It has sent out 4,550 letters in the last four or five days, and enlistments are coming in at the rate of from thirty to forty a day. We believe in ten days the new quota will be filled.

NORTH DAKOTA

Dr. H. J. Rowe, Casselton, said: North Dakota is a state of magnificent distances, and as a consequence we have some counties that have no physicians. We have four component societies in the entire jurisdiction, and some of these societies have a large number of members. For instance, the Northwestern Society has eighty-seven members in the profession within its jurisdiction. When I received a notice to attend this meeting, I at once got in touch with the local secretaries, so that I might present accurately before this conference the exact condition of our state and people. I have been secretary of the state medical association, and also secretary of the National Council of Defense, Medical Section, so that I can reach these people without any trouble. From the Northwestern Society of the state we have six men in the service; three men are ready to go. Five men are in the service from the city of Minot, leaving eight to do the business. Every man of us is willing to go, barring those who have physical disabilities or who on account of age cannot be taken. Unfortunately, I have never been able to ascertain the number of our men who are in the service. I know the number that are recommended, but have not been able to secure the names of those who are actually in the service, so I cannot tell whether we have our quota or not.

(To be continued)

Medical Mobilization and the War

Military Information Asked

The War Department needs, for intelligence purposes, photographs, drawings, picture post cards, and descriptions of bridges, buildings, towns and localities occupied by the German army in France, Belgium and that portion of Germany lying west of a line running north and south through Hamburg. As it will not be practicable to return this material to the owners, it will be considered as a gift to the government, and should be sent to Col. A. B. Coxe, U. S. Army, 1156 Fifteenth Street, Washington, D. C.

Medical Officers Wounded in Action

According to a letter received by the wife of Capt. Frank H. Hearst of Guilderland Center, N. Y., members of the medical unit to which he was attached on the Somme in the great battle during the month of April were all captured or killed with the exception of a major and the captain himself, who was wounded in the hand. Capt. Howard H. Davis, M. R. C., U. S. Army, Cleveland, was slightly wounded, March 21. He was cited for bravery under fire a few days before. Dr. Daniel E. Berney, Scranton, Pa., who has been serving with the British Expeditionary Forces in France, is in a hospital in London recovering from slight wounds. Capt. John B. Nutt of Williamsport, Pa., who is serving with the British Expeditionary Forces in France, is reported to have been slightly wounded in action.

Rehabilitation of Returned Disabled Soldiers

Senator Smith of Georgia has introduced into the Senate a bill (S.4284) to provide for vocational rehabilitation and return to civil life of disabled persons discharged from the military or naval forces of the United States. The persons entitled to this attention shall be such as are entitled to compensation under the war risk insurance law, who are unable to resume their former occupations successfully. If the Federal Board of Vocational Education, which shall have direction of the courses, considers them entitled to it, they shall have the prescribed course of reeducation, and at the same time shall remain in the military or naval forces of the country under the direction of the board. During the course they shall be entitled to receive pay equal to the monthly pay of their last active service, and allowances shall also be made for their dependent relatives as designated in the war risk insurance law.

Personnel of the Medical Department

For the week ending May 3, 1918, the personnel of the Medical Department of the Army included: MEDICAL CORPS: 843, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 297 majors, 1 captain and 369 lieutenants. MEDICAL RESERVE CORPS: 18,773, including 1,252 majors, 4,584 captains and 12,937 lieutenants. On active duty: 16,552, including 1,170 majors, 4,158 captains and 11,224 lieutenants. MEDICAL CORPS, NATIONAL GUARD: 1,205, including 19 lieutenant-colonels, 246 majors, 150 captains and 790 lieutenants. MEDICAL CORPS, NATIONAL ARMY: 114, including 3 brigadier-generals, 12 colonels, 91 lieutenant-colonels and 8 majors. DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,232, of whom 1,405 are on active duty; DENTAL CORPS, N. G., 257; VETERINARY CORPS, 17; VETERINARY RESERVE CORPS, 1,449, of whom 774 are on active duty; VETERINARY CORPS, N. G., 46; VETERINARY CORPS, N. A., 439; SANITARY CORPS, 1,145, and AMBULANCE SERVICE, 158, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number				
	M.R.C.	M.C.N.G.	D.C.N.G.	Sau C.	
Physical disability	630	46	7	7	
Inaptitude	242	18	0	1	
Other branches	487	62	7	57	
Resignations	109	45	5	8	
Domestic troubles	59	1	0	1	
Needed by community	47	1	0	0	
Dismissed	6	2	0	0	
Deaths	63	3	0	1	
Duty completed	1	0	0	0	
No reason	14	0	0	0	
Good of service	0	0	0	1	
	1,658	178	19	76	

THE NEW MILITARY SERVICE BILL OF GREAT BRITAIN AND ITS RELATION TO THE MEDICAL PROFESSION

The question of the supply of medical officers for the British army has been one of tremendous seriousness. With numerical strength of physicians approximately one fifth of that of this country and with a much larger army, the securing of a sufficient number of medical officers has been a severe drain on the profession. A new medical service bill fixes the age of compulsory military service at from 18 to 55, inclusive, subject to provisos as follows:

(a) If it appears to His Majesty at any time that it is necessary so to do for the defence of the realm, His Majesty may, by order in Council, declare that the foregoing provisions shall, as respects men generally, as respects any class of men, have effect, as from a date to be specified in the order, as if any age specified in the order not exceeding fifty-six years were therein substituted for the age of fifty-one years; and

(b) as respects any person being a duly qualified medical practitioner, the foregoing provisions shall have effect as if the age of fifty-six years were therein substituted for the age of fifty-one years.

Clause 2 of the act gives power to declare by proclamation that a national emergency has arisen and that any certificates of exemption to any class or body of men shall cease to have effect.

In an editorial the *British Medical Journal* reviews what has been done to secure medical officers for the British army:

THE BRITISH MEDICAL JOURNAL'S EDITORIAL

"The introduction of the new Military Service Bill and the special provision which it contains with regard to medical men makes it opportune briefly to recall the steps by which the present situation, so far as it specially affects the medical profession, has been brought about. The annual general meeting of the British Medical Association in Aberdeen had ended a few days before the outbreak of war, so that the association had no special machinery in existence for dealing with the emergency. The War Office immediately called up the medical officers of the Special Reserve, and the medical officers of the Territorial Force belonging to the combatant units were mobilized with those units. Medical officers *à la suite* of the Territorial general hospitals were mobilized and those hospitals were got ready. With the regulars and employed regular officers the total number of medical officers obtained from these sources was about 4,000, and nearly three fourths of them were withdrawn completely or in part from the civil profession. At the same time an appeal was made for volunteers, one of the terms being that the volunteer undertook to serve if required for at least twelve months, with the right then to relinquish his commission. The response to this appeal produced about 1,140 by the end of 1914, and about 2,700 by the end of 1915. The first step spontaneously taken by the organized body of the profession to meet the emergency disclosed by the German advance into Belgium and Lord Kitchener's appeal to the manhood of the country was taken at the instance of the late Dr. Hamilton Hawick by the Scottish Committee of the British Medical Association. By September the Scottish Medical Service Emergency Committee, consisting of representatives of Scottish universities and medical corporations and the British Medical Association, had been formed. In England and Wales preliminary arrangements were undertaken by committees of the British Medical Association, which reported to the annual meeting in 1915, when the Central Medical War Committee was constituted. It was instructed 'to organize the medical profession in such a way as will enable the Government to use every medical practitioner fit to serve the country in such a manner as to turn his qualifications to the best possible use, and to deal with all matters affecting the medical profession arising in connection with the war.' Local Medical War Committees were set up throughout England and Wales to act with the Central Medical War Committee and to advise it as to local conditions and as to practitioners in the localities who could most easily be spared. The Committee of Reference of the Royal Colleges in England was set up early in 1916 to consider cases of doctors on the staffs of hospitals and medical schools in the metropolis, and such other special cases in England and Wales as might be referred to it. An Irish Medical War Committee was also established. Schemes were instituted by the Central Committees in England and Wales, and in Scotland, for the enrolment of all medical men up to the age of 45, the limit for general service in the R.A.M.C. The enrolled person gave an undertaking to accept service when called upon by the committee, and the Army Council undertook to apply to him the principle that a medical man thus offering himself should

not be called upon to fulfil his obligation of commissioned service for more than twelve months consecutively.

"The passing of the second Military Service Act, 1916, had the effect of imposing compulsory service on all medical men under 41. The central medical committees, thereafter called 'professional committees,' were recognized by an Order in Council, and were entrusted with the duty of selecting at the right time in each case the particular medical men who could be spared from their civil work with least injury to the civil population, and of retaining in their civil work those most needed there in the public interest. The Army Council undertook to refrain from applying its compulsory powers as to combatant service to a doctor of military age if, and so long as, he was enrolled and undertook to serve, and if required did serve, as a commissioned officer in the R.A.M.C. whenever this might be found necessary by the central professional committee. When called on he was given the right of appeal to the central professional committee. If at the end of the first or any twelve months' service a medical man relinquished his commission, he, if under 41, remained liable to the Military Service Acts, but if he then enrolled he reverted to the position in which he was before he took a commission; that is to say, he went back amongst those from whom the central professional committees selected doctors for commissioned service in the R.A.M.C., subject to due consideration of the needs of the locality and his personal circumstances. The enrolment scheme continued to apply to doctors over military age, especially those from 41 to 45, and in June, 1916, shortly after the passing of the second Military Service Act, the War Office announced that it was prepared to give commissions in the R.A.M.C. to medical men between 45 and 55 willing to undertake whole-time general service in the United Kingdom. Incidentally it should be noted that newly qualified medical men automatically passed into the Reserve, and were commissioned in the R.A.M.C. (S.R.), subject only to their being pronounced physically fit on medical examination.

"On the establishment of the Ministry of National Service recruiting in all its branches was transferred from the War Office to that Ministry, and medical recruiting became especially the care of its medical department, with which the professional committees have been in communication throughout.

"At present temporary R.A.M.C. officers of military age on expiration of their contract are required, if they renew, to engage for the duration of the war. If an officer, however, does not wish to renew he retains his right of appeal to the professional committee, which, in deciding whether or not he should rejoin, takes into consideration the needs of the civilian population of the locality in which he practices and his personal circumstances. It is to be noted that medical officers of military age intending to relinquish their commissions after Oct. 31, 1917, were warned that they would probably be recalled shortly.

"The first clause of the new bill fixes the military age at from 18 to 51, but there is a proviso that by an Order in Council the upper limit of age may be raised to 56 as respects men generally, or as respects any class of men, and it shall be so fixed 'as respects any person being a duly qualified medical practitioner.' Clause 4 gives power to make regulations by an Order in Council to establish 'special tribunals, committees, or panels for dealing with particular classes of cases,' and to determine the grounds on which application may be made to the tribunals and the rights of appeal.

"The Central Medical War Committee, at its meeting on April 10, decided, after full discussion, not to press for the insertion of any amendment in the bill now before Parliament in so far as it relates to registered medical practitioners. It is felt that the older men who will now become subject to military service will in most cases serve their country best by placing themselves at the disposal of the central professional committees for medical work, in a military or civil capacity, which will release younger practitioners for active service. The method, no doubt, will vary according to local and individual conditions, but it would seem that schemes for local arrangements would produce less dislocation of practice than any general plan of long-distance substitution between the areas which are relatively understaffed and those which are more plentifully supplied with doctors. Although the total number of medical men who may be made liable to military service under the bill is large—between 6,000 and 7,000—it is unlikely that any considerable proportion would be called on; if this is so, only a minority would be directly affected.

"In the altered situation which will be brought about by the enactment of the bill, the Ministry of National Service will, doubtless, desire to remain in the closest collaboration with

the Statutory Professional Committee. But it is probable that henceforward the decision on the indispensability of individual practitioners, or on questions of priority, will rest ultimately in the hands of the Ministry. The fullest use will, no doubt, be made of the advice and opinion of the professional committees, but, as in the case of all other tribunals, the last word will be said by the Ministry of National Service. In this respect the legal position will be changed, though it is not anticipated that in practice any conflict will arise between the professional committees and the Ministry."

A CORNER OF THE GREAT BATTLEFIELD

An American Surgeon in the Midst of Things

THE JOURNAL has received from Major George de Tarnowsky a description of the activities of the hospital to which he was attached during the recent drive. In the letter accompanying his statement he says:

For four days we had the hospital full of Tommies; since that time the French have taken over the sector and we are doing advanced surgery on all severe "nontransportable cases," a rare opportunity to do major war surgery. Of the battle itself, events are still too recent to dare even mention a word about it. Suffice it to say that the English put up a splendid fight against overwhelming numbers. It was a close call for two or three days, but the hole is plugged up and we have confidence that the leak will not recur again. The spirit of the troops is magnificent.

FRANCE, April 12, 1918.

To the Editor: The great battle which began in the early morning hours of March 21, '18, found the Ambulance des Alliés with some two hundred wounded, seventy-five of whom were American, one of our divisions occupying a nearby sector jointly with the French.

In order to have all available beds possible at our disposal, the latter were evacuated on Paris by train and from thence by ambulance to U. S. Base Hospital at Neuilly. The French wounded were sent to the interior by train. All stood the journey very well. A few of the patients recently operated on were kept for a subsequent evacuation.

An atmosphere of tense excitement and uncertainty surrounded us. We knew that the thinly held British line had been overwhelmed by sheer weight of numbers and that the Tommies were falling back, making the enemy pay dearly for his gains. Just where the retreat would end was anybody's guess. The highway in front of the hospital was a seething mass of soldiers, artillery, munitions, etc., speeding north to check the invasion; an equally dense, infinitely pathetic mass of civilians were trekking south. Baby carriages, wheelbarrows, two and four-wheeled carts and carriages of all sorts passed before our eyes in an apparently unending stream. These poor people had just begun to live their lives over again, amidst familiar surroundings, when the stern necessities of the battle forced them, for the second time in four years, to abandon their homes and fields in order to seek shelter elsewhere.

Two girls, both under 20, stop in front of the operating room windows and lean against the parapet to rest. Taking turns, they had trundled a wheelbarrow, on which was a single black trunk, for miles along the dusty road. They, at least, will not fall in the hands of the Boche! An old grandmother pushes a baby carriage in which a pretty 4-year-old girl sits, clutching a wooden doll in her hands, while at her feet is a wicker basket containing a hen and its chicks! In a two-wheeled cart lies an infirm grandfather, with a goat and calf for company, while his daughter walks beside the horse's head and three boys tramp behind, clinging to ropes which dangle from the vehicle! The pictures are pathetically funny, and one tries to laugh—in order not to cry—for men have learned to cry in this war; cursing is inadequate to express the feelings which surge within!

Wounded, both English and French, began arriving on the morning of March 24; the earlier signs of military confusion had ceased, and the French had jumped into the breach, while the English, worn out by the terrific onslaught, but still full of fighting spirit, fell back on the town of to reform. It was a magnificent exhibition of team work, carried out in the very midst of a desperate battle for the road to Paris! Three divisions against eleven, and the eleven could not get through!

LOCATION OF THE HOSPITAL

Without mentioning names of places, a short description of our location will explain the immense importance of this hospital during the battle. The first great rush brought the battle line seven miles north of us. We occupied almost the

apex of a triangle, the base of which represented the battle line, the two sides two converging valleys along which the Boche hoped to push on to Paris. Had he been able to pour down either valley, our retreat toward Paris would have been cut off, as the junction of the two rivers takes place three miles south of the hospital grounds.

With no railway lines, bridges or canal locks within a mile, and no munition depots within three miles of us, we enjoyed a reasonable degree of security from shell fire or aerial bombs. The tiny village did, however, shelter troops who were constantly billeted there, and a long-range battery installed three hundred yards from the hospital barracks put us in real danger. The guns, most fortunately for us, only remained twenty-four hours, departing before the Boche avions had a chance to photograph their location. Shell fragments, bullets, and even pieces of shell casings from our own antiaircraft guns sprinkle the roofs and grounds about us, but this small diversion has been of almost nightly occurrence for the past month and we have grown accustomed to the avion raids. The vicissitudes of the great battle thus made us the nearest surgical formation in this sector, capable of operating on all "nontransportable" cases. Owing to their exposed position, all the large hospitals east and west of us had been compelled to evacuate on the second day of the battle.

The fact that only two surgical teams, one French, one American, were attached to the hospital when the attack began, was a serious handicap, but the American Red Cross promptly sent reinforcements, with a supply of food and four motor trucks, the latter placed at our constant disposal in case a hasty evacuation became imperative.

By Monday, March 25, the war news was so conflicting, yet so generally discouraging, that the directress of the hospital very suddenly ordered a general evacuation. At 2 o'clock, on the morning of March 26, everybody was awakened and told to be dressed in ten minutes! The peculiar arrangements and combination of circumstances which allowed a civilian directress to order a military evacuation, are not germane to this letter, and will, therefore, not be mentioned. Suffice it to say that the French staff and personnel obeyed said order to the letter.

Approximately one hundred and fifty patients were transferred by ambulance to the hospital boat belonging to this formation, with the French staff and personnel and all of the nurses, the evacuation consuming four hours. As the boat was docked in the canal, a mile from the hospital, the transfer was extremely rapid and easy. Needless to say, there was no opportunity for cleaning up the wards or even storing away any of the material. Chaos and confusion were left behind.

THE HOSPITAL MOVED—NOT

Major John J. Moorhead, M.R.C., U.S.A., and myself, not being under the direct orders of either the directress or the French Service de Santé, expressed our firm desire and intention of remaining behind. There was plenty of work ahead of us; the Chief Surgeon A. R. C., under whose orders we were detailed for temporary duty, had not ordered us to evacuate, and we both felt that we could make a quick getaway if the military situation absolutely demanded our taking such a step.

Our request was granted. One patient, suffering from a lesion of the left femoral vessels and pelvic peritonitis, was left behind. By 6 a. m., March 26, the staff and personnel of the hospital consisted of Major George de Tarnowsky, M.R.C., U.S.A.; Major John J. Moorhead, M.R.C., U.S.A.; Corporal Bonne, French Service de Santé; Corporal Brardiniere, cook; Mme. Louis, kitchen helper; Louis, blind retainer; and Jean Legros, gardener.

The two French surgeons envy us our good luck; there is, however, plenty of work for them to do on the boat, as many of the wounded are evacuated before operation. The nurses, English, Irish, Canadian and American women, without a single exception, volunteered to remain with us; we unfortunately had no military authority over them and they were compelled to go with the French staff.

Mme. Louis, fearful lest her blind husband be left behind if we have to evacuate, makes me repeatedly promise that he will be put in one of the A. R. C. trucks. She, on the other hand, swears that she will put her chickens in a crate so that we can have fresh fowl to eat all the way to Paris! Neither husband nor chickens must be allowed to fall in the hands of the Boche!

Left to our own resources, Major Moorhead, Corporal Bonne and I prepared forty beds, sterilized several sets of instruments and stored away the uniforms, arms, etc.,

which had been left behind. We fortunately have a large supply of sterile dressings, cotton and bandages.

Using the A. R. C. supplies which had been left under our charge, we distributed corned beef, cheese, crackers, chocolate, etc., to scores of hungry soldiers who passed the hospital gates. The cook presided over this distribution with much gusto, adding coffee or wine from the hospital stores.

Wounded soldiers began to arrive early in the afternoon, and we prepared to operate on the urgent ones. At 6 p. m., Capt. Peter M. Keating, M.R.C., U.S.A., very opportunely arrived from Paris and was immediately impressed. The electric plant having been disconnected, candles, stuck on a wooden board, and two lamps served for lighting purposes. This compels us to use chloroform instead of ether anesthesia. From 7 p. m. to 4 a. m., we three surgeons performed twenty-six consecutive operations. The A. R. C. truck drivers were impressed as stretcher bearers and orderlies, while Corporal Bonne attended to the sterilizing. At 10 p. m., several American volunteer nurses, belonging to what is known as Mrs. Daly's equipe or team, arrived from Compiègne and immediately rendered invaluable assistance.

We had barely retired for a few hours' sleep when at dawn of March 27, several A. R. C. officials drove up with very alarming news, advising us to evacuate immediately! All of the cases operated on were loaded in ambulances and trucks and taken to Compiègne, five miles south of us, where they left on the last sanitary train, all the hospitals in that town having received orders to close up and depart.

Before coming to any decision regarding our small, therefore very mobile, staff, Major Moorhead and the writer drove to the hospital center of Villers-s/Coudun, three miles northwest of the Ambulance des Alliés. The C. O. informed us that he had already received three evacuation orders and many counter-orders, the last one to the effect that he must evacuate all wounded, but that his hospital would continue to receive slightly wounded cases; the latter, however, were not to be operated on but merely dressed and put on a sanitary train. We were assured that any further evacuation orders could be transmitted to us by courier, as our phone had been cut; this promise was most welcome and reassuring.

After holding a consultation with Major Moorhead, we decided to stay. Late in the afternoon, our French C. O., with the two French surgeons, returned from the boat which they had left below the Compiègne bridges. With fourteen volunteer American nurses and two surgical teams, we were able to operate steadily throughout the day and night.

At 3 a. m., March 28, a courier from Villers-s/Coudun Hospital arrived, with a message from the C. O. to the effect that we had just received orders to evacuate all wounded and prepare to retire with his supplies and personnel. While our French C. O. went to army headquarters nearby for final orders, the wounded were prepared for evacuation and sent to the boat which had docked in the canal, eight miles south of us.

Returning from headquarters, our C. O. reported that we would be allowed to remain at our post for the time being, but that there should be a daily evacuation of all wounded after their operation. Our canal hospital boat, propelled by its own steam and fitted up with seventy bunks and a small operating room, had been in commission about six months, rendering good service. Its utility, during the battle, was considerable. For instance, on March 24, in the thickest of the fight, it went up the canal to Noyon and came back with 180 wounded, seventy of whom were "lying" cases, the lance being able to sit here, there and everywhere, above and below decks. During two of the "en masse" evacuations from the hospital, forty-six operations were performed on board the boat by the French surgical team.

March 28 and 29, the operations continued steadily, one surgeon at a time managing to get a few hours rest. A second American team, consisting of Capt. Charles Farmer, Philip Wilson and First Lieut. Thomas S. Hardy, all M. C., U. S. R., arrived from Paris. Unfortunately, Captain Keating was recalled to Paris so that, during the absence on the boat of the French team, we were still reduced to two operating teams, with a spare surgeon for stimulations, dressings, etc. On this same date, March 29, seven of our nurses returned, and the Mrs. Daly equipe departed. While new wounded continued to tax our operative capacity to its utmost, the general news of the battle became more reassuring; the Hun had been brilliantly dammed. We began to keep our operated cases until all danger of secondary hemorrhage or sepsis had passed, only evacuating when our nursing capacity was absolutely overtaxed.

Owing to our nearness to the firing line, the entire nursing staff, for the boat and hospital, was kept down to twelve nurses and their matron, with some thirty French orderlies.

This personnel enabled us to hospitalize as many as seventy-five severely wounded cases at a time, but no more.

By Wednesday, April 3, we had definitely organized three operating teams, working turn and turn about in ten hour shifts. A ten-hour shift was decided on in order to give each team an equal number of night hours in the operating room, admissions being heaviest after nightfall. When not operating, we received, diagnosed and prepared cases, dressed our own cases and rested whenever we could.

Early in the battle, our trunks and lockers had been sent to Paris for safe keeping and, with the contents of a suitcase for our entire wardrobe, we lived from day to day, stripped for the surgical fight which it is our lot to wage. For almost two weeks we had no postal service; at present we occasionally receive mail and can write about the weather and the safety of our persons to the loved ones at home.

Distractions abound; not a day passes without several aerial fights; bombardments start up at all hours of the day and night and we keep wondering whether Fritz will not drop a shell or bomb "by mistake" on our modest Red Cross group of buildings!

While Major Moorhead and I have tabulated all of the cases which have passed through our hands, there has been no opportunity to classify the operations and results. Suffice it to say, for the present, that during the first great rush, i. e., from March 25 to April 3, when the three teams began their regular schedule, 149 operations were performed, with a total mortality of six cases. Two of the six were moribund on admission, no operation being possible; of the remaining four, two were intrathoracic and two intra-abdominal wounds with profuse hemorrhage. One hundred and three operations were performed at the hospital; forty-six on the boat.

Just how long this emergency is to continue, nobody knows. We intend sticking as long as there are wounded to succor and our orders remain unchanged. That we shall still be operating in the same hospital when this letter reaches you, is the earnest wish of

GEORGE DE TARNOWSKY, Major, M. R. C., U. S. Army.
Chief Surgeon, Ambulance des Alliés.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Grant, Rockford, Ill., base hospital, from Camp Sheridan, Major GEORGE W. JEAN.

To Camp Wadsworth, Spartanburg, S. C., as assistant to camp surgeon, from Madison Barracks, Major SIDNEY L. CHAPPELL.

To Fort Jay, N. Y., for physical examination to determine his fitness for active duty, Major CHARLES W. FARR.

To Fort Schuyler, N. Y., for duty, from Camp Hancock, Major J. MARKWOOD PETERS.

To Fort Slocum, N. Y., for duty, from Governors Island, Lieut.-Col. CHARLES Y. BROWNLEE.

To Fort Hills, N. Y., for duty, from Hoboken, Lieut.-Col. HENRY H. RUTHERFORD.

To Governors Island, N. Y., for duty, from Fort Slocum, Col. FRANCIS M. C. USHER.

To Rockefeller Institute for instruction in chemistry, from Army Medical School, Lieut. CYRUS B. WOOD.

To Washington, D. C., for consultation and on completion to his proper station, from Hoboken, Col. JAMES M. KENNEDY; from Fort Porter, Lieut.-Col. THOMAS D. WOODSON for conference, and on completion to his proper station, from Camp Lee, Lieut.-Col. THOMAS L. RHOADS.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Gordon, Atlanta, Ga., base hospital, from Army Medical School, Lieut. MONTE LER. MOORER, Mt. Vernon; from Camp Upton, Lieut. JOSEPH M. WELDON, Tallahassee.

To Camp Jackson, Columbia, S. C., for duty, Lieut. JAMES L. BOOTH, Buhl.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. JAMES H. PHILLIPS, Dora.

To Fort McPherson, Ga., for temporary duty, from New York City, Major WESLEY E. DRENNEN, Birmingham.

To Fort Oglethorpe for instruction, Lieuts. CHARLES E. TEDDER, Emsley; WILLIAM C. HANNON, Mobile; MILNER H. ESKEW, Selma.

To Newport News, Va., for duty, Lieut. JOHN P. COCHRAN, Catchie.

To Sacramento, Calif., Mather Field, Signal Corps Aviation School, from Camp Kelly, Capt. JOHN R. OSWALT, Union Springs.

Honorably discharged on account of physical disability prior to entrance into the service, Lieut. CHARLES W. BRASFIELD, Linden.

Arizona

To Camp Cody, Deming, N. M., base hospital, Capt. JOHN E. BACON, Miami.

Arkansas

To Camp Jackson, Columbia, S. C., for duty, Capt. ELMER E. HOLT, Mena; from Fort Oglethorpe, Lieut. HERBERT S. WATSON, Earl.
To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieuts. BOULANGER GWALTNEY, Haskell; JAMES M. BEST, Monticello.
To Fort Oglethorpe for instruction, Lieuts. OSCAR BARKSDALE, Bassett; FELTON W. LANDRUM, Driggs.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THOMAS M. FLY, Little Rock.

California

To Camp Crane, Allentown, Pa., base hospital, from Camp Travis, Major JAMES R. MOORE, Los Angeles.
To Camp Fremont, Palo Alto, Calif., for duty, Lieut. FRANK M. LAWSON, Willows.
To Camp Gordon, Atlanta, Ga., for duty, from Camp Doniphan, Capt. AMBROSE E. EDGERTON, Stockton.
To Camp Hancock, Augusta, Ga., base hospital, from Camp Bowie, Lieut. THOMAS R. PETCH, Eureka.
To Camp Kearny, Linda Vista, Calif., base hospital, Capt. GEORGE G. HUNTER, Los Angeles; Lieut. SAMUEL J. MATTISON, Pasadena.
To Camp Lewis, American Lake, Wash., base hospital, Lieuts. EDWIN H. McMILLAN, Pasadena, Walter C. Smallwood, Richmond.
To Camp Pike, Little Rock, Ark., base hospital, from San Francisco, Capt. MORTON R. GIBBONS, San Francisco.
To Camp Wheeler, Macon, Ga., base hospital, from Fort McHenry, Capt. HOWARD C. NAFFSIGER, San Francisco.
To Fort Riley for instruction, Capt. WILLIAM V. CHALMERS-FRANCIS, Los Angeles; Lieuts. WILLIAM R. McDANNELL, Los Angeles; ROY H. PARKINSON, San Francisco.
To New York City, Orthopedic Hospital, for instruction, from Army Medical School, Capt. ERNEST W. CLEARY, San Francisco.
To Rockefeller Institute for instruction in laboratory work, from Camp Fremont, Lieut. L. J. SCHERMERHORN, Stockton.

Canal Zone

To report to the Governor, Panama Canal, for duty, Capt. LEWIS B. BATES, Ancon.

Colorado

To Camp Cody, Deming, N. M., base hospital, Capt. WALTER F. CHURCH, Greeley.
To Camp Fremont, Palo Alto, Calif., for duty, Lieut. FRANK DUNKLE, Denver.
To Camp Gordon, Atlanta, Ga., base hospital, from Camp Logan, Lieut. TOM R. KNOWLES, Colorado Springs.
To Camp Wadsworth, Spartanburg, S. C., base hospital, from New York City, Capt. LEWIS H. McKINIS, Colorado Springs.
To Newport News, Va., for duty, from Fort Riley, Lieut. VIVIAN E. PENNOCK, Longmont.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Doniphan, Major HARRY S. FINNEY, Denver.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Riley, Capt. THOMAS A. STODDARD, Pueblo.

Connecticut

To Camp Sheridan, Montgomery, Ala., to examine the command for nervous and mental diseases, from New York City, Capt. WILLIAM R. MILLER, Southington.
To Camp Upton, Long Island, N. Y., as orthopedic surgeon, from Army Medical School, Lieut. LEVERNE HOLMES, Manchester.
To Fort Ontario, N. Y., for temporary duty, Capt. PHILIP D. BUNCE, Hartford.
To Governor's Island, N. Y., for duty, Lieut. GEORGE P. CHENEY, New London.
To Newport News, Va., for duty, from New York City, Capt. JOHN B. GRIGGS, Hartford.
To Rockefeller Institute for instruction, in the treatment of infected wounds and on completion to Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Major WILLIAM F. VERDI, New Haven. On completion to Camp Logan, Houston, Texas, base hospital, Lieut. ROBERT F. SCHELL, New Haven.

District of Columbia

To Camp Crane, Allentown, Pa., base hospital, from Dansville, N. Y., Capt. CHARLES S. ROBBINS, Washington.
To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. VIRGIL B. WELLIAMS, Washington.
To Fort Oglethorpe for instruction, Capt. CHAUNCEY L. BARBER, Washington.
To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WILLIAM H. NORTON, Washington.

Florida

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Capt. JAMES D. PASCO, Jacksonville.
To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM S. GRAMBLING, Miami.
To Camp Greene, Charlotte, N. C., base hospital, from Camp McClellan, Capt. JOHN D. MACRAE, Tampa.
To Camp Wheeler, Macon, Ga., base hospital, Lieut. EDGAR E. STRICKLAND, Hawthorne.
To Fort Oglethorpe for instruction, Lieut. CAREY T. ROGERS, Jacksonville.
To Newport News, Va., as orthopedic surgeon, from Army Medical School, Capt. JOHN W. ALSOBROCK, Plant City.
Honorably discharged, Lieut. JOEL W. HOOD, Ocala. On account of physical disability existing prior to entrance into the service, Lieuts. OVEDIA F. GREEN, Mayo; JOHN T. BRADSHAW, San Antonio.
The following order has been revoked: To Camp Gordon, Atlanta, Ga., for duty, Capt. JOHN S. TURBERVILLE, Century.

Georgia

To Americus, Ga., for duty, from Fort Oglethorpe, Capt. JOHN M. SPENCE, Camilla; from Atlanta, Lieut. JAMES M. J. LUKE, Fitzgerald.
To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. KENETH S. HUNT, Milner.
To Camp Gordon, Atlanta, Ga., base hospital, Capt. HANSELL CRENSHAW, Atlanta. For duty, from Fort Oglethorpe, Lieuts.

CLEVELAND D. WELCHEL, Gainesville; LOUIS B. ROYAL, Girard; CARL S. PITTMAN, Ty Ty.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Atlanta, Capt. JOHN H. HALL, Atlanta.

To New Orleans, Charity Hospital, for instruction, and on completion to Camp Gordon, Atlanta, Ga., base hospital, from Camp Gordon, Capt. FRANK BIRD, Valdosta.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, from Camp Bowie, Lieut. CALVIN W. DAVIS, Atlanta.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN W. BRADLEY, Woodstock.

Illinois

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Capt. CLAUDE R. G. FORRESTER, Chicago.

To Camp Cody, Deming, N. M., base hospital, from Camp Pike, Major WILLIAM FULLER, Chicago; from Camp Upton, Lieut. IRA McKINNEY, Chicago.

To Camp Devens, Ayer, Mass., base hospital, from Newport News, Major FRANK S. CHURCHILL, Chicago; from Springfield, Mass., Capt. WILLIAM P. MACCRACKEN, Chicago.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. KARL LEWIS, Chicago.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Lieut. RALPH W. PETERSON, Chicago.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Lieut. CLYDE F. BACUS, Woodstock. For duty, from Camp Wheeler, Lieut. PAUL BLACK, Chicago.

To Camp Grant, Rockford, Ill., base hospital, Capt. ARTHUR F. BYFIELD, Chicago.

To Camp MacArthur, Waco, Tex., to examine the command for nervous and mental diseases, from El Paso, Capt. ROMNEY M. RITCHEY, Elgin.

To Camp Meigs, Washington, D. C., for duty, from Boston, Lieut. MAXWELL LANDO, Chicago; from Camp Hancock, Lieut. CLINTON STALEY, Enfield.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Garden City, Lieut. CLEVELAND C. MACLANE, Chicago.

To Fort Oglethorpe for instruction, Capt. ALLEN ALOUIRE, Belvidere; Lieuts. PERCY E. ROGERS, Aurora; JACOB MEYER, Chicago; KARL L. HAYES, Farmersville; JACOB V. KAHN, Ambler C. PRUNER, South Chicago; from Camp Pike, Lieut. FREDERICK I. BROWN, Chicago.

To Fort Riley, as orthopedic surgeon, Capt. EDWIN W. RYERSON, Chicago. For instruction, Lieuts. JOHN A. TURNER, Antioch; LEON P. KOZAKIEWICZ, Chicago; JOHN J. HOPKINS, Hindsboro; CHRISTOPHER B. STUART, Mt. Oliver; FRANK B. HILLER, Pinckneyville; from Camp Grant, Lieut. WILLIAM H. TAYLOR, Chicago.

To Fort Sam Houston, Tex., for duty, from Rockefeller Institute, Lieut. CHARLES P. ECK, Chicago.

To Rockefeller Institute for instruction, in the treatment of infected wounds and on completion to Camp Hancock, Augusta, Ga., base hospital, from Camp Hancock, Major ALBERT E. HALSTEAD, Chicago. For instruction in laboratory work, and on completion to Army Medical School for duty, from Camp Jackson, Lieut. FRANK MOCK, Chicago.

To Williamsbridge, N. Y., for duty, Lieut. HAROLD A. ROSENBAUM, Chicago.

Honorably discharged on account of physical disability incident to the service, Lieut. JAMES S. CLELAND, Swanick. On account of physical disability existing prior to entrance into the service, Capt. MAXIMILIAN HERZOG, Chicago; Lieuts. EDMON E. RICHARDSON, Mattoon; FRANK A. PALMER, Morris; AUSTIN I. BROWN, Murphyshoro; EARL R. COCHRAN, Rockton.

Resignation of Capt. PAUL E. BAIN, Pleasant Plains, accepted.

Indiana

To Camp A. A. Humphreys, Accotink, Va., for duty, from Camp Laurel, Capt. JAMES O'D. RHEA, Linden.

To Camp Bowie, Fort Worth, Tex., base hospital, from Camp Logan, Lieut. WARREN D. CALVIN, Fort Wayne.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Capt. BUDD VAN SWERINGEN, Fort Wayne.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CHARLES J. ADAMS, Kokomo.

To Camp Dix, Wrightstown, N. J., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. HAROLD S. HATCH, Oklandon.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp McClellan, Capt. ARTHUR F. WEYERBACKER, Indianapolis.

To Camp Jackson, Columbia, S. C., for duty, Capt. JOSEPH A. F. FRISZ, Terre Haute.

To Fort Oglethorpe for instruction, Lieuts. FRED C. DILLEY, Brazil; FOWLER B. ROBERTS, Evansville; PAUL R. TINDALL, Greensburg; CARL HENNING, Hanover; ROBERT G. JOHNSTON, Markle.

To Fort Omaha, Nebr., for duty, from Army Medical School, Capt. BONNELLE W. RHAMY, Fort Wayne.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieuts. DONALD D. JOHNSTON, Fort Wayne; PAUL A. GARBER, Sidney.

Iowa

To Camp Crane, Allentown, Pa., base hospital, Capt. ANDREW H. WOODS, Cedar Rapids.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. MARCUS C. TERRY, Jr., Brighton.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Joseph E. Johnston, Lieut. SNYDER D. MAIDEN, Council Bluffs.

To Camp Sheridan, Montgomery, Ala., for duty, from San Antonio, Capt. DONALD McELDERY, Ottumwa.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Cody, Deming, N. M., base hospital, Lieut. GUS B. YOUNG, Des Moines.

To Fort Oglethorpe for instruction, from New York City, Lieut. ELMER P. WEIH, Clinton.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Lee, Petersburg, Va., base hospital, Lieut. EDWARD F. BEEH, Fort Dodge.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Bowie, Fort Worth, Tex., base hospital, from Fort Riley, Capt. PRINCE E. SAWYER, Sioux City.

Kansas

To Camp Grant, Rockford, Ill., for duty, from Camp Sherman, Lieut. LEE E. HAUGHEY, Concordia.
To Fort Riley for instruction, Lieuts. SEBREE S. MCGINNIS, Dighton; HENRY O. HARDESTY, Jennings.
To Fort Sheridan, Ill., hospital train, Lieut. JOSEPH C. SHAW, Holton.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. NOBLE E. MELENCAMP, Dodge City.
Honorably discharged on account of physical disability, Lieut. ALEXANDER HAGGART, Ottawa.
 The following order has been revoked: *To Fort Oglethorpe for instruction, Lieut. OTTO J. DIXON, Mound Valley.*

Kentucky

To Baltimore, Md., Johns Hopkins Hospital, for instruction in pathology, from Rockefeller Institute, Capt. THOMAS H. KELLY, Covington.
To Camp Jackson, Columbia, S. C., for duty, Lieut. ALBERT L. BASS, Louisville.
To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Capt. ROBERT L. GLASCOCK, Caneyville.
To Camp Logan, Houston, Tex., for duty, from Fort Oglethorpe, Capt. SAMUEL C. RICHIE, Dwarf.
To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. JACK I. GRANT, Florence; ARTHUR C. HENTHORN, Garrison.
To Fort Sheridan, Ill., hospital train, Lieut. JOHN B. OVERALL, Cox's Creek.
To New York City, Bellevue Hospital, for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Capt. BENJAMIN D. CHOATE, Louisville.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THOMAS C. BELL, Harrodsburg.
 The following order has been revoked: *To Fort Riley for instruction, Capt. WILLIAM W. WILSON, Henderson.*

Louisiana

To Baltimore, Md., Johns Hopkins Hospital, for instruction in pathology, from Rockefeller Institute, Lieut. JAMES L. LOCASCIO, New Orleans.
To Camp American University, Washington, D. C., for duty, from Garden City, Lieut. HARRY W. SCOFIELD, Shreveport.
To Camp Gordon, Atlanta, Ga., base hospital, from Camp Pike, Lieut. WALLACE L. DIXON, Hope Villa.
To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. JOHN C. MCSWEEN, New Orleans. To examine the command for nervous and mental diseases, Lieut. PRESSLY Y. DONALD, Jackson; from Washington, D. C., Lieut. EDWIN M. LEVY, Jackson.
To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. JOSEPH M. HOUNTHA, New Orleans.
To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. OEL A. WILKINSON, Homer.
To Fort Oglethorpe for instruction, Lieut. CHARLES B. LAW, Elican.
To Newport News, Va., for duty, from El Paso, Major ROY McL. AN WART, New Orleans.
To Plattsburg Barracks, N. Y., for temporary duty, and on completion to Army Medical School for the required course of instruction, from Army Medical School, Lieut. ABRAHAM MATTES, New Orleans.

Maine

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Capt. UMNER C. PATTEE, Searsport.
To Camp Greene, Charlotte, N. C., base hospital, from Camp Dodge, Capt. HERBERT E. MILLIKEN, Portland; from Camp Jackson, Major THOMAS J. BURRAGE, Portland; Lieut. STEPHEN A. COBB, Jr., Portland; from Camp Sevier, Lieut. THOMAS A. FOSTER, Portland.
To Camp Jackson, Columbia, S. C., from Camp Meigs, Capt. CHARLES E. COOK, Jr., South Berwick.
To Camp Pike, Little Rock, Ark., as orthopedic surgeon, from Camp Doniphan, Capt. ALLAN WOODCOCK, Bangor.
To Washington, D. C., for duty, from Fort Oglethorpe, Lieut. ARRY L. KILGORE, Belfast.
 The following orders have been revoked: *To Hoboken, N. J., for duty, Lieut. JAMES M. STURTEVANT, Dixfield.*
To New Haven, Conn., for duty, Lieut. WILLIAM F. FINNAY, Jr., Baltimore.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Army Medical School, Lieut. WILLIAM C. DUFFY, Baltimore.
To Camp Greene, Charlotte, N. C., base hospital, from Fort Porter, Capt. DANIEL D. V. STUART, Jr., Baltimore.
To Camp Meade, Annapolis Junction, Md., to examine the command for nervous and mental diseases, Lieut. VERNON L. MAHONEY, Annapolis.
To Fort Oglethorpe, Camp McClellan, Annapolis, and Camp Sheridan, Montgomery, Ala., and Camp Shelby, Hattiesburg, Miss., for orthopedic instruction, and on completion to Camp Shelby, Hattiesburg, Miss., for temporary duty, from Camp Wadsworth, Capt. HENRY P. MAUCK, Baltimore. To Fort Oglethorpe for instruction, Lieut. HERBERT N. WYNNE, Baltimore; from New York City, Lieut. MICHAEL J. AN, Jr., Baltimore.
To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, from Camp Meigs, Lieut. ALPH S. STAUFFER, Hagerstown. For instruction in the treatment of infected wounds, Lieut. JOHN G. LONG, Baltimore. On completion to Camp Devens, Ayer, Mass., base hospital, Lieut. JOHN W. MARSHALL, Annapolis.
To Washington, D. C., American University, for duty, Lieut. ELI K. ARSHALL, Jr., Baltimore.
To Williamsbridge, N. Y., for duty, Lieut. BRUCE H. GUIST, Baltimore.

Massachusetts

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. EN Y. KAU, Boston.
To Camp Gordon, Atlanta, Ga., for duty, Capt. WILLIAM K. S. OMAS, Cambridge.
To Camp Grant, Rockford, Ill., base hospital, Capt. ALMON G. ORSE, Hingham.
To Camp Logan, Houston, Tex., for duty, from Fort Oglethorpe, Lieut. GEORGE C. BIONDI, Framingham.

To Camp McClellan, Annapolis, Md., to examine the command for nervous and mental diseases, from New York City, Lieut. BUELL L. ASHMORE, Palmer.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. WARREN S. SHIELDS, Boston. To examine the command for nervous and mental diseases, Lieut. MARTIN W. PECK, Marblehead.

To Cape May, N. J., for temporary duty, from New York City, Capt. HARRY P. CAHILL, Boston.

To Fort Des Moines, Ia., base hospital, from Camp Sherman, Capt. EDWARD S. ABBOT, Waverly.

To Fort Oglethorpe for instruction, Lieut. JOHN B. THOMAS, Pittsfield.

To Jackson Barracks, La., to examine the command for nervous and mental diseases, and on completion to his proper station, from Camp Logan, Lieut. FRANCIS S. CALDICOTT, Milford.

To Mincola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. EMMETT E. LIGHT, Springfield.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp McClellan, Annapolis, Md., base hospital, Lieut. THOMAS H. LANMAN, Cambridge.

To Rockefeller Institute for instruction, in the treatment of infected wounds, and on completion to Fort Oglethorpe, for instruction, Capt. JAMES R. TORBERT, Boston.

To Springfield, Mass., for duty, Lieut. CHARLES E. HARRIS, Hyannis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. ISAAC S. F. DODD, Pittsfield; Lieut. ERDIX T. SMITH, Springfield.

Resignation of Lieut. DAVID BRIDGEWOOD, Worcester, accepted. The following order has been revoked: To Camp Devens, Ayer, Mass., base hospital, from Fort Riley, Capt. PAUL WITHINGTON, Boston.

Michigan

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Capt. BYRON H. JENNE, Detroit.

To Camp Grant, Rockford, Ill., as assistant to camp surgeon, from Fort Riley, Lieut. ABRAHAM NOVINSKY, Detroit.

To Fort Oglethorpe for instruction, Lieuts. RUSSELL A. A. OLDFIELD, Bay City; VICTOR F. RYAN, Escanaba; AUSTIN W. HEINE, Mt. Clemens; from New York City, Lieut. WILLIAM R. McCLURE, Detroit.

To Jefferson Barracks, Mo., to examine the command for cardio-vascular diseases, from Fort Riley, Lieut. FORREST R. OSTRANDER, Lansing.

To Mincola, L. I., N. Y., Signal Corps Aviation School, for duty, from Garden City, Lieut. RICHARD F. BOONSTRA, Detroit.

To Newport News, Va., for duty, Lieut. ALBERT F. OTTOW, Detroit.

To New York City, Neurological Institute, for instruction, Lieut. GLENN B. CARPENTER, Detroit.

To Williamsbridge, N. Y., for duty, Lieuts. FRANK T. F. STEPHENSON, Detroit; RAY A. PINKHAM, Lansing.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. STANLEY E. BRYANT, Dowagiac, WILLIAM J. DUBOIS, Grand Rapids.

Resignation of Lieut. DELBERT R. BLENDER, Detroit, accepted.

Minnesota

To Camp Dodge, Des Moines, Ia., base hospital, from New York City, Major WARREN A. DENNIS, St. Paul.

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Lieut. RICHARD B. GRIVIN, Villard.

To Camp Jackson, Columbia, S. C., base hospital, from Army Medical School, Lieut. HERMAN W. HUNDLING, Rochester.

To Camp Lewis, American Lake, Wash., as assistant to the camp surgeon, from Fort Riley, Lieut. HERBERT A. BURNS, Hutchinson.

To Camp Pike, Little Rock, Ark., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. FRANK W. WHITMORE, St. Paul.

To Fort Riley for instruction, Lieut. WILLIAM J. KUCERA, Hutchinson.

To Houston, Tex., Ellington Field, Signal Corps Aviation School, from Mineola, Lieut. REUBEN A. JOHNSON, Minneapolis.

To New Haven, Conn., for duty, Lieut. GUY BRELSFORD, State Sanatorium.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Jackson, Columbia, S. C., base hospital, from Fort Riley, Major PAUL B. COOK, St. Paul.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp MacArthur, Waco, Tex., base hospital, Lieut. FELPHIN W. KOHLER, Albany.

The following order has been revoked: To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, Major PAUL B. COOK, St. Paul.

Mississippi

To Fort Oglethorpe for instruction, Capt. WILLIAM E. MOODY, Lake; Lieuts. HENRY K. WADE, Sherman; JOHN L. TRICE, Tupelo.

To Jackson Barracks, La., to examine the command for nervous and mental diseases, and on completion to his proper station, from Camp Logan, Lieut. THOMAS C. CLEVELAND, Meridian.

To New York City, Neurological Institute, for instruction, from Camp Doniphan, Major JOHN W. BARKSDALE, Winona.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Doniphan, Capt. THOMAS W. HOLMES, Winona.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ROBERT M. WEBB, Noxapater.

Missouri

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Kearny, Lieut. CAMERON A. ROSE, Kansas City.

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Capt. CLAUDE E. FRAZIER, Kansas City. As assistant to camp surgeon, from West Point, Lieut. ROY F. MILLS, Odessa.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. PAUL C. DAVIS, Moberly.

To Fort McHenry, Md., for temporary duty, from New York City, Major WILLIAM E. LEIGHTON, St. Louis.

To Fort Oglethorpe for instruction, Capt. LOGAN O. HAMILTON, Koch.

To Fort Porter, N. Y., for duty, from Ann Arbor, Capt. WILLIAM T. PATTERSON, Hannibal.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Bowie, Fort Worth, Tex., base hospital, Lieut. FRANK H. RAAB, Kansas City. On completion to Camp Doniphan, Fort Sill, Okla., base hospital, Lieut. PATRICK MCGENNIS, St. Louis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to his proper station, from New Orleans, Major JOHN C. MORFIT, St. Louis. On completion, to Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. QUITMAN U. NEWELL, St. Louis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. HIRAM S. WINTERS, Oran; CLARENCE CARDWELL, Stella.

The following orders have been revoked: To Army Medical School, for instruction, Lieut. JAMES E. WILLIAMS, St. Louis. To Camp Meade, Annapolis Junction, Md., for duty, Lieut. JAMES F. McFADDEN, St. Louis.

Montana

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. WEAVER B. ROGERS, White Sulphur Springs.

To Camp Lewis, Wash., base hospital for observation treatment, and report, Major LE ROY SOUTHMAYD, Great Falls.

To Fort Riley for instruction, Lieut. LEE K. GIBSON, Bozeman.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HUGH M. WARE, Butte.

Nebraska

To Camp Grant, Rockford, Ill., base hospital, from New York City, Lieut. JAMES F. KELLY, Dawson.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. FRANK H. MORROW, Columbus.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp MacArthur, Waco, Tex., base hospital, from Fort Leavenworth, Lieut. CLARK D. SPIVEY, Lincoln.

To Fort Riley for instruction, Capt. HARRY W. FRANCIS, Bancroft; Lieuts. NEILL J. EVERITT, Kearny; JOSEPH P. SWOBODA, Omaha; LOUIS D. MCGUIRE, Wisner.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. GUY S. PHILBRICK, Omaha.

Honorably discharged, Capt. HARRY M. BONNIWELL, Lincoln. On account of physical disability existing prior to entrance into the service, Lieut. RAYMOND A. YOUNG, Auburn.

Nevada

To Fort Riley for instruction, Lieut. WALTER S. HOLMQUIST, Ely.

New Hampshire

To Camp Meade, Annapolis Junction, Md., as member of the board examining the command and for mental and nervous diseases, from New York City, Capt. LEE C. STILLINGS Alstead.

To New York City, Neurological Institute, for intensive training, from Hoboken, Lieut. GOODWIN A. JOHNSON, Concord.

New Jersey

To Camp Devens, Ayer, Mass., base hospital, from Boston, Capt. CHARLES R. MITCHELL, Paterson.

To Camp Dix, Wrightstown, N. J., as member of the tuberculosis examining board, from Camp Sevier, Lieut. EDWARD S. KRANS, Plainfield. Base hospital, Lieut. ALONZO W. LITTLE, Secaucus.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Kearny, Lieut. JOHN PELLARIN, West Hoboken.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Lieut. BERNARD A. O'CONNOR, Harrison.

To Camp Kelly, San Antonio, Tex., for duty, from Wichita Falls, Capt. CLARENCE LE F. VREELAND, Pompton Lakes.

To Camp Upton, L. I., N. Y., base hospital, Capt. GERHARD H. COCKS, Lakewood.

To Fort Bliss, Tex., for duty, from Camp Grant, Major CHARLES E. MACDONALD, Salem.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CHARLES BROWNE, Princeton; LAWRENCE E. ROGERS, Trenton.

New Mexico

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. ORVILLE B. MOON, Mills.

To Fort Riley for instruction, Lieuts. ENOCH C. PRICE, Captain WILLIAM G. BASSETT, Des Moines.

New York

To Camp Hancock, Augusta, Ga., base hospital, from Allentown, Major DANIEL A. SINCLAIR, New York; from Newport News, Capt. EMIL ALTMAN, New York. For duty, from Fort Oglethorpe, Capt. JOS. A. LANAHAN, Albany; Lieut. SAMUEL GRIENSTEIN, Buffalo.

To Camp Jackson, Columbia, S. C., base hospital, Capt. PHILIP S. POTTER, Syracuse. For duty, from Fort Schutler, Major WILLIAM E. FITCH, New York; from Fort Oglethorpe, Lieut. HIRAM S. YELLEN, Buffalo.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. SAMUEL ROTH, New York.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. ISIDOR E. SHACK, Brooklyn.

To Camp Lee, Petersburg, Va., with the board examining the command for cardiovascular diseases, Capt. JOHN B. ZABRISKIE, Brooklyn.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieuts. FRANCIS G. RILEY, Jamaica; DONALD A. MACDUFFIE, Olean.

To Camp Sheridan, Montgomery, Ala., for duty, from New York, Capt. LEON M. WILBOR, Jasper.

To Camp Sherman, Chillicothe, Ohio, with the board examining the command for cardiovascular diseases, from Fort Oglethorpe, Lieut. ORVILLE H. RICHER, New York.

To Fort Oglethorpe, for instruction, Capt. CHARLES BREWER, CONRAD M. MEYER, ERNEST C. SCHULTZE, New York; Lieuts. DANIEL F. HANNON, IVAN M. SCHNEIBLE, Albany; THEODORE P. GOLDSTEIN, HAROLD C. GOLLY, LEO JACOBS, SAMUEL SOLOVEI, Brooklyn; JOHN G. GROTTZ, Buffalo; LEON J. CAMCHE, Elmira; DWIGHT G. DUDLEY, Endicott; ABRAM B. BRUNER, DANIEL P. GILLESPIE, WALTER F. HUME, New York; from Camp Gordon, Lieut. HENRY M. SPOFFORD, Batavia.

To Fort Sam Houston, Tex., for duty, from Rockefeller Institute, Lieuts. ADOLPH G. DE SANCTIS, JACQUES S. UHR, New York.

To Fort Screven, Ga., to examine the command for mental and nervous diseases, and on completion to his proper station, from Camp Wheeler, Lieut. PERCY L. DODGE, Poughkeepsie.

To Fort Thomas, Ky., for duty, Capt. HENRY JAMES, New York.

To Fox Hills, N. Y., for duty, Lieut. JACOB BUCKSTEIN, Brooklyn; from Cape May, Major DAVID BOVAIRD, New York.

To Hoboken, N. J., base hospital, Lieut. CHARLES E. SEVIER, New York; from New York, Capt. EDWARD T. WENTHWORTH, Rochester; from Fort Oglethorpe, Lieut. DAVID T. BREWSTER, Jr., Poughkeepsie.

To Lakewood, N. J., for duty, from Camp Wadsworth, Lieut. ALBERT C. MARGULIES, Brooklyn.

To Markleton, Pa., base hospital, from Army Medical School, Lieut. JOSEPH D. ROSENTHAL, New York.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Fort Monroe, Lieut. JOHN H. DUNNINGTON, New York.

To New Haven, Conn., for instruction, and on completion to his proper station, from Otisville, N. Y., Capt. WILLIAM J. HAMMER, New York.

To Newport News, Va., for duty, Lieuts. SAMUEL SOLOVEI, Brooklyn; LOYAL L. DUNLOP, Stoney Creek; from Fort McPherson, Major EDWARD W. PINKHAM, New York.

To New York City, Bellevue Hospital, for instruction, and on completion to Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion to Camp Devens, Ayer, Mass., base hospital, Lieut. CLARENCE P. KUMMER, Buffalo.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, Capt. JOSEPH F. LONG, Brooklyn. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. THOMAS J. LUBY, New York. On completion to Camp Wheeler, Macon, Ga., base hospital, Lieut. WILLIAM F. MITCHELL, Syracuse.

To Richmond, Petersburg and Hopewell, Va., for inspection, and on completion to his proper station, Lieut. WILLIAM G. PHILLIPS, Jr., Brooklyn.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Oglethorpe, Lieut. WILLIAM P. SWEENEY, New York. On completion to Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. RAYMOND T. POTTER, Ellenville.

Honorably discharged on account of physical disability incident to the service, Lieut. ROBERT KNIGHT, Seneca Falls. On account of physical disability existing prior to entrance into the service, Lieuts. FRANCIS G. RILEY, Jamaica; DONALD A. MACDUFFIE, Olean.

The following order has been revoked: To Fort Oglethorpe, for instruction, Lieut. ROBERT J. SHEA, New York.

North Carolina

To Camp Gordon, Atlanta, Ga., for duty, from Camp MacArthur, Lieut. LOUIS N. WEST, Raleigh; from Fort Oglethorpe, Lieuts. JOHN C. RICH, Candler; MURRAY P. WHICHARD, Tyner.

To Camp Greene, Charlotte, N. C., base hospital, Lieut. CHARLES Z. CANDLER, Sylva; from Fort Oglethorpe, Lieut. JOS. A. HARTSELL, Concord.

To Camp Hancock, Augusta, Ga., base hospital, from Camp Grant, Lieut. JOSEPH W. HOOPER, Wilmington.

To Fort Sam Houston, Texas, for duty, from Camp Forrest, Major CHARLES O'H. LAUGHINGHOUSE, Greenville.

To Fort Screven, Ga., to make nervous and mental examinations, from New York City, Lieut. EVERETT S. BARR, Asheville.

Honorably discharged on account of physical disability not incurred in line of duty, Lieut. WILLIAM C. WILLIAMS, Apex. On account of physical disability existing prior to entrance into the service, Lieut. JOSEPH R. SKULL, Cliffside.

The following order has been revoked: To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. RALPH C. SADLER, Bladenboro.

North Dakota

To Camp Jackson, Columbia, S. C., base hospital, from Hoboken, Capt. ORVILLE N. MELAND, Grand Forks.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. WILHELM S. ANDERSON, Grand Forks.

Honorably discharged, Lieut. BENJAMIN FRANKSON, Rugby.

Ohio

To Camp Gordon, Atlanta, Ga., base hospital, Lieuts. ORRIN C. McDOWELL, Akron; ARTHUR E. ROBERTSON, Cleveland; from Camp Sherman, Capt. WILLARD C. STENER, Cleveland; Lieut. ROYAL G. GROSSMAN, Lakewood; from Fort Oglethorpe, Lieuts. VICTOR B. WELLER, Delaware; SQUIRE S. BEVERLY, Toledo; from Walter Reed General Hospital, Lieut. ROY F. DRURY, Akron.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. JAY G. KEISER, Columbus; MELVILLE M. MCNERNEY, Corning; JOSEPH A. TURNER, Linden Heights.

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Capt. JOHN C. MILLER, Payne; Lieuts. ARTHUR W. CARLEY, Dayton; JOSIAH M. PUMPHREY, Mount Vernon; CARL H. GRAF, Sciotoville.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieuts. HENRY B. RAMAN, Cincinnati; FRANCIS E. REED, Wren.

To Camp MacArthur, Waco, Texas, to examine the command for nervous and mental diseases, from El Paso, Lieut. JAMES A. BELYEA, Toledo.

To Camp Pike, Little Rock, Ark., base hospital, from Rockefeller Institute, Lieut. JAMES R. DAVIS, Painesville.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Dix, Lieut. SAMUEL J. ELLISON, West Union; from Fort Oglethorpe, Lieut. GLEN NISLEY, Chillicothe; from Garden City, Lieut. JOSEPH R. MONTGOMERY, Steubenville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieuts. ANTON W. OELGOETZ, Columbus; MURRAY E. REEDER, Ohio City.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Meade, Lieut. MINER R. KENDALL, Cleveland.

To Cape May, N. J., for temporary duty, from Cleveland, Capt. JOHN M. INGERSOLL, Cleveland.

To Edgewood, Md., base hospital, from Camp Jackson, Lieut. ADAM B. DENISON, Cleveland.

To Fairchild, Ohio, Wilbur Wright Field, Signal Corps Aviation School, from Dayton, Lieuts. LOUIS C. WOTTRING, Cincinnati; PAUL A. DAVIS, Columbus.

To Fort Oglethorpe for instruction, Capt. LUTHER P. HOWELL, Washington C. H.; Lieuts. ROBERT C. VAN BUREN, Carey; FRANK J. GALLAGHER, Cleveland; JOHN A. MELLON, Columbiana; WAL-

TER M. LEONARD, Fostoria; PETER E. KERN, Gibsonburgh; JOHN D. SIDDALL, Kalida; STUCKEY A. CONRAD, Leetonio; ALFRED P. HANCUFF, Youngstown; HARRY M. RAMBO, Zanesville.
Honorably discharged, Lieuts. WILLIAM J. FRANCIS, Kalida; JAMES W. SALISBURY, West Toledo. On account of physical disability, existing prior to entrance into the service, Capt. CLARON B. PFEIDER, Columbus; Lieuts. IGNATIUS W. MATUSKA, Cleveland; JOSEPH H. FRAME, Highland; FREDERICK T. MILES, Salem.

Oklahoma

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Capt. ANTONIO DEB. YOUNG, Oklahoma City.
To Fort Riley for instruction, Lieut. RICHARD E. THACKER, Norman.

To McAlester, Okla., for duty, and on completion to the inactive list, Lieut. LOYD M. SACKETT, Oklahoma City.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Jackson, Columbia, S. C., base hospital, from Fort Riley, Lieut. GARNETT, A. KILPATRICK, Wilburton.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Logan, Houston, Texas, base hospital, Lieut. WALLACE A. AITKEN, Enid.

Honorably discharged, Lieut. CHARLES E. HOUSER, Vici. On account of physical disability incident to the service, Lieut. WILLIAM A. L. COSSEY, Prague. On account of physical disability existing prior to entrance into the service, Lieut. JAMES E. PARRAMORE, Antlers.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, Lieut. ISIDOR C. BRILL, Portland; from Fort McHenry, Capt. THOMAS M. JOYCE, Portland.

To Fort Riley for instruction, Lieuts. ARTHUR W. BOSLOUGH, Ashland; WILLIAM H. POLLARD, Springfield; ROY B. CRAVER, Yamhill.

To Portland, Ore., Yeon Bldg., for duty, Lieut. AMON W. BOTKIN, Portland.

To Vancouver Barracks, Washington, to examine the command for nervous and mental diseases, from Talmage, Calif., Lieuts. KENNETH W. KINNEY, Astoria; CLARENCE U. SNIDER, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEONARD H. VINCENT, Crane.

Pennsylvania

To Camp Beauregard, Alexandria, La., as orthopedic surgeon from Army Medical School, Lieut. ALBERT P. BERG, Philadelphia.

To Camp Crane, Allentown, Pa., base hospital, from Army Medical School, Lieut. ARTHUR E. SIMONIS, Fremont.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. THOMAS V. McLAUGHLIN, Wilkes-Barre.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Lieut. FRANK E. SMITH, New Kensington.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Lieut. GARDNER A. SAYRES, Lancaster; from Lakewood, Lieut. MILTON H. BACHMAN, McKeesport. For duty, Lieut. OLIVER K. SPEER, Tamaqua.

To Camp Grant, Rockford, Ill., base hospital, from New York City, Lieut. CHARLES H. KIRK, Homer City.

To Camp Logan, Houston, Texas, for duty, from Fort Oglethorpe, Lieut. WILLIAM J. McGRANER, Port Alleghany.

To Camp MacArthur, Waco, Texas, base hospital, from Fort Oglethorpe, Lieut. ROBERT W. RICHARDS, Shingle House.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. PHILIP A. TRAU, Philadelphia; WILLIAM H. M. IMHOFF, Willow Grove. To examine the command for nervous and mental diseases, Lieut. JACOB PEARL, Philadelphia.

To Camp Pike, Little Rock, Ark., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. WILLIAM W. McC. MILLS, Du Quesne.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Gordon, Capt. FERDINAND L. BENZ, Pittsburgh; from Fort Oglethorpe, Lieut. GEORGE H. B. TERRY, Wyalusing.

To Cape May, N. J., for temporary duty, from Philadelphia, Capt. BURTON K. CHANCE, Philadelphia.

To Colonia, N. J., for temporary duty, Lieut. GEORGE W. SCHLINDWEIN, Erie.

To Columbus Barracks, Ohio, for temporary duty, Lieut. DEN C. LINDLEY, New Castle.

To Fort Oglethorpe for instruction, Lieuts. JOHN H. MOSS, Archbold; ALBERT F. DUNSBORO, Barnesboro; PAUL M. HUNSICKER, Beaver Meadow; ROBERT C. KOONS, Conyngham; WILLIAM T. DONCASTER, Jeannette; NATHAN ASHINSKY, Pittsburgh; JOHN F. SPEARMAN, Sharon; from New York City, Lieut. SIDNEY KALLAWAY, Homestead.

To Fort Thomas, Ky., for duty, from New York City, Lieut. HORACE L. CARNCORSS, Philadelphia.

To Rock Island, Ill., for duty, and on completion to his proper station, from Camp Wheeler, Capt. VINCENT J. FENERTY, Philadelphia.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, from Newport News, Capt. WILLIAM S. RUCH, Carlisle.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CLOY G. BRUMBAUGH, Huntingdon; HARRY A. DUNCAN, Philadelphia; LEO DEL. PARRY, Rock Glen.

Resignation of Lieut. FRANKLIN W. MATHEWSON, Oakdale, accepted.

The following orders have been revoked: *To Camp A. A. Humphrey*, Accotink, Va., for duty, Lieut. HARRY A. DUNCAN, Philadelphia.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Gordon, Capt. FERDINAND L. BENZ, Pittsburgh.

South Carolina

To Baltimore, Md., John Hopkins Hospital, for instruction in pathology, from Rockefeller Institute, Lieut. FRANCIS A. COWARD, Columbia.

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM R. BLACKMON, Rock Hill.

To Williamsbridge, N. Y., for observation and treatment, from Fort Riley, Lieut. SAMUEL S. BRUINGTON, Georgetown.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HERBERT H. ACKER, Anderson.

South Dakota

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. JAMES H. CRAWFORD, Castlewood.

To Fort Riley for instruction, Lieut. CHARLES A. WILLIAMS, Doland.

To Kansas City, Mo., for duty, and on completion to his proper station, from Fort Leavenworth, Lieut. GEORGE A. STEVENS, Sioux Falls.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JAMES C. WALTON, Isabel.

Tennessee

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. GROVER C. WEBB, Memphis.

To Camp Forrest, Chickamauga Park, Ga.; *Fort Oglethorpe*, and *Memphis, Tenn.*, Park Field, from Camp Hancock, Capt. LEE A. STONE, Memphis.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Capt. CHARLES L. GOODRICH, Fayetteville.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Gordon, Capt. LEON L. MEYER, Memphis.

To Camp Logan, Houston, Texas, for duty, from Fort Oglethorpe, Lieut. DAVID H. JAMES, Nashville.

To Camp McClellan, Anniston, Ala., as assistant to the camp surgeon, from West Point, Capt. JOHN M. LEE, Nashville.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Capt. CARL T. SPECK, Cleveland. On completion to Camp Bowie, Fort Worth, Texas, base hospital, Lieut. WILLIAM D. RICHARDS, Etowah.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion to his proper station, from Fort Oglethorpe, Major FRANK D. SMYTHE, Memphis.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, from Camp Wadsworth, Lieut. PHILIP J. TRENTZACH, Rives.

Honorably discharged, Lieut. JOHN W. FROST, Dyer.

The following order has been revoked: *To Hoboken, N. J.*, for duty, Capt. GEORGE E. VAUGHAN, Clarksville.

Texas

To Army Medical School, for instruction, Lieut. HORACE H. HILLIARD, Canton.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. HERSHALL LAForge, Kingsbury.

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. DOLPHUS E. COMPERE, Dallas.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Joseph E. Johnston, Capt. JOSEPH E. JOHNSTON, Kirvin; from Fort Oglethorpe, Lieut. CLAUDE E. PIERSALL, Wolfe City.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Travis, Capt. ROBERT F. MILLER, San Antonio; from Camp Upton, Capt. OWEN R. O'NEILL, Clarksville; from Fort Oglethorpe, Lieut. WILLIAM A. LEE, Denison.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Hancock, Major WALLACE KALSTON, Houston.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. GEORGE M. JONES, Smithville.

To Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment, Major WALLACE RALSTON, Houston.

Honorably discharged, Lieut. JOHN J. TRIBLE, Fort Lavosa.

The following order has been revoked: *To Army Medical School* for instruction, Lieut. FREDERICK L. STORY, Ennis.

Utah

To Camp Wheeler, Macon, Ga., base hospital, from Fort Riley, Lieut. JOHN O. COOK, Sunnyside.

To Fort Riley for instruction, Lieut. HARRY S. SCOTT, Salt Lake City.

Vermont

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. JOHN M. CAISSE, Vergennes.

To Fort Oglethorpe for instruction, Capt. WALTER J. WHITE, Middlebury.

Virginia

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. ERNEST B. MILLER, Elkton.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. FRANK D. WILLIS, Newport News.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. PAUL DAVIS, Roanoke.

To Fort Oglethorpe for instruction, Lieuts. HERMAN P. DAVIDSON, Lexington; EDGAR A. MOORE, Paris; WALTER D. SIMMONS, Richmond; HARRY C. HARRIS, Roanoke; WILLIAM L. VARN, Walkerton; from Army Medical School, Lieut. ARTHUR HOOKS, Blackstone.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE Y. MacMURPHY, The Plains.

Washington

To Camp Lewis, American Lake, Washington, for duty, from Portland, Ore., Lieut. JOSEPH HEHIR, Sedro-Woolly.

To Fort Monroe, Va., for temporary duty, from New York City, Capt. HARRY G. WILLARD, Tacoma.

To Fort Riley for instruction, Lieut. WILLIS H. HALL, Seattle.

To Hoboken, N. J., for temporary duty, from New York City, Capt. HARRY E. ALLEN, Seattle.

West Virginia

To Camp McClellan, Anniston, Ala., base hospital, Capt. HARRY M. LAVILLE, Littleton.

Wisconsin

To Camp Gordon, Atlanta, Ga., base hospital, from Boston, Lieut. JOHN W. HANSEN, Milwaukee.

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieuts. GEORGE W. HARRISON, Ashland; JAMES H. FOWLER, Lancaster.

To Edgewood, Md., base hospital, Lieut. EMIL H. SUTTER, Milwaukee.

The following orders have been revoked: *To Camp Cody*, Deming, N. M., base hospital, Capt. GERHARD A. BADING, Milwaukee. *To Fort Riley* for instruction, Lieut. KNUTE A. RUETHIN, Ridgeland.

Wyoming

To Fort Riley for instruction, Lieut. EDWARD R. SCHUNK, Dietz.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Washington Conserves Its Supply of Nurses for the Civil Population.—Washington is suffering from a shortage of graduate nurses. So many nurses have gone into the service of the Army, Navy, and Red Cross, and the population of the city has been so largely increased that the Medical Society of the District of Columbia and the Town and Country Nursing Service of the American Red Cross have felt it necessary to take action to conserve the available supply of graduate nurses. During March, 1918, the Nurses' Registry was able to answer only seventy-three requests for graduate nurses out of a total of 338 requests filed. A public appeal contains the following recommendations:

1. No person should be allowed to have a graduate nurse for minor illness or any purpose other than the care of a seriously ill patient. Nurses are now being retained by many people simply as companions and children's caretakers.

2. A graduate nurse should not be retained on a case after convalescence is well established.

3. Hourly nurses and visiting nurses should be used as much as possible in place of full-time, resident nurses.

4. Patients in hospitals should be cared for by the pupil nurses unless very seriously ill.

5. Women who have taken the Red Cross home nursing course should endeavor to take care of those sick in their own families.

6. Young women of education should be urged to enter training schools for nurses.

7. The public generally should supply the funds to make it possible for the training schools to increase their classes.

If people understand the situation and are willing to practice self-denial, the present supply of nurses can be so wisely and frugally distributed that all imperative needs will be met—and the seriously sick will be cared for.

To make such nurses as are available serve in those places where they can do the greatest possible good, the Medical Society of the District of Columbia has adopted the following resolution and appealed to its members to be guided by the principles laid down in it.

That the society recognizes the prevailing and increasing shortage of trained nurses and urges upon its members the duty of distributing the services of nurses still available in such manner as will best serve the public good; it therefore recommends that members will (1) discourage the employment of trained nurses except in cases in which the safety of the patient demands skilled care; (2) release nurses from the care of patients at the earliest possible moment, so as to make their services available to others; and (3) where possible utilize the service of hourly nurses and practical nurses.

FLORIDA

State Meeting.—The Florida State Medical Association will meet at Tampa, May 15 and 16, for the 1918 session.

ILLINOIS

Chicago

Report of Visiting Nurse Association.—The twenty-eighth annual report of the Visiting Nurse Association of Chicago describes the association as "a field hospital furnishing skilled nursing care to the sick in their own homes" and shows that during 1917 there were 241,352 visits made in the homes of 34,427 patients, 32,488 of whom were new patients. There were ninety-six nurses on the staff whose work is classified into special services.

KENTUCKY

Trachoma.—Fifty cases of trachoma have been discovered in schools in Jefferson County outside of Louisville by officials of the U. S. Public Health Service, and Surg. John McMullen of the service has come to Louisville to aid in treating this disease.

MARYLAND

Personal.—Drs. Hugh Hampton Young and George H. Hocking have been reappointed members of the state lunacy commission by Governor Harrington. Dr. Young, who is president of the commission, is now in France, and during his absence Dr. Hocking is acting president.

Coroners Appointed.—The following physicians have been appointed by the governor as coroners for the different sections of Baltimore City: southwestern, Dr. James M. Fenton; eastern, Dr. Henry L. Sinskey; northern, Dr. John J. Morrissey; northwestern, Dr. James G. Wiltshire; western, Dr. Harry K. Gorsuch; central, Dr. William T. Riley; southern, Dr. Otto M. Reinhardt; northeastern, Dr. James K. Insley; at large, Dr. F. Edward Smith.

To Enlarge Hospital No. 7.—Plans are under way and building operations will begin at once to enlarge General Hospital No. 7, the government hospital for soldiers and sailors who become blind or deaf in the war, located just outside of Baltimore. Some of the new buildings will be used as dormitories for the military staff of the hospital and others as classrooms, where the men will be given vocational training as a means of support in spite of their handicap.

MISSOURI

Action Taken Regarding Disloyalty.—The Missouri State Medical Society, concurred in by the St. Louis Medical Society, has agreed by resolution that any member of these societies who in any way gives aid and comfort to the enemy is disqualified for membership. Under this action, a committee has been appointed by the St. Louis Medical Society to inquire into charges made by Dr. Koettler as to the loyalty of Dr. Charles H. Weisenberg, the report having been made to the society at its meeting, April 20.

NEW YORK

Personal.—Mildred Penrose Stewart, M.A., P.H., who obtained her M.A. degree in public health from the University of California, has been appointed director of the Dutchess County Health Association, with headquarters at Poughkeepsie. She is a graduate of Vassar, 1908, and for seven years taught physiology and hygiene in Pratt Institute, Brooklyn.—Dr. Franklin C. Graves, chief of the Bureau of Vital Statistics of Buffalo, has been appointed acting health commissioner, succeeding Dr. Francis E. Fronczak, who has been commissioned major, M. R. C.—The employees of the Buffalo Health Department, April 2, presented former Health Commissioner Major Francis E. Fronczak, M. R. C., with a military trunk and hand bag. Major Fronczak left for Washington, April 6.—Dr. Daniel Pugh, Utica, who has been serving in France with the Red Cross and who has recently been under treatment in the American Woman's Hospital for Officers in London, is now on duty in the Military Hospital in Liverpool.—Dr. James W. Charters, Buffalo, fractured his right arm, March 22, while cranking his automobile.—Dr. Carl G. Zimmerman, Elmira, who has been in a hospital for seven weeks, has recovered and resumed his practice.

New York City

Investigation of Randall's Island.—Commissioner Coler of the charities department is conducting an investigation of the institutions on Randall's Island which are under the direction of the department of charities. It is alleged that administrative conditions are unsatisfactory.

Three More Hospitals to Care for Wounded Soldiers.—The Montefiore Home and the Hebrew Orphan Asylum have outlined plans for extending the work of these institutions to aid the government in its care of wounded soldiers. The government has accepted the offer of 100 beds in the Montefiore Home on Gunhill Road in the Bronx, near the Columbia War Hospital. The newly erected private hospital of the Montefiore Home has also been placed at the disposal of the government for the care of returning incapacitated officers. This offer is now under consideration by the medical department. The board of directors of the New York Ophthalmic Hospital announce that, during the second year of the war, the hospital will specialize in the injuries to soldiers' eyes. It will give surgical and medical attention to drafted men and recruits, to disabled and wounded soldiers and to dependents of soldiers. It will also give special attention to the training of doctors and nurses for war work, especial emphasis being given to the care of diseases of the eye, ear, nose and throat.

Health Department Changes Head.—Dr. Lewis J. Amster, following his refusal to accede to the demand of Mayor Hylan that he should remove Drs. Abraham Jacobi and Sigismund S. Goldwater from the medical advisory council of the health

department, sent in his resignation as health commissioner, April 29. In giving his reasons for refusing to hold office any longer, Dr. Amster objected to continuous interference and petty direction from the mayor; to the holding up of requests for the filling of important vacancies in the department; to suggestions for the successive abolishment of baby health stations maintained by the department; to the holding up of requests for other important appropriations and inaction in clearing up garbage and ashes in the streets; to the executive order that bureau heads be summarily dismissed on the ground that they held their positions illegally; to the turning over of graft investigations to the civil service commission, and the transference of the Otisville sanatorium to the federal government without conferring with the commissioner. Dr. Royal S. Copeland has been appointed to succeed Dr. Amster. One of the new commissioner's first official acts was to suspend Dr. Lucius P. Brown, director of the bureau of food and drugs, pending trial on charges made by the new health commissioner. Dr. Copeland gives as his reason for suspending Dr. Brown the fact that the latter made public his reply to the attack made on the conduct of the bureau of food and drugs by Chairman James E. McBride of the civil service commission. The committee on wartime problems of New York Academy of Medicine has adopted resolutions, which were sent to Dr. Amster, applauding his action in refusing to be a party to the spoliation of the health department. The executive committee of the citizens' union has also sent resolutions to Dr. Amster congratulating him on the stand he has taken and expressing their appreciation of his courage and wisdom in his struggle in behalf of the people of New York. Letters from various organizations and from physicians protesting against changes that threaten the efficiency of the health department continue to pour in on the mayor.

NORTH CAROLINA

Personal.—Dr. Samuel S. Coe has been selected as city physician of High Point, succeeding Dr. Thomas M. Stanton, who has resigned to enter the military service.

Health Officers Meet.—The North Carolina State Health Officers Association, composed of health officers, county physicians, quarantine officers, medical inspectors of schools, and others interested in public health work met in conference in Pinehurst, April 15, under the presidency of Dr. Darius C. Absher, Henderson. The morning session was devoted to the discussion of quarantine and control of contagious diseases. The afternoon was occupied in the inspection of the state sanatorium for the treatment of tuberculosis, and in the evening, medical inspection of schools and the treatment of defective children were considered.

OHIO

Tuberculosis Items.—Final action on the proposition to establish a district tuberculosis hospital for the counties of Lorain, Erie, Huron, Ottawa, and Sandusky was taken at a meeting of the five boards and of the county commissioners held in Lorain, April 11.—At a conference of the governor with Dr. Stephen A. Douglass, superintendent of the Ohio State Sanatorium, Mount Vernon, and Mr. D. S. Creamer of the state board of administration held in Columbus, March 21, it was decided to erect additional cottages at the Mount Vernon institution, to care for the Ohio soldiers who may develop tuberculosis while in military service.

Personal.—Dr. Martin Friedrich, Cleveland, municipal medical expert, was seriously injured, March 30, in a collision between the automobile in which he was riding and a motor truck.—Dr. R. W. Cole, city epidemiologist of Akron, has left for his new post of duty as director of West Virginia's division of communicable diseases, public health, education, and statistics, with headquarters at Charleston.—Dr. Francis J. Firmin, Findlay, announces his retirement from the practice of medicine.—Dr. Thomas G. McCormick has been made chief surgeon to the Chesapeake and Ohio system at Portsmouth, succeeding Dr. Orin W. Robe, who has resigned to enter military service.—Dr. Walter H. Rieger, Cleveland, for eight years surgeon for the Cleveland Railway Company, has been appointed house surgeon at the Manhattan Hospital, New York.—Dr. Herman S. Rhu, Marion, fractured his right arm and dislocated his right wrist while cranking his automobile, March 19.

Cincinnati

Personal.—Dr. Joseph W. Kirgan, Hyde Park, has resigned as a member of the state fish and game commission to take

up oversea service under the auspices of the Y. M. C. A., as building secretary.—Dr. Emerson A. North has been superintendent of Longview Hospital, succeeding Dr. Frank W. Harmon, who resigned after thirty-seven years of service.—Dr. Frank H. Lamb has sailed for France to work with the American Red Cross Bureau of Infant Welfare.—Dr. Frank Scherrer, Norwood, sustained severe bruises in a collision between his automobile and a trolley car, March 26.—Dr. Walter E. List, assistant superintendent of the Cincinnati General Hospital, has been appointed acting superintendent during the absence of Dr. Arthur C. Bachmeyer, who is in military service.—Dr. E. A. Martin, assistant superintendent of the antituberculosis hospital, has been appointed acting superintendent of the institution.

PENNSYLVANIA

Personal.—Dr. Frederick W. Roberts, Plymouth, has brought suit for \$50,000 damages against Hanover County and a local contractor on account of the death of his wife in an automobile accident several months ago.—April 4, the Clinton County Medical Society tendered a banquet to Dr. Luther M. Holloway, Salona, who has completed half a century of practice, and Dr. Francis P. Ball, Lock Haven, who has resumed practice.—Dr. John W. Wright has been reelected health officer of Erie for the thirty-third consecutive term.—Dr. J. C. Stern, Goldsboro, suffered a cerebral hemorrhage at New Cumberland, March 27.—Dr. Isaac Simon, Elizabethtown, while making a professional call recently, was shot and seriously wounded by the chief of police, who mistook him for a burglar.—The Lackawanna County Medical Society gave a banquet, March 20, in honor of its former president, Capt. Daniel A. Webb, C. A. M. C.—Drs. Simon S. Koser and Cynthia E. Koser, Williamsport, have started on a two-year trip to the British coast and Alaska.

Philadelphia

Personal.—Dr. James P. Hutchinson, in charge of the American Military and Red Cross Hospital No. 1 at Neuilly, has been honored with the French Cross for his hospital work in France. Dr. Hutchinson was a member of the staffs of the Pennsylvania and University Hospitals until he went to France in 1915 with the University of Pennsylvania Hospital Unit, of which the late Dr. J. William White was the head. Since Dr. Hutchinson has been in France, reports have reached here telling of his brilliant work for the wounded soldiers. The Cross of the Legion of Honor was bestowed on him a few weeks ago.—A dinner in honor of Dr. Samuel D. Risley, the father and dean of American ophthalmologists, who is retiring from public practice after forty-eight years of continuous service, was given, May 1, by the ophthalmologists of Philadelphia and other leading medical men. The testimonial meeting was presided over by Dr. G. Oram Ring. A silver loving cup was presented to Dr. Risley.

TEXAS

Baby Hospital Opened.—The Fort Worth Baby Hospital was formally opened, March 21. The hospital was built by the women's clubs of the city. Dr. Khleber H. Beall is resident physician of the institution.

State Society Meeting.—The annual meeting of the State Medical Association of Texas will be held in San Antonio, May 14-16. An exhibition of field hospitals will be given, May 13, and the entire meeting of the association will have a strong military trend as San Antonio is practically an armed camp.

VIRGINIA

Piedmont Tuberculosis Sanatorium Open.—The Piedmont Sanatorium for the treatment of tuberculous colored persons is now open and sixteen patients have been provided for in the institution. Forty beds are now available, and by fall it is expected that the capacity will be increased to eighty. This is a state institution and the nominal charge of \$2 a week is made for each patient. This is the first institution in the state for the care of tuberculous colored patients. Dr. H. G. Carter is the active head of the sanatorium.

CANADA

Personal.—Lieut.-Col. Charles H. Gilmour, Toronto, who has been overseas for more than two years, and recently has been made chief surgeon at the Ontario Military Hospital,

Orpington, is returning to Toronto.—Col. George E. Armstrong, Montreal, consulting surgeon to the Canadian Expeditionary Forces in England, is returning to Montreal.—Col. Charles A. Hodgetts, Ottawa, who has been overseas since the beginning of the war as Canadian Red Cross commissioner, is reported to have been given a position as deputy commissioner of medical services. Lady Perley, the wife of the Canadian High Commissioner in London, recently gave a reception in Colonel Hodgett's honor, at which he was presented with silver articles and an illuminated address by the Canadian Red Cross staff in London, England.—Col. Arthur E. Ross, Kingston, Ont., director-general of medical services, First Canadian Division, has recently been presented with the *Croix de Guerre* by the Belgian government.—Major William C. Laidlaw has been appointed deputy director of medical services at the Canadian Army Corps headquarters in France.—Major Claude E. Fortin is slated for chief of medical services in No. 10 (Winnipeg) Canadian Military District, succeeding Dr. Wellington H. Reilly, who is being transferred to Toronto for an important appointment.—Capt. Willis C. Connell has been serving for a year and a half in a British hospital, German East Africa. His home is at Prescott, Ont.—Capt. George F. Lewis, East View, Ont., went overseas in April, 1917, as medical officer. He served for a time with the Scottish Borders and then went to France. At present he is back in England and has charge of the men undergoing remedial treatment at Seaford, Sussex, England.—Lieut. Frank J. Elkerton, Chamberlain, Sask., who was for a time with the University of Toronto Base Hospital, has recently been appointed to the army medical board, Riseborough Barracks, Folkestone, England.—Capt. O. J. S. Little, Seaford, Ont., has received an appointment at the Ravenscroft Hospital, Seaford, England.—Lieut. Alexander E. Macdonald, Brantford, Ont., is now serving as medical officer to a Toronto battalion of the first division.—Capt. Arthur C. Armstrong, M. C., C. A. M. C., medical officer of the Ross Military Hospital, Regina, Alta., has been elected a Fellow of the Royal Institute of Public Health of London. He has received both the Military Cross and the *Croix de Guerre*.—Capt. Oswald J. Day of the Royal Medicals, Toronto, recently received a bar to his Military Cross for leading bearers through the enemy barrages and effecting the recovery of wounded close to the German lines.—Dr. William E. Gallie, orthopedic surgeon, Toronto, has gone to England.—Capt. Willard E. Hodgins, Lucan, Ont., is in Wellington, India, in charge of a British hospital.—Capt. James D. Shields, Mount Albert, Ont., has been appointed to the pension board at Ottawa.—Dr. Basil C. H. Harvey, Toronto, '98, is now with No. 13 Base Hospital, Fort McPherson, Atlanta, Ga.

GENERAL

Sanitarians to Meet.—The Southeastern Sanitary Association will hold its annual meeting at Knoxville, Tenn., May 20 to 22. Dr. Charles E. Smith, Greenville, N. C., is secretary of the organization.

Meeting Indefinitely Postponed.—According to a notice sent out by the secretary, Dr. Collier F. Martin, Philadelphia, the American Proctologic Society has decided not to hold its meeting in Chicago, June 10 and 11. The society will probably not meet again until after the war.

Gifts and Bequests.—The following gifts and bequests have recently been announced:

House of Rest for Consumptives, \$10,000, New York; New York Nursery and Child's Hospital, \$20,000; General Memorial Hospital for the Cure of Cancer and Allied Diseases, \$50,000; New York Asylum for the Blind, \$5,000, by the will of Mrs. Margaret E. Zimmermann, of New York City.

Census of Drug Addicts in the United States.—In order to determine more accurately than has ever been done heretofore the number and distribution of drug addicts in the United States, the commissioner of internal revenue has requested every physician registered under the Harrison Narcotic Law to report the number of drug addicts for whom he prescribed or whom he treated, during the calendar year 1917. The information called for includes the number of male addicts of all ages, the number of male addicts between the ages of 21 and 31 inclusive, and the total number of female addicts of all ages. The questionnaire sends out calls for the name and address of every male addict between the ages of 21 and 31 inclusive, which represents practically all males within the draft age.

The term "drug addict" is defined as meaning "any person who is a confirmed user of opium or coca leaves, their salts, derivatives, or preparations." The information called for is

said to be absolutely necessary for the use of the government in its work incident to the war, and strictest confidence is promised.

FOREIGN

Peruvian Hospital at Paris.—The Franco-Peruvian Hospital, maintained by the Peruvian colony in Paris, was formally inaugurated at 8 avenue d'Iéna in April. The hospital is for wounded and sick soldiers and is equipped with eighty beds.

Deaths in the Profession Abroad.—R. Rivalta, an Italian dermatologist and writer on his specialty, aged 46.—S. Pansini, professor of clinical medicine at the University of Naples, and one of the leading clinicians of Italy.—A. Montuori, instructor in physiology at the University of Rome and director of the Institute for physical education and experimental physiology.—C. Vibert, director of the laboratory for forensic medicine at the University of Paris and inspector general of the Morgue, author of numerous works on legal medicine and toxicology.

MEXICO, CENTRAL AND SOUTH AMERICA

Children's Sanatorium in Peru.—The Sociedad de Beneficencia Publica of Lima, Peru, has planned to construct a sanatorium for a colony of a thousand poor children, and donations have already been received insuring its realization.

Cumulative Index of the Revista Medica del Uruguay.—Our Montevideo exchange has just issued a single, comprehensive index for the twenty volumes of the *Revista* that have appeared to date. It forms a pamphlet of seventy-five pages.

Inter-University Gift of Casts.—The medical faculty of the University of Rio de Janeiro recently sent as a gift to the medical faculty of the University of Montevideo a set of wax models of some recent interesting cases in the dermatologic clinic.

Merging of Public Health Departments.—The *Revista Medica del Uruguay* mentions that the government of Paraguay is planning to combine the Asistencia Publica and the Departamento de Higiene under a single director-general and board of four members.

Milk Congress in Uruguay.—The minister of industries in Uruguay and the Consejo Nacional de Higiene organized in February at Montevideo a conference of persons connected with the dairy business and milk distribution, and the local medical and pediatric and the national veterinarian societies.

National Academy in Uruguay.—The government is now discussing the foundation of the Academia de Ciencias, Artes y Letras del Uruguay. It is proposed to have it composed of five institutes, one each for the medical sciences, the political sciences, the exact sciences, physics and nature and for arts and belles lettres.

Municipal Milk Distribution in Costa Rica.—The *Revista Medica del Uruguay* states that the medical faculty of the University of San José, Costa Rica, has appealed to the government for permission—which has been granted—for the municipality to assume charge of the distribution of milk, that is, to found an *expediente de leche*.

Data on Antityphoid Vaccination.—The Consejo Nacional de Higiene of Uruguay has sent a notice to all the physicians of the country instructing them, in sending in their notification of cases of typhoid fever, to specify whether the patient had been vaccinated against typhoid, and if so, to state the source of the vaccine, the number of injections, and the dates when they were made. The *Revista Medica* reproduces this notice with a word of comment on the value for the future estimation of antityphoid vaccination of data thus collected.

Conference on Typhus in Mexico.—The committee appointed at the recent national medical congress in Mexico to organize a conference on typhus, announces the date for Jan. 15 to 22, 1919, and urges collection of data by all the physicians of the country, giving a long list of questions to aid in compiling them for ready comparison, especially information in regard to the months when the typhus prevailed, the weather, rains, dust, association or precedence of other infectious diseases, conditions as to fomites, housing, etc. All communications and questions on the subject should be addressed to Dr. F. Ocaranza, San Juan de Letran, No. 19, Mexico, D. F. The complete list of questions and suggestions is given in Dr. Vasconcelos' *Pagina Medica* of *El Universal*, April 6, 1918.

PARIS LETTER

PARIS, April 4, 1918.

Bread Made Directly from Wheat Grain

At a recent meeting of the Académie de médecine, Drs. Leprince and Lecoq called attention to a new method of making use of grain by a direct and rapid panification, a method proposed by Pointe, of the army commissary department. The principle of this new method of procedure is as follows: The unmodified grain, just as it is gathered, is cleaned mechanically under a current of water; following this it is made to absorb by maceration at 50 degrees the water necessary to its complete hydration, in the presence of a trace of alcoholic yeast, the development of which should prevent any harmful secondary fermentations. Then the wheat is crushed between grooved cylinders and depulped by being forced through a metal drum sieve which sifts out the bran from the starch and nitrogen which alone are suitable for human food. The paste thus prepared contains the water necessary for bread-making, and all that is necessary then is to add the normal quantity of yeast, and then to go on with the baking as under the ordinary conditions. The yield by this procedure attains to 75 to 76 per cent. of the quantity of the wheat employed, and it is to be expected that with perfection of the mechanical part of the method it will be possible to attain to 80 per cent. of extraction, which would correspond to about 115 kilograms of bread for 100 kilograms of the wheat. The bread so prepared is of a perfect quality. As for the bran, it is used to make cakes for the feeding of cattle.

Restrictions Concerning the Regulation Bread

In a previous letter was published the decree regulating the manufacture and sale of certain food commodities. A new decree has been issued regulating the manufacture and consumption of the regulation breads and flours. Gluten bread should consist of two parts of gluten; casein bread should consist of one part of casein to four of flour. The bread ticket calling for 100 grams of bread for current consumption entitles the holder to 50 grams of the *pain de régime*. The *pain de régime*, the flours *de régime* and other flour products containing cereals, legume flours, starch flour or any kind of flour, chocolate and cocoa must bear a label indicating the contained materials and the weight of each.

The Service of the American Red Cross

The American Red Cross merits a new tribute of recognition for the helpful rôle it has held since the beginning of the last offensive pertaining to the inhabitants of the departments of the Somme and the Aisne. At Montdidier, Noyon and Lassigny the American delegates have installed themselves to work on the reconstruction of the destroyed homes, restoring the land for cultivation. A number of trucks or carriages were placed at the disposal of the inhabitants to transport them to the rear, thus facilitating the railway service. The evacuated were directed to various hospital centers created in France by the Americans during the past two years. Furthermore, thousands of refugees have been fed and even hospitalized in Paris by the American Red Cross.

Saloons in the War Zone

The minister of finance has decreed that the wine shops at the front, transformed by order of the military authorities into hygienic establishments, need not pay any license fee on condition that the tenants in these establishments do not serve, either in their cellars or in local storehouses, any alcoholic or spirituous liquors, and that they sign a declaration by which they agree to sell only hygienic or soft drinks.

LONDON LETTER

LONDON, April 9, 1918.

More Physicians Wanted for the Army

The concentrated German attack on the western front has involved many casualties as well as some loss of medical men. The result is a demand for still more physicians for the army. The government has made an urgent appeal for physicians to come forward with offers of voluntary service to meet the pressure. Those now in the country who have relinquished their commissions are asked to rejoin. Secondly, the age for service has been extended and physicians under the age of 55 who are physically fit are asked to offer their services either at home or abroad. A physician responding to the appeal is promised that if he desires to return home or his presence is urgently needed to meet civil requirements

his case will be reviewed at the close of the present crisis, and in any circumstances not later than six months after the date of joining, with a view to his being released, unless the ministry after considering the military and civil necessities of the time in consultation with the professional committee decides that this is impossible from a military point of view. The medical losses during the German offensive do not appear to have been great as regards personnel. The staffs of the advanced clearing stations were mostly safely evacuated, though in many this did not take place until the last moment, and, indeed, while some were in the firing line. As far as possible the sisters were sent back first, then the patients, and finally the medical men.

The Segregation of Neurasthenic Soldiers

Considerable controversy has arisen in consequence of a statement by Mr. Hodge, the minister of pensions, that a system of hospitals devoted to the treatment of neurasthenics invalided from the army is not the best plan. He wanted "neurasthenic cases mixed up with other cases so that the cheery chap might shed some of the sunshine of his presence over the others." Medical opinion does not agree with this. A neurologic conference at the War Office recommended that all soldiers suffering from a functional nervous disorder should be segregated in special hospitals, staffed by physicians specially trained for this work. It is true that some of the milder cases require only convalescent treatment in boarding houses or other homes, but the graver cases of shell shock and other nervous disorders require something more, and it has been found that treatment in special hospitals is successful, as many as 90 per cent. being rendered fit for civil work. Interesting testimony in favor of this treatment has been furnished by a letter sent to the committee of the Home of Recovery, Golders Green, by the patients under treatment. They state that they have benefited and in many cases recovered, and express satisfaction with the institution: "Our past experiences in general hospitals have taught us to appreciate being separated from other cases, especially from the so-called cheery man." They prefer the risk of an air raid to going into another hospital.

A Smaller Army Medical Advisory Board

The Army Medical Advisory Board has been reconstituted as follows: president, Lieut.-Gen. T. H. J. C. Goodwin, C.B., C.M.G., D.S.O.; members, Major-Gen. Sir B. E. Dawson, G.C.V.O., C.B.; Major-Gen. Sir B. G. A. Moynihan, C.B., F.R.C.S.; Col. W. H. Horrocks, C.B.; Col. Sir Robert Jones, C.B., F.R.C.S.; Lieut.-Col. Sir H. J. Stiles. The board has thus been considerably reduced in size. The only member of the old board retained is Colonel Horrocks, expert in sanitation. Sir Robert Jones, director-general of military orthopedic surgery for the British Isles, has during the war enhanced his already great reputation as an orthopedic surgeon, and has rendered considerable service to the army.

Marriages

LIEUT. JACQUES HENRY GREEN, M. R. C., U. S. Army, Waterbury, Conn., on duty at the Department Laboratory, Southern Department, Atlanta, Ga., to Miss Agnes Sybil Lewis of New York City, at New York City, April 30.

CAPT. HAROLD ENSIGN BENNETT PARDEE, M. R. C., U. S. Army, to Miss Dorothy Dwight Porter, at Hewlett, L. I., N. Y., April 15.

LIEUT. MONROE BRADFORD KUNSTLER, M. R. C., U. S. Army, to Miss Francis Mandelbaum, both of New York City, April 29.

LIEUT. BROOX CLEVELAND GARRETT, M. R. C., U. S. Army, Shreveport, La., to Miss Bessie Gray of Butler, Ala., on April 6.

JAMES SAMUEL GOODRICH to Miss Mary Adelaide Cleveland, both of Lexington, Ky., at Covington, Ky., April 19.

LIEUT. THEODORE THOMAS BATSON, M. R. C., U. S. Army, to Miss Aline Catharine Pinera, at New Orleans, April 21.

EDWARD JAMES ROGERS, Pittsford, Vt., to Miss Alma J. Hoykendorf of Scarsdale, N. Y., April 27.

WILLIAM H. MCKAY to Miss Gertrude Selden Hicks, both of Bayside, L. I., N. Y., April 24.

ROLL HARRISON MARKWITH to Miss Ethel A. Davis, both of Columbus, Ohio, about April 21.

Deaths

Wallace R. Hunter, Erie, Pa.; University of Pennsylvania, Philadelphia, 1890; aged 52; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; acting assistant surgeon of the United States Public Health and Marine Hospital Service; attending surgeon to the Hanot Hospital, Erie, Pa.; a member of the medical staff of St. Vincent's Hospital; a member of the board of trustees of the state hospital at Warren; one of the founders of the Erie Municipal Hospital; died at his home, April 20.

William Arthur Moore, Binghamton, N. Y.; Columbia University, College of Physicians and Surgeons, 1885; aged 58; a Fellow of the American Medical Association; a fellow of the American College of Surgeons, and the American Academy of Medicine; surgeon to the Moore-Overton Hospital, Binghamton; surgeon of the Delaware and Lackawanna and Western Railroad; the Binghamton Traction Company, and the Delaware and Hudson Railroad; died at his home, April 26.

Lieut. Burt Jacob Asper, M. R. C., U. S. Navy, Chambersburg, Pa.; University of Maryland, Baltimore, 1911; aged 29; a Fellow of the American Medical Association; clinical assis-

William Alexander Ewing, New York City; Bellevue Hospital Medical College, New York City, 1869; aged 75; a Fellow of the American Medical Association; a member of the New York Academy of Medicine; formerly sanitary superintendent of the New York City Health Department; associate member of the surgical staff of the New York City Railway; died at his home, April 21.

Surg. Lieut.-Com. William Henry Rush, U. S. Navy, retired, Ardmore, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 65; formerly surgeon on the training ship *Saratoga*; he was commissioned as assistant surgeon in the Navy, Feb. 13, 1877; three years later he became passed assistant surgeon, and was promoted to surgeon in 1894; died at his home, April 26.

Edith Anderson Van Dyke, Faribault, Minn.; Women's Medical College of Philadelphia, 1909; aged 37; assistant physician at the Faribault State Hospital for the Feeble-minded, and a member of the school board; formerly a member of the staff of the Walker Sanitarium; died at the Faribault State School for Feeble-minded, April 18, from pneumonia.

William Lomax Graves, Los Angeles; Medical College of Georgia, Augusta, 1859; a veteran of the Civil War; founder of the Farmers' Bank at Fresno; and helped to establish the National Bank of California; and formerly president of the Merchants National Bank; died at his home, April 7.



Died in the Service
IN FRANCE
ATTACHED TO BASE HOSPITAL 18.
LYLE BARNES RICH, M.D., 1891-1918



Died in the Service
AT CAMP SHERMAN, OHIO
CAPT. PETER L. S. KEOUGH, M. R. C.,
U. S. ARMY, 1889-1918
(See The Journal, May 4, p. 1322)



Died in the Service
LOST AT SEA ON THE CYCLOPS
LIEUT. BURT JACOB ASPER, M. R. C.,
U. S. NAVY, 1888-1918

tant and assistant physician in the Sheppard and Enoch Pratt Hospital, Towson, Md., from 1912 to 1915; instructor of clinical pathology in the University of Maryland, 1912 to 1913; assistant physician to the Springfield State Hospital, Sykesville, Md., 1915-1917; surgeon on the U. S. S. *Cyclops*, which was lost at sea in April.

Henry Ebenezer Handerson, Cleveland, Columbia University, College of Physicians and Surgeons, 1867; aged 80; a member of the Ohio State Medical Association, and the Cleveland Academy of Medicine; formerly emeritus professor of hygiene and sanitary science in Cleveland College of Physicians and Surgeons; also an author of many medical subjects; died suddenly at the home of a friend, April 20, from cerebral hemorrhage.

Elmer M. Eckard, Peoria, Ill.; Rush Medical College, 1896; aged 45; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society, and American Association of Railway Surgeons; formerly coroner of Peoria; chief surgeon of the Toledo, Peoria and Western Railway; and local surgeon for the Chicago, Peoria and St. Louis Railway; died at his home, April 21.

Edgar Fossin Green, State Sanatorium, Minn.; Medical College of the State of South Carolina, 1908; aged 43; a Fellow of the American Medical Association; formerly a member of the South Carolina State Medical Association; formerly of the state reformatory at St. Cloud, Minn.; died in Walker, Minn., April 23, from pulmonary tuberculosis.

Daniel U. Wadsworth, Tulsa, Okla.; Medical Department of the University of the South, Sewanee, Tenn., 1898; aged 43; a member of the Oklahoma State Medical Association; formerly professor of surgery in the Mississippi Medical College; died at his home, April 13, from pneumonia.

James H. Craig, Mansfield, Ohio; Western Reserve University, Medical Department, Cleveland, 1885; aged 60; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; formerly city health officer; died at his home, April 10, from interstitial nephritis.

Charles G. Shipman, Oceanpark, Calif.; Rush Medical College, 1881; aged 61; a Fellow of the American Medical Association; formerly health officer of Santa Monica; director of the First National Bank of Ocean Park; died suddenly, April 10, in his office, from heart disease.

Charles Bowman Sturtevant, Manchester, N. H.; Dartmouth Medical School, Hanover, N. H., 1875; aged 67; a member of the New Hampshire Medical Society; formerly superintendent of schools of New Boston, N. H.; died at his home, April 12, from arteriosclerosis.

Lyle Barnes Rich, Willow City, N. D.; Johns Hopkins University, Medical Department, Baltimore, 1918, aged 26; died from typhoid fever in Base Hospital 18, December 18, 1917, while with the American Expeditionary Forces in France.

Guy Sumpter Waters, Prospect Station, Tenn.; Vanderbilt University Medical Department, Nashville, 1911; aged 37; a member of the Tennessee State Medical Association; died April 11, from a gunshot wound, self inflicted while despondent, it is believed.

Robert Shields Stedman, Brooklyn; Columbia University, College of Physicians and Surgeons, New York, 1880; aged 76; formerly a well known practitioner of Manhattan; retired for twenty-eight years; an inventor; died suddenly, April 13, from heart disease.

William Bratten Munford, Banks, Ore.; Kansas Medical College, Topeka, 1905; aged 44; formerly a Fellow of the American Medical Association; a member of the Oregon State Medical Association; died in Colorado Springs, April 10.

Oliver Allen McIntosh, Macomb, Ill.; Rush Medical College, Chicago, 1903; aged 53; formerly a Fellow of the American Medical Association; died at the Marietta Phelps Hospital, Macomb, Ill., January 8, from septic infection.

Willard Ammi Long, Lewiston, Mont.; Cooper Medical College, San Francisco, 1882; aged 59; formerly a Fellow of the American Medical Association; formerly health officer of Fergus County; died in Miami, Fla., about April 12, from acute dilatation of the heart.

William C. Wilkerson, Paris, Ky.; University of Louisville, Ky., 1881; aged 63; formerly a Fellow of the American Medical Association; formerly a practitioner of Little Rock, Ark.; died at his home, April 11, from cancer.

Jacob Stickel, Williamsport, Pa.; University of Michigan, Medical School, Ann Arbor, 1867; aged 73; formerly a member of the Medical Society of the State of Pennsylvania; died at the Williamsport Hospital, March 26.

John Boice Whittaker, Central City, Neb. (license, Nebraska, 1891); aged 73; a veteran of the Civil War; formerly coroner of Merrick County, and at one time Mayor of Central City; died at his home, April 5.

Richard H. Alfred, Dayton, Va.; Victoria University, Medical Department, Coburg, Ont., 1862; aged 83; formerly a member of the Medical Society of Virginia; died at his home, February 19, from senile debility.

H. Williams Smith, Crookston, Minn.; University of Minnesota, Minneapolis, 1897; aged 52; formerly a Fellow of the American Medical Association; died at his home, March 13, from heart disease.

George F. Brubaker, Springfield, Ohio; Medical College of Ohio, University of Cincinnati, 1893; aged 55; formerly president of the City Hospital staff; died at his home, April 10, from diabetes.

Charles Frank Ruch, Summithill, Pa.; Jefferson Medical College, Philadelphia, 1891; aged 48; a Fellow of the American Medical Association; died at his home, April 10, from pneumonia.

John A. Wheeler, Chicago; University of Michigan, Department of Medicine and Surgery, 1852; aged 90; was burned to death at his summer home in South Haven, Mich., April 28.

Alfred Stratford, Indianapolis; University of Louisville, Ky., Medical Department, 1871; aged 73; also a druggist; died at his home, January 20, from organic heart disease.

John Plutarch Avery, Indianapolis, Ind.; Bellevue Hospital Medical College, New York, 1866; aged 76; died at the Methodist Episcopal Hospital, Indianapolis, April 9.

Edwin Timothy Rucker, Richmond, Va.; Kentucky School of Medicine, 1877; aged 64; a Fellow of the American Medical Association; died at his home, April 9, from nephritis.

Anna Colby Smith Grigsby, Concordia, Kan.; Homeopathic Hospital College, Cleveland, 1883; aged 69; died at her home, January 8, from cerebral hemorrhage.

Charles Henry Wheeler, Fall River Mills, Calif.; Eclectic Medical College, Cincinnati, 1889; aged 58; died at his home, April 11, from cerebral hemorrhage.

Emeline Tanner, Fairmont, Minn.; University of Michigan, Homeopathic Medical School, 1880; died in California, April 2, from heart disease.

J. Edwin Frazier, Tuolumne, Calif.; Louisville, Ky., Medical College, 1885; aged 62; died at Dr. Bromley's Sanitarium, Sonoma, Calif., April 7.

Firmen C. Braker, Chicago; Eclectic Medical College of Pennsylvania, Philadelphia, 1866; aged 75; also a druggist; died April 16.

Jane V. Myers, Philadelphia; Pennsylvania Medical College, Philadelphia, 1853; aged 87; died at her home, March 27.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MAYR'S WONDERFUL STOMACH REMEDY ADVERTISING

Also Mayr's Wonderful, Universal, Ready-Made Testimonials "Mayr's Wonderful Stomach Remedy" has been the subject of more than one article in THE JOURNAL. Briefly, it may be said, for those who have forgotten this picturesque humbug,

IMPORTANT COPY INSTRUCTIONS
Geo. H. Mayr Advertising

Publisher: _____

Commencing with first possible schedule date after January 1st, please run ONLY the following copy on the Geo. H. Mayr advertising

This advertising to run in _____

The advertisements are to be run one each schedule day, in the order marked, each advertisement to appear only one time. At the expiration of this schedule, we will send you additional copy.

These advertisements are to be set in space necessary in reader style, in as near your body type as the rules of your publication will permit for display advertising.

Insert name of your city in heading of EACH ad and druggists' names at the base of EACH ad.

We would very much appreciate it if you will give this advertisement good position among reading matter.

Acknowledge receipt of these instructions by return mail advising date of first insertion.

If there is any reason why you will be unable to run these advertisements as per above, advise me immediately.

GEO. H. MAYR, Chicago

IMPORTANT: Insert at end of each ad in body type name of druggist.

<p>No. 1 First Helping All the Cures</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 2 Soldier Under Fire</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 3 Woman's Liberty Daddy With Operation Money</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 4 Woman's Liberty Daddy With Operation Money</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 5 Woman's Liberty Daddy With Operation Money</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 6 Woman's Liberty Daddy With Operation Money</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 7 Older Brother Big Her Old</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 8 Man Would Rather Fight Than Work</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 9 Man Doing His Duty</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 10 Housewife Changed From Gloom to Cheer</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 11 Old Grown Up by Physicians</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 12 Railroad Man Awful Experience</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 13 Widow's Cathartics</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 14 Wife Doing Good Work</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 15 Man Has Miraculous Escape</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 16 Woman's Liberty Use of Morphine</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 17 Business Man's Stomach Smaller</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 18 Business Man Tells of Food's Recovery</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 19 Pharmacist Thinks</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 20 Young Man's Extraneous Profession</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 21 Man's Trouble Arrested</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 22 Widow Cries for Her</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 23 Man Sees Wife In Nick of Time</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 24 Business Man Tells of Food's Recovery</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 25 Woman Finds Her Way Through</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 26 Widow World's Merry</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 27 Man Loses Hope</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 28 Girl Cannot Stand Clothes to Touch Her</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 29 Tailor Makes Yarns Find</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 30 Man's Trouble Arrested</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 31 Woman Thinks She Can't Tolerate</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 32 Man's Operation Was Successful</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 33 Housewife's Garden Was</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 34 Cabbage and Sausage Woman's Diet</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 35 Woman's Diet Escaped Dyspepsia</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 36 Man Has Trouble Giving Every Day</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 37 Man Loses Hope</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 38 Man's Operation Was Successful</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 39 Merchant's Financial</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 40 Man Postpones His Funeral</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 41 Man Spent For Years in Search</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>	<p>No. 42 Business Man Sings Praises</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>
<p>No. 43 Resident Dear</p> <p>"I have been suffering from indigestion for many years, and have tried every remedy, but have not found any relief. I have heard of Mayr's Wonderful Stomach Remedy, and have decided to try it. I have just received a box of it, and have taken it for a few days. I feel much better, and my stomach is settling down. I am sure it will cure me. I am very much obliged to you for sending me this medicine. I will be sure to run your advertisement in my paper."</p>					

Reduced photographic reproduction of the "Copy Instructions" sent out to newspapers by George H. Mayr. The original was 16 inches by 32 inches. Notice that the newspapers are told (in black-faced type) to "insert name of your city in heading of each ad." This means, in effect, that the newspaper accepting this contract, agrees for a financial consideration knowingly to deceive and mislead its readers.

that it is a "patent medicine" adaptation of the old "fake gallstone" trick. The trick consists in administering a large dose of some such oil as olive, peanut or cottonseed, followed by a saline cathartic. The result of taking this combination is the passage of a number of soapy concretions which the victim is persuaded to believe are gallstones.

"It Removes Gall Stones and Shows Them to You" used to be the claim that appeared on the bottles of the "Wonderful Remedy." This disappeared after the federal Food and Drugs Act began to be a force for good. However, Mayr was not quite as shrewd as he might have been, for he continued to make claims in the trade package to the effect that his stuff was "a positive remedy for appendicitis" and "absolutely the best, most positive and permanent remedy for all stomach, liver and intestinal diseases." These claims, and some others, the government rightly charged were "false and fraudulent" and had been applied by Mayr "knowingly and in reckless and wanton disregard of their truth or falsity." Although Mayr was given an opportunity to prove that his claims were true, he pleaded guilty!

This was in December, 1915. Eighteen months later THE JOURNAL called attention to the fact that Mayr was then dis-

heading in black-faced type, followed by what purports to be a quotation from a testimonial. Four of these pieces of copy (Nos. 34, 35, 40 and 41) are reproduced in such size as to be plainly readable. There are also reproduced four advertisements using the same "copy," each taken from copies of the Chicago Examiner of recent dates. It will be noticed that the copy furnished by Mayr differs from the advertisement as it appears in the papers, in that the latter has had inserted in the caption the name of the city in which the advertisements are published. For instance, the heading of Copy No. 35, as furnished by Mayr, reads:

"——— WOMAN GLAD SISTER ESCAPED OPERATION."

When this advertisement appears in, say, a Chicago paper, the newspaper carrying it obligingly inserts the name of the city, so that the heading reads:

"CHICAGO WOMAN GLAD SISTER ESCAPED OPERATION."

<p>No. 34</p> <p>Cabbage and Sausage Woman's Diet</p> <p>"I have doctored with the best doctors in the United States. Some said one thing and some another was ailing me and all wanted to cut me open, but Mayr's Wonderful Remedy saved me, so now I eat cabbage, sausage and anything I want to. Nothing hurts me." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.</p>	<p>No. 35</p> <p>Woman Glad Sister Escaped Operation</p> <p>"Physicians had given my sister up to die; they wanted to operate for gall stones, but she was too weak and could only talk in whispers. I got her a bottle of Mayr's Wonderful Remedy and in 3 weeks she was able to get about and walked a mile to church." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.</p>
<p>No. 40</p> <p>Man Postpones His Funeral</p> <p>"I am 66 years old and for past two years have been suffering so badly from stomach and liver trouble, bloating and colic attacks that I did not expect to live more than a few months and was arranging my affairs and even my funeral. Three doses of Mayr's Wonderful Remedy have entirely cured me." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.</p>	<p>No. 41</p> <p>Man Spent Fortune in Search</p> <p>"I spent \$1,800 in 7 years treating with physicians, some specialists costing me \$10 a visit, only to at last say that nothing could be done for me, that I had cancer or ulcers of the stomach. I suffered awful pains in my stomach, but after taking a few doses of Mayr's Wonderful Remedy these all disappeared and for 3 years am feeling fine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.</p>

BUSINESS NOTICE

**Cabbage and Sausage
Chicago Woman's Diet**

"I have doctored with the best doctors in the United States. Some said one thing and some another was ailing me and all wanted to cut me open, but Mayr's Wonderful Remedy saved me, so now I eat cabbage, sausage and anything I want to. Nothing hurts me." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. All druggists.

BUSINESS NOTICE

**Chicago Woman Glad Sister
Escaped Operation**

"Physicians had given my sister up to die; they wanted to operate for gall stones, but she was too weak and could only talk in whispers. I got her a bottle of Mayr's Wonderful Remedy and in 3 weeks she was able to get about and walked a mile to church." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. All druggists.

BUSINESS NOTICE

**Chicago Man Postpones His
Funeral**

"I am 66 years old and for past two years have been suffering so badly from stomach and liver trouble, bloating and colic attacks that I did not expect to live more than a few months and was arranging my affairs and even my funeral. Three doses of Mayr's Wonderful Remedy have entirely cured me." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. All druggists.

BUSINESS NOTICE

**Chicago Man Spent Fortune
in Search**

"I spent \$1,800 in 7 years treating with physicians, some specialists costing me \$10 a visit, only to at last say that nothing could be done for me, that I had cancer or ulcers of the stomach. I suffered awful pains in my stomach, but after taking a few doses of Mayr's Wonderful Remedy these all disappeared and for 3 years am feeling fine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. All druggists.

Photographic reproduction (reduced) of four pieces of Mayr's advertising copy (on the left) and the same copy set up in the advertisement form as it appeared in some recent issues of the Chicago Examiner. Thus the "Chicago Woman" who had "doctored with the best doctors in the United States," all of whom "wanted to cut me open," would be a St. Louis woman, or a Kalamazoo woman, or an Oshkosh woman if the papers published in those cities could be hired to print the advertisements.

playing in the windows of his Chicago store large placards containing not only essentially the same claims that the government had declared were fraudulent, and to which he had pleaded guilty, but claims that were even more false. Now, twenty-eight months later (May, 1918) Mayr still has painted over his store window the claim that his "Wonderful Remedy" is "the Only Known Cure for All Stomach, Liver and Intestinal Complaints"! Mayr's apparent contempt for federal authority may lie in the fact that the federal law cannot touch him for making false and fraudulent claims if he is careful to keep such claims off the trade package.

The present article, however, deals, not with his store-window advertising, but with his newspaper advertising. Mayr, it seems, is his own advertising agent and places his own "copy." In common with most "patent medicine" advertisers, his advertisements are of the testimonial type and the copy is frequently changed. Mayr's "Copy Instructions" to the papers are here reproduced in miniature. They consist, as will be seen, of forty-three pieces of advertising copy each with a

And the "Chicago Woman" would be a "St. Louis Woman," a "Kalamazoo Woman" or an "Oshkosh Woman" if papers published in those cities could be hired to print the Mayr advertisements. It will be noticed by again referring to the "Copy Instructions," which are reproduced in miniature, that the newspapers are told, in black-faced type, to "Insert name of your city in heading of EACH ad. . . ."

Was there ever a more cynical disregard for the elemental principles of common truthfulness and decent business methods? Here are what purport to be forty-three testimonials from people who have taken Mayr's Wonderful Stomach Remedy and received benefit or cure. The newspaper accepting this copy becomes frankly *particeps criminis* with Mayr in his lying campaign. Copy instructions alone prove that each of these forty-three testimonials is a distinct and separate lie and that these lies are to be multiplied by as many times as there are papers which will publish the advertisements.

Notice the testimonials in Copy Nos. 11 and 12: "Old — Resident Given Up By Physicians" and "—— Resident

Has Awful Experience." Just notice our reproductions from the Marion (Ohio) *Daily Star*, the Austin (Minn.) *Daily Herald* and the Hornell (N. Y.) *Evening Tribune-Times*. Here we read that the "Old Austin Resident," the "Old Marion Resident" and the "Hornell Resident" have been "Given Up By Physicians" or had "Awful Experiences."

It is entirely in keeping with the type of ethics shown by Mayr in his advertising that he should have attempted to capitalize the present national situation:

"_____ Soldier Under Fire."
"How _____ Soldier Dispersed Attacks."
"_____ Lady Buys Liberty Bonds With Operation Money."
"_____ Woman Not Worried Over Food Shortage."

Old Marion Resident Given Up by Physicians

"Given up by five doctors, my only hope an operation. I rebelled on cutting me open, as I am 75 years old. A neighbor advised trying Mayr's Wonderful Remedy for stomach trouble. I got relief right away. I had not eaten for 10 days and was as yellow as a gold piece. I could have lived only a few days but for this medicine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. Schmidt & Co.'s Drug Store, Waldorf Pharmacy.—Adv.

AUSTIN RESIDENT HAS AWFUL EXPERIENCE

"I was twice confined in hospitals in the last one nothing but gruel water was injected into me 4 times a day, as my stomach would not retain any food. I suffered terribly; was reduced to a skeleton. My folks saw an ad of Mayr's Wonderful Remedy and it has surely saved my life. I weigh 180 lbs. now." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. Haugan's Pharmacy. Advertisement.

OLD AUSTIN RESIDENT GIVEN UP BY PHYSICIANS

"Given up by five doctors, my only hope an operation. I rebelled on cutting me open, as I am 75 years old. A neighbor advised trying Mayr's Wonderful Remedy for stomach trouble. I got relief right away. I had not eaten for 10 days and was as yellow as a gold piece. I could have lived only a few days but for this medicine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. Haugan's Pharmacy. Advertisement.

Hornell Resident Has Awful Experience

"I was twice confined in hospitals in the last one nothing but gruel water was injected into me 4 times a day, as my stomach would not retain any food. I suffered terribly; was reduced to a skeleton. My folks saw an ad of Mayr's Wonderful Remedy and it has surely saved my life. I weigh 180 lbs. now." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. Geo. Hollands & Sons, Hornell Drug Company. adv.

No. 11
Old Resident Given Up by Physicians

"Given up by five doctors, my only hope an operation. I rebelled on cutting me open, as I am 75 years old. A neighbor advised trying Mayr's Wonderful Remedy for stomach trouble. I got relief right away. I had not eaten for 10 days and was as yellow as a gold piece. I could have lived only a few days but for this medicine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.

No. 12
Resident Has Awful Experience

"I was twice confined in hospitals in the last one, nothing but gruel water was injected into me 4 times a day, as my stomach would not retain any food. I suffered terribly; was reduced to a skeleton. My folks saw an ad of Mayr's Wonderful Remedy and it has surely saved my life. I weigh 180 lbs. now." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.

Photographic reproduction (reduced) of advertising copy Nos. 11 and together with reproductions of four advertisements from the Marion (Ohio) *Daily Star*, the Austin (Minn.) *Daily Herald* and the Hornell (N. Y.) *Evening Tribune-Times*, respectively. One wonders whether these newspapers have ever heard of the movement toward "truth in advertising"!

Possibly Mr. Mayr, having found that, so far as his store-window claims are concerned, he can, figuratively speaking, put his thumb to his nose at Uncle Sam, may have figured that he is equally free to continue his present lying campaign in the newspapers. If this is Mayr's theory, we are of the opinion that it is likely to be revised.

Correspondence

PROTECTION AGAINST LICE

To the Editor:—In THE JOURNAL, April 27, 1918, p. 1247, your London correspondent mentions some important facts respecting the rôle of the louse as the cause of trench fever; and, from what is there said, it would appear that, while the typhus disease is conveyed by the bite of the louse, trench fever is the result of an infection from the other end of that insect. Indeed, it would seem that man, proud man, has been reduced to the last stage of physical degradation by being trodden on, preyed on, and his comfort, health and life placed in jeopardy by the excrement of this abhorred parasite—the indignity being literally rubbed into him in a double sense; and, in this connection, the means of prevention are of first importance—and as they appear to be simple and available, I now take the liberty of speaking on this subject.

In the accounts given of John Howard and his work in visiting English jails, prisons and lockups, where typhus was actively present, it is mentioned that he always bathed, and changed his clothes after visits to such centers of infection; but this sanitary recourse cannot have been the whole story, for it is not said that he ever suffered in bodily comfort or health from such extended benevolent ministrations.

The fact is known that the courts, where prisoners from such centers of virulent infection were tried, were sometimes broken up by the death from typhus of the judges and minor officials; but precisely how this fatal communication occurred has not been altogether made clear.

An early professional experience that I had in connection with service in a public institution may throw some light on the question; for, in dealing with emergency patients picked up in the streets, some of whom proved lousy, a very unfavorable prognostic sign was found in the decamping of lice from such a body—the probable explanation being that these parasites, being sensitive to temperatures, felt the coming chill as circulation ceased, and promptly departed, seeking lodgment elsewhere. That they are known to be capable of a considerable migration may explain the infection of judges on the bench.

In my personal experience as a country youth, it was common practice to smear with grease the arms and legs as a protection against wood ticks, chiggers, sand flies, lice, etc.; and, when well applied, this was an effective safeguard against such vermin. It is accordingly suggested that Howard must have known and used such means of defense; but he may not have been willing to let it be generally known through fear of the coarse ridicule too often visited on benefactors of the human race.

Some years ago when war broke out in the Balkan states and pandemic typhus appeared, a contingent of physicians from this country went over to lend their aid, and some of them died of that infection. In commenting on this sad dénouement even THE JOURNAL spoke of them as martyrs to science, an opinion I could not share; for, though it may seem ungracious to say so, they appeared to me rather as the victims of ignorance through not knowing the means of prophylaxis.

Any form of sticky fat that does not melt freely at body temperature seems effective, the explanation presumably being that the spiracles of the insect are clogged, and death by suffocation follows; while the newly hatched young die likewise when attempting to feed, even if the nits are not destroyed, as such.

It was recently stated publicly here, by a medical officer lately returned from France, that gasoline is not effective in dealing with body lice, and an explanation that occurs is that they are rather benefited by its solvent action in clearing the breathing pores of possible obstruction. It has been claimed, also, that silk underwear is useful, as the fiber is said to afford no foothold to the louse in its effort to pierce the epidermis; but an oiled fabric of any kind would be very likely to prove equally effective, if the contention as to the indicated physical difficulty of the insect is well based.

A suggestion of fatty agents for protective bodily inunction would be a combination of castor oil and tallow, sticky and substantial, not expensive, and which in use would probably meet all the leading indications. Petroleum products may be found equally effective.

GEORGE HOMAN, M.D., St. Louis.

MEDICAL SCHOOL RECOGNIZED IN NEW YORK

To the Editor:—Table D, published in *THE JOURNAL*, April 13, indicates that the University of Virginia Department of Medicine is not a registered medical school in New York and New Jersey.

With regard to New Jersey, I wish to state that this board dropped the University of Virginia without consulting or even notifying me. The first intimation I had of its action was a letter received a week ago from one of our graduates informing me that this board had declined to allow a graduate of this school to take the licensure examination until he had spent an additional year of study in one of their registered schools. A letter from the secretary of the New Jersey board informs me that their list of acceptable schools is the New York list.

With regard to New York, the University of Virginia was registered with the regents until the spring of 1917. It was then transferred to their list of "accredited" schools for the sole reason that at that time we were not ready to agree to the absolute prohibition of entrance conditions on certain parts of our two year college requirement. During the fall and winter of 1917 we had an extensive correspondence with this board, urging that special provision be made for entrance conditions in special cases. Our suggestions received careful and courteous consideration by the board, but the regents finally declined to change their rule, absolutely forbidding any entrance conditions whatever.

Although the University of Virginia was and still is strongly of the opinion that this is an unwise and unnecessary measure—and the editorial comment as well as Dr. French's paper shows that we are not alone in this opinion—still it was clear that it would be unfair to our school and its graduates to have them excluded from practice in the state of New York. We therefore voted in January to abolish all entrance conditions hereafter. When this action was reported to the regents, they restored the University of Virginia to their list of registered schools, Jan. 31, 1918.

I regret that my inadvertent failure to notify the Council on Medical Education of this action of the regents has led to an erroneous statement which can be only imperfectly corrected. *THE JOURNAL*, of course, is in no way to blame for the mistake.

THEODORE HOUGH, Charlottesville, Va.

Dean, Department of Medicine, University of Virginia.

[COMMENT.—Table D is based on official reports received from the various state medical boards. Since its publication, however, New York has notified us that the University of Virginia Department of Medicine should not have been included among the medical schools not fully recognized by the Board of Regents, thus confirming Dean Hough's statement.—ED.]

PEANUTS AS FOOD

To the Editor:—I have read with a great deal of interest the food articles appearing in *THE JOURNAL* in Current Comment. March 23, special reference was made to peanuts, and on page 1004, April 6, to the yield of food per acre. This comment referred especially to corn, and stated that 35 bushels of corn per acre produce 150 pounds of protein and more than 3,000,000 units of energy. Further reference was made to the soy bean.

The peanut is unusually interesting for several reasons: First, it produces an average of 1,000 pounds of nuts per acre, containing 2,000,000 units of energy and approximately 220 pounds of protein. If the peanuts are properly handled, they will produce about 500 pounds of peanut flour, which

contains 44 per cent. of protein and 7.5 per cent. of fat. This peanut flour blends readily with all flour and flour substitutes as well as corn meals, and is now an official substitute for flour in Florida. When this thousand pounds of peanuts are crushed, they produce 300 pounds of edible oil. In addition, there is a yield per acre of hay, testing 13 per cent. protein, which is a most excellent food for live stock, which gives an additional 130 pounds of protein per acre.

The peanut can be grown all over the South, is one of the surest crops, and can be produced in less time, with less labor, at smaller cost than most of the staple crops. Every farmer in the South knows how to grow peanuts, and the South in 1919 could easily put in 10,000,000 acres. This would produce 3,000,000,000 pounds of fat, which would take care of the fat shortage, and 5,000,000,000 pounds of peanut flour, running 44 per cent. protein and 7.5 per cent. fats.

Allowing 4 ounces of protein per day for an adult under the most strenuous working conditions, this production could supply all the protein consumed by 24,000,000 adults under the most strenuous conditions for 365 days. This crop can be produced in four months from the time of planting, and the land on which it was planted can be planted with small grains during the other eight months. Without doubt, the peanut will produce more food for man and beast in less time, with less labor and less acreage than any other known crop. This is one crop than can be made to take care of both the meat and fat shortage.

We are manufacturers of peanut flour on a commercial scale, and it is being widely used throughout the South.

B. F. WILLIAMSON, Gainesville, Fla.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COTARNIN HYDROCHLORID

To the Editor:—Please describe the action of cotarnin hydrochlorid and indications for its use. Is it derived from opium?

W. E. SMITH, M.D., Rossford, Ohio.

ANSWER.—In *New and Nonofficial Remedies*, 1918, p. 83, cotarnin is stated to be an artificial alkaloid derived by oxidation from narcotin, by a process analogous to the derivation of hydrastinin from hydrastin (which again differs from narcotin only by an additional OCH_3 group). Cotarnin hydrochlorid is marketed as "stypticin," the phthalate as "styptol." Cotarnin is used systematically mainly against uterine hemorrhage; especially in menstrual menorrhagia, endometritis, and congestive conditions. It is ineffective against postpartum hemorrhage or bleeding from gross anatomic lesions, and probably also against hemorrhage in other internal organs. The clinical reports in its favor are often superficial and sometimes contradictory, but seem to justify the preceding statements. No satisfactory explanation for these actions has been established. The most probable is the (unproved) assumption of a special constrictor action on the uterine vessels. The circulatory changes observed in experiments are small and probably do not occur in the therapeutic use. The uterine stimulation observable on excised uteri probably does not occur in life. Local application of cotarnin in substance or concentrated solution has a direct vasoconstricting effect and is used in tooth extractions, epistaxis, etc.

Typhus Lesions.—E. Fraenkel relates that the roseola patches of typhus can be brought out again by applying a tourniquet to the limb, week after week, up to the tenth week after defervescence. In his communication on the subject in the *Münchener medizinische Wochenschrift*, No. 40, he remarks that probably the similar changes found in and around the arteries of the internal organs persist in the same way long after defervescence. (From abstract in *Nederlandsch Tijdschrift*.)

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular Board, Little Rock, May 14-15. Sec. Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

FLORIDA (H): Jacksonville, May 22. Sec., Dr. Geo. A. Davies, East Port.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Volan, Marietta.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagers-town.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 24. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WISCONSIN: Milwaukee, June 25. Sec., Dr. J. M. Dodd, Ashland.

Vermont February Examination

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the oral and written examination held at Burlington, Feb. 12, 1918. The examination covered 12 subjects and included 90 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. One candidate was licensed through reciprocity, and 1 candidate was granted a reregistration license. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bush Medical College	(1917)	89.6
Bufts College Medical School	(1918)	91.1
Columbia University	(1917)	90.1
University of Vermont	(1917)	88.1, 88.3
McGill University	(1910)	88.1
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Vermont	(1902)	New Hamp.

Book Notices

THE IMMEDIATE CARE OF THE INJURED. By Albert S. Morrow, A.B., M.D., Clinical Professor of Surgery in the New York Polyclinic. Third edition. Cloth. Price, \$2.75 net. Pp. 356, with 242 illustrations. Philadelphia: W. B. Saunders Company, 1917.

The recent great impetus to the study of the care of the sick and injured has been met in part by the formation of countless classes in first aid. An experience of several years as a teacher of such classes has impressed the reviewer with the desirability of a textbook that would give in greater detail than does the little Red Cross Manual (Women's edition) the essential facts of the normal anatomy and physiology of the body in conjunction with a discussion of the cause and management of various pathologic changes with which the lay first aider might be expected to cope. Dr. Morrow's book appears to fill this need admirably. The first part devoted to a consideration of the anatomy and physiology

of the human body. The structure (gross and microscopic) and function of the various tissues and organs are presented in a clear, concise manner. The second part is a general discussion of bandages and slings, dressings, practical remedies, such as hot packs, enemias and counterirritants, and of antiseptics and disinfectants. In the third part the questions of how to act and what to do in emergencies are taken up in detail. Here the facts and principles described in the preceding parts are applied to specific cases. The book is well illustrated. While intended for the instruction of those who are not trained in medicine, it is probable that there are few physicians who could not peruse its pages with benefit.

Medicolegal

Freezing Is an Accident; Also, Heat Stroke

(State ex rel. Virginia & Rainy Lake Co. v. District Court of St. Louis County et al. (Minn.), 164 N. W. R. 585, State ex rel. Nelson v. District Court, Ramsey County, et al. (Minn.), 164 N. W. R. 917)

The Supreme Court of Minnesota says that the direct authorities upholding findings in freezing cases are few. That freezing is a personal injury within the meaning of the workmen's compensation act, the court says, in the first of the foregoing two cases, is not open to question. Nor is it to be questioned that within the statutory definition it is an "unexpected and unforeseen event," or that it is an event "producing at the time injury to the physical structure of the body." The difficult question is whether the requirement that the event be one "happening suddenly and violently" excludes it. Freezing comes suddenly and violently as distinguished from gradually and naturally or in ordinary course. In common talk a sudden or violent death is one occurring unexpectedly and not naturally or in the ordinary course of events. In some such sense the words are used in the statute. Their effect is not to exclude from accidental injuries all except such as result from physical force applied from without. A fair construction of the statutory definition does not exclude freezing, and the court holds that it is a personal injury caused by accident within the meaning of the act.

The freezing involved in the first case occurred in January, 1916. The workman was employed by the Virginia & Rainy Lake Company as a swamper in the woods in the northern part of St. Louis County. He was cutting and handling timber and making roads for swamping. He used an ax, handled the timber with his hands, and they came into contact with the snow. The weather was severely cold. He was 4 or 5 miles from camp. There were no facilities for warming. The building of fires was not permitted. It was not questioned that the employee received his injury, a freezing of his thumb which resulted in its amputation, in the course of his employment. But the court also thinks that the evidence fairly sustained the view that the character of his work subjected him to a risk of freezing not shared by the generality of the community and sustained a finding that the freezing arose out of the employment. It was not enough that it occurred while work was in progress. It must have arisen under such circumstances that a causal connection was traceable between the employment and the freezing, and the freezing must be more than a consequence, shared by the community in general, of exposure to cold.

In the second case, the court holds that the evidence sustained a finding that the injury to relator Nelson, a janitor, was one "arising out of his employment" within the workmen's compensation act, when, while shoveling snow from the sidewalks about a building in severely cold weather, he froze the great toe, which resulted in the amputation of the leg.

A similar question, the court says, is presented by cases involving sunstrokes or heat strokes, which are the subject of review in *State ex rel. Rau v. District Court*, 164 N. W. R. 915, a heat stroke case, wherein the evidence was held such as to authorize a finding that the injury arose out of the employment.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
 American Climatological and Clin. Assn., Boston, June 5-6.
 American Dermatological Association, Philadelphia, May 23-25.
 American Gynecological Society, Philadelphia, May 16-18.
 American Laryngological Association, Atlantic City, May 27-29.
 Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
 American Medico-Psychological Association, Chicago, June 4-7.
 American Ophthalmological Society, New London, Conn., July 9-10.
 American Otological Society, Atlantic City, May 28-29.
 American Pediatric Society, Lenox, Mass., May 27-29.
 American Proctologic Society, Chicago, June 10-11.
 American Psychopathological Association, Atlantic City, May 11.
 American Surgical Association, Cincinnati, June 6-8.
 American Therapeutic Society, Richmond, Va., June 7-8.
 Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
 Connecticut State Medical Society, Hartford, May 15-16.
 Florida Medical Association, Tampa, May 15-16.
 Illinois State Medical Society, Springfield, May 21-23.
 Massachusetts Medical Society, Boston, June 18-19.
 Mississippi State Medical Association, Jackson, May 14-15.
 Montana Medical Association, Butte, July 10-11.
 Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
 New Hampshire Medical Society, Concord, May 15-16.
 New Jersey Medical Society, Spring Lake, June 25-26.
 New York State Medical Society, Albany, May 21-24.
 North Dakota State Medical Association, Fargo, June 19-20.
 Oklahoma State Medical Association, Tulsa, May 14-16.
 Oregon State Medical Association, Portland, June 27-29.
 Rhode Island Medical Society, Providence, June 6.
 South Dakota State Medical Society, Mitchell, May 21-23.
 Southern Minnesota Medical Association, Winona, Minn., June 24-25.
 Texas State Medical Association, San Antonio, May 14-16.
 Washington State Medical Association, July 10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, 1918, 15, No. 4

- 1 *Familial Splenomegaly. C. de Lange and J. C. Schippers, Amsterdam, Holland.—p. 249.
- 2 *Hydrocephalus of Poliomyelitis. J. G. Regan, Brooklyn.—p. 259.
- 3 *Experience with Vaccine in Prevention of Whooping Cough. F. Vander Bogert, Schenectady, N. Y.—p. 271.
- 4 Abdominal Injury Due to Blunt Force; Difficult Diagnosis. H. P. De Forest, New York.—p. 272.

1. **Familial Splenomegaly.**—Two cases which presented the clinical picture of splenomegaly of Gaucher's type were examined by De Lange and Schippers. There were seven children in this family. The enlargement of liver and spleen was already noticed in one child when 4 years old; in the other when 2 years old. There is every reason to believe that the disease in question is congenital in origin. The Wassermann reaction was, in the beginning, slightly positive. On later examination, carried out by another serologist, the test was slightly positive in the case of one girl, negative in that of the other child; on third examination, performed by the same serologist, the reaction proved negative in both instances. The first examination of the father's blood showed a slight leukopenia; the second and third were practically normal, although somewhat low; a relative lymphocytosis was always present. The other members of the family, the mother, paternal grandmother, maternal grandfather and maternal grandmother were negative. Based on the data obtained no other clinical diagnosis but splenomegaly of Gaucher seemed possible.

2. **Hydrocephalus of Poliomyelitis.**—According to the type of symptoms and the time they persist, Regan has found it advisable to divide the hydrocephalus of poliomyelitis into the following forms: 1. That of the onset (including the preparalytic and early paralytic stages). 2. That persistent after the first week of the disease and comprising three varieties: (a) a mild form commonly encountered in which there is only a slight increase in fluid and in which symptoms are practically absent; (b) a more severe form comprising various degrees, in which there are distinct signs of pressure;

(c) a very severe type, more or less insidious in onset, indefinite in physical signs, and associated with evidences of progressive emaciation. Symptoms of these various types are described and suitable case reports are included to amply explain these descriptions. Regan is convinced that MacEwen's sign provides a definite means by which these symptoms of hydrocephalus may be easily recognized and suitable treatment by rachiocentesis instituted, and therefore its employment in the routine physical examination of a patient with poliomyelitis is of the utmost importance.

3. **Vaccine in Prevention of Whooping Cough.**—At the Children's Home in Schenectady, one of the forty-six inmates developed whooping cough on or about Nov. 27, 1917, but because of failure of diagnosis was allowed to mingle for nearly a week with other children, after which he was isolated in a separate building. It was later learned that during this time he was known to have whooped and vomited. An epidemic of the disease was well under way in the city at the time, and several of the whooping cough patients had been attending the school to which the children of the home were sent daily. Seven weeks after the development of the case, there were nearly 400 records of pertussis at the city health department. Dec. 3, 1917, thirty-one who gave no record of having had whooping cough were inoculated, each with 50 million plain pertussis vaccine (stock). No reactions were noted, but one child complained of a sore arm. Up to the present time (Jan. 24, 1918) not a single case has developed in the home. The original case was given one dose of vaccine immediately after the diagnosis was made and ceased whooping at the end of one week. The vaccine was not repeated.

American Journal of Ophthalmology, Chicago

April, 1918, 1, No. 4

- 5 Experience Through Halifax Disaster. F. Tooke, Montreal, Canada.—p. 223.
- 6 Canthoplasty for Trachomatous Conditions. J. S. Wyler, Cincinnati.—p. 231.
- 7 Neuroblastoma of Retina. C. C. Hugger and J. Forman, Columbus.—p. 234.
- 8 Stereoscopic and Perspective Vision. I. Franklin, Sheboygan, Wis.—p. 236.
- 9 Painful Accommodation. J. Green, Jr., St. Louis.—p. 240.
- 10 Toxic Action of Emetin on Eye. J. M. Robinson, Duluth, Minn.—p. 245.
- 11 Ocular Lesions Result of Oral and Pharyngeal Diseases. W. Zentmayer, Philadelphia.—p. 247.
- 12 Power of Eye to Sustain Clear and Comfortable Seeing with Different Illuminants. C. E. Ferree and G. Rand, Boston.—p. 252.
- 13 Vernal Conjunctivitis. E. Jackson, Denver.—p. 259.

Archives of Internal Medicine, Chicago

April, 1918, 21, No. 4

- 14 *Superiority of Inoculations with Mixed Triple Vaccine (B. Typhosus, B. Paratyphosus A, and B. Paratyphosus B). W. C. Davison, Philadelphia.—p. 437.
- 15 *Study of Metabolism of Asthma. E. Zugsmith, Pittsburgh, and M. Kahn, New York.—p. 510.
- 16 *Conglomerate Tubercle and Combined Degeneration of Cord as Complications of Visceral Tuberculosis. P. Bassoe, Chicago.—p. 519.
- 17 *Pituitary Gland in Epileptics. J. F. Munson, Sonyea, N. Y.—p. 531.
- 18 *Intravenous Serum Treatment of Epidemic Cerebrospinal Meningitis. W. W. Herrick, Camp Jackson, S. C.—p. 541.

14. **Superiority of Inoculations with Mixed Triple Vaccine.**—Davison carried out a series of inoculations in a number of men and rabbits with vaccines prepared from cultures of one, two or all three of the bacilli (*B. typhosus*, *B. paratyphosus* A and *B. paratyphosus* B), varying the order of their introduction in the successive immunizations of different groups of rabbits. The details of all the experiments are given in full and the results are discussed. The following conclusions bearing on the practical problem of prophylactic inoculation in man against the typhoid-paratyphoid group of organisms stand out as possessing paramount importance: 1. When a mixed vaccine is used the immunity obtained for each of its constituent bacilli is at least as good as, and very often greater than, that obtained against any one of

these organisms when it is employed alone in the same dosage for a first immunization. 2. When single vaccines are employed in succession and the immunizations are carried out independently, the response is greatest to that vaccine which is introduced first. To the later immunizations with other micro-organisms the specific response is almost always less intense. It has associated with it, however, as a secondary result the production of a new rise of variable extent in the agglutinin titer of the serum of the bacillus of the first immunization.

15. Metabolism of Asthma.—Asthmatic individuals seem to suffer from a condition of tissue suboxidation. Whether this is due to the lack of oxygen induced by the functional failure of the pulmonary system, or whether the suboxidation is the result of the causative factor of the disease and is, perhaps, the etiologic factor in the production of the spasmodic seizure, cannot be at the present time decided. If it were possible to study the metabolism of a patient who did not suffer from asthma, but who had the etiologic factors present that may induce asthma, as, for example, an anaphylactic state that is present without the asthma, this point might be cleared up. The neutral sulphur fraction (consisting of the various oxidized sulphur derivatives, like taurine, taurocarbamic acid, cystin, sulphocyanates, the oxyproteic and uroferric acid, the volatile sulphids, etc.) increase shows this lack of oxidation. This seems to agree with the findings of various observers who noticed a decrease of tissue oxidation in dyspneic animals. Zugsmith and Kahn find also that the creatinin output is low, thus indicating a lessened tissue oxidation, for, according to Folin and others, the creatinin output depends only on the endogenous katabolism of the body. While they did not notice that there was a lessened excretion of urea in urine, they found that the observation of Colosanti that there was a decrease in tissue breakdown during dyspnea, held true in human beings suffering from asthma. It is not true, however, that secretion of urine stops during the dyspneic attack, for in one case the secretion of urine seemed to be stimulated during the spasm, at least one patient voided urine frequently.

16. Cord Degeneration and Visceral Tuberculosis.—Bassoe reports two cases. Case 1.—Conglomerate tubercle in mid-thoracic region: Onset with epigastric paresthesia, then girdle pains, numbness and weakness of legs, finally picture of transverse lesion. Much pus in urine, but no pulmonary symptoms. Tuberculosis not recognized during life. Death seven months after onset. Necropsy: Pulmonary and genitourinary tuberculosis. Conglomerate intramedullary tubercle at level of seventh thoracic vertebra. Numerous tubercle bacilli in sections from cord. Case 2.—Man of 46 years with history of stroke causing right hemiplegia five years before death. Only partial weakness left behind. Later, pain and weakness of right side, followed by paraplegia and sphincter disturbance. Increased tendon reflexes and Babinski sign. No pulmonary symptoms and only slight physical signs. Necropsy: Chronic pulmonary and pleural tuberculosis. Atrophy of brain and cord. Old hemorrhagic softening in left hemisphere. Nodule in left Sylvian fissure. Extensive bilateral cord degeneration.

17. Pituitary Gland in Epileptics.—The sellas from a series of unselected epileptic subjects examined by Munson presented a wide variation in type. The average size seems a little smaller than the figures given for normals and the contained gland seems to weigh less. Roofing will be seen on the roentgenogram, but in reality the gland is well exposed and pressure seems a remote possibility. Bony changes are present but seem to be the anomalies which might well be present in a similar series of nonepileptic cases. There was no characteristic change to be seen in epileptic sellas.

18. Intravenous Serum Treatment of Cerebrospinal Meningitis.—A camp epidemic of 208 cases of cerebrospinal meningitis is reported by Herrick. He claims that the disease is in a most, probably in all, instances a primary meningococcus sepsis with usual, but not necessarily universal, secondary meningitis. The diagnosis can be made in at least 50 per cent. of the cases in the premeningitic stage of sepsis. Treat-

ment by large amounts of antimeningococcus serum intravenously, combined with active spinal drainage and intraspinal serum administration, has reduced the duration of the disease, the number and severity of complications and the mortality. The total mortality of the entire series of 208 cases is 26 per cent. In the 129 cases treated by intraspinal methods alone or with intravenous serum doses of 10 to 45 c.c., it is 31.7 per cent.; in 79 treated by larger amounts of serum intravenously and average or smaller amounts intrathecally, 16.4 per cent. The mild cases do well by either method of treatment. It is in the severe types that the intravenous methods give the most striking results. Another important effect of intravenous therapy is the apparent reduction in number of complications.

Boston Medical and Surgical Journal

April 18, 1918, 178, No. 16

- 19 Physical Examination in Pulmonary Tuberculosis. J. H. Pratt, Boston.—p. 519.
- 20 Standardization of Hospitals. C. A. Drew, Worcester.—p. 527.
- 21 Surgical Sutures as Causes of Wound Infection. W. H. Watters, Boston.—p. 530.
- 22 Plea for Quick Bacteriologic Diagnosis of Diphtheria. E. A. Beckler, Boston.—p. 531.
- 23 Modern Treatment of Tuberculosis. H. F. Gammons, Carlsbad, Texas.—p. 532.

Canadian Medical Association Journal, Toronto

April, 1918, 8, No. 4

- 24 Modern Conceptions of Certain Immunity Reactions and Their Practical Bearing. H. Oertel, Montreal.—p. 289.
- 25 Experience Through Halifax Disaster. F. T. Tooke, Montreal.—p. 308.
- 26 Analysis of Clinical Types of Puerperal Fever: Prognosis and Treatment. B. P. Watson and W. A. Scott, Toronto.—p. 321.
- 27 Essentials of Success in Prostatic Surgery. E. M. Watson, Buffalo.—p. 327.
- 28 Establishment of Federal Bureau of Health. J. B. Black, Windsor, N. S.—p. 333.
- 29 Two Cases of Sinus Thrombosis and Jugular Resection. R. S. Minnes, Ottawa.—p. 336.
- 30 Mercury Poisoning with Anaphylactic Phenomena and Fatal Issue Fifty-Two Days Later. A. R. Robertson and A. G. Fleming.—p. 342.
- 31 Case of Rheumatic Fever with Purpura, Edema of Glottis, etc. L. M. Lindsay, Montreal.—p. 352.

Cleveland Medical Journal

March, 1918, 17, No. 3

- 32 Primary Anemia. C. F. Hoover, Cleveland.—p. 143.
- 33 Immediate Repair of Cervix after Childbirth. J. L. Bubis, Cleveland.—p. 149.
- 34 Wheat, Meat and Heat. T. Hubbard, Toledo.—p. 152.
- 35 Poliomyelitis in Cleveland in 1917. R. A. Bolt, Cleveland.—p. 156.
- 36 Technic of Some of Less Common Methods of Examination of Blood and Urine. A. B. Denison, Cleveland.—p. 166.

Georgia Medical Association Journal, Augusta

April, 1918, 7, No. 12

- 37 Indirect, Direct and Suspension Laryngoscopy. C. Stockard, Atlanta.—p. 255.
- 38 Chronic Appendicitis in Young Children. B. Moore, Atlanta.—p. 258.
- 39 Syphilis of Stomach; Report of Cases. L. C. Fischer, Atlanta.—p. 261.
- 40 County Hospitals. W. A. Chapman, Cedartown.—p. 264.

Indiana State Medical Association Journal, Fort Wayne

April, 1918, 11, No. 4

- 41 Application and Interpretation of Newer Ear Tests. J. D. Heitger, Bedford.—p. 135.
- 42 *Tonsillectomy and Adenectomy. J. W. Iddings, Lowell.—p. 139.
- 43 Chronic Constipation. W. H. Foreman, Indianapolis.—p. 147.

42. Abstracted in THE JOURNAL, Oct. 27, 1917, p. 1469.

Iowa State Medical Society Journal, Des Moines

April, 1918, 8, No. 4

- 44 Operation of Sewage Treatment Plants in Iowa. J. H. Dunlap, Iowa City.—p. 121.
- 45 Acidosis in Children. F. Moore, Des Moines.—p. 125.
- 46 Acidosis in Surgery. E. A. Graham, Mason City.—p. 130.
- 47 Acidosis and Its Relation to Upper Respiratory Conditions. F. A. Stevens, Sioux City.—p. 136.
- 48 Manic Depressive Insanity. G. H. Hill, Des Moines.—p. 138.
- 49 Heart Disease in Children. T. N. Walsh, Hawkeye.—p. 143.

Journal of Bacteriology, BaltimoreMarch, 1918, **3**, No. 2

- 50 Science of Bacteriology and Its Relation to Other Sciences. L. F. Rettger, New Haven, Conn.—p. 103.
- 51 Methods of Pure Culture Study. H. J. Conn, H. A. Harding, I. J. Kligler, W. D. Frost, M. J. Prucha and K. N. Atkins.—p. 115.
- 52 *Enzymes of Tubercle Bacillus. H. J. Corper and H. C. Sweany, Chicago.—p. 129.
- 53 Some Characters which Differentiate Lactic Acid Streptococcus from Streptococci of Pyogenes Type Occurring in Milk. J. M. Sherman and W. R. Albus, Philadelphia.—p. 153.
- 54 Studies in Nomenclature and Classification of Bacteria. R. E. Buchanan, Ames, Iowa.—p. 175.
- 55 Direct or Breed Method for Counting Bacteria in Tomato Catsup, Pulp or Paste. C. Vincent, Baltimore.—p. 183.
- 56 Blue Printing Directly from Agar Plates. J. Broadhurst, New York.—p. 187.
- 57 Comparison of Loeffler's Coagulated Blood Serum and Blood Serum with Addition of Sterile Ox Gall. H. R. Odell, Albany, N. Y.—p. 189.

52. **Enzymes of Tubercle Bacillus.**—As a result of experiments Corper and Sweany state that evidence of the presence of a connective tissue, or elastic tissue, disintegrating enzyme in the tubercle bacillus was not obtained, at least by the methods used for this purpose. Tubercle bacilli of both the human and bovine varieties possess autolytic enzymes, as indicated by the noncoagulable nitrogen and amino-acid, a nitrogen liberated at incubator temperature after the bacilli have been killed by toluene and chloroform. The bacilli themselves, or autolysates therefrom, also possess a trypsin-like enzyme capable of splitting proteins in alkaline solution, an erepsin-like enzyme capable of decomposing peptone in acid solution, a weak pepsin-like enzyme capable of splitting proteins in acid solution, a nuclease capable of splitting nucleic acid and a urease capable of decomposing urea. The tubercle bacilli, or autolysates therefrom, do not possess enzymes capable of hydrolyzing starch or inverting sucrose, demonstrable by the delicate Lewis and Benedict picramic acid method. Autolysates from tubercle bacilli do not possess enzymes capable of digesting elastic tissue prepared from lamb lung, or connective tissue prepared from tubercles, at least.

Medical Record, New YorkApril 13, 1918, **93**, No. 15

- 58 *Relation of Dress to Health, with Special Reference to Army Uniforms. W. B. James, New York.—p. 617.
- 59 Teratologic Collection of Army Medical Museum. R. W. Shufeldt, Washington, D. C.—p. 620.
- 60 Surgical Histology and Anatomy of Breast. P. Syms, New York.—p. 627.
- 61 Is Diagnosis of Precancerous Stage Possible in Uterine Diseases? H. Crutcher, Tularosa, N. M.—p. 632.
- 62 Mouth Surgery, with Special Reference to Cysts of Jaws. T. Blum, New York.—p. 634.
- 63 Abrams' Method of Treatment of Aneurysm. R. Kodama, Tokio, Japan.—p. 635.

April 20, 1918, **93**, No. 16

- 64 War Food Dieting and Our Patients. W. G. Thompson, New York.—p. 663.
- 65 Some Manifestations of Parent Complex. A. Stern, New York.—p. 664.
- 66 Fracture Dislocation of Sacrum; Involving Third, Fourth and Fifth Sacral Roots. J. Byrne and A. H. Harrigan, New York.—p. 668.
- 67 Surgical Anomalies of Ileocolon. H. Barber, New York.—p. 673.
- 68 Conservation of Baby Life in Tenement. J. Sobel, New York.—p. 676.
- 69 Explanation of Austin Flint Murmur; Also of Presystolic Murmur of Mitral Stenosis. O. V. Huffman, Brooklyn.—p. 681.

58. **Health and the Army Uniform.**—Nowhere, says James, is the irrational in dress more striking than in military life. In private life, excepting for fashion and modern police requirements, every man is at liberty to dress as he wishes. In the army his dress is determined for him without any choice on his part. Military tradition and a desire to look different from other armies seem to have been the determining factors. The chief points in the army uniform that seem not to be in accord with the principles before demonstrated and which prevent free contact between the skin and the air, which is necessary for health, resistance to disease, and for efficiency, are the closefitting woolen and often padded coat which must always be kept closely buttoned; the high closefitting collar; the woolen puttees resembling the bands in which the legs of infants were swaddled in a former and

more barbaric age; and the regulation which necessitates the constant wearing of the hat or cap when out of doors. The modern soldier is almost hermetically sealed from the soles of his feet to his chin. From the point of view of modern science the clothing of the navy is far more rational than is that of the army. The open front blouse and the bell-bottom trousers flapping in the wind secure at least a moderate exposure of some part of the body.

New York Medical JournalApril 13, 1918, **107**, No. 15

- 70 Hemorrhage of Nonpregnant Uterus. F. C. Hammond, Philadelphia.—p. 673.
- 71 Infection and Resistance. J. W. Smith, Jr., New York.—p. 675.
- 72 Ether Oil Colonic Anesthesia. W. Lathrop, Hazelton, Pa.—p. 679.
- 73 Paraffin in Ear and Nose. A. Kahn, New York.—p. 681.
- 74 Surgical Prognosis in Gallbladder Disease. E. MacD. Stanton, Schenectady.—p. 682.
- 75 Tonsil Problem in Adults and Children. J. Friedman, New York.—p. 686.
- 76 Sex in Life. J. H. Toomey, New York.—p. 688. To be continued.
- 77 Principles of Treatment of Gunshot Wounds at Casualty Clearing Stations. H. M. W. Gray, Aberdeen, Scotland.—p. 696.

April 20, 1918, **107**, No. 16

- 78 Malpositions and Their Treatment. J. W. Markoe, New York.—p. 721.
- 79 Medical Supervision of Trinitrotoluol Workers. W. G. Hudson, New York.—p. 723.
- 80 Intramuscular Injection of Foreign Protein, Crotalin, in Three Hundred Cases of Epilepsy. R. H. Spangler, Philadelphia.—p. 727.
- 81 Syphilis in Relation to Mental Disease. W. C. Sandy, Middletown, Conn.—p. 734.
- 82 Intra-Arterial (Vertebral) Administration of Tetanus Antitoxin. R. B. Pratt, Philadelphia.—p. 737.
- 83 Sex in Life. J. H. Toomey, New York.—p. 739.
- 84 Pupillary Reaction in Chronic Alcoholism and Alcoholic Psychoses. S. R. Leahy, New York.—p. 743.
- 85 Hoarseness. J. J. Levbarg, New York.—p. 744.
- 86 Principles of Treatment of Gunshot Wounds at Casualty Clearing Stations. H. M. W. Gray, Aberdeen, Scotland.—p. 745.
- 87 Surgery in British Base Hospital in France. A. Greenwood.—p. 748.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, LondonMarch, 1918, **22**, No. 10

- 1 Technic for Lateral View of Upper End of Femur. R. W. A. Salmond.—p. 297.
- 2 Some Modern Developments in Roentgenology. L. E. Ellis.—p. 301.
- 3 Convenient Method of Heating Spiral of Coolidge Tube. A. C. Jordan.—p. 307.
- 4 Study of Dosage in Radium Therapy. J. C. Mottram and S. Russ.—p. 309.

Glasgow Medical JournalDecember, 1917, **88**, No. 6

- 5 Etiology of Cancer. H. Morton.—p. 321.
- 6 Intratracheal Anesthesia. H. P. Fairlie.—p. 334.

Lancet, LondonMarch 30, **1**, No. 4935

- 7 *Nonunion of War Fractures of Mandible. P. P. Cole.—p. 459.
- 8 *Bone Grafting in Gunshot Injuries of Mandible. H. Platt, G. G. Campion and B. J. Rodway.—p. 461.
- 9 Case of Unilateral Hypertrophy of Mandible. W. Edmond.—p. 463.
- 10 Electrocardiographic Depression Produced by Digitalis. I. Harris.—p. 464.
- 11 *Trophic Disturbances in Gunshot Injuries of Peripheral Nerves. J. S. B. Stopford.—p. 465.
- 12 Roentgen Ray Appearances of Trichiniasis. C. Gouldesbrough.—p. 468.

April 6, 1918, **1**, No. 4936

- 13 *Cardiac Pathology. Auricular Flutter. F. W. Price.—p. 491.
- 14 Army Nephritis. C. F. Coombs.—p. 495.
- 15 *Prophylactic Triple Inoculation against Typhoid and Paratyphoid. G. Dreyer, A. D. Gardner, A. G. Gibson and E. W. A. Walker.—p. 498.
- 16 Persistent Carriers of Entameba Histolytica. S. Shepherd and D. G. Lillie.—p. 501.

7. **Nonunion of War Fractures of Mandible.**—Among 270 cases of jaw fractures which have come under the care of Cole and his associate Bubb immediately or soon after the infliction of their injury, there were thirty ununited fractures, an inclusive nonunion percentage of approximately eleven.

Of these thirty cases, union was in twelve absolutely hopeless, judged by no matter how exacting a standard. The resulting figure is approximately 7 per cent. In the treatment of many of these cases use has been made of a pedicled graft method which Cole regards as being a novel procedure. He used that portion of the jaw lying in front of the masseter attached to its lower margin the deep cervical fascia, to its outer surface the platysma, and to its inner surface near the symphysis the anterior belly of the digastric. On clinical and anatomic grounds this portion can be detached and utilized as a pedicled graft. The feasibility of the procedure was clearly demonstrated at operation. The procedure adopted is as follows: The skin incision is made extending well into the neck reaching a lower level in front than behind. A flap consisting of skin only is raised to the requisite level. The posterior fragment is thoroughly exposed. The extremity only of the anterior fragment is exposed, so that the extent of the gap may be gaged. An incision is then made through the soft parts clothing the outer aspect of the anterior fragments at a level immediately below the buccal sulcus. The basal margin of this portion of the jaw is then sawed off. The periosteum on the inner aspect of the fragment is incised. Lateral incisions through platysma and deep fascia are made to define the pedicle, which is then dissected from the underlying structures.

The graft is thus freed to an extent sufficient to allow easy adaptation in its new position. The posterior fragment is now freshened to provide as broad a surface of contact as possible. Anterior and posterior fragments are now drilled for the passage of a fine silver wire. The wires are passed through the pedicle, surround the graft, and, when tightened and twisted, ensure snug contact between graft and freshened fragments. The soft parts are brought together with a few catgut sutures and the skin is sewed up. A drainage tube is inserted and retained for twenty-four hours. The vast majority of ununited fractures occur on the lateral aspect of the mandible and exhibit a gap rarely exceeding 3 cm. in length. This operation, then, enjoys a wide range of applicability. The results obtained by this method are rapid and certain. Cole says that to such an extent is this so that in cases with nonunion, amenable to treatment by means of a pedicled graft, success can practically be guaranteed.

8. Bone Grafting in Injuries of Mandible.—The authors report nine cases of jaw injury in which tibial bone grafts were implanted successfully.

11. Gunshot Injuries of Peripheral Nerves.—Stopford points out that there is strong reason to conclude that irritative nerve lesions can produce changes in the walls of the arteries supplied by the affected nerves. These changes seriously reduce the caliber of the vessel and must inevitably diminish the blood supply to the muscles, bones, joints and skin. From the clinical and pathologic evidence brought forward in this paper it seems probable that the so-called trophic disturbances are the result of vascular changes produced by an irritative nerve lesion. The contention held by Todd that vascular changes precede trophic lesions is strongly supported by Stopford's clinical observation. The appearance of gangrene and other features in the late stages of some of his patients who had received uncomplicated gunshot injuries of peripheral nerves strongly suggested arterial obstruction, although there was no indication that any main blood vessel had been primarily or secondarily implicated by the injury or healing of the wound. The constant fibrous contracture of muscles in these cases showed a more serious condition than was to be expected from a simple nerve injury, and the histologic examination points to this being due largely to diminished blood supply in consequence of the endarteritis. It is important to emphasize the fact that this contracture is only found to occur in the muscles whose nerve supply has been affected.

13. Cardiac Pathology.—The diagnosis of the condition, Price says, rests on the detection of the extremely rapid contractions of the auricle, and this is not infrequently impossible without the employment of the polygraph or electrocardiograph; indeed, in some cases a correct diagnosis cannot be made with certainty, even though the polygraph

be employed, an electrocardiographic examination being necessary. Besides it is necessary to distinguish the electrocardiograms of auricular flutter from those of auricular fibrillation. In the case of the latter, however, the R deflections occur at irregularly irregular intervals; the amplitude of the R deflections varies from cycle to cycle; and there is often no relation between the length of a pause and the amplitude of the deflection R which follows it, that is, a short pause may be followed by an R deflection of large amplitude and a long pause by one of small amplitude. In the case of auricular flutter it will be found that these features are not present, even though the ventricular rhythm is markedly irregular. Further, the deflections due to auricular systole in cases of auricular flutter may be distinguished from the oscillations that are found in auricular fibrillation. In the case of the former they are less frequent, ranging between 180 and 380 per minute, rhythmic, and of constant form in each lead; whereas in the latter they are more numerous, irregular in rhythm, inconstant in form in each lead, and smaller in size.

Whenever an individual is conscious of a marked increase in the cardiac rate or complains of attacks of palpitation, occurring suddenly and without apparent cause, or suffers from dyspnea on exertion and other indications of cardiac failure coming on rapidly, the possibility of auricular flutter should be considered, especially if the rhythm of the pulse be regular. Auricular flutter should be diagnosed from tachycardia associated with a normal rhythm. When the attacks are transient absolute rest is advisable and the treatment is that of paroxysmal tachycardia. When they are of longer duration, or the condition has become permanently established one of the digitalis series of drugs should be administered in large doses. One may employ the tincture of digitalis, commencing with a dram, or in urgent cases with even $1\frac{1}{2}$ or 2 drams, per diem. These doses should be continued until the full physiologic reaction is obtained. After this one or two plans may be adopted: (1) The dosage may be lessened, and afterward the administration of the smallest dose necessary to control the ventricular rate continued in the hope that the flutter may cease; or (2) large doses may be continued, in the hope of inducing auricular fibrillation, after which the administration of the drug is discontinued for some days in anticipation of a return to the normal rhythm. Price says that the first plan is generally to be preferred.

15. Inoculation Against Typhoid.—A brief partial report is made by the authors in order to record their observations made on animals and man in relation to the use of triple vaccine. They were from the first of the opinion that the doses recommended and employed by Castellani were too small, and of this they soon became convinced. In their own investigations they have used vaccine made up to the following strengths per cubic centimeter: (1) 1,000 million *B. typhosus*; 500 million *B. paratyphosus* A; 500 million *B. paratyphosus* B; (2) 1,000 million *B. typhosus*; 750 million *B. paratyphosus* A; 750 million *B. paratyphosus* B; (3) 1,000 million *B. typhosus*; 1,000 million *B. paratyphosus* A; 1,000 million *B. paratyphosus* B. As regards the degree of local and general reaction produced by the inoculations the authors found that the vaccines do not produce appreciably greater disability than the ordinary typhoid vaccine. Comparing earlier results, following the use of the weakest vaccine, with those obtained with the two stronger vaccines the authors have no doubt that both the degree of immunity developed and its duration were distinctly greater in the case of paratyphoid A and B where the stronger vaccines were used. This was particularly evident in the case of paratyphoid A.

Curves of agglutinin formation worked out on man have enabled Dreyer and his associates to reach the following general conclusions: (a) as the result of a single first inoculation with triple vaccine. 1. Agglutinins begin to make their appearance in the serum about the seventh day. 2. Thereafter they undergo a rapid increase in amount, reaching their maximum somewhere between the sixteenth and the twenty-fourth day, usually about the eighteenth to

the twentieth. 3. After the maximum is passed a regular fall begins similar to that familiar from animal experiment. 4. The actual height of the titer reached for each bacillus varies very greatly with the individual subject of inoculation, as also does the relative height of the titers obtained respectively for T., A, and B. Nevertheless, the individual differences in reaction remain very striking. These facts suggest an explanation of how it happens that one individual freely and continuously exposed to typhoid infection may not become infected (while others similarly situated may do so), but will, nevertheless, readily acquire infection if exposed to paratyphoid A or paratyphoid B as the case may be, and similarly *mutatis mutandis*. (b) What occurs when the usual routine of giving two inoculations at ten days' interval is followed.

At the moment when the second inoculation is given the rise in agglutinin titer following the first inoculation has usually just begun to become rapid. There occurs immediately a marked change in the rate of agglutinin production. This change is normally characterized by an actual fall in the curve of a few days' duration, after which the rapid rise again sets in and reaches its maximum between the sixteenth and twenty-fourth day, most frequently the eighteenth to twentieth day. The regular fall, then, follows as in the case of a single inoculation. It follows that the use of two inoculations, at least, is an essential feature in the prophylaxis of enteric fevers, since it secures a more persistent relatively high immunity. A most important factor affecting duration of immunity is the time interval allowed between the first and second inoculation. A more lasting immunity is obtained by administering the second dose of vaccine at a time when the effect of the first has reached (approximately) its maximum. The authors are of opinion, therefore, that it would prove advantageous to lengthen the interval between the first and second dose of vaccine from ten days to eighteen or twenty days (about three weeks) in making prophylactic inoculations against typhoid and paratyphoid.

Sei-I-Kwai Medical Journal, Tokyo

March, 1918, 37, No. 3

- 17 Myositis Purulenta Acuta Caused by Bacillus Typhosus. M. Terada.—p. 9.

Bulletin de l'Académie de Médecine, Paris

March 12, 1918, 79, No. 10

- 18 *Pustules on Munition Workers. G. Thibierge.—p. 208.
19 *Nervous Form of Slow Endocarditis. H. Claude.—p. 211.
20 The Laws of Healing of Skin Wounds. A. Lumière.—p. 213.
21 *Treatment of Stenosis of the Esophagus. Sencert.—p. 215.

18. The Oil Pustules of Munition Workers.—Summarized in the Paris Letter, page 1247.

19. Nervous Form of Slow Endocarditis.—Claude recalls that malignant endocarditis with a protracted course was described by Jaccoud in 1882. Osler has called attention recently to the frequency of infectious nodules and purpura in its course, and he has also described a meningitic form which belongs, however, more to the acute type of endocarditis. Claude here reports a case, in a young man, of typical slow endocarditis remarkable in that the symptoms were predominantly nervous: a two months' chorea, meningism, hemiplegia and alternate facial paralysis. Necropsy six months after the first symptoms showed foci of infectious arteritis with ectasia. Fine chains of streptococci were found in sections of the mitral valve.

21. Treatment of Grave Stenosis of the Esophagus.—Sencert reports two new cases which bring to fourteen the number of his cases of practically impassable cicatricial stenosis of the esophagus corrected by retrograde catheterization. An opening is made into the stomach and then, ten or fifteen days later, he works a fine catheter up into the esophagus from below, under direct visual control through the gastrostomy. This allows a thread to be drawn through the esophagus, and a fine rubber tube, tied to this thread, can be drawn through. A thread tied to the tube is drawn through with it and is left till next day when the progressive dilation is continued.

Paris Médical

March 9, 1918, 8, No. 10

- 22 *Amputation of the Foot. A. Trèves and M. Paramelle.—p. 194.
23 *Chronic Dental Infection. A. Baude.—p. 199.
24 *Internal and External Temperature. A. Satre.—p. 204.

March 16, 1918, 8, No. 11

- 25 Treatment of Salivary Fistulas. L. Dieulaufé.—p. 211.
26 Amputation to Precede Disarticulation. P. Bertein.—p. 216.
27 Feet Frozen in Repatriating Trains. F. Baup.—p. 220.

22. Amputation of the Foot.—From their comprehensive study of prostheses applied for partial or total amputation of a foot, Trèves and Paramelle declare that the functional use of the leg is more nearly perfect when the amputation removed the whole of the foot. Amputation in the lower third of the leg gives the best results, farmers, mechanics, and others being able to resume their occupation in practically exactly the same conditions as before their injury, after they once get accustomed to their artificial leg. The leg is stouter and is not so liable to get out of order as the more complicated artificial foot. A severely maimed foot is more of a handicap than an artificial leg. In the present state of things, the best advice to give for severe mutilation of the foot is to have it amputated at the ankle. (The concluding portion of this article was suppressed by the censor.)

23. Dental Infections.—Baude insists that with enlarged glands in the neck, the primary lesion should be sought in the teeth, before incriminating the tubercle bacilli. If there is not already softening, treatment of the teeth generally brings the return to normal of conditions in the glands. In a large proportion of cases the tubercle bacilli locate only secondarily in the inflamed glands. Ordinary inflammation makes the bed for tuberculosis, in both children and adults. He has encountered cases of chronic septicemia from oral sepsis, and urges that the physician should insist on the teeth being put in order as an indispensable element of whatever treatment he is instituting. If the patient cannot afford the time or expense for careful dentistry, the tooth should be pulled.

24. Difference Between Internal and External Temperature.—Satre found in all but fifty-one of 500 persons examined that the temperature in the rectum was from 0.1 to 0.5 centigrade degree higher than the external temperature. The average was 0.3, and this may be regarded as the normal, the standard difference between the two temperatures. When the difference is less than this, or more, abnormal conditions prevail. Judging from his observation and clinical experience, the prognosis is fatal when the difference amounts to 1.5 or 2 degrees C. If the figure is 0.8 or 1 early in the disease and keeps at this figure, the outlook is grave but there is still a chance of recovery. Much difference, in the course of an infectious disease, often indicates acute insufficiency of the myocardium. When he finds that the difference is 1 degree, he begins to give stimulants and stops all cooling baths and packs, to refrain from augmenting further this heart weakness. When the difference keeps within the normal range in the course of acute infectious diseases, the outlook may be regarded as good, notwithstanding the delirium, rapid pulse and occasional arrhythmia. An abnormal difference in the course of convalescence from diphtheria, warns of acute insufficiency of the myocardium. In chronic heart disease, the difference may amount to 1 or 1.2 degrees; as it goes higher than this, the prognosis grows graver. A difference of 1 degree differentiates cardiac asthma from other forms of asthma, and organic tachycardia from the nervous form. A difference within normal excludes appendicitis and peritonitis, suggested otherwise by the symptoms. With all internal or external purulent affections, there is a difference of about 1 degree.

Presse Médicale, Paris

March 14, 1918, 26, No. 15

- 28 *Treatment of Deformity of Hand or Foot from Contracture. J. Boisseau and M. d'Oelsnitz.—p. 133.
29 *The Rhythm of Retention of Salt. P. Valléry-Radot.—p. 135.
30 *Spinal Anesthesia by Lumbosacral Cocainization. P. Delmas.—p. 137.

28. **War Contracture of Hand or Foot.**—Illustrations are given of hand or foot in extreme contracture cured by a single sitting. The curability is independent of the duration, of the degree of secondary disturbances, and of the clinical form of contracture. Boisseau and d'Oelsnitz report all cured but 9 in 143 cases of contracted hand, *mains figées*, and all cured but 6 in 62 cases of war clubfoot. The mental condition is that of hysteria, and this is responsible for the motor disturbance. The preparation of the patient by a wholesome environment with his mates in the ward, the contagion of example, and the direct or indirect progressive psychotherapy proper of the motor disturbance, are reinforced by weak faradic electricity. In 81 hand cases and 44 foot cases the contracture was overcome at the first trial. They regard it as important from a prophylactic point of view to have these men return when cured to their mates in camp. The outlook for them then is on the same plane as for any men with the hysteria temperament.

29. **Rhythmic Retention of Salt.**—Radot emphasizes that from 10 to 15 per cent. of the chlorids ingested is retained in physiologic conditions. If after a salt-poor period a normal person takes 10 gm. of additional sodium chlorid, part of this is retained for two or three days. The rest is thrown off by steps until the salt balance is reached, and then practically all the salt ingested is eliminated. In chronic nephritis there is more or less accentuation of the normal retention, and of the elimination by steps, *échelons progressifs*. The elimination of salt may increase from less than 2 gm. to over 10 gm. in the third or fourth day in the normal; or not until the seventh day; or it never reaches 5 gm.; or even 1 gm.—these are the three different types of retention of chlorids with diseased kidneys. This test ingestion daily of 11.5 gm. of sodium chlorid, after the patient has been getting only 1.5 gm. for some time, is the only means for determining with precision the permeability of the kidney for chlorids. But it is indispensable to watch the elimination for ten or twelve days in dubious cases, as the elimination may be only retarded. To attempt to draw conclusions in two or three days after giving the superposed 10 gm. is misleading.

30. **Lumbosacral Cocain General Anesthesia.**—Delmas states that in his 300 cases and in Le Filliatre's 3,000, there have been no mishaps with this cocain technic, which he here describes in detail. Two antagonistic injections are given first; one of 1 mg. scopolamin and 1 cg. morphin, the other of 3 mg. of strychnin to counterbalance any toxic action from the other. The eyes are bandaged to ward off brilliancy. After waiting half an hour, two more antagonistic injections are made, one, subcutaneous, 5 cg. of spartein. The other is the intraspinal injection of from 2 to 6 cg. cocain, dissolved in the spinal fluid. The analgesia begins in the feet and gradually extends up to the head, going off in reverse order. Delmas reiterates that this method permits anesthetization of any segment of the body desired, including the head, without any disagreeable by-effects at the time or later.

Progrès Médical, Paris

March 2, 1918, 33, No. 9

1 Complications of War Wounds of Spinal Cord. G. Roussy.—p. 73.
2 *Symptoms after Severing of Dorsal Spinal Cord. Lhermitte.—p. 76.

3 War Wounds of Cervical Sympathetic. C. Pfeiffer.—p. 80.

March 16, 1918, 33, No. 11

4 *Somnambulism in Hysteria and Epilepsy. Bernheim.—p. 91.
5 *Displacement of Liver from Interposed Intestine. L. Moreau.—p. 92.
6 Posterior Mastoiditis. R. Moreaux.—p. 95.

32. **Symptoms from Complete Section of Spinal Cord.**—Lhermitte warns that the symptoms observed at first may be way to others later. This change is responsible for the conflicting testimony that has been published on this subject. All discrepancies are explained by the varying length of time between the injury to the cord. He analyzes the different symptoms, especially the tardy exaggeration of the reflexes and

the automatic defensive movements, spasmodic contraction of certain muscles. Cases of this kind seem to demonstrate that certain centers must exist in the spinal cord which preside over skin, tendon and bone reflexes.

34. **Somnambulism in Hysteria and Epilepsy.**—The practical conclusion of Bernheim's study of this subject is that the somnambulism is merely a secondary manifestation, superposed on the hysteria or the epilepsy. Hence the somnambulism is amenable to psychotherapy.

35. **Ptoxis of Liver from Interposed Loop of Intestine.**—In one of Moreau's two cases the colon had become interposed between the diaphragm and the liver; in the other case, loops of small intestine. In the first case a cancer of the stomach was evidently responsible for the displacement, by traction from adhesions. In the other case there was cystic disease of the intestines.

Revue de Médecine, Paris

July-August, 1916, 35, No. 7-8, Published November, 1917

37 The Menace of Declining Vitality in French Nation. L. Landouzy.—p. 407.

38 *Nervous Shock. H. Roger.—p. 422.

39 War Microbian Skin Diseases. H. Gougerot.—p. 461. Continuation.

40 *Diagnosis of Pregnancy from the Urine. J. Koopman.—p. 493.

41 Influence of Alcohol on Sugar Content of Dogs' Blood. R. Lépine.—p. 506.

42 *Variations in Pressure of Cerebrospinal Fluid. E. Cottin and C. Saloz.—p. 511.

43 Sugar Content of Blood after Inhalation of Chloroform. R. Lépine.—p. 528.

38. **Nervous Shock.**—Roger analyzes nervous shock as a set of inhibiting phenomena following on some violent excitation, and entailing secondary paralysis of the centers primarily excited or inhibited. The dynamic disturbance is felt in all or nearly all the cells of the entire body. It arrests or modifies their functioning, thus inducing a series of new morbid manifestations: reduction of the blood pressure; attenuation of the cellular metabolism; lowering of the temperature; disturbance in the internal and the external secretions; acidification of the blood, and reduction of the proportion of carbon dioxid. Thus, as the process develops, it keeps growing more complex. Physical and chemical manifestations become superposed on the primary dynamic disturbances. Treatment, therefore, must be addressed to all three. Shock retards the action of drugs. He has found that frogs in a state of shock from a blow on the head or an electric shock did not respond to the effect of a poison until after a period eight or ten times longer than under normal conditions, even when strychnin, for example, was injected by the vein. Roger reviews the various measures in vogue for combating shock, including pneumatic pressure to drive the blood from the periphery inward after severe hemorrhage; anesthesia of the region, and inhalation of carbon dioxid with oxygen.

40. **Diagnosis of Pregnancy from the Urine.**—Koopman's trials of various technics for this purpose proved disappointing, with the exception of the miostagmin reaction. For this he uses a stalagmometer, an increase in the number of drops from the capillary tube or the weight of the fluid thus dropped, per second, is the miostagmin reaction. In thirty pregnant women he found that the urine always showed two or three more drops than the controls, up to six drops. The only misleading findings he obtained were in a case of cancer of the esophagus and one of uterine fibroma. The reagent used was an extract of chorionic villi, or Izar's reagent (1 c.c. each of linolic and ricinolic acid), or Abderhalden's placenta antigen.

42. **Pressure in the Cerebrospinal Fluid.**—Cottin and Saloz found wide variations in the pressure in healthy persons according as they were seated, standing or reclining. In eighty pathologic cases the variations were still more marked, but no special laws for this could be detected. In normal persons the pressure was from 20 to 23 cm. water, reclining, and from 40 to 42 cm., seated. Hence in recording the pressure the position at the time should be specified.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 9, 1918, 48, No. 10

- 44 *Paralysis Left by Anterior Poliomyelitis. H. Hoessly.—p. 305.
 45 *Internal Topography of Peripheral Nerves. H. Hoessly.—p. 309.
 46 *The Function of the Patella. H. Hoessly.—p. 311.
 47 *Lactation and Mammary Cancer. B. von Steiger.—p. 312.
 48 "Iron Placenta" Test for Pregnancy. Kottmann.—p. 318. See Abstr. 51, p. 658.

44. **Sequels of Poliomyelitis.**—Hoessly thinks that it is more than a casual coincidence that, at the Zurich orthopedic institute, in fifty-two patients under treatment for bilateral paralysis from poliomyelitis, one foot was in pronation, and the other in supination. The paralysis always involved the antagonists in the two feet.

45. **Internal Topography of Peripheral Nerves.**—Hoessly has found an instructive means for study of the inner topography of nerves to be research on the peripheral nerves in cases of old central paralysis. In four cases of arthrodesis of the knee requiring operative correction, in patients who had long been paralyzed as result of poliomyelitis nearly twenty years before, a segment of the external popliteal nerve was resected and examined to determine the topography of the fiber tracts. He assumes that the motor fibers must have been all destroyed during the long interval. On this assumption, the findings indicated that the motor and sensory fibers do not run in cables but blend in their course, weaving in and out. This "secondary degeneration method" for determining the internal topography of a nerve may give interesting results when applied to trunk nerves.

46. **The Function of the Patella.**—Hoessly presents arguments to show that one of the main functions of the patella is to serve as a leverage point.

47. **Mammary Cancer and Lactation.**—Von Steiger's statistics from the public hospital at Bern confirm the general assumption that the normal physiologic activity of the mammary glands does not predispose to cancer. In 108 women with mammary cancer, less than 25 per cent. had had normal lactation; more than 50 per cent. had never borne children, and the others had nursed only defectively. The average age of those who had never borne children was 55, while the average age of the others was a little over 52.

Gazzetta degli Ospedali e delle Cliniche, Milan

Feb. 17, 1918, 39, No. 14

- 49 *War Wounds of the Skull. E. Riccioli.—p. 135.
 Feb. 24, 1918, 39, No. 16
 50 *The 1917 Epidemic of Malaria. G. Cremonese.—p. 153.

49. **Skull Wounds.**—Riccioli analyzes his experience with thirty-three operative cases of war wounds of the skull. The mortality was 38.7 per cent., and in 16.6 per cent. of the fatal cases the dura mater was apparently intact. The operation followed the wound within a few hours.

50. **Malaria in 1917.**—Cremonese remarks that malaria exacted high tribute all over Europe last year, and especially in Italy. Until 1917 malaria in Italy had been gradually assuming a milder form. The ability to procure quinin at cost at every postoffice made it possible for everyone to take it freely, and people did this, even without calling in a physician, aborting the disease as it developed, or materially attenuating it. The only plausible explanation for the virulence of the malaria during 1917 is that new and virulent strains of the malaria parasites had been imported. The quotidian type was especially prevalent. The treatment found successful was a double injection of the quinin (1 gm. bichlorid : two vials), and 2 gm. by the mouth in ten tablets during the day. Then for two or three days, 0.5 gm. by injection and five or six tablets, or ten tablets alone. This was kept up for two or three days; then for about three days, eight tablets; then six for a week (1.20 gm.), and finally four daily for a month (0.80 gm.). In children over 5 he began also with the 1 gm. by injection, but under this age he gave the quinin only by the mouth.

Policlinico, Rome

Feb. 24, 1918, 25, No. 8

- 51 *Ascending Cultures in Bacteriology. C. Gorini.—p. 173.
 52 *Bullet Wound of Heart. L. Vaccari.—p. 177.

- 53 *Abortive Treatment of Gonorrhea. E. Vecchia.—p. 179.

March 3, 1918, 25, No. 9

- 54 Total Peripheral Facial Diplegia. A. Rossi.—p. 197.
 55 Deformity of the Sternum. B. Masci.—p. 200.
 56 Dental Caries and Social Medicine. B. De Vecchis.—p. 202.
 57 Treatment of Fracture of the Humerus. L. Fioravanti.—p. 204.
 March, 1918, 25, Surgical Section, No. 3
 58 Hard Edema of Hand. G. Segre.—p. 65.
 59 Mycosis from Oospora d'Agatae n. sp. G. D'Agata.—p. 80.
 60 Experimental Lesions of the Pituitary. A. Chiasserini.—p. 87.
 Continuation.

51. **Ascending Cultures of Bacteria.**—Gorini called attention in 1903 to the faculty possessed by certain bacteria of climbing to the surface of the tube of agar when only the condensation fluid at the bottom of the tube was inoculated. Bacteria can be classed by this phenomenon as climbing and nonclimbing, and this supplies another element for differentiating them. It is the most convenient and the most certain method for distinguishing the proteus, and obtaining it in pure cultures. The bacteria of the typhoid group and certain races of colon bacteria are of the ascending type.

52. **Bullet Wound of Heart.**—The small bullet was found close to the sternum of the boy of 8 about an hour after the accident. The grave symptoms indicated hemorrhage in the pericardium but not a trace of perforation of the pericardium could be found. Nevertheless the pericardium was opened with a Y incision and the apex of the heart brought out. A jet of blood suddenly spurted nearly 70 cm. high, but was arrested with the left thumb and finger. With the right hand an X suture was taken in the myocardium and the heart was replaced. The interest of the case lies in the injury of the heart with no signs of perforation of the pericardium. The heart seems perfectly normal now.

53. **Abortive Treatment of Gonorrhea.**—The Italian authorities have recently decreed that soldiers with venereal disease are to be treated in their own units. Especially with acute gonorrhea, this imposes a heavy task on the regimental medical officers. Acute gonorrhea is not infrequent, in spite of all the precautions taken. Vecchia reports the subsidence of all symptoms in four days in eight of eleven men given energetic abortive treatment within thirty-six or forty-eight hours. He first anesthetized the urethra with cocain, and then injected a 5 per cent. solution of silver nitrate and a 4 or 5 per cent. solution of silver proteinate. The dose was 10 c.c. of each, and the injections were given three times a day for three days. The fluid was retained for four or five minutes and the urethra passively stretched to flatten out recesses.

Riforma Medica, Naples

March 16, 1918, 34, No. 11

- 61 *Fever Following Infectious Disease. U. Baccarani.—p. 202.
 62 Ossification of Ligaments. C. Guarini.—p. 208.

61. **Meta-Infectious Fevers.**—Baccarani refers to the slight fever he has frequently noted a few days after defervescence in some acute infectious diseases. He accepts as febrile any temperature over 36.5 C. in the axilla in the morning and 36.7 at evening. When it is 37 or 38, he seeks for some complication and almost invariably finds it in constipation, in adenoids, or processes in the internal genitals, the gall-bladder, periosteum or heart. Instead of enquiring whether the bowels have moved, he asks the typhoid convalescent whether there was a sensation that the bowels had been completely emptied or not. This often reveals latent constipation in spite of the regular morning movement. In an instructive post-typhoid case related, only this tendency to very slight fever gave the clue to an otherwise latent appendicitis, confirmed by operation. A tendency to cholecystitis may likewise be responsible for the slight fever. The urine may disclose signs of pyelitis, or the fluctuations in the pulse and slight modifications in the heart sounds may reveal a mild endocarditis. Since he has made a special study of this "feverette" after typhoid or paratyphoid, he very seldom fails to discover some cause to explain it. The infectious disease may have roused some slumbering process, or it may have directly damaged the organ. In either event, prompt

discovery and appropriate measures may ward off serious danger.

Rivista di Clinica Pediatrica, Florence

March, 1918, **16**, No. 3

63 Pathogenesis of Infantile Atrophy. D. Pacchioni.—p. 113.

64 *Rachitis. A. Gismondi.—p. 128.

64. **Nature and Treatment of Rachitis.**—Gismondi theorizes to explain the favorable action of cod liver oil, phosphorus and calcium in rachitis, and relates clinical experiences confirming their efficacy. He says that fully 80 per cent. of the children under 2 brought to the dispensary in his town in the last three years have had rachitis. He regards it as a disease of the entire organism, not of the bones alone. The blood and soft parts, as well as the bones, lack the normal content of calcium. His experience indicates that any milk allowed at night after the first year of age directly favors the development of rachitis. A little soft mashed vegetables helps to ward it off, even commencing at the seventh or eighth month. The yolks of eggs, under the age of 2, especially before the child is a year old, have seemed to him to do more harm than good. In treatment of rachitis, he prefers to give the cod liver oil in the form of a 50 per cent. emulsion. To each 100 gm. of this emulsion he adds 0.01 gm. phosphorus. A teaspoonful thus represents 0.5 mg. of phosphorus, and he gives one or two a day, immediately before eating. Along with this, calcium acetate is given, in doses of 0.5 gm. daily, fractioned. He says that a much larger proportion of the acetate is retained—up to 20, 30 or even 60 per cent.—than of the phosphate or citrate. This same treatment has curative action also in spasmophilia. The results of his experience with this combination in the last three years, he says, could not have been more satisfactory. The outcome has always been most excellent both in dispensary and private practice. Restoration to normal proceeds most rapidly under this treatment during the period of repair. It is at this stage that the child begins to move about more, and the soft bones bend under the weight of the body and the traction from the muscles. The above treatment hastens the consolidation of the bone, and thus materially shortens this dangerous period before actual deformity results.

Rivista Critica di Clinica Medica, Florence

March 2, 1918, **19**, No. 9

65 Six Types of Jaundice in Troops. G. Berghinz.—p. 97.

March 16, 1918, **19**, No. 11

66 *Epidemic Meningitis and Serotherapy. A. Fabbretti.—p. 121. Commenced in No. 9, p. 99.

66. **Cerebrospinal Meningitis.**—Fabbretti discusses the present status of serotherapy in meningitis and reports his experiences in thirty-two cases at the hospital for infectious diseases at Florence. The serum does not seem able to arrest the disease in the graver toxic cases, but in the others has a decidedly beneficial action, shortening and attenuating the disease and warding off sequels. To avoid danger of anaphylaxis—which is undoubtedly responsible for the untoward effects of serotherapy in certain cases—he advises to push the serotherapy vigorously before the anaphylactic state has time to develop, that is, during the first eight or ten days. After this, the serotherapy should be applied only when there are serious relapses with meningococci in the cerebrospinal fluid. When the fluid is under high pressure, it is best to refrain from injecting the serum. He had serum sickness in seven of his cases. In three cases in which the injection was made after an interval of one or two weeks after the last injection, the meningeal phenomena returned more intense than at first, but subsided within twenty-four hours. One patient had collapse, with cessation of respiration for a few moments, at the fifth injection, the sixteenth day of the treatment. Two patients had convulsions after the third or fourth injection the second week of treatment. One patient with pre-existing kidney disease did not have it aggravated by the serotherapy but it was benefited by the dietetic measures imposed. Only one of his patients developed appreciable sequels; he was left totally blind, with slight spastic paralysis. The overall mortality was 41.3 per cent., but a third of the patients were over 40 years old.

Brazil-Medico, Rio de Janeiro

Feb. 2, 1918, **32**, No. 5

67 *Sporotrichosis in Brazil. C. de Rezende.—p. 33.

Feb. 16, 1918, **32**, No. 7

68 Eugregarina Parasites of Arthropods. C. F. Pinto.—p. 49.

69 Addison's Disease. C. Fonte.—p. 50.

67. **Sporotrichosis in Brazil.**—De Rezende describes the case of a woman of 43 who had noticed for a month two red patches on the left hand. They rapidly assumed the appearance of extragenital primary syphilitic lesions, and some improvement followed injection of a salvarsan preparation. This improvement proved only transient, discrediting the diagnosis, but the lesions finally healed under two months of a tonic and iodids internally, plus Reclus' ointment. Soon after, de Rezende encountered a case of similar lesions in a boy of 11. They had begun five months before as hard lumps, but soon ulcerated. After failure of other measures, the lesions healed under cotton dipped in a 2 per thousand solution of mercuric chlorid. No medicine was given internally. There was no enlargement of glands or impairment of the general health in either case. The retrospective diagnosis was sporotrichosis, although this had never been known before in his region. Two other cases in a boy and girl of 15 and 10 confirmed this diagnosis, and recovery was soon complete under potassium iodid internally and local application of the 2 per thousand mercuric chlorid. The girl's arm showed nine lumps—a centripetal lymphangitis. These four cases within a year in a small town in Brazil show that sporotrichosis is not so rare as assumed. The 1 or 2 per thousand solution of mercuric chlorid seems to exert an almost specific action on the lesions.

Medicina Ibero, Madrid

Feb. 7, 1918, **2**, No. 14

70 *Hyperemia in Therapeutics. R. Coderque.—p. 161.

71 Cortical Hemianesthesia plus Oculomotor Paralysis, Nystagmus and Myopia. C. Juarros.—p. 168.

72 Autoserotherapy for Tuberculous Ascites. Blanc y Fortacin.—p. 171.

Feb. 21, 1918, **2**, No. 16

73 *Prostatism without Enlargement of the Prostate. M. Seres.—p. 225.

74 Intubation of the Larynx. E. Suñer.—p. 228.

75 The Dangers of Materialism. S. Herreros.—p. 235.

76 Influence of Arthritism and Endocrine Disturbance on Heart Disease. D. F. Huertas y Barrero.—p. 253.

70. **Hyperemia in Therapeutics.**—Coderque relates that Sehrt and Lindember in Germany have been publishing very favorable reports of the favorable influence of passive hyperemia on the healing of war wounds. They say that the pain vanishes as a rule in ten or twelve hours after the constricting band has been applied. Grenade wounds of joints are said to heal rapidly, with retention of joint functioning. They left the constricting band in place for from six to twelve days but did nothing else to the wound except cover it with gauze and a loose bandage, trusting the cleansing of the wound to the profuse secretion from the stasis hyperemia. Sehrt insists that there is no other treatment that ensures so promptly and so certainly the salvation of limbs and joints with conservation of function. In France, active hyperemia has been applied in treatment of wounds in the form of a jet of superheated air. Coderque has had favorable results with hyperemia induced with a suction glass in mastitis and with the constricting band in gonorrheal arthritis. He declares that there is no antiseptic with such a powerful action as that of induced hyperemia, relieving pain, killing bacteria and softening the tissues. With acute processes, the constriction hyperemia can be maintained for twenty or twenty-two hours at a time, but with tuberculous lesions one or two hours is the rule, skipping one day in five, and supplementing this treatment with heliotherapy. He reports a few cases to illustrate the frequent advantage from hyperemia as an adjuvant.

73. **Prostatism Without Enlargement.**—Seres describes ten operative cases to show the different types of prostate mischief which may induce symptoms resembling those from enlargement of the prostate. In some of the cases there was a group of incipient adenomas, with complete retention. These groups encircled the urethra at a point where there was

stenosis, or they encircled the neck of the bladder, or were in the lumen of the prostatic urethra. They were all readily shelled out. In other cases chronic prostatitis or an intravesical bar caused the obstruction.

Prensa Medica, Buenos Aires

Jan. 20, 1918, 4, No. 23

- 77 *Modified Technic for Production of Antitoxic Serums. I. R. Kraus and A. Sordelli.—p. 307.
- 78 *Hemoglobinuria plus Raynaud's Disease. M. R. Castex and J. Queirel.—p. 307.
- 79 Cerebellopontine Angle Tumor. L. Grasso and E. Dameno.—p. 309.
- 80 Technic for Obtaining Specimens for Biopsy. S. Mazza.—p. 315.

Jan. 30, 1918, 4, No. 24

- 81 *Spirochetes and Filtrable Viruses. R. Kraus.—p. 323.
- 82 *Venereal Granuloma. J. Nin Posadas and A. H. Roffo.—p. 323; C. V. Zerbini.—p. 332.
- 83 Traumatic Action of Strongylus Equinus. S. E. Parodi and V. Widakovich.—p. 326.
- 84 Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 333. Continuation.

77. **Production of Antitoxin.**—Kraus and Sordelli comment on the numerous questions that have to be solved before the production of immune serums will pass from the empiric stage to a solid scientific foundation. They review the various methods in vogue for rapid production of antitoxin and other serums, and then describe the method they have been using of late to hasten and render more certain the production of diphtheria antitoxin. They injected toxin neutralized with antitoxin, giving progressively increasing doses, and using horses over 10 years old, making the injections twice a week or oftener. One horse, 12 years old, received five injections in twelve days, and seven days later the serum gave 400 units. Two others, 13 and 18 years old, receiving six injections in sixteen days, gave 500 and 300 units. Three other horses given thirteen injections gave 300, 800 and 250 units. These results with old horses surpass in the number of units and in the shortness of the time anything previously realized with the old technic, thus saving both time and expense. The toxin was neutralized with antitoxin up to Ehrlich's "Lo" guinea-pig standard. The results obtained harmonize with and even surpass those recently published by McClintock and Ferry. Experiments are now under way to decide whether the age of the horses is an essential factor.

78. **Raynaud's Disease and Paroxysmal Hemoglobinuria of Syphilitic Origin.**—The man of 36 had moist gangrene develop in the Raynaud syndrome. For seven years he had been having occasional hematuria. He denied syphilis but had had several sieges of gonorrhea. The Raynaud's disease and gangrene had been developing for eleven months, commencing with a septic ingrown toenail. He had lost 21 kg. The Wassermann test was negative. He suffered from the cold one day so that his bed had to be artificially heated. In five or ten minutes after having felt so extremely chilly, he voided almost pure blood. The diagnosis was ignored syphilis plus tobacco poisoning, the latter mainly responsible for the permanent vasoconstriction entailing the Raynaud clinical picture. Specific treatment as for syphilis promptly restored clinically normal conditions, confirming the diagnosis, notwithstanding the negative Wassermann findings and the negative blood findings. Both the Raynaud syndrome and the hemoglobinuria were evidently of syphilitic origin.

81. **Spirochetes and Filtrable Viruses.**—Kraus cites various data which seem to establish that certain spirochetes at a certain stage of their development are so minute that they can pass through a Berkefeld filter. Schaudinn was convinced that the germ causing yellow fever was a spirochete of this type. Organs that contain the spirochete of infectious jaundice yield filtrates which induce the infection in guinea-pigs, according to Japanese investigators. Nicolle has also reported that the filtrate of the blood in typhus is very infectious. Futaki's finding of spirochetes in the kidneys in seven cases of typhus adds another link to the chain connecting spirochetes with invisible viruses.

82. **Venereal Granuloma.**—The extensive ulcerating granuloma was of nine years' standing, but it retrogressed completely under twenty intravenous injections of a 1 per cent.

solution of tartar emetic. There was no general reaction after the first injection. The doses were from 0.02 to 0.05 gm. in the first series of six injections, and after this from 0.05 to 0.10 gm. The microphotographs show the characteristic cultures. Zerbini reports two other cases cured likewise with tartar emetic.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 28, 1918, 42, No. 1496

- 85 Sebaceous Cyst of the Epiglottis; Two Cases. F. Bertran Castillo.—p. 225.

Revista Medica del Rosario

March, 1918, 8, No. 1

- 86 *Cholecystectomy for Gallstones. J. B. Abalos.—p. 1. Conclusion.
- 87 *Dyspepsia from Perigastritis. R. Araya.—p. 15.
- 88 Chronic Cervical Glandular Lesions in Inherited Syphilis. A. Luque.—p. 29.
- 89 Social Medicine as a Special Chair in the Medical Schools. E. Mazzini.—p. 34.

86. **Cholecystectomy.**—Abalos has removed the gallbladder in 100 cases and advises this operation, as medical measures in treatment of gallstone cholecystitis have only a palliative action. By the technic he describes there is no danger of pseudorecurrence of gallstones, as is liable to occur with Kehr's ligation of the cystic duct. When the gallbladder is free he works from below, but when it is adherent he detaches it first, working from above downward. He severs the cystic duct between two clamps. The clamp seizing the central stump of the cystic duct rests on a wick with epinephrin which drains the bed of the gallbladder. This clamp is left for two or more days. The cystic artery is clamped with the duct when possible; when not, a separate clamp is applied to this artery and left likewise for two or more days. These retention clamps have to be silver plated or gold plated, to ensure their nonrusting. When he has to operate without an assistant, he uses a retractor which has a special device for lifting the liver up out of the way. By this technic no suture materials are left in the wound. Even the bed of the gallbladder is left to heal spontaneously, with no attempt at peritonization. The incision is sutured except the small opening left for the gauze and clamp. With this technic, no foreign body is left in the tissues, while the whole operation is so simple it takes very little time. Sprengel's transverse incision, severing merely the rectus, gives ample access and the clamp seizing the cystic duct in the depths does not require much of an opening for it. With this clamp close to the gallbladder, the latter is easily drawn up, exposing the liver. The other clamp, to be left for two days, can be applied with precision and ease to the cystic duct, close to its junction with the hepatic duct. If drainage is indispensable, he drains the common bile duct with a small rubber tube, but refrains here also from using any suture material. He says that cholecystectomy is indicated with rebellious and repeated gallstone disturbances even although there may not be any stones in the gallbladder itself.

87. **Dyspepsia from Perigastritis.**—Araya reports four cases in which long years of suffering from the stomach, dyspepsia and gastralgia, rebellious to all other measures, were cured at one stroke by a laparotomy to break up adhesions from perigastritis. In one case gastro-enterostomy was done besides. His cases teach anew the lesson of the multiplicity of the causes that may be responsible for stomach disturbances, and the necessity for removing the cause instead of combating symptoms. Pain is the most constant symptom with adhesions; it may range from a simple oppression in the stomach region to actual crises. The pain is generally exaggerated by eating, by movements affecting the abdomen and by walking. It is relieved more or less by reclining or wearing an abdominal band. Pain on pressure below the left false ribs is considered significant by some. The increase in the pain when the stomach is inflated is also instructive; it may also show a depression in its outline from traction by some linear adhesion. The symptoms from the dyspepsia from adhesions hampering the stomach may be associated with or masked by intestinal lesions, including appendicitis. His patients were all women between 33 and 50, and the adhesions were located at different points.

THE CHICAGO SESSION

AMERICAN MEDICAL ASSOCIATION, SIXTY-NINTH ANNUAL SESSION, CHICAGO, JUNE 10-14, 1918

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-ninth annual session of the American Medical Association will be held in Chicago, June 10-14, 1918.

The House of Delegates will convene at 10 a. m., Monday, June 10. In the House the representation of the various constituent associations for 1918 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	5
District of Columbia.....	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	3	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	4	Utah	1
Louisiana	1	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The general meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held at 8:30 p. m., Tuesday, June 11. The various sections of the Scientific Assembly will meet Wednesday, June 12, at 9 a. m., and subsequently, according to their respective programs.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 10, 11, 12 and 13, and from 8:30 a. m. to 12 noon, on Friday, June 14.

CHARLES H. MAYO, President.

HUBERT WORK, Chairman, House of Delegates.

ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state societies are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA	CONNECTICUT
L. F. Moody, Dothan	D. Chester Brown, Danbury.
S. W. Welch, Montgomery.	
ARKANSAS	DELAWARE
W. T. Wooton, Hot Springs.	Willard Springer, Wilmington.
CALIFORNIA	DISTRICT OF COLUMBIA
A. B. Spalding, San Francisco.	G. Wythe Cook, Washington.
H. P. Newman, San Diego.	GEORGIA
	M. A. Clark, Macon.
COLORADO	IDAHO
L. H. McKinnic, Colorado Springs.	C. R. Scott, Twin Falls.
Oliver Lyons, Denver.	

ILLINOIS

Don Deal, Springfield.
R. R. Ferguson, Chicago.
C. J. Whalen, Chicago.

INDIANA

C. H. Good, Huntington.
Miles F. Porter, Fort Wayne.
Charles Stoltz, South Bend.
A. E. Bulson, Jr., Fort Wayne.

IOWA

William B. Small, Waterloo.

ISTHMIAN CANAL ZONE

William B. Pierce, Ancon, C. Z.

KANSAS

James W. May, Kansas City.

KENTUCKY

A. T. McCormack, Bowling Green.
M. E. Alderson, Russellville.

LOUISIANA

W. H. Seemann, New Orleans.

MARYLAND

A. McGlannan, Baltimore.
Randolph Winslow, Baltimore.

MASSACHUSETTS

F. B. Lund, Boston.
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.

MICHIGAN

Guy L. Connor, Detroit.
J. D. Brook, Grandville.

MINNESOTA

H. P. Ritchie, St. Paul.
George D. Head, Minneapolis.

MISSISSIPPI

T. M. Dye, Clarksdale.

MISSOURI

E. J. Goodwin, St. Louis.
R. M. Funkhouser, St. Louis.

MONTANA

Rudolph Horsky, Helena.

NEBRASKA

LeRoy Crummer, Omaha.

NEVADA

William Z. Dahl, Reno.

NEW JERSEY

William S. Lalor, Trenton.

NEW MEXICO

H. A. Miller, Clovis.

NEW YORK

F. M. Crandall, New York.
John O. Polak, Brooklyn.
William F. Campbell, Brooklyn.

Grover W. Wende, Buffalo.
W. Stanton Gleason, Newburgh.
E. Eliot Harris, New York.

NORTH CAROLINA

H. A. Royster, Raleigh.
C. P. Ambler, Asheville.

NORTH DAKOTA

Chas. MacLachlan, New Rockford

OHIO

J. H. J. Upham, Columbus.
H. C. Haning, Dayton.
A. B. Walker, Canton.
B. R. McClellan, Xenia.
C. D. Selby, Toledo.

OKLAHOMA

Charles R. Hume, Anadarko.

PENNSYLVANIA

David N. Dennis, Erie.
Edward D. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
C. L. Stevens, Athens.
W. F. Bacon, York.
George R. S. Corson, Pottsville.
H. B. Gibby, Wilkes-Barre.
George G. Harman, Huntingdon.
Wilmer Krusen, Philadelphia.

PORTO RICO

José S. Belaval, San Juan.

SOUTH CAROLINA

E. A. Hines, Seneca.

SOUTH DAKOTA

Percy D. Peabody, Webster.

TENNESSEE

A. F. Richards, Sparta.
E. T. Newell, Chattanooga.

TEXAS

C. E. Cantrell, Greenville.
H. D. Barnes, Childress.
M. M. Carrick, Dallas.

UTAH

Sol G. Kahn, Salt Lake City.

VIRGINIA

Robert C. Bryan, Richmond.

WASHINGTON

D. E. McGillivray, Port Angeles.
H. H. McCarthy, Spokane.

WEST VIRGINIA

C. R. Ogden, Clarksburg.
Frank LeMoine Hupp, Wheeling.

WISCONSIN

Rock Sleyster, Waupun.
H. M. Brown, Milwaukee.
C. H. Lemon, Milwaukee.

WYOMING

J. D. Lewellen, Powell.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE

W. J. Stone, Toledo.

SURGERY, GENERAL AND ABDOMINAL

Floyd W. McRae, Atlanta, Ga.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

Horace G. Wetherill, Denver.

OPHTHALMOLOGY

Thomas B. Hollaway, Philadelphia.

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

George L. Richards, Fall River.

DISEASES OF CHILDREN

T. C. McCleave, Oakland, Calif.

PHARMACOLOGY AND THERAPEUTICS

Torald Sollmann, Cleveland.

STOMATOLOGY

William C. Fisher, New York.

NERVOUS AND MENTAL DISEASES

G. A. Moleen, Denver.

DERMATOLOGY

Sigmund Pollitzer, New York.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

Otto P. Geier, Cincinnati.

GENITO-URINARY DISEASES

E. O. Smith, Cincinnati.

ORTHOPEDIC SURGERY

John Ridlon, Chicago.

GASTRO-ENTEROLOGY AND PROCTOLOGY

J. C. Johnson, Hamilton, Ala.

DELEGATES FROM THE UNITED STATES GOVERNMENT SERVICES

United States Army.
United States Navy

United States Public Health
Service



MEDICAL CHICAGO

The Medical Features of the Convention City

The word "Chicago" is derived from an Indian word meaning "wild onion" which should not, however, reflect unfavorably on the metropolis of today. There remains much that is "wild," and from time to time the odor of the stockyards may be reminiscent of the "onion"; but the development of Chicago in literature, in art, in finance, in manufacturing, and as a medical center is typical only of the strength of the onion and of none of its disagreeable features. Its strength is also typified by its ability to continue this life after two very notable relapses—the Fort Dearborn Massacre of 1812 and the Chicago Fire of 1871. Chicago is the fifth largest city in the world, being preceded by London, New York, Paris and Berlin. As there is grave doubt concerning the population of the center of Kultur, Berlin might well be omitted. Forty railroads, twenty-three of which are trunk lines, terminate in Chicago. The development of Chicago as a manufacturing center is measured in figures running into billions, as shown by the annual bank clearings, which exceed twenty billion dollars. However, the growth of the city in literature, art and science has kept pace with its magnificent commercial development.

MEDICAL COLLEGES

It was the custom, not so long ago, for Chicago to boast of the number of medical students it turned out annually; today it prefers to boast of the quality. There are now seven medical colleges in Chicago, three of them listed by the Council on Medical Education of the American Medical Association in Class A, two in Class B and two in Class C.

RUSH MEDICAL COLLEGE: This institution, one of the oldest of the Northwest, was founded by Daniel Brainard in 1837, the same year in which the city was incorporated. At the meeting of the American Medical Association in St. Louis in 1854, Dr. Brainard received a premium from the committee on prize essays for "An Essay on a New Method of Treating Ununited Fractures and Certain Deformities of the Osseous System," which was exceptional for that time. The first two years of the medical work of Rush Medical College have been given at the University of Chicago since the affiliation of the college with the university; the last two years are conducted in three buildings at the corner of Harrison and Wood streets, as well as in hospitals affiliated with the college. The juniors and seniors have thus been strangers to the underclassmen. By raising \$3,461,000, the University of Chicago secured a fund of \$2,000,000, offered by the General Education Board of the Rockefeller Foundation for the organization of medical instruction at the univer-

sity. Rush Medical College will therefore merge with the new school and become the Medical Department of the University of Chicago. The plans of reorganization include the erection of a hospital on the grounds of the university on the South side, the transfer of all undergraduate medical education to the university, and the creation of a postgraduate medical school at the present location of the college. By this means the underclassmen will regain the enlightening influence lent by the presence of the higher grades.

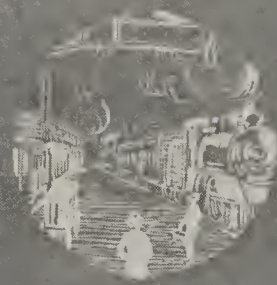
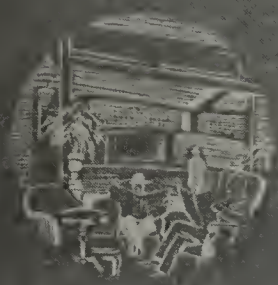
NORTHWESTERN UNIVERSITY MEDICAL SCHOOL: This school was established in 1859 by Dr. Hosmer A. Johnson as the medical department of Lind University. In 1864, the Northwestern University Medical School became independent and the Chicago Medical College under the leadership of Dr. Nathan S. Davis, the "Father of the American Medical Association." In 1869, the Chicago Medical College united with Northwestern University, retaining, however, the name of Chicago Medical College until 1891. Adjoining the college building is Wesley Memorial Hospital. Recently Mr. James Deering set aside an endowment fund of \$1,000,000 to be used in the maintenance of Wesley Memorial Hospital and in the furtherance of clinical teaching in the medical school. Northwestern University Medical School claims the honor of being "the first American school to enforce a standard of preliminary education, to adopt longer annual courses of instruction, and to initiate, in 1859, the graded curriculum in which studies were assigned in logical order and in which laboratory departments prepared the way for the practical clinical branches."

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE: This school was organized in 1882 as the College of Surgeons. It became the medical department of the University of Illinois by affiliation in 1897, and an integral part in 1910. In the same year the American Medical Missionary College was absorbed. The relationship with the university was canceled in June, 1912 and was restored in March, 1913. This school is now supported in part by an annual appropriation made by the state and is rejuvenated, and is rapidly growing.

OTHER COLLEGES: Chicago is also the home of the Hahnemann Medical College and Hospital of Chicago, of the combined school representing the Chicago College of Medicine and Surgery and the Loyola University School of Medicine (formerly Bennett Medical College), and of the Jenner Medical College and the Chicago Hospital College of Medicine.

POSTGRADUATE MEDICAL EDUCATION

CHICAGO POSTGRADUATE MEDICAL SCHOOL: The Chicago Postgraduate Medical School was established in 1887 by



OTEL HEADQUARTERS—(1) AUDITORIUM; (2) CONGRESS AND ANNEX; (3) SHERMAN; (4) BLACKSTONE; (5) MORRISON; (6) LA SALLE

group of physicians, prominent among whom was the late Dr. John H. Hollister. In addition to the college, a general hospital of 100 beds is conducted by the teaching staff.

CHICAGO POLYCLINIC: In 1886, Dr. Truman W. Miller founded this school. Its clinical facilities are furnished by a large dispensary that has been built up in a densely populated portion of the city, and by two hospitals owned by the school—the Chicago Polyclinic Hospital and the Henrotin Memorial Hospital.

THE ILLINOIS POSTGRADUATE MEDICAL SCHOOL: This school occupies its own building, and in connection with its educational work, it conducts the West Side Hospital, which has an equipment of 175 beds. It is fortunately located in what is known as the medical Rialto of Chicago, of which more will follow.

RESEARCH INSTITUTIONS

MEMORIAL INSTITUTE FOR INFECTIOUS DISEASES: This institute was founded, Jan. 2, 1902, by Harold F. and Edith Rockefeller McCormick in memory of their son. The first board of trustees consisted of Frank Billings, Christian Fenger, Ludvig Hektoen, Charles L. Hutchinson and Stanley McCormick. It began work at once, utilizing the first floor of the laboratory building of Rush Medical College. In March, 1911, through a bequest from Mrs. Annie W. Durand, the institute was enabled to build a hospital to cost \$200,000 with a minimum of forty beds for the free care of persons suffering from infectious diseases. The hospital was formally



THE MEMORIAL INSTITUTE FOR INFECTIOUS DISEASES



THE NELSON MORRIS RESEARCH INSTITUTE

opened in February, 1913, and in 1914 a laboratory was built at a cost of \$100,000. At the present time the total resources of the institute amount to nearly \$2,000,000. The institute also has a serum division and publishes the *Journal of Infectious Diseases*. Many important investigations have been conducted by the workers in the institute. Its director is Dr. Ludvig Hektoen.

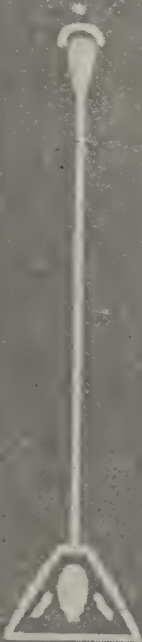
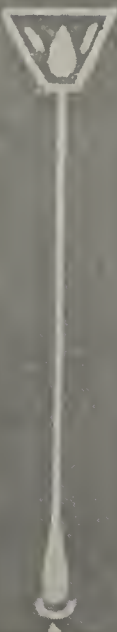
THE NELSON MORRIS INSTITUTE FOR MEDICAL RESEARCH: This institute was established in 1910 as the result of a donation of \$500,000 given by Mrs. Sarah Morris to the Michael Reese Hospital in memory of her husband, Nelson Morris, founder of the firm of Nelson Morris & Co.

Dr. John A. Hornsby was superintendent of the hospital this time, and Drs. James F. Jobling and Solomon Strout were, respectively, pathologist and assistant pathologist. The original donation, \$375,000 was expended for construction and the balance for equipment. The institution is supported by funds provided by the board of directors of the Michael Reese Hospital. During the present fiscal year the budget of the institute has been \$18,000, exclusive of the maintenance of the library, of building maintenance and repairs, and of such general supplies as are obtained directly from the Michael Reese and Sarah Morris hospitals, all three institutions being under the control of a single board of directors. The institute conducts medical research by its full-time staff and clinical research by those members

of the hospital staff to whom research privileges are assigned. In addition, the staff has charge of the routine laboratory work of the Michael Reese and Sarah Morris hospitals. The institute departmental heads at the present time are: Oscar T. Schultz (M.D., Johns Hopkins, 1903), director; Katherine M. Howell (M.D., Rush Medical College, 1913), serology, and Withrow Morse (Ph.D., Columbia University, 1909), chemistry.

THE OTHO S. A. SPRAGUE MEMORIAL INSTITUTE: This institute was organized in January, 1911, by Mr. Albert Sprague, brother of the donor, who bequeathed a sum of money for the purpose of relieving human suffering. May 1911, Dr. H. Gideon Wells of the University of Chicago was appointed director of medical research. It was decided to use none of the money for the erection of buildings, but to cooperate with existing institutions in furthering medical research. Since its foundation, the institute has supported research work in the University of Chicago, Rush Medical College, the Presbyterian Hospital, the Children's Memorial Hospital and the pathologic laboratories of St. Luke's Hospital and of Cook County Hospital. The staff of the institute consists of about twenty members, exclusive of special assistants and investigators and untrained helpers. Of the investigators, about one half give their entire time to the work of the institute. It has also supported special investigations in industrial diseases, caisson disease, anesthesia, infant health, etc., by special workers. The scientific work of the institute is under the supervision of an advisory council consisting of Drs. James B. Herrick, Frank Billings, Ludvig Hektoen, Joseph L. Miller, E. R. LeCount, and Professors Julius Stieglitz and E. O. Jordan.

THE UNIVERSITY OF CHICAGO: The University of Chicago was founded in 1857, and after some vicissitudes, in 1867 succeeded in interesting Mr. John D. Rockefeller, who has contributed an amount in excess of \$34,000,000 to establish



(1) UNIVERSITY OF ILLINOIS MEDICAL SCHOOL; (2) NORTHWESTERN UNIVERSITY MEDICAL SCHOOL; (3) RUSH MEDICAL COLLEGE; (4) POST-GRADUATE MEDICAL SCHOOL OF CHICAGO; (5) ILLINOIS POST-GRADUATE MEDICAL SCHOOL; (6) THE CHICAGO POLYCLINIC



MICHIGAN BOULEVARD; ON THE RIGHT IS THE ART INSTITUTE

the institution on a firm and lasting basis. The college grounds comprise 92 acres, and there are fifty-three buildings devoted to educational purposes. The buildings are of a uniform type, a scheme of modern Gothic architecture being carried out in all of the structures.

NORTHWESTERN UNIVERSITY: Northwestern University was founded in 1851, and is located in Evanston, 12 miles north of Chicago. It covers an area of 75 acres. The professional schools are all located in the city of Chicago, including the dental, pharmacy and law schools.

HOSPITALS

There are about eighty-five hospitals in Chicago, most of which are under denominational control. Many of them are closely affiliated with the medical schools, and are under the medical supervision of members of the faculties of the colleges.

COOK COUNTY HOSPITAL: The Cook County Hospital occupies 12 acres at Wood, Harrison and Lincoln streets. New buildings recently erected, at a cost of \$3,650,000, make this the largest and most modern institution of its kind in the Middle West. There are 2,700 beds available. During 1917, 34,400 patients were treated in the hospital, and 18,612 in the dispensary. An average of eight major surgical operations are performed at the hospital every day, and during 1917 over 10,000 roentgen-ray examinations were made and over 500 necropsies performed. There are two amphitheaters in the hospital, each seating 250 persons, for the holding of clinics.

A part of this hospital is the new psychopathic hospital, erected in 1915 at a cost of approximately \$500,000. During 1917, over 4,000 patients were admitted to this department.

THE ILLINOIS CHARITABLE EYE AND EAR HOSPITAL: This institution was founded by Dr. E. L. Holmes in 1859. It is

located at Adams and Peoria streets, and has a capacity of 1,756, with an outpatient service which treats 25,000 patients annually. It is supported by an annual appropriation of about \$80,000 by the state, and a recent appropriation of \$500,000 provides for a new building. Clinics are held daily and are open to all physicians who desire to come.

MUNICIPAL TUBERCULOSIS SANITARIUM: This institution, a part of which is shown in the illustration, is situated at North Crawford and Bryn Mawr avenues, within the city limits, and covers an area of 160 acres. The thirty-two principal buildings, including the administrative headquarters, and a concrete contagious building for men and women, cost approximately \$2,500,000. There are 870 beds in addition to eight dispensaries, which are conducted in different parts of the city from which patients requiring institutional supervision are sent to the sanatorium. The sanatorium is supported by the annual taxes levied by the city.

THE CHICAGO MEDICAL SOCIETY

The Chicago Medical Society was organized in April of the year 1850, and continued under this name for two years, when it was changed to the Cook County Medical Society. The society continued until 1858, when it was changed back to its original name, the Chicago Medical Society, which name it has had ever since.

Among the founders of the society in 1850 were Drs. Levi D. Boone, Daniel Brainard, B. McVickar, W. B. Herrick, John Evans, Edwin Meek, J. H. Bird, J. V. Z. Blaney, Samuel W. Ritchey, Phillip Maxwell and N. S. Davis. Dr. Levi D. Boone was elected as the first president.

The society continued under its original constitution as drawn up at that time until February, 1903, when a new constitution was formulated and the society was divided up into districts, or "branches." At that time there were eleven

branches with a total membership of 1,315. At present there are fifteen branches, and the active membership of the society is 3,084, a nonresident membership of thirty-five, making a total of 3,119.

The branches have their own branch officers, and hold scientific meetings each month, excepting during the months of July, August and September.

The central society holds a scientific meeting each week except during July, August and September. These meetings are arranged by the secretary and the president, and are presided over by the president.

A weekly bulletin known as the *Official Bulletin of the Chicago Medical Society* is published each week. The *Bulletin* contains the announcements of the central society and of the branches as well as those of the affiliated societies, and each week an abstract is published of the scientific meeting, of the papers read, and the discussions.

The council of the Chicago Medical Society meets each month, with the exception of July, August and September. The council is composed of fifty-four councilors who are elected by the branches, that is, each branch is entitled to one councilor for the first fifty members and an additional one for the first hundred and one for each additional hundred members. In addition to the councilors elected by the branches, there are five councilors-at-large elected each year to serve a term of three years, and the retiring president becomes a councilor to serve a term of three years. This body is presided over by the president-elect.

The council at its meeting in October elects nine standing committees as follows:

Membership Committee: This committee is made up of three members whose duty it is to investigate the personal and professional standing of all applicants for membership and report on them to the council with their recommendation.

Medicolegal Committee: This committee is made up of three members whose duty it is to represent the Chicago Medical Society on the Medicolegal Committee of the Illinois State Medical Society. They defend the members when sued for alleged malpractice. This legal defense is accorded to every member in good standing, and the expenses are covered by the regular dues, no assessment being made.

The Milk Commission: This is composed of six members and the president ex-officio. The work of the Milk Commission is to secure a supply of pure and clean raw milk that can be relied on for the feeding of infants, and the commission certifies to milk from farms where the milk is produced in accordance with the conditions imposed and equals the standard that has been designated. In addition to this the

object is to disseminate knowledge concerning the hygienic importance of a wholesome milk supply.

Ethical Relations Committee: This committee is made up of three members whose duty it is to take cognizance of and investigate and make recommendations on questions affecting the ethical relations of members to each other, to the society, to the profession and to the public. The committee also makes proper investigations of any charges of unethical conduct preferred against any member, and submits its conclusions and recommendations to the council.

Criminal Abortion Committee: This committee is made up of three members whose duty it is to investigate all matters pertaining to criminal abortions.

Election Commission: This committee is composed of four members whose duty it is to conduct all elections, and they also have charge of all matters pertaining to the election.

Constitution and By-Laws Committee: This committee is composed of three members whose duty it is to take care of all changes to the constitution and by-laws. Any change is referred to them, and they then bring in their recommendations to the council.

Public Relations Committee: This committee is composed of three members together with the president and secretary ex-officio. Their duty is to take up all matters of public policy or legislative matters, and the work is carried on in conjunction with the State Legislation Committee on all matters pertaining to the medical profession.

Grievance Committee: This committee is composed of three members whose duty it is to investigate all complaints made against physicians, by the laity as well as by the profession. They are also working in conjunction

with the state investigators in an effort to eliminate the "quacks."

There are ten special societies which by vote of the council are recognized as sections of the Chicago Medical Society. They are: the Chicago Neurological Society; Chicago Pathological Society; Chicago Urological Society; Chicago Dermatological Society; Chicago Laryngological and Otological Society; Chicago Pediatric Society; Chicago Orthopedic Society; Chicago Surgical Society; Chicago Ophthalmological Society, and Chicago Academy of Surgery.

Each special or affiliated society holds a meeting each month excepting during July, August and September, so that with the branch societies there are about twenty-five meetings held each month apart from the general society meeting.

The general society last year held thirty-five meetings, and there were 107 papers contributed to the scientific pro-



HOME OF THE AMERICAN MEDICAL ASSOCIATION



SOME CHICAGO HOSPITALS

(1) ST. LUKE'S; (2) PRESBYTERIAN; (3) MERCY; (4) COOK COUNTY; (5) WESLEY; (6) MICHAEL REESE;
(7) PSYCHOPATHIC DETENTION



SOME CHICAGO HOSPITALS

(1) AUGUSTANA; (2) ALEXIAN BROTHERS; (3) WEST SIDE; (4) HENROTIN; (5) LYING-IN; (6) ST JOSEPH'S



THE MUNICIPAL TUBERCULOSIS SANITARIUM—(1) ADMINISTRATION BUILDING; (2) MEN'S DINING ROOM; (3) SERVICE BUILDING; (4) WOMEN'S DINING ROOM; (5) INFIRMARY BUILDING; (6) SOUTH WING OF INFIRMARY; (7) WOMEN'S COTTAGES. THERE ARE THIRTY BUILDINGS IN ALL. THE SANATORIUM IS LOCATED AT NORTH CRAWFORD AND BRYN MAWR AVENUES, WITHIN THE CITY LIMITS

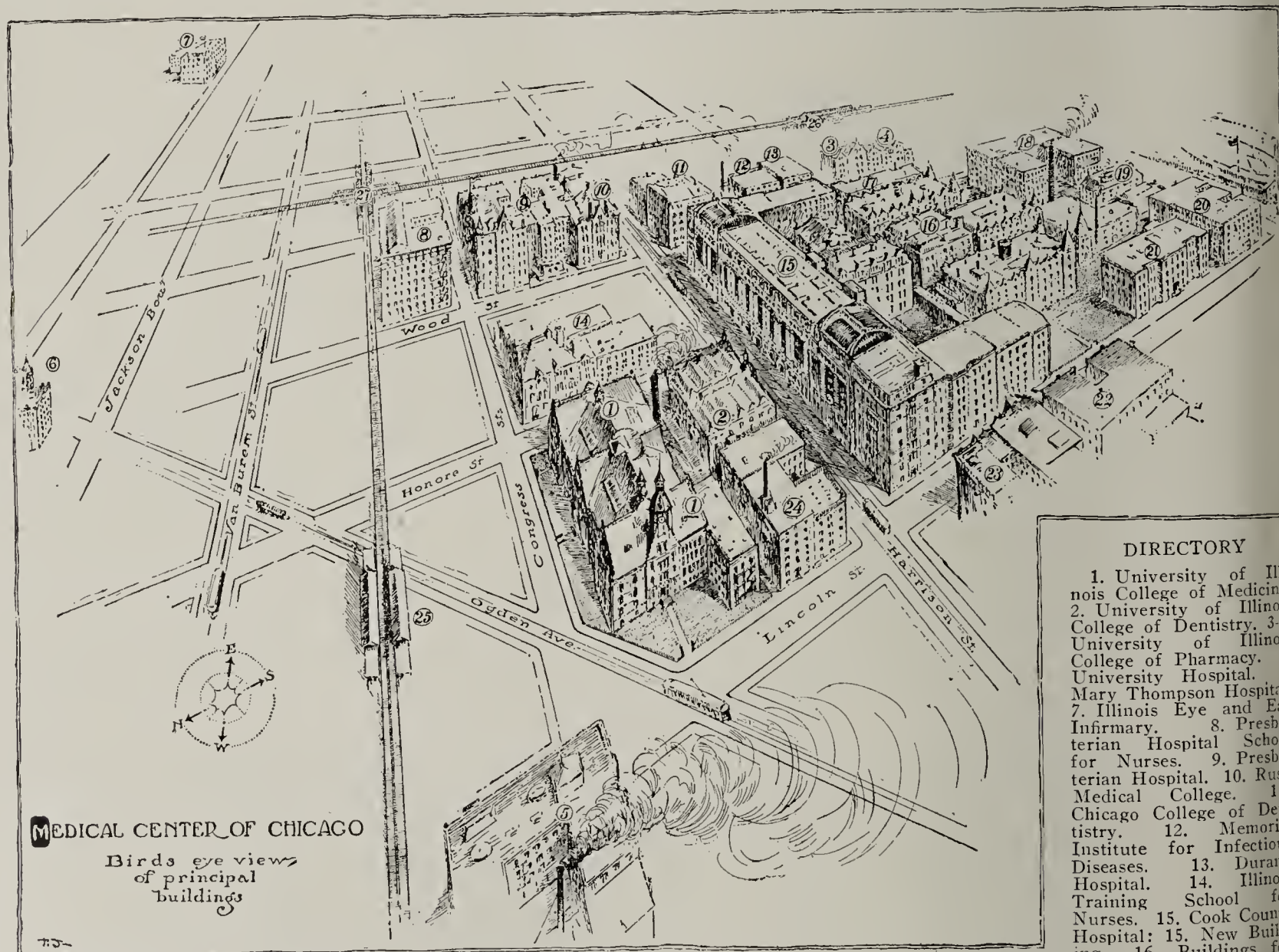
grams, and 112 men took part in the discussion of these papers.

OTHER MEDICAL ORGANIZATIONS

There are a great number of other medical organizations whose membership is limited to physicians and scientists. They include the Institute of Medicine of Chicago, the Chicago Society of Internal Medicine, and a Physicians' Club—a social organization.

TRANSPORTATION

On account of conditions incident to the war, it is impossible to announce any special railroad rates for the convention. The facilities of the railroads are being taxed to the utmost in moving troops, munitions, fuel and food. For the same reason extra train service is being restricted. Delays coming to the convention from the Pacific Coast, according to information received from the Transcontinental Pa-



Administration, Laboratories, Employees, etc. 17. Children's Hospital. 18. Psychopathic Institute. 19. Morgue. 20. Tuberculosis Hospital. 21. Contagious Hospital. 22. Frances Willard Hospital. 23. Chicago College of Medicine and Surgery. 24. West Side Hospital. 25. Elevated R. R. Stations: 25. Ogden Avenue. 26. Polk Street. 27. Marshfield Avenue (also Aurora, Elgin & Chicago Line).

THE HOME OF THE ASSOCIATION

The Association headquarters are located at the corner of North Dearborn Street and Grand Avenue, easily accessible from the business district of the city. During the annual session, arrangements will be available for conducting visiting physicians through the building and giving information relative to the conduct of the work. The offices of the Association are open from 8 a. m. to 5 p. m.

senger Association, may take advantage of the regular months' excursion fares which are in effect daily from Pacific Coast common points to Chicago. These tickets are sold at a substantial reduction from double the one-way fare. Examples of some of the rates are: from California to Chicago and return, \$110; from North Pacific Coast common points to Chicago and return, \$100. These tickets are sold from California, Nevada, Oregon, Washington and British Columbia.

ACCOMMODATIONS OFFERED BY CHICAGO HOTELS

The local Committee on Arrangements, on recommendation of its subcommittee on hotels, urges that those who plan to attend the Chicago session, June 10 to 14, should make their selection and write directly to the hotel, stating the accommodations desired and indicating the rate they are prepared to pay. The management of the hotel should be advised of the day on which guests expect to arrive in Chicago, and the length of time they plan to remain. If, in any instance, a

satisfactory arrangement with some one of the hotels is not made, write to the chairman, subcommittee on hotels, Dr. C. J. Whalen, 25 East Washington Street, Chicago.

The accompanying table lists a number of Chicago hotels indicating the accommodations which are offered and naming the rates per day. All rates are for accommodation on the European plan except when, as indicated, the American plan is offered.

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY CHICAGO HOTELS

Hotels, Number of Rooms and Street Addresses	Rooms Without Bath		Rooms With Bath		Parlor, Bedroom and Bath or Connecting Rooms for One or More Persons*
	For One Person	For Two Persons	For One Person	For Two Persons	
AUDITORIUM—500—Michigan Blvd. and Congress.... Headquarters of the Sections on Surgery, General and Abdominal; on Pharmacology and Therapeutics; on Pathology and Physiology; on Preventive Medicine and Public Health; on Genito-Urinary Diseases; and on Gastro-Enterology and Proctology.	1.50 to 2.50	2.50 to 4.00	2.50 to 4.00	4.00 to 6.00	.....
BLACKSTONE—700—Michigan Blvd. and Seventh.... Headquarters of the Sections on Nervous and Mental Diseases and on Dermatology.	3.00	.....	3.50 to 7.00	5.00 to 10.00	.....
CONGRESS AND ANNEX—1,500—Mich. Blvd. and Cong. Headquarters Sections on Obstetrics, Gynecology and Abdominal Surgery; Diseases of Children; Stomatology; Orthopedic Surgery.	2.00 to 3.00	3.00 to 5.00	3.00 to 6.00	5.00 to 7.00	6.00 to \$50.00
LA SALLE—1,800—Madison and La Salle..... Headquarters of the Sections on Ophthalmology, and on Laryngology, Otology and Rhinology.	2.00 to 3.00	3.00 to 4.00	3.00 to 5.00	5.00 to 8.00	4.00 to 12.00
MORRISON—1,000—Clark and Madison..... Headquarters Section on Practice of Medicine.	.....	.....	2.00 up	.....	.....
SIERMAN—1,500—Clark and Randolph..... General headquarters housing the Registration Bureau; Information Bureau; Branch Post Office; Scientific Exhibit, and Commercial Exhibit.	.....	.....	2.00 to 5.00	3.50 to 7.00	5.00 to 15.00
ALEXANDRIA—300—Rush and Ohio Sts.....	\$ 1.00 to \$ 1.25	\$ 1.50	\$ 1.50 to \$ 2.00	\$ 2.00 to \$ 2.50	.....
ASTOR—125—176 N. Clark.....	1.00	2.00	1.50	3.00 to 3.50	.....
ATLANTIC—750—Clark, near Jackson Blvd.....	1.50 to 2.00	2.00 to 3.00	2.00 to 3.00	3.00 to 5.00	.....
PI-MARCK—300—171 W. Randolph.....	1.00	2.00	1.50	3.00 to 3.50	.....
BOARD OF TRADE—250—321 S. La Salle.....	1.50 up	.....	.....	.....	.....
BRADLEY—300—Rush and Grand Ave.....	1.00	1.50	1.00 to 1.50	2.00	.....
BREVOORT—500—120 W. Madison.....	1.50	3.00 to 3.50	2.50 to 3.00	4.00 up	.....
BRIGGS—300—Randolph St. and Fifth Ave.....	1.00 to 1.50	.....	1.50 to 2.50	.....	.....
CHICAGO BEACH—500—Hyde Park Blvd. and 51st St. European.....	1.50 up	2.50 up	2.50 up	4.00 up	.....
American.....	3.50 up	6.00 up	4.50 up	7.50 up	.....
CLARENDON BEACH—200—Wilson Ave., at the Lake..	.....	.....	1.50 up	.....	\$ 4.00 up
DARLINGTON—125—4700 North Racine Ave.....	1.00	1.50	1.50	2.00	.....
DEJONGHE—100—12 E. Monroe.....	.....	.....	2.00 up	3.00 up	.....
DEL PRADO—400—Midway Blvd. and Jackson Park..	.....	.....	2.50 to 4.00	.....	.....
DREXEL ARMS—250—Drexel and Oakwood Blvds....	1.00 to 1.25	1.25 to 1.50	1.50 to 2.00	1.75 to 3.00	.....
EDGEWATER BEACH—600—5300 Block, Sheridan Rd..	.....	.....	2.00 up	3.00 up	4.00 up
ELMS—150—Fifty-Third and Cornell Ave., American Plan	3.00 to 3.50	.....	3.00 to 4.00	.....	.....
FORT DEARBORN—1,000—La Salle and Van Buren Sts.	1.50	2.50	2.00	3.00 to 4.00	.....
GLALSTONE—500—Sixty-Second and Kenwood Ave..	.....	.....	1.00 to 1.50	2.00 to 3.00	3.00 to 5.00
GRAND PACIFIC—400—Jackson Blvd. and Clark.....	1.50 to 2.00	.....	2.00 up	3.00 up	.....
GRANT—250—Dearborn and Madison.....	1.00 up	2.00 up	1.50 up	3.00 up	.....
GRASMERE—150—4621 Sheridan Road.....	.....	.....	1.50	2.50	4.00
GREAT NORTHERN—550—Jackson, Quincy, Dearborn..	1.50 to 2.00	3.00	2.50 to 5.00	4.00 to 6.00	.....
HAYES—300—Sixty-Fourth and University Ave. (American Plan).....	2.00	.....	.....	.....	.....
HYDE PARK—400—Hyde Park Blvd. and Lake Ave. (American Plan).....	3.00	5.00	3.50 to 5.00	6.00 to 8.00	.....
JACKSON PARK TAVERN—100—Sixty-Seventh and Cornell	.....	.....	1.50	2.00	.....
LAKOTA—350—Michigan Blvd. at Thirtieth.....	1.00	.....	2.00	.....	.....
LEXINGTON—500—Mich. Blvd. and Twenty-Second..	1.50 up	2.00 up	2.00 up	3.00 up	.....
LUZERNE—100—Clark and Center.....	1.00 up	.....	1.50 up	.....	.....
MAJESTIC—300—Quincy, bet. State and Dearborn...	1.00 to 2.00	2.00 to 3.00	1.50 to 3.50	3.00 to 5.00	.....
METROPOLE—300—Michigan Ave. and Twenty-Third..	1.50	2.50	2.00 up	3.00 up	.....
MORaine—250—Highland Park, Ill. 30 minutes from Chicago	1.50 up	.....	2.00 up	3.00 to 5.00	.....
NEW GAULT—200—Madison and Market.....	1.00 to 1.50	2.00 to 2.50	1.50 to 2.00	3.00 to 3.50	.....
NEW SOUTHERN—350—Mich. Blvd. and Thirteenth..	1.00 to 1.50	2.00	1.50 to 3.00	3.00 to 5.00	.....
PALMER HOUSE—1,000—State and Monroe.....	1.50 to 2.00	2.00 to 3.00	2.50 to 5.00	3.00 to 5.00	.....
PARKWAY—250—Lincoln Park West and Garfield Ave.	.....	.....	2.50 to 3.50	3.50 to 5.00	6.00 to 8.00
PLANTERS—350—Clark and Madison.....	1.50 up	.....	.....	.....	.....
PLAZA—600—N. Clark and North Ave.....	.....	.....	1.50 to 3.00	2.00 to 3.50	3.00 to 6.00
PLYMOUTH—250—4700 Broadway, cor. Leland.....	1.00	1.50	1.50 to 3.00	.....	.....
SARATOGA—700—23 to 29 S. Dearborn.....	1.00	2.00	1.50	3.00	.....
STOCK YARD INN—450—W. Forty-Second and S. Hal-sed Sts.	1.00 up	2.00 up	1.50 up	2.50 up	.....
STRAND—300—Sixty-Third and Cottage Grove.....	1.00 up	.....	1.50 up	.....	.....
STRATFORD—500—Jackson and Michigan Blvd.....	1.50	.....	2.00 up	6.00 up	.....
UNION—70—66-72 W. Randolph.....	1.00 to 1.50	2.00 to 2.50	1.50 to 2.50	3.00 to 3.50	.....
VIRGINIA—450—Rush and Ohio.....	1.50 to 2.00	2.00 to 3.00	2.00 to 2.50	3.00 to 4.00	3.00 to 10.00
WARNER—350—Thirty-Third and Cottage Grove.....	.....	1.50	1.50 up	2.00 up	.....
WASHINGTON—200—Washington St. between La Salle and Fifth Avenue.....	1.50	3.00	1.50 to 2.00	3.00 up	.....
WINDEMERE—300—Fifty-Sixth and Cornell Ave. (American Plan).....	3.00	5.00	4.00 up	6.00 up	.....
WINDSOR-CLIFTON—350—Wabash Ave. and Monroe..	1.00 up	1.50 up	2.00 up	3.00 up	.....
WYCHMERE—200—Indiana Ave. and E. Eighteenth..	.75 up	1.25 up	1.00 up	1.50 up	.....

* For definite information concerning rates and accommodations offered, write to the hotels.

MEETING PLACES AND HOTEL HEADQUARTERS

The following hotels have been designated as general and section headquarters for the Chicago Session, June 10 to 14:

GENERAL HEADQUARTER: HOTEL SHERMAN, North Clark and West Randolph.

PRACTICE OF MEDICINE: Hotel Morrison, 83 West Madison.

SURGERY, GENERAL AND ABDOMINAL: Auditorium Hotel, 430 South Michigan.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Congress Hotel, South Michigan and Congress.

OPHTHALMOLOGY: Hotel LaSalle, LaSalle and West Madison.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Hotel LaSalle, LaSalle and West Madison.

DISEASES OF CHILDREN: Congress Hotel, South Michigan and Congress.

PHARMACOLOGY AND THERAPEUTICS: Auditorium Hotel, 430 South Michigan.

STOMATOLOGY: Congress Hotel, South Michigan and Congress.
NERVOUS AND MENTAL DISEASES: Blackstone Hotel, South Michigan and East Seventh.

DERMATOLOGY: Blackstone Hotel, South Michigan and East Seventh.

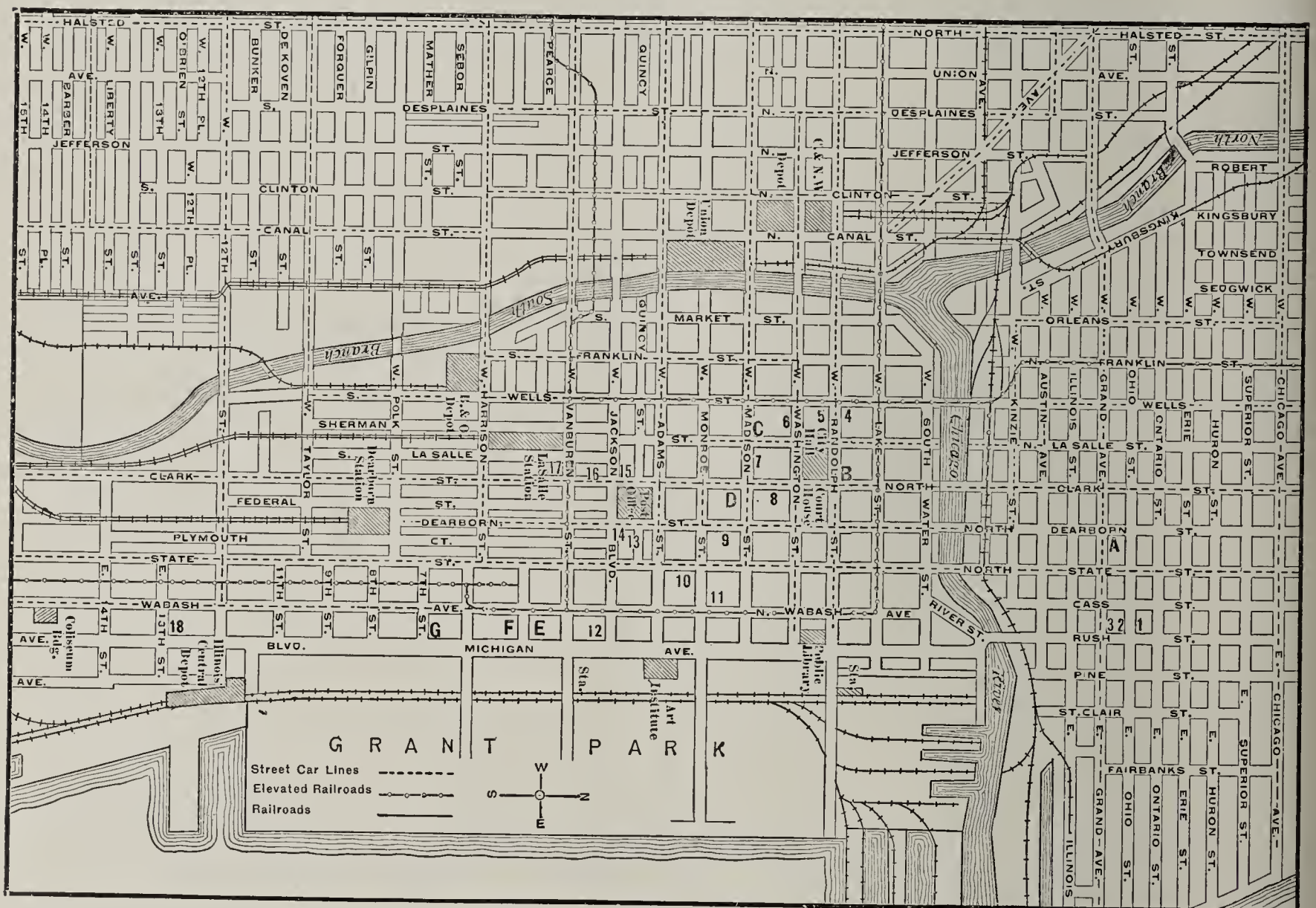
PREVENTIVE MEDICINE AND PUBLIC HEALTH: Auditorium Hotel, 430 South Michigan.

GENITO-URINARY DISEASES: Auditorium Hotel, 430 South Michigan.

ORTHOPEDIC SURGERY: Congress Hotel, South Michigan and Congress.

GASTRO-ENTEROLOGY AND PROCTOLOGY: Auditorium Hotel, 430 South Michigan.

SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU, AND BRANCH POST-OFFICE: Hotel Sherman, North Clark and West Randolph.



A—American Medical Association Building, 535 N. Dearborn St., N. E. Cor. Grand Ave. and Dearborn St.

B—Hotel Sherman, N. W. Cor. Clark and Randolph Sts.

C—Hotel LaSalle, N. W. Cor. LaSalle and Madison Sts.

D—Morrison Hotel, 83 W. Madison St., S. E. Cor. Clark and Madison Sts.

E—Auditorium Hotel, 430 S. Michigan Blvd., N. W. Cor. Michigan Blvd. and Congress St.

F—Congress Hotel and Annex, S. W. Cor. Michigan Blvd. and Congress St.

G—The Blackstone, N. W. Cor. Michigan Blvd. and E. Seventh St.

1. Virginia Hotel, N. W. Cor. Rush and Ohio Sts.

2. Hotel Alexandria, 542 Rush St., S. W. Cor. Rush and Ohio Sts.

3. Hotel Bradley, 536 Rush St., N. W. Cor. Rush St. and Grand Ave.

4. Briggs House, 188 W. Randolph St., N. E. Cor. Wells and Randolph Sts.

5. Hotel Bismarck, 171 W. Randolph St., south side, between Wells and LaSalle Sts.

6. Hotel Washington, 167 W. Washington St., south side, between Wells and LaSalle Sts.

7. Hotel Brevoort, 120 W. Madison St., north side, between LaSalle and Clark Sts.

8. Hotel Planters, 19 N. Clark St., east side, between Washington and Madison Sts.

9. Saratoga Hotel, 23-29 S. Dearborn St., east side, between Madison and Monroe Sts.

10. Palmer House, S. E. Cor. State and Monroe Sts.

11. Windsor-Clifton Hotel, 39 S. Wabash Ave., N. W. Cor. Wabash Ave. and Monroe St.

12. Stratford Hotel, N. W. Cor. Jackson and Michigan Blvds.

13. Hotel Majestic, 29 Quincy St., south side, between State and Dearborn Sts.

14. Great Northern Hotel, Jackson, Quincy and Dearborn Sts., N. E. Cor. Dearborn St. and Jackson Blvd.

15. Grand Pacific Hotel, 232 S. Clark St., N. W. Cor. Clark St. and Jackson Blvd.

16. Hotel Atlantic, 316 S. Clark St., west side, near Jackson Blvd.

17. Fort Dearborn Hotel, 125 W. Van Buren St., S. E. Cor. LaSalle and Van Buren Sts.

18. New Southern Hotel, 1250 S. Michigan Ave., N. W. Cor. Michigan Blvd. and Thirteenth St.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Louis XVI Room, Sherman Hotel, Randolph and Clark Streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau.

Every one who registers will be required to fill out completely, except the blank space for the number, the spaces both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." Here the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster will occupy time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1918 dues are unpaid should present the filled in registration card with the amount of his Fellowship dues (\$5) at one of the windows marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

4. Subscribers and others desiring to qualify as Fellows should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or from the members of the Committee on Registration. In order

to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to *THE JOURNAL*, with his subscription paid for a term to or beyond Jan. 1, 1919, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1919, is required.

The registration of new Fellows will be greatly facilitated if they will provide themselves with certificates of membership issued by the secretary of their state association, certifying to their membership in the state and county branches of the organization.

It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than June 1. Any applications received later than June 1 will be given prompt attention, but the Fellowship certificate and pocket card may not reach the applicant in time so that he can use this card in registering at the Chicago session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at headquarters can be consulted after the close of the session, when any excess payment will be adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching Chicago, he may be entered as a Fellow at the meeting, as suggested above.

POSTOFFICE

An Association Postoffice will be maintained at the Registration Bureau in the Louis XVI Room, Sherman Hotel, Randolph and Clark Streets. Guests are requested to order mail addressed to them "Care American Medical Association, Sherman Hotel, Chicago," or to their hotels, as preferred.

CLINICS AT CHICAGO SESSION

Extensive preparation for clinics in connection with the Chicago session has been made. Clinics will be given every day for five days beginning Thursday, June 6, and ending Tuesday, June 11.

The Local Committee of Arrangements appointed the following committee on clinics: Charles E. Humiston, chairman; Karl E. Meyer, secretary; E. Wyllys Andrews, Daniel Eisendrath, Thomas L. Gilmer, Joseph B. DeLee, A. J. Ochsner, Wilbur E. Post, Hollis E. Potter and Bertram W. Sippy.

This supervising committee called to its assistance representatives of the various hospitals and medical educational institutions of Chicago. A subcommittee for each specialty was selected and in addition a special committee of one for each hospital was chosen who was made responsible for the clinics and demonstrations in his own particular institution.

These clinics are presented for the benefit of the members of the American Medical Association and there is no charge or fee of any kind for the privilege of attending any of them. The "Pocket Card" or other evidence of membership in the Association is the "ticket" of admission.

A comprehensive schedule has been prepared covering the entire field of medicine and surgery. All specialties will be presented in one or more hospitals every day of the entire day period.

The preliminary publication in this issue is necessarily incomplete. Details and hours of each clinic will be published in ample time for the guidance of those who are interested.

Autopsies at the Cook County Morgue both morning and afternoon will be held every day.

In order that proper steps may be taken to care for the interests of all visiting fellows the committee wishes to ascertain in advance the probable attendance and accordingly requests those who contemplate attending these clinics to inform the chairman as soon as convenient.

ALEXIAN BROTHERS HOSPITAL, 1200 Belden Ave.—*General Surgery*: M. L. Harris, Wm. E. Hesser and A. Zimmerman. *Genito-Urinary*: L. Diamosis, Herman L. Kretschmer, L. E. Schmidt and E. White. *Eye, Ear, Nose and Throat*: J. Holinger. *Medicine*: H. Klein and A. Luckhardt. *Nervous and Mental*: A. B. T. Heym.

AUGUSTANA HOSPITAL, 2043 Cleveland Ave.—*General Surgery*: A. T. Lundgren, A. J. Ochsner and H. M. Percy. *Medicine*: Frank Smithies.

CHICAGO STATE HOSPITAL, Dunning Station.—*Nervous and Mental*: H. Douglas Singer.

CHICAGO POLICLINIC AND HOSPITAL, 221 W. Chicago Ave.—*General Surgery*: J. A. Graham, M. L. Harris, Wm. Hessert and C. C. Rogers. *Gynecology*: C. V. Bachele. *Orthopedics*: E. W. Ryerson. *Eye, Ear, Nose and Throat*: C. H. Francis, Otto T. Freer, J. W. Mahoney and C. M. Robertson. *General Medicine*: J. F. Hultgen and E. S. Moore. *Tuberculosis*: O. W. McMichael. *Pediatrics*: Paul Grabow. *Stomach*: A. Heinen. *Obstetrics*: C. S. Bacon. *Genito-Urinary*: Robert H. Herbst.

THE CHICAGO FRESH AIR HOSPITAL, Cor. Howard and Western Ave.—*Tuberculosis*: Pneumothorax Treatment, Ethan Allen Gray.

CHILDREN'S MEMORIAL HOSPITAL, 735 Fullerton Ave.—*General Surgery*: Coleman G. Buford, John Graham and Robert O. Ritter. *Orthopedic*: Robert O. Ritter. *Eye, Ear, Nose and Throat*: David Fiske, Edwin Norcross and John Williams. *Medical*: Arthur Parmalee and Samuel J. Walker. *Infant Feeding*: George Edwin Baxter.

CHICAGO LYING-IN HOSPITAL, 426 E. 51st St.—*Obstetrics*: C. S. Bacon, J. B. DeLee, H. M. Stowe and Anna Lapham.

COOK COUNTY HOSPITAL, Harrison and Wood Sts.—*General Surgery*: E. Wyllys Andrews, Charles Davison, Frederick G. Dyas, Daniel N. Eisendrath, Charles E. Humiston, Harry Jackson, A. Belcham Keyes, Paul F. Morf, Arthur B. Rankin, Harry Richter, Lawrence Ryan, Victor

L. Schrager, Geo. F. Thompson, Roger T. Vaughan and John A. Wolfer. *Gynecology*: Mary McEwen, H. M. Stowe, Bertha VanHoosen and Wesley J. Woolston. *Orthopedics*: Charles M. Jacobs, Charles A. Parker and Henry B. Thomas. *Eye, Ear, Nose and Throat*: Joseph C. Beck, G. W. Boot, E. V. L. Brown, J. W. Clark, Charles G. Darling and Robert Sonnenschein. *Genito-Urinary*: Frederick G. Harris, Ernest L. McEwen and Arthur W. Stillians. *Medicine*: Arrie Bamburger, Arthur F. Beifeld, Wm. J. Butler, Leon Bloch, James G. Carr, Harry B. Culver, W. W. Dicker, A. A. Goldsmith, Karl K. Kocssler, Ludwig M. Loeb, M. Milton Portis, Joseph M. Patton, S. R. Slaymaker, Frederick Tice and Theodore Ticken. *Nervous and Mental*: Julius Grinker, George W. Hall, George B. Hassin and Sigmund Krumholz. *Tuberculosis*: Max Beisenthal, Frank Chauvet, J. F. Hultgen, Maurice Lewison, Wm. Ed. Putz, Katherine B. Rich and Isadore M. Trace. *Pediatrics*: May Michaels and August Strauch. *Obstetrics*: Frederick O. Bowe, Frederick H. Falls and Otto H. Rohrlack. *Pathology*: D. J. Davis, Ludvig Hektoen, E. R. LeCount, J. Simonds and H. Gideon Wells. *Contagious Diseases*: Maurice Blatt, Archibald L. Hoyne and H. E. Irish. *Oral Surgery*: Louis Schults and Herbert Potts.

FRANCES WILLARD HOSPITAL, 710 S. Lincoln St.—*General Surgery*: Hugh N. MacKechie, Lawrence Ryan, V. L. Schrager and Allen Stewart. *Eye, Ear, Nose and Throat*: W. D. Brode and L. B. Phelps. *General Medicine*: Wm. J. Butler and V. L. Sheets. *Stomach*: M. H. Mack. *Roentgen Ray*: B. H. Orndoff. *Oral Surgery*: T. W. Brophy.

HAHNEMANN HOSPITAL, 2814 Ellis Ave.—*Surgery*: H. R. Chislett and Chas. E. Kahlke.

HOME FOR DESTITUTE CRIPPLED CHILDREN, 1653 Park Ave.—*Surgery*: Ed. McGinnis. *Orthopedic*: Wallace Blanchard and Chas. A. Parker.

THE ILLINOIS CHARITABLE EYE AND EAR INFIRMARY, 904 W. Adams St.—*Eye*: W. A. Barr, Robt. H. Buck, David Evans, Michael Goldenberg, Louis G. Hoffman, Arthur P. Hunneman, Michael Lebensohn, Dwight C. Orcutt, Nils E. Remmen and Robert Vonder Heydt. *Ear*: Henry R. Boettcher, James R. Davey, S. M. Hager, Alfred Lewy and W. K. Spiece.

ILLINOIS CENTRAL HOSPITAL, 5744 Stoney Island Ave.—*General Surgery*: E. J. Hoglund, L. L. Iseman and T. H. Kelly. *Gynecology*: Wm. Cuthbertson. *Eye, Ear, Nose and Throat*: Geo. J. Musgrave and R. J. Tivnen. *General Medicine*: W. T. Harsha. *Roentgen Ray*: B. C. Cushway.

MERCY HOSPITAL, 2537 Prairie Ave.—*General Surgery*: E. Wylls Andrews, John F. Golden, G. W. Hochrein, P. H. Kreuscher, M. F. McGuire, E. L. Moorhead, Wm. E. Morgan, F. E. Pierce and C. F. Sawyer. *Eye, Ear, Nose and Throat*: G. T. Jordan, G. J. Musgreaves and R. J. Tivnen. *Genito-Urinary*: V. D. Lespinasse. *Medicine*: C. P. Caldwell, J. G. Carr, A. C. Kleutgen, J. M. Lillie, W. G. McGuire and F. Wright. *Nervous*: Julius Grinker. *Gynecology*: W. S. Barnes and W. J. Jeffries. *Pediatrics*: Robt. A. Black and T. J. Sullivan, Jr.

MICHAEL REESE HOSPITAL, 29th and Ellis Ave.—*General Surgery*: E. Wylls Andrews, Geo. Davenport, Daniel N. Eisendrath, E. Friend and A. A. Straus. *Gynecology*: Emil Ries and L. Frankenthal. *Eye, Ear, Nose and Throat*: Ira Frank and H. Kahn. *Genito-Urinary*: Daniel N. Eisendrath and Gustav Kolischer. *General Medicine*: A. R. Edwards, E. L. Schram, Solomon Strouse and Frank Wright. *Pediatrics*: I. A. Abt and E. Lackner. *Nervous and Mental*: Archibald Church.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 2431 S. Dearborn St.—*Nervous and Mental*: Hugh T. Patrick.

NORWEGIAN DEACONESS HOSPITAL, 1138 N. Leavitt St.—*General Surgery*: J. R. Ballinger, Svening Dahl, J. V. Fowler, E. E. Henderson and A. Holmboe.

NORTH CHICAGO HOSPITAL, 2551 N. Clark St.—*General Surgery*: Carl Beck, Emil Beck and B. Katz. *Ear, Nose and Throat*: Joseph Beck and H. L. Pollock. *Roentgen Ray*: Paul Eisen.

PASSAVANT HOSPITAL, 149 W. Superior St.—*Surgery*: E. J. Brougham, Aime Paul Heineck, Frank R. Morton, Carl G. Swenson, O. J. Waters and A. G. Wermuth.

PROVIDENT HOSPITAL (colored), 16 W. 36th St.—*General Surgery*: Geo. C. Hall. *Gynecology*: Bertha Van Hoosen. *Eye, Ear, Nose and Throat*: H. R. Smith and E. S. Stewart. *Genito-Urinary*: Albert E. Mowry. *Nervous and Mental*: Albert B. Yudelson. *Pediatrics*: Mark Jampolis and G. W. Prince. *General Medicine*: A. Wilberforce Williams. *Obstetrics*: E. R. Cornell. *Roentgen Ray*: C. D. Bell.

POST GRADUATE MEDICAL SCHOOL, 2400 S. Dearborn St.—*General Surgery*: C. J. Drucek, Chas. Frazier, W. J. Marvel, A. W. McNealy, J. C. Salyers and W. J. Sullivan. *Gynecology*: W. F. Dickson, H. L. Meyers, Emil Ries and Henry Scott. *Orthopedics*: R. W. Haddon. *Eye, Ear, Nose and Throat*: M. M. Jones, C. W. Hawley, A. Duncan, E. P. Norcross, Chas. Long, I. Sher, L. E. Schwarz, O. J. Stein and Robt. Sonnenschein. *Genito-Urinary*: Gustav Kolischer and Walter Venn. *Medicine*: F. B. Kirby, Harry Meissler, H. W. Traub, A. A. Jamieson and N. C. Gilbert. *Nervous and Mental*: Julius Grinker. *Pediatrics*: Robt. A. Black, O. J. Rabe and F. B. Combs. *Stomach*: A. A. Goldsmith. *Skin*: P. F. Shaffner.

PRESBYTERIAN HOSPITAL, 1753 W. Congress St.—*General Surgery*: Arthur Dean Bevan and Carl B. Davis. *Gynecology*: J. C. Webster and N. S. Heaney. *Eye, Ear, Nose and Throat*: Wm. H. Wilder and Geo. E. Shambaugh. *Genito-Urinary*: Herman L. Kretschmer and Robert Herbst. *Medicine*: J. B. Herrick, B. W. Sippy and W. E. Post. *Nervous and Mental*: Thor Rothstein and Peter Bassoe. *Pediatrics*: Walter Hoffmann. *Skin*: O. S. Ormsby.

PSYCHOPATHIC HOSPITAL, Wood and Polk Sts.—*Nervous and Mental*: Herman M. Adler, Geo. W. Hall, G. B. Hassin, Julius Grinker, Julius Retinger and Sydney Kuh.

RAVENSWOOD HOSPITAL, 1917 Wilson Ave.—*General Surgery*: G. N. Bussey, Clark A. Buswell, G. W. Green, W. W. Mueller, A. G. Schroeder and J. J. Toeller. *Medicine*: Geo. Edwin Baxter and Josiah J. Moore.

RUSH MEDICAL COLLEGE.—*Nervous and Mental*: James C. Gill and Thor Rothstein. *Genito-Urinary*: Robert H. Herbst.

ST. LUKE'S HOSPITAL, 1439 S. Michigan Ave.—*General Surgery*: E. Wylls Andrews and L. L. McArthur. *Gynecology*: E. C. Dudley and L. E. Frankenthal. *Orthopedics*: J. L. Porter. *Eye, Ear, Nose and Throat*: F. Allport, Paul Guilford, G. P. Marquis and E. P. Norcross. *General Medicine*: A. R. Elliott and R. B. Preble. *Nervous and Mental*: A. Church. *Pediatrics*: F. X. Walls. *Obstetrics*: C. E. Paddock. *Oral Surgery*: T. L. Gilmer.

ST. BERNARD'S HOSPITAL, 6337 Harvard Ave.—*General Surgery*: J. C. Belson, W. H. Bohart, Carl Christoph, O. E. Christoph, G. M. Cushing, J. C. Hepburn, Henry Hoffman, J. B. Haeberlin, W. J. Hurley, Frederick Lofton, J. T. Meyers and Jacobson. *Eye, Ear, Nose and Throat*: Austin A. Hayden.

ST. JOSEPH'S HOSPITAL, 2100 Burling St.—*General Surgery*: Wm. Hestert and Carl Wagner. *Gynecology*: Wallace Grosvenor. *Eye, Ear, Nose and Throat*: John B. Ellis, Austin Hayden, J. Holinger and J. Z. Bergeron. *Roentgen Ray*: Isadore Trostler. *Oral Surgery*: Trumar Brophy.

WESLEY HOSPITAL, 2449 S. Dearborn St.—*General Surgery*: H. M. Richter, Wm. E. Schroeder, W. E. Shackleton and John A. Wolfer. *Gynecology*: Mark T. Goldstine. *Ear*: J. Gordon Wilson. *Medicine*: Achilles Davis, Chas. A. Elliott, N. C. Gilbert, A. A. Goldsmith, C. P. Horner and L. J. Osgood. *Obstetrics*: Charles B. Reed.

THE UNIVERSITY HOSPITAL, Ogden Ave., Congress and Lincoln Sts.—*General Surgery*: Charles Davison. *Orthopedics*: Edwin W. Ryerson. *Eye, Ear, Nose and Throat*: E. V. L. Brown and Wm. E. Gamble. *Genito-Urinary*: Harry Culver. *Medicine*: Ed. L. Heintz. *Pediatrics*: Henry E. Irish. *Obstetrics*: Chas. S. Bacon.

WASHINGTON BOULEVARD HOSPITAL, 2449 Washington Blvd.—*Surgery*: B. F. Lounsbury.

WEST SUBURBAN HOSPITAL, Ontario St. and Austin Ave., Oak Park (City limits, West).—*General Surgery*: Chas. E. Humiston.

WEST SIDE HOSPITAL, 1844 W. Harrison St.—*General Surgery*: E. M. Brown, T. A. Davis, Paul Gronnerud, C. C. O'Byrne and Geo. F. Thompson. *Gynecology*: A. N. Claggett and J. M. Lang. *Eye, Ear, Nose and Throat*: James A. Clark and Wm. L. Noble. *Genito-Urinary*: John S. Nagel. *General Medicine*: W. L. Callaway. *Nervous and Mental*: C. N. King. *Skin*: K. A. Zurawski and Robt. A. Sempill.

AMERICAN MEDICAL GOLFING ASSOCIATION

The fourth tournament of the American Medical Golfing Association will be held on June 10 at the Glenview Golf Club. The following members of the local committee and section captains will be in charge of the entertainment: Section on Surgery—Arthur Bevan; Section on Practice of Medicine—John Dodson; Section on Surgery, Gynecology and Obstetrics—Thomas Watkins; Section on Dermatology—William Pusey; Section on Ophthalmology—Frank Brawley; Eye, Ear, Nose and Throat Section—Frederick Menge; Section on Pediatrics—Henry Helmholtz; Section on Orthopedics—Edwin Ryerson; Section on Pathology—Gideon Wells. Fellows of the American Medical Association who wish to enter the tournament should communicate without delay with the secretary, Dr. Will Walter, 1414 Chicago Avenue, Evanston, Ill. Visiting foreign surgeons are invited to attend the tournament.

MEETINGS FOR WOMEN PHYSICIANS

SUNDAY AFTERNOON, JUNE 9, 3 p. m., a tea at the South Shore Country Club.

TUESDAY, JUNE 11, 12 m.-1 p. m., assembly room of the Chicago College Club, Dr. Mabel S. Ulrich of Minneapolis will speak on social hygiene.

WEDNESDAY, JUNE 12, 5:30 p. m. Banquet for medical women at La Salle Hotel.

Headquarters

Headquarters have been engaged at the Chicago College Club in the Stevens' Building. Luncheon and supper will be served in the club; there are reception and rest rooms; our guests can have their mail forwarded here, receive their friends, get telephone messages and rest between sessions.

Reservations

The Medical Women's Committee (Dr. Clara P. Seippel, chairman, 25 East Washington Street, Chicago) will be glad to be of service to women physicians who attend the convention. An entire floor of rooms has been reserved at the Hotel La Salle. They request that every medical woman who intends to be in Chicago from June 6 to 14 send them her name, address while in the city, and time of arrival, so that she may be notified of any gatherings.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will occupy the mezzanine floor of Hotel Sherman. This is in direct contact with the general headquarters and the commercial exhibit, and is easily accessible to the visiting physicians. The exhibits promise to be unusually interesting as there are several of special military interest. In connection with many of the exhibits frequent demonstrations by especially qualified persons will be provided. One gold and two silver medals and several certificates of merit will be awarded for the exhibits which are adjudged most worthy. The following exhibits have already been arranged for:

DR. V. D. LESPINASSE, Chicago, Ureteral Stone—pictures, slides and specimens.

DR. DANIEL N. EISENDRATH, Chicago—1. Experimental effects of cholecystectomy. 2. Anatomy of common duct region. 3. Specimens of kidney surgery.

DR. LEIGH F. WATSON, Chicago—Experimental studies of water, specimens, photographs and photomicrographs.

DR. HENRY F. SMYTH, Laboratory of Hygiene, University of Pennsylvania—Industrial Dust—charts, photographs and museum specimens.

DR. ALFRED A. STRAUSS, Chicago—Stomach and intestinal surgery—operation for sterility in male.

DR. HIDEYO NOGUCHI, Rockefeller Institute, New York—Microchaeta of infectious jaundice.

DR. EMIL G. BECK, Chicago—Stereoscopic roentgenographs illustrating localization of foreign bodies and lung abscess.

PRUDENTIAL LIFE INSURANCE COMPANY OF AMERICA, Newark, N. J.—Malaria eradication and control.

MAYO FOUNDATION, Rochester, Minn.—Selected exhibit.

MARY THOMPSON HOSPITAL, Chicago—Anesthetic cap and berthe, delivery bed, bedside cabinet, examining glove, hospital window and pictures.

FORT RILEY SANITARY LABORATORY, Fort Riley, Kan.—Army sanitation—fifty models of Army sanitary apparatus.

THE AMERICAN RED CROSS—Red Cross surgical dressings, etc.

STATE OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH—Mechanical and still models, cartoons, etc.

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF ANIMAL INDUSTRY—Specimens of disease in food animals.

DR. MORTIMER FRANK, Chicago—Historic medical books, original letters and pictures.

DR. DAVID J. DAVIS, Chicago—Sporotrichosis—specimens, cultures, pictures.

It is expected that other medical activities of the war than those mentioned will be illustrated, but announcements cannot be definitely made at this time.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF OPENING MEETING

AUDITORIUM THEATER

Tuesday, June 11, 8:30 p. m.

Music.

Call to Order by the President, DR. CHARLES H. MAYO, Rochester, Minn.

Invocation. JOHN TIMOTHY STONE, D.D., Chicago.

Announcements. DR. LUDVIG HEKTOEN, Chairman of the Local Committee of Arrangements.

Address of Welcome. DR. E. B. COOLEY, Danville, President of the Illinois State Medical Society.

Address of Welcome. DR. CHARLES E. HUMISTON, Chicago, President of the Chicago Medical Society.

Address. HON. FRANK O. LOWDEN, Governor of Illinois.

Music.

Introduction and Installation of President-Elect ARTHUR DEAN BEVAN, Chicago.

Address. DR. ARTHUR DEAN BEVAN.

Music.

GENERAL MEETING, WEDNESDAY EVENING

Military Meeting

Plans are being perfected for a general meeting to be held Wednesday evening, June 12, at 8:30, at which representatives of the Medical Corps of our allied nations, together with other distinguished medical guests, will speak on medical war problems.

THURSDAY EVENING MEETING

Patriotic Meeting

A general popular patriotic war meeting will be held in Auditorium Theater on Thursday evening at 8:30, when distinguished citizens of Chicago will present the appeal of the United States in the present war from the viewpoint of national citizenship.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, also lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of Chicago and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON MISCELLANEOUS TOPICS

MEETS IN AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—FRANK BILLINGS, Chicago

Vice Chairman—JAMES BORDLEY, JR., Baltimore.

Secretary—HARRY E. MOCK, Chicago.

Thursday, June 13—9 a. m.

1. Opening Address.

WILLIAM C. GORGAS, Washington, D. C.

2. Chairman's Address: The National Program for the Reconstruction and Rehabilitation of the Disabled Soldiers.

FRANK BILLINGS, Chicago.

3. Reconstruction and Rehabilitation Problems as Demonstrated by Experience in Foreign Countries.

CASEY A. WOOD, Chicago.

4. The Surgeon-General's Plans for the Receiving and Transporting and Distributing of the Disabled from Overseas.

ROBERT E. NOBLE, Washington, D. C.

5. Acute Surgery as Related to Reconstruction.

MAJOR G. SEELIG, St. Louis.

Discussion to be opened by DAVID SILVER, Pittsburgh.

6. Medical Reconstruction of Disabled Soldiers—War Neuroses. PEARCE BAILEY, New York.
7. Reeducation of the Deaf and Speech Defective. CHARLES W. RICHARDSON, Washington, D. C.
8. Reeducation of the War Blinded. JAMES BORDLEY, JR., Baltimore, Md.

Thursday, June 13—2 p. m.

- The Reconstruction of the Canadian Crippled Soldiers and Results.
9. The Conservation and Reclamation of the Industrial Soldiers: A War Measure. HARRY E. MOCK, Chicago.
Experiences in Reeducation and Vocational Training of the Disabled Soldiers.
 10. The Results of Rehabilitation in Foreign Countries (Lantern Demonstration). DOUGLAS C. MCMURTRIE, New York.
 11. What Is to Become of the Reconstructed Soldier in Civil Life? In Trades. In Professions. Social and Economic Supervision of the Rehabilitated Soldiers. ERNEST P. BICKNELL, Washington, D. C.
 12. "The Way Out": Educational Propaganda for the Disabled Soldiers and for the Public (Illustrated by Motion Pictures). ARTHUR H. SAMUELS, Washington, D. C., and MICHAEL J. DOWLING, Olivia, Minn.

SECTION ON PRACTICE OF MEDICINE

MEETS IN BANQUET ROOM, HOTEL MORRISON

OFFICERS OF SECTION

Chairman—LAWRENCE LITCHFIELD, Pittsburgh.
 Vice Chairman—A. W. HEWLETT, San Francisco.
 Secretary—JAMES S. McLESTER, Birmingham, Ala.
 Executive Committee—THOMAS McCRAE, Philadelphia; ROGER S. MORRIS, Cincinnati; HENRY A. CHRISTIAN, Boston.
 (Stenographer—Dr. W. W. BELLAMY, Boston)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Dextrose Intravenously as a Therapeutic Agent. LAWRENCE LITCHFIELD, Pittsburgh.
2. War and Medical Education. HORACE D. ARNOLD, Boston.
3. Further Studies in the Treatment of Acute Poliomyelitis with Immune Horse Serums. EDWARD C. ROSENOW, Rochester, Minn.
4. Pulmonary Compression Signs Associated with Fibrinous Pericarditis. HENRY A. CHRISTIAN, Boston
5. On Ulceration of the Soft Palate Resembling Syphilitic Perforating Ulcer Due to Fusiform Bacilli and Spirillae (Vincent's Angina). SYDNEY R. MILLER, Baltimore.
Discussion to be opened by ROGER S. MORRIS, Cincinnati, and FRANK J. SLADEN, Detroit.
6. The Complications of Cerebrospinal Meningitis and Their Treatment. WILLIAM W. HERRICK, New York.

Wednesday, June 12—2 p. m.

7. Measles in the Army Camp.
8. Report on Cases of Cerebrospinal Meningitis (Epidemic) Observed at General Hospital No. 6, Fort McPherson, Ga. CHARLES N. B. CAMAC, New York, and KARL M. BOWMAN, White Plains, N. Y.
9. Neurocirculatory Asthenia. WILLIAM H. ROBEY, JR., Boston.
10. The Training of the Medical Officers in the Army. WILLIAM N. BISPHAM, Fort Riley, Kan.
11. The Significance of Presystolic Thrills in the Examination of Recruits. ROGER S. MORRIS and ALFRED FRIEDLANDER, Cincinnati.
12. Newer Aspects of Digitalis Therapy. JOSEPH H. PRATT, Boston.
Discussion to be opened by ALFRED E. COHN, Washington, D. C., and GEORGE CANBY ROBINSON, St. Louis.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.**Election of Officers****SYMPOSIUM ON PNEUMONIA**

13. A Clinical Study of Eight Hundred Cases of Pneumonia. WILLARD J. STONE, Toledo, Ohio.
14. Unique Findings Gathered from the Observation of Eleven Hundred Cases of Pneumonia in a Base Hospital. ARTHUR A. SMALL, Chicago.
15. An Epidemic of Streptococcus Pneumonia and Empyema at Camp Dodge. JOSEPH L. MILLER and FRANK B. LUSK, Chicago.
16. Streptococcus Pneumonia. JAMES G. CUMMING, Ann Arbor, Mich.
17. The Pathology of the Pneumonia of the Army Camp. WILLIAM G. MACCALLUM, Baltimore.
18. Practical Consideration of Epidemiology Drawn from Classification of Streptococci. RALPH A. KINSELLA, St. Louis.
Discussion to be opened by ERNEST E. IRONS, Chicago; RUFUS I. COLE, New York; BRUCE G. PHILLIPS, New York; WALTER P. BLISS, New York; HUGH McKENNA, Chicago, and GEORGE F. DICK, Chicago.

Friday, June 14—2 p. m.

19. Acute Mastoiditis as a Complication of Infectious Diseases. GEORGE H. LATHROPE, Morristown, N. J.
Discussion to be opened by WILLIAM H. ROBEY, JR., Boston, and ROBERT H. FOWLER, New York.
20. The Prevention and Control of Contagious Diseases. JOSEPH A. CAPPS, Chicago.
21. Later Results of the Intraspinal Treatment of Cerebrospinal Syphilis, Based on Four Years' Observation. CLYDE L. CUMMER, Cleveland, and RICHARD DEXTER, Toledo, Ohio.
Discussion to be opened by JOHN A. FORDYCE, New York.
22. A Study of Diaphragmatic Movements in Acute Abdominal Inflammations. LLEWELLYN SALE, St. Louis.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—E. STARR JUDD, Rochester, Minn.
 Vice Chairman—ROBERT C. COFFEY, Portland, Ore.
 Secretary—EUGENE H. POOL, New York.
 Acting Secretary—GEORGE P. MÜLLER, Philadelphia.
 Executive Committee—CHARLES H. PECK, New York; E. WYLLYS ANDREWS, Chicago; WILLIAM D. HAGGARD, Nashville, Tenn.
 (Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, June 12—9 a. m.

1. Chairman's Address. E. STARR JUDD, Rochester, Minn.
2. Congenital Cleft Palate and Harelip. TRUMAN W. BROPHY, Chicago.
Discussion to be opened by A. J. OCHSNER, Chicago.
3. The Principles of Thyroid Surgery. CHARLES H. MAYO, Rochester, Minn.
4. Temporary Loss of Voice Following Thyroidectomy. DONALD GUTHRIE, Sayre, Pa.
5. Goiter in the Southeast. EDWARD G. JONES, Atlanta, Ga.
Discussion on the foregoing papers by CHARLES H. FRAZIER, Philadelphia; STUART McGUIRE, Richmond, Va.; EMIL GOETSCH, Baltimore, and GORDON B. NEW, Rochester, Minn.
6. On Glycophilia. WILLY MEYER, New York.
Discussion to be opened by LEO BUERGER, New York.

Wednesday, June 12—2 p. m.

7. Reconstruction of the Common Duct from the Experimental Standpoint.
J. SHELTON HORSLEY, Richmond, Va.
Discussion to be opened by WILLIAM J. MAYO, Rochester, Minn. and W. W. MATTSO, Tacoma, Wash.
8. Clinical Report on Reconstruction of the Common and Hepatic Ducts. LEGRAND GUERRY, Columbia, S. C.
Discussion to be opened by JAMES F. MITCHELL, Washington, D. C., and STUART MCGUIRE, Richmond, Va.
9. Rôle of the Cystic Duct in Recurring Cholecystitis.
J. EARL ELSE, Portland, Ore.
Discussion to be opened by ALLEN B. KANAVEL, Chicago.
10. Traumatic Pancreatic Cysts.
JOHN A. HARTWELL, New York.
Discussion to be opened by GEORGE D. STEWART, New York.
11. Chronic Pancreatitis Associated with Cholecystitis and Cholelithiasis. ALLEN O. WHIPPLE, New York.
12. The Ultimate Results in Cases of Chronic and Subacute Pancreatitis.
EDWARD W. ARCHIBALD, Montreal Canada.
Discussion on the foregoing two papers will be opened by JOHN B. DEAYER, Philadelphia.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

13. The Therapeutics of Tetanus.
HERMANN B. GESSNER, New Orleans.
Discussion to be opened by A. P. C. ASHHURST, Philadelphia.
14. Treatment of Suppurative Arthritis by Irrigation and by Staining with Gentian Violet.
JOHN W. CHURCHMAN, New Haven, Conn.
Discussion to be opened by GEORGE P. MÜLLER, Philadelphia, and WALTON MARTIN, New York.
15. The Use of Dichloramin-T and Other Antiseptics in War Surgery. W. ESTELL LEE, Philadelphia.
16. The Hodgen Extension Suspension Splint and Its Application in Both Civil and War Surgery.
FRANK G. NIFONG, Columbia, Mo.
17. A Method for the Relief of Medullary Pressure in Fracture of the Skull. JOHN E. JENNINGS, Brooklyn.
18. The Fall of the Alkaline Reserve Under Surgical Conditions: Its Effects and Prevention.
HOWARD W. HAGGARD, New Haven, Conn.
Discussion to be opened by CARL WIGGERS, New York.

Friday, June 14—2 p. m.

9. The Bearing of Hypertonic Sphincters on the Surgery of the Alimentary Tract.
EDWARD MARTIN, Philadelphia.
10. Duodenal Fistula and Its Treatment.
DANIEL FISKE JONES, Boston.
Discussion to be opened by E. STARR JUDD, Rochester, Minn.
1. Gastroptosis: Its Cause, Prevention and Care, with Special Reference to the Duret-Rovsing Operation.
GEORGE N. KREIDER, Springfield, Ill.
Discussion to be opened by CARL E. BLACK, Jacksonville, Ill.
2. A New Principle in the Surgical Treatment of Brain Tumors. ARTHUR C. STRACHAUER, Minneapolis.
Discussion to be opened by CHARLES H. FRAZIER, Philadelphia.
3. Kondoléon's Operation.
WALTER E. SISTRUNK, JR., Rochester, Minn.
Discussion to be opened by RUDOLPH MATAS, New Orleans, and CARL B. DAVIS, Chicago.
4. End-Results in Hodgkin's Diseases.
RALPH E. MORTER, Milwaukee.
Discussion to be opened by CHARLES H. BUNTING, Madison, Wis.

SECTION ON OBSTETRICS, GYNECOLOGY
AND ABDOMINAL SURGERY

MEETS IN GOLD ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

Chairman—BROOKE M. ANSPACH, Philadelphia.
Vice Chairman—ROLAND E. SKEEL, Cleveland.
Secretary—SIDNEY A. CHALFANT, Pittsburgh.
Executive Committee—THOMAS S. CULLEN, Baltimore; EDWARD REYNOLDS, Boston; HOWARD W. LONGYEAR, Detroit.
(Stenographer—Miss LIDIE C. ALEXANDER, Philadelphia)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Enterostomy and Enterocolostomy in the Treatment of Intestinal Obstruction Following Pelvic Operations.
BROOKE M. ANSPACH, Philadelphia.
2. The Clinical Observations and Results of the Newer Methods of Operations in Congenital Pyloric Stenosis and Gastric and Duodenal Ulcers (Lantern Demonstration). ALFRED A. STRAUSS, Chicago.
3. Hypertrophic Pyloric Stenosis in Infancy (Lantern Demonstration).
WILLIAM D. HAGGARD, Nashville, Tenn.
Discussion to be opened by FRANK X. WALLS and WELLER VAN HOOK, Chicago.
4. The Relation of Anomalies of the Bile Ducts and Blood Vessels to Accidents in Biliary Surgery.
DANIEL N. EISENDRATH, Chicago.
5. Secondary Tuberculous Peritonitis.
WILLIAM J. MAYO, Rochester, Minn.
Discussion to be opened by ALBERT J. OCHSNER, Chicago.
6. Abdominal Visceroplexy: An Original Method With a Report of Cases. J. RIDDLE GOFFE, New York.
Discussion to be opened by C. A. L. REED, Cincinnati.
7. The Use of the Rubber Band in Abdominal Surgery.
JOHN W. KEEFE, Providence, R. I.

Wednesday, June 12—2 p. m.

8. Goiter in Pregnancy (Lantern Demonstration).
LEIGH F. WATSON, Chicago.
Discussion to be opened by JAMES W. MARKOE, New York.
9. Extending the Care of Pregnancy.
ISADORE L. HILL, New York.
Discussion to be opened by BARTON COOKE HIRST, Philadelphia.
10. Uterine Inertia: Summary of a Series of Cases.
PAUL TITUS, Pittsburgh.
Discussion to be opened by RUDOLPH W. HOLMES, Chicago.
11. The Use and Abuse of Pituitary Solution.
GEORGE W. KOSMAK, New York.
Discussion to be opened by J. B. DE LEE, Chicago.
12. Pus in the Female Pelvis: A Surgical Retrospect.
JOHN YOUNG BROWN, St. Louis.
13. Rectal Section for Pelvic Abscess (Lantern Demonstration). HARRY P. RITCHIE, St. Paul.
14. Parotitis Following Induced Abortion in a Case of Pernicious Vomiting in Pregnancy.
W. P. MANTON, Detroit.
Discussion to be opened by W. A. N. DORLAND, Chicago.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

15. How Surgeons Can Help Win the War.
FRANKLIN H. MARTIN, Chicago.
16. The Question of Operation in Abdominal Gunshot Injuries.
JOSEPH RILUS EASTMAN, Indianapolis.
17. Experience with Thirty-Five Cases of Gunshot Wounds of the Abdomen in 1917 at the Memphis General Hospital.
MAX GOLTMAN, Memphis, Tenn.
Discussion to be opened by GEORGE L. HAYS, Pittsburgh.

18. Avoidable Traumatic Abdomen.

JOHN B. DEEVER, Philadelphia.

Discussion to be opened by THOMAS J. WATKINS, Chicago.

19. Treatment of Incisional Ventral Hernia by the Transplantation of Fascia Lata (Lantern Demonstration).

WILLARD BARTLETT, St. Louis.

Discussion to be opened by ARTHUR T. MANN, Minneapolis.

20. Short Circuiting Operations in Abdominal Surgery.

ALEXIUS MCGLANNAN, Baltimore.

21. Infantilism and Other Hypoplastic Conditions of the Uterus (Lantern Demonstration).

EMIL NOVAK, Baltimore.

Discussion to be opened by WILLIAM P. GRAVES, Boston.

Friday, June 14—2 p. m.

22. Paravertebral Anesthesia, with Report of One Hundred Cases. NATHANIEL R. MASON and FRANK C. W. KONRAD, Boston.

Discussion to be opened by JOHN OSBORNE POLAK, Brooklyn.

23. Age of Menopause: Observations Based on Statistical Data of Eight Hundred Menopause Cases.

K. I. SANES, Pittsburgh.

Discussion to be opened by CURTIS S. FOSTER, Pittsburgh.

24. The Pathology of Hemorrhagic Myomas and Their Relation to Sarcoma (Lantern Demonstration).

ARTHUR E. HERTZLER, Kansas City.

Discussion to be opened by THOMAS S. CULLEN, Baltimore.

25. The Radical Treatment of Cancer of the Cervix by Igni Extirpation (Lantern Demonstration).

EDWARD A. WEISS, Pittsburgh.

Discussion to be opened by ALBERT GOLDSPOHN, Chicago.

26. The Conservation of Ovaries After Hysterectomy: With a New Technic of Extirpation of the Uterus.

GEORGE GELLHORN, St. Louis.

Discussion to be opened by HENRY T. BYFORD, Chicago.

27. Plastic Operations in the Vagina and on the Pelvic Floor.

STEPHEN E. TRACY, Philadelphia.

Discussion to be opened by HORACE G. WETHERILL, Denver.

SECTION ON OPHTHALMOLOGY

MEETS IN GRAND BALL ROOM, HOTEL LA SALLE

OFFICERS OF SECTION

Chairman—ALEXANDER DUANE, New York.

Vice Chairman—F. PHINIZY CALHOUN, Atlanta, Ga.

Secretary—GEORGE S. DERBY, Boston.

Acting Secretary—EDGAR S. THOMSON, New York.

Executive Committee—EDWARD C. ELLETT, Memphis, Tenn.;
WALTER R. PARKER, Detroit; WILLIAM ZENTMAYER, Philadelphia.

(Stenographer—Dr. G. G. TAYLOR, Chicago)

Members are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening.

The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to members of the section.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion, and five minutes in which to close the discussion.

The member appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1917. Copies of the Transactions may be obtained at \$1 each, if subscriptions are sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, by July 1, as only enough copies are printed to cover subscriptions received up to the time of going to press.

Members of the Section are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Wednesday, June 12—9 a. m.

1. Chairman's Address. ALEXANDER DUANE, New York.

2. Disciform Keratitis. JOHN E. WEEKS, New York.
Discussion to be opened by WILLIAM ZENTMAYER, Philadelphia.3. The Action of Miotic Drugs on Eyes, with Incomplete Sphincter Iritis. ROBERT J. CURDY, Kansas City, Mo.
Discussion to be opened by FRANK C. TODD, Minneapolis.4. Paralysis of the Sixth Cranial Nerve Associated with Otitis Media. JOHN M. WHEELER, New York.
Discussion to be opened by WALTER H. SNYDER, Toledo, Ohio.5. The Relation of Hereditary Defects of the Eye to Modern Genetics and Eugenics. LUCIEN HOWE, Buffalo.
Discussion to be opened by FRANK ALLPORT, Chicago, and HAROLD H. NEWMAN, Salisbury, N. C.6. The Rational Etiology and Satisfactory Treatment of Dacryocystitis. WILLIAM R. THOMPSON, Fort Worth, Texas.
Discussion to be opened by HARRY W. WOODRUFF, Joliet, Ill.

Wednesday, June 12—2 p. m.

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

7. Some Aspects of Military Ophthalmic Surgery. GEORGE E. DE SCHWEINITZ, Philadelphia.

8. Visual Standards of the U. S. Army. WILLIAM H. WILDER, Chicago.

9. Visual Standards of the U. S. Navy. WILLIAM E. CARSON, Washington, D. C.

10. The Eyes of the Army. ALLEN GREENWOOD, Boston.
Discussion to be opened by HIRAM WOODS, Baltimore.11. Maculocerebral Degeneration with Dementia. HOWARD S. CLARK, Minneapolis.
Discussion to be opened by F. PARK LEWIS, Buffalo.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

12. Pollakiuria or Excessive Frequency of Micturition as a Functional Disturbance Due to Eyestrain. WILLIAM W. KAHN, Detroit.
Discussion to be opened by ISAAC HARTSHORNE, New York.13. Astigmatism Against the Rule. JOHN GREEN and WILLIAM F. HARDY, St. Louis.
Discussion to be opened by WALTER B. LANCASTER, Boston.14. Common Changes in Regular Astigmatism and Their Causes. EDWARD JACKSON, Denver.
Discussion to be opened by ARTHUR G. BENNETT, Buffalo.15. Focal Infections of the Eye from the Intestinal Tract. JAMES G. DWYER, New York.
Discussion to be opened by EDGAR S. THOMSON, New York.16. Alterations in the Visual Fields Associated with Pellagra. F. PHINIZY CALHOUN, Atlanta, Ga.
Discussion to be opened by EDWARD V. L. BROWN, Chicago.17. A Study of the Histology and Pathology of the Superstructure of the Lid Occurring in Trachoma (Lantern Demonstration). EDWARD H. CARY, Dallas, Texas.
Discussion to be opened by MEYER WIENER, St. Louis.

Friday, June 14—2 p. m.

18. The Etiology of Phlyctenular Ophthalmia. HUNTER H. TURNER, Pittsburgh.
Discussion to be opened by EDWARD B. HECKEL, Pittsburgh.19. Postciliary Scleral Trephining for Acute Glaucoma. ARTHUR E. EWING, St. Louis.
Discussion to be opened by EDWARD C. ELLETT, Memphis, Tenn.

20. The Treatment of Blood Cysts of the Orbit.
HAROLD GIFFORD, Omaha.
Discussion to be opened by ALBERT E. BULSON, JR.,
Fort Wayne, Ind.
21. The Management of Certain Intractable Lid Conditions.
MELVILLE BLACK, Denver.
Discussion to be opened by GILES C. SAVAGE, Nashville,
Tenn.
22. An Operation for Cataract. Especially Adapted to Cases
of Intractable Sepsis of the Conjunctiva or the Lacri-
mal Sac. ARTHUR E. PRINCE, Springfield, Ill.
Discussion to be opened by JOHN D. PIFER, Joplin, Mo.
23. A Method of Acquiring Cataract Technic Leading to the
Smith-Indian Intracapsular.
WILLIAM A. FISHER and H. D. THORNBURG, Chicago.
Discussion to be opened by LOUIS D. GREEN, San
Francisco.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

MEETS IN RED ROOM, HOTEL LA SALLE

OFFICERS OF SECTION

- Chairman—GREENFIELD SLUDER, St. Louis.
Vice Chairman—PHILIP D. KERRISON, New York.
Secretary—L. W. DEAN, Iowa City, Iowa.
Executive Committee—NORVAL M. PIERCE, Chicago; HILI
HASTINGS, Los Angeles; FRANCIS P. EMERSON, Boston.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, June 12—9 a. m.

1. Chairman's Address: The Specialist's Relations to the
American Medical Association.
GREENFIELD SLUDER, St. Louis.
2. Acromegaly of the Larynx.
CHEVALIER JACKSON, Philadelphia.
3. Certain Traumatic Lesions of the Esophagus.
THOMAS HUBBARD, Toledo, Ohio.
4. Indurative Headaches. HUGH T. PATRICK, Chicago.
5. Ocular Headaches. JOSEPH W. CHARLES, St. Louis.

Wednesday, June 12—2 p. m.

- EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES
6. Otolaryngology in the Army Medical Service.
NORVAL H. PIERCE, Chicago.
 7. Results of Concussion of High Explosive Shells on the
Ear. J. GORDON WILSON, Chicago.
 8. Endoscopic Diagnosis and Treatment.
EDGAR M. HOLMES, Boston.
 9. Bilateral Ankylosis of the Crico-Arytenoid Joint, with
Report of a Case. THOMAS J. HARRIS, New York.
 0. Amputation of the Epiglottis in Cases of Laryngeal Tuber-
culosis. THOMAS E. CARMODY, Denver.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

1. Anatomy of the Nasal Accessory Sinuses in Infancy and
Childhood. WARREN B. DAVIS, Philadelphia.
2. Treatment of Neuralgia of the Fifth Nerve by Injection
of the Gasserian Ganglion.
HENRY H. MARTIN, Savannah, Ga.
3. Surgery of the Trifacial Nerve.
JOHN F. BARNHILL, Indianapolis.
4. Anatomy of the Lateral Sinus: Its Connections and
Anomalies. J. RANDOLPH PAGE, New York.
5. Two Cases of Unusual Wounding of the Lateral Sinus.
VIRGINIUS DABNEY, Washington, D. C.
6. The Etiology of Speech Disorders.
WALTER B. SWIFT, Boston.

Friday, June 14—2 p. m.

7. The Snaretome Operation for Enucleation of the Tonsil.
JACOB BRAUN, New York.

18. Diseased Faucial Tonsils: Their Toxic Infections and
Reflex Effects. J. LESLIE DAVIS, Philadelphia.
19. The Clinical Pathology of the Tonsil: Its Application
in Focal Infections. HARRY A. BARNES, Boston.
20. Systemic Factors in the Treatment of Acute and Subacute
Sinusitis. JOSEPH A. STUCKY, Lexington, Ky.
21. The Present Status of the Operative Treatment of Chronic
Frontal Sinusitis.
THOMAS W. MOORE, Huntington, W. Va.
22. The Relation of the Movements of the Head and Eyes to
Labyrinth Stimulation. HENRY B. LEMERE, Omaha.

SECTION ON DISEASES OF CHILDREN

MEETS IN FLORENTINE ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

- Chairman—LAURENCE R. DEBUYS, New Orleans.
Vice Chairman—RICHARD M. SMITH, Boston.
Secretary—F. P. GENGENBACH, Denver.
Executive Committee—LAWRENCE T. ROYSTER, Norfolk, Va.;
T. C. MCCLEAVE, Oakland, Calif.; J. P. SEDGWICK, Minne-
apolis.
(Stenographer—Dr. HELEN J. COWIE, Philadelphia)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Conservation of Child Life, a
National Responsibility.
LAURENCE R. DEBUYS, New Orleans.
2. Conservation of Child Life in New Zealand.
TRUBY KING, New Zealand.
3. Infant Mortality Campaign in France.
PAUL ARMAND-DE LILLE, Paris, France.
4. Medical Work Among the Civilian Population in France.
WILLIAM PALMER LUCAS, San Francisco.
5. A Report on Children in the War Zone.
JULIUS P. SEDGWICK and N. O. PEARCE, Minneapolis.
6. Children's Year Program for Child Conservation in War
Time. GRACE L. MEIGS, Washington, D. C.

Wednesday, June 12—2 p. m.

7. Clinical Supervision of the Well Baby During Its First
Year. HENRY H. YERINGTON, San Francisco.
8. A Report of Three Years' Clinical Experience with the
Feeding of S. A. M. (Synthetic Milk Adapted).
HENRY J. GERSTENBERGER, Cleveland.
9. Digestion of Fat by Gastric and Intestinal Ferment.
JAY I. DURAND, Seattle.
10. Pneumococcus Meningitis.
HENRY D. CHAPIN, New York.
11. A Case of Typhoid Fever with Meningismus.
COLLINS H. JOHNSON, Grand Rapids, Mich.
12. Lumbar Puncture in Meningeal Hemorrhage of New-Born.
JULES M. BRADY, St. Louis.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS.

Friday, June 14—9 a. m.

Election of Officers

13. Treatment of Prematurity.
ROOD TAYLOR, Rochester, Minn.
14. Intestinal Parasites in Children.
HARRY M. MCCLANAHAN, Omaha.
15. Human Blood as a Therapeutic Agent in Pediatric
Practice. CHARLES G. KERLEY, New York.
16. The Superior Longitudinal Sinus in Infants; Its Value in
Transfusion, and for Rapid Medication; Its Adapt-
ability in Procuring Blood for Diagnosis (Lantern
Demonstration). LOUIS FISCHER, New York.
17. Purpura Abdominalis in Early Life.
WILLIAM WESTON, Columbia, S. C.
18. Hemophilia.
HARRY LOWENBURG and A. I. RUBENSTONE, Philadelphia.

Friday, June 14—2 p. m.

19. Further Report on Pertussis Vaccine Controlled by the Complement Fixation Test.
EDGAR J. HEUNEKENS, Minneapolis.
20. Cutaneous Hypersensitiveness as an Evidence of Infection, and Its Bearing on the Pathogenicity for Infants of the Bacillus Abortus-Bovinus.
EMANUEL C. FLEISCHNER and K. F. MEYER, San Francisco.
21. The Remote Results of Tonsillectomy in the Young Child.
JOHN ZAHORSKY, St. Louis.
22. Etiology and Treatment of Enuresis.
JOSEPH I. GROVER, Boston.
23. Group Medicine and Pediatrics.
CHARLES E. HANSEL, South Bend, Ind.
24. The Diagnostic Study of Conditions in the Throat Producing Dyspnea. Report of Case.
ALBERT J. BELL, Cincinnati.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN THE LADIES' PARLOR, AUDITORIUM HOTEL

OFFICERS OF SECTION

- Chairman—ARTHUR D. HIRSCHFELDER, Minneapolis.
 Vice Chairman—WALTER A. BASTEDO, New York.
 Secretary—CARY EGGLESTON, New York.
 Executive Committee—J. F. ANDERSON, New Brunswick, N. J.;
 R. A. HATCHER, New York; ALBION W. HEWLETT, San Francisco.
 (Stenographer—Mr. J. M. CARNEY, Milwaukee)

Wednesday, June 12—9 a. m.

1. Chairman's Address: The Teaching of Pharmacology.
ARTHUR D. HIRSCHFELDER, Minneapolis.
- SYMPOSIUM ON ACTIVITIES BEARING ON THE WAR*
2. Pharmacology in the War.
TORALD SOLLMANN, Cleveland.
3. The Problem of Synthetic Drugs.
JULIUS STIEGLITZ, Chicago.
4. Industrial Hazards in War Time.
ALICE HAMILTON, Chicago.
5. The Chemical Control of Lice.
WILLIAM MOORE, St. Paul.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON DISEASES DUE TO DEFICIENCIES IN NUTRITION

6. The "Vitamin" Hypothesis and the Diseases Referable to Faulty Diet.
E. V. McCULLUM, Baltimore.
7. The Role of Antiscorbutics in Our Diet.
ALFRED F. HESS, New York.
8. Diet and Pellagra.
JOSEPH GOLDBERGER, G. A. WHEELER and EDGAR SYDENSTRICKER, Washington, D. C.
9. Diet of the U. S. Army Soldier.
JOHN R. MURLIN, Washington, D. C.
10. Civilian War Rations.
PAUL ROTH, BATTLE CREEK, MICH.

Thursday, June 13THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS**Friday, June 14—9 a. m.****Election of Officers**

11. On the Pharmacologic and Therapeutic Properties of Some Benzyl Esters.
DAVID I. MACHT, Baltimore.
12. The Significance of Sounds Heard During the Auditory Measurement of Blood Pressure.
CLYDE BROOKS, Pittsburgh, and ALBERT M. BLEILE, Columbus, Ohio.
13. The Chemical Groups in the Active Constituent of the Thyroid Which Are Responsible for Its Physiologic Activity.
E. C. KENDALL, Rochester, Minn.

14. Studies in a Case of Acute Bichlorid of Mercury Poisoning, Treated by the Newer Methods and Followed by Recovery.
JACOB ROSENBLOOM, Pittsburgh.
15. A Study of the Delayed Kidney Injury Induced by Bichlorid of Mercury.
WILLIAM DEB. MACNIDER, Chapel Hill, N. C.

Friday, June 14—2 p. m.

16. The Relationship of the Strength of the Effective Stimulus and the Irritability of the Respiratory Center.
ROY G. PEARCE, Cleveland.
17. The Therapeutic Indications for the Inhalation of Oxygen.
CHARLES F. HOOVER, Cleveland.
18. Clinical Studies of a Series of Cases Presenting the Phenomena of Cholesteremia.
JOHN R. WILLIAMS, Rochester, N. Y.
19. Studies on the Valuation of Digitalis.
E. L. NEWCOMB, Minneapolis.
20. Pharmacologic Studies on Arnica.
E. D. BROWN, A. M. SMITH and A. C. JOHNSON, Minneapolis.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN THE BALL ROOM, AUDITORIUM HOTEL

OFFICERS OF SECTION

- Chairman—LOUIS B. WILSON, Rochester, Minn.
 Vice Chairman—FRANCIS CARTER WOOD, New York.
 Secretary—ISABELLA C. HERB, Chicago.
 Executive Committee—A. J. CARLSON, Chicago; F. P. GAY, Berkeley, Calif.; JAMES EWING, New York.
 (Stenographer—Dr. ANNA C. LANDMAN, Chicago)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Necropsies in American Hospitals.
LOUIS B. WILSON, Rochester, Minn.
2. The Function of Fats in Immune Reactions.
CARL C. WARDEN, Ann Arbor, Mich.
3. A New Method of Making the Gonorrheal Complement Fixation Test.
R. B. H. GRADWOHL, St. Louis.
4. A Further Consideration of Complement Fixation in Tuberculosis.
V. H. MOON, Indianapolis.
5. Industrial Fatigue and the War.
FREDERIC S. LEE, New York.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON PHARMACOLOGY AND THERAPEUTICS

SYMPOSIUM ON DISEASES DUE TO DEFICIENCIES IN NUTRITION

6. The "Vitamin" Hypothesis and the Diseases Referable to Faulty Diet.
E. V. McCOLLUM, Baltimore.
7. The Role of Antiscorbutics in Our Diet.
ALFRED F. HESS, New York.
8. Diet and Pellagra.
JOSEPH GOLDBERGER, G. A. WHEELER and EDGAR SYDENSTRICKER, Washington, D. C.
9. Diet of the U. S. Army Soldier.
JOHN R. MURLIN, Washington, D. C.
10. Civilian War Rations.
PAUL ROTH, Battle Creek, Mich.

Thursday, June 13THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS**Friday, June 14—9 a. m.****Election of Officers**

11. Some Observations on the Pathology of the Urine in Arteriosclerotic Kidney.
B. G. R. WILLIAMS, Paris, Ill.
12. A Further Experimental Study on Surgical Shock.
FRANK C. MANN, Rochester, Minn.
13. The Resistance of the Streptococcus Viridans to Germicidal Agents.
HENRY ALBERT, Iowa City, Iowa.
14. The Relationship of Hodgkin's Disease to Lymphosarcoma.
MICHAEL G. WOHL, Omaha.

SECTION ON STOMATOLOGY

MEETS IN GREEN ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

Chairman—FREDERICK B. NOYES, Chicago.
Vice Chairman—HENRY S. DUNNING, New York.
Secretary—EUGENE S. TALBOT, Chicago.
Executive Committee—WILLIAM C. FISHER, New York; FREDERICK B. MOOREHEAD, Chicago; ARTHUR D. BLACK, Chicago.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Dental Lymphatic Vessels.
FREDERICK B. NOYES, Chicago.
2. An Analysis of Two Hundred Cases of Malignant Disease in the Oral Cavity Treated by Electrothermic Methods, or in Combination with Operative Surgery, Roentgen Rays or Radium.
WILLIAM L. CLARK, Philadelphia.
3. Treatment of Epithelioma of the Jaws and Cheeks, with Heat and Radium.
GORDON B. NEW, Rochester, Minn.
Discussion to be opened by ALBERT J. OCHSNER, Chicago.

Wednesday, June 12—2 p. m.

4. The Lipoids of Tumors of the Dental System.
KAETHE W. DEWEY, Chicago.
5. The Genesis of Nasmyth's Membrane, the Epithelial Débris in the Peridental Membrane and the Granular Layer of Tomes.
EUGENE S. TALBOT, Chicago.
6. Additional Roentgenographic Studies of Infections of the Maxillary Bones.
ARTHUR D. BLACK, Chicago.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

1. Microscopic Studies of Diseased Peridental Tissues (Lantern Demonstration).
EDWARD H. HATTON, Chicago.
2. Absorption of the Roots of Teeth (Lantern Demonstration).
HERBERT A. POTTS, Chicago.
3. Neuralgia Dentalis.
KURT H. THOMA, Boston.

Friday, June 14—2 p. m.

4. Longitudinal and Transverse. Sectional Views of the Accessory Sinuses of the Human Cranium, Cut Parallel and at Right Angles to the Nasal Septum (Lantern Demonstration).
GEORGE EDWARD FELL, Chicago.
5. A New Surgical Procedure for Operating in Cases of Suppurative Gingivitis, with Alveolar Involvement (Lantern Demonstration).
ARTHUR ZENTLER, New York.
6. Fractures and Dislocations of the Jaws.
CHALMERS J. LYONS, Ann Arbor, Mich.
7. Fractures of the Bones of the Face, with Complication.
VIDA LATHAM, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN BALL ROOM, BLACKSTONE HOTEL

OFFICERS OF SECTION

Chairman—C. EUGENE RIGGS, St. Paul.
Vice Chairman—CHARLES W. HITCHCOCK, Detroit.
Executive Committee—WILLIAM W. GRAVES, St. Louis; FRANCIS X. DERCUM, Philadelphia; BERNARD SACHS, New York.
(Stenographer—Miss ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, June 12—9 a. m.

- Chairman's Address: Some Further Considerations Concerning the Treatment of Neurosyphilis.
C. EUGENE RIGGS, St. Paul.

2. Conjugal Syphilis of the Nervous System.
ALFRED GORDON, Philadelphia.
3. The Interpretation of Negative Laboratory Findings in Syphilis, with Special Reference to Treatment.
ALBERT E. STERNE, Indianapolis.
4. Cerebral Edema Due to Pressure.
WILLIAM A. JONES, Minneapolis.
5. Motor Disturbances Resulting from Lesions of the Corpus Striatum: A Discussion of the Striospinal System and Its Relation to Motility.
J. RAMSAY HUNT, New York.
6. Carbon Monoxid Poisoning, with Report of a Case: Its Nervous and Mental Symptoms.
CHARLES W. HITCHCOCK, Detroit.

Wednesday, June 12—2 p. m.

7. Nervous and Mental Symptoms in Exophthalmic Goiter.
LEWELLYS F. BARKER, Baltimore.
8. Medical Treatment of Exophthalmic Goiter, Especially the Use of the Extract of Corpus Luteum.
HERMAN H. HOPPE, Cincinnati.
9. Pituitary Disturbance in Relation to the Psychoses of Adolescence.
BEVERLY R. TUCKER, Richmond, Va.
10. Pineal Gland Neoplasms, with Report of a Case Studied Clinically and Pathologically (Lantern Demonstration).
ANDREW L. SKOOG, Kansas City, Mo.
11. The Visceral Symptomatology of Nervous Diseases.
FRANCIS X. DERCUM, Philadelphia.
12. Prognosis in Traumatic Neurosis.
WALTER F. SCHALLER, San Francisco.

Thursday, June 13—9 a. m.

13. Neuropsychiatry and the Mobilization.
Representative of the Office of the Surgeon-General, U. S. Army.
14. Neurologic Reconstruction Work in the Army.
RICHARD H. HUTCHINGS, Washington, D. C.
15. War Neuroses as a Community Problem.
FRANKWOOD E. WILLIAMS, New York.
16. The Intensive Teaching of Neurology to Members of the Medical Reserve Corps.
THEODORE H. WEISENBERG, Philadelphia.
17. The Neuropsychiatric Personnel: The Character and Make-Up of the Members of the Neuropsychiatric Division of the Medical Reserve Corps.
WALTER TIMME, New York.
18. The Interpretation of Shell Shock.
B. SACHS, New York.

Thursday, June 13—2 p. m.

Election of Officers

19. The Results of Studying the Psychosis from the Standpoint of the Clinical and Pathologic Laboratory.
HENRY A. COTTON, Trenton, N. J.
20. The Personal Equation in Psychiatry.
LAWRENCE B. PILSBURY, Lincoln, Neb.
21. The Medical Practitioner and Mental Hygiene.
H. DOUGLAS SINGER, Kankakee, Ill.
22. Treatment of Toxic and Exhaustion Psychoses.
FRANK P. NORBURY, Jacksonville, Ill.
23. Dementia Praecox: Its Diagnosis, Prognosis and Treatment.
CHARLES R. BALL, St. Paul.
24. A Psychiatric Contribution to the Problem of Prison Reform.
HERMAN M. ADLER, Chicago.

Friday, June 14—9 a. m.

25. The Cerebellar Gait: A Pedographic Study.
I. LEON MEYERS, Chicago.
26. Some Suggestions for More Accurate Mental Therapy in Epilepsy.
L. PIERCE CLARK, New York.
27. Radiculitis: Its Diagnosis and Interpretation.
EDWARD E. MAYER, Pittsburgh.
28. Posterior Column Lesions Nonspecific.
OTTO G. FREYERMUTH, San Francisco.
29. Early Manifestations of Nervous and Mental Instability.
E. BOSWORTH MCCREADY, Pittsburgh.
30. Insanity versus Mental Disease: Duty of the General Practitioner in Psychiatric Diagnosis.
ELMER E. SOUTHARD, Boston.

SECTION ON DERMATOLOGY

MEETS IN ENGLISH ROOM, BLACKSTONE HOTEL

OFFICERS OF SECTION

Chairman—HENRY H. HAZEN, Washington, D. C.
 Vice Chairman—ERNEST DWIGHT CHIPMAN, San Francisco.
 Secretary—WALTER J. HEIMANN, New York.
 Executive Committee—HOWARD FOX, New York; HOWARD MORROW, San Francisco; HENRY R. VARNEY, Detroit.
 (Stenographer—Mrs. IRENE HILTON SNYDER, Chicago)

Wednesday, June 12—9 a. m.

1. Chairman's Address: The Duties of the Dermatologist.
HENRY H. HAZEN, Washington, D. C.

SYMPOSIUM ON SKIN TUBERCULOSIS

2. Cutaneous Tuberculosis: A Survey.
SIGMUND S. POLLITZER, New York.
3. Miliary Tuberculosis of the Skin, Lichen Scrofulosum and Papulonecrotic Tuberculosis.
FRED WISE, New York.
4. Sarcoids and Erythema Induratum of Bazin.
SAMUEL E. SWEITZER and HENRY E. MICHELSEN, Minneapolis.
5. Dermatoses Possibly Related to Tuberculosis.
MAX SCHEER, New York.
6. The Too Intensive Salvarsan Treatment of Syphilis.
MEYER L. HEIDINGSFELD, Cincinnati.

Wednesday, June 12—2 p. m.

SYMPOSIUM ON SYPHILIS IN ITS ECONOMIC ASPECTS

7. Experimental Therapy in Syphilis
WADE H. BROWN and LOUISE PEARCE, New York.
8. The Handling of the Venereal Disease Problem in the Army.
WILLIAM A. PUSEY, Chicago.
9. The Value of Early Diagnosis and Immediate Treatment in Preventing Neurosyphilis: Its Economic Aspects.
JOHN A. FORDYCE, New York.
10. Syphilis and Venereal Diseases as a Public Health Problem.
HARRY G. IRVINE, Minneapolis.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
 BUT WILL JOIN WITH THE SECTION ON
 MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

SYMPOSIUM ON BULLOUS DERMATOSES

11. The Etiology of Dermatitis Herpetiformis and Its Relation to Other Bullous Diseases, Especially Erythema Multiforme and Pemphigus.
MILTON B. HARTZELL, Philadelphia.
12. Pemphigus: A Clinical Study.
HERMANN GOLDENBERG and WALTER J. HEIMANN, New York.
13. The Significance of Certain Bullous Eruptions.
MARTIN F. ENGMAN and RICHARD S. WEISS, St. Louis.
14. Toxic and Bullous Drug Eruptions and the Bullous Erythemas.
DAVID LIEBERTHAL, Chicago.
15. Unusual Forms of Epitheliomas of the Skin.
LLOYD W. KETRON, Baltimore.

Friday, June 14—2 p. m.

16. The Role of the Vegetative Nervous System in Certain Diseases of the Skin.
EDWARD H. REEDE, Washington, D. C.
17. Further Observations Concerning Dermatoses Attributed to Focal Infections.
MICHAEL L. RAVITCH and SOL A. STEINBERG, Louisville, Ky.
18. Retention of Cysts of the Mucous Membrane.
RICHARD L. SUTTON, Kansas City, Mo., and FRANK E. SIMPSON, Chicago.
19. Adenoma Sebaceum: Report of Five Cases in One Family.
JESSE B. SHELMIER and JAMES H. BLACK, Dallas, Texas.
20. Dermatitis Lycopersicum Esculentum.
EVERETT S. LAIN, Oklahoma City, Okla.
21. A Case of Sporotrichosis.
JOSEPH S. EISENSTEADT, Chicago.
22. The Etiology of Lichen Planus.
ERNEST D. CHIPMAN, San Francisco.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN THE BANQUET HALL, AUDITORIUM HOTEL

OFFICERS OF SECTION

Chairman—W. S. RANKIN, Raleigh, N. C.
 Vice Chairman—HAVEN EMERSON, New York.
 Secretary—DON B. LOWE, Akron, Ohio.
 Executive Committee—HAMPSON JONES, Baltimore; WILLIAM C. RUCKER, Washington, D. C.; OTTO P. GEIER, Cincinnati.
 (Stenographer—Mr. FREDERICK H. GURTNER, Chicago)

Wednesday, June 12—9 a. m.

SYMPOSIUM ON RURAL SANITATION

1. Coordinate Responsibility of Nation, State and County in Rural Sanitation.
WATSON S. RANKIN, Raleigh, N. C.
2. State Responsibility and Aims in County Health Work.
JOHN N. HURTY, Indianapolis.
3. The Unit Development of County Health Work.
WALLER S. LEATHERS, University, Miss.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON ORTHOPEDIC SURGERY

4. Military and Industrial Orthopedic Surgery.
ALBERT H. FREIBERG, Cincinnati.
5. Orthopedic Surgery in Reclaiming the Crippled Soldier.
ELLIOTT G. BRACKETT, Washington, D. C.
6. The Conservation of Man Power in the Industries.
CHARLES G. FARNUM, Peoria, Ill.
7. Conserving Industrial Man Power.
CLARENCE D. SELBY, Toledo, Ohio.
8. Responsibility of the Industrial Board and the Influence of the Medical Examiner.
CHARLES S. ANDRUS, Chicago.
9. Reconstruction Work in Industrial and Military Life.
FRANCIS PATTERSON, Harrisburg, Pa.

Thursday, June 13, 9 a. m.

Election of Officers

SYMPOSIUM ON MUNICIPAL HEALTH ADMINISTRATION

10. Municipal Health Administration: General Considerations.
ERNEST C. LEVY, New York.
11. Health Administration in Cities of Less than Twenty Thousand Population.
DONALD B. ARMSTRONG, Framingham, Mass.
12. Health Administration in Cities with a Population Between 20,000 and 100,000.
JACOB FURSTMAN, La Crosse, Wis.
13. Health Administration in Cities with a Population Between 100,000 and 500,000.
JOHN H. LANDIS, Cincinnati.

Friday, June 14—9 a. m.

SYMPOSIUM ON MILITARY HYGIENE AND PREVENTIVE MEDICINE

14. Prevention of Pneumonia.
RUFUS I. COLE, New York.
15. Control of Meningitis.
SIMON FLEXNER, New York.
16. Measles.
EDWARD L. MUNSON, Washington, D. C.
17. Mumps.
MARTHA WOLLSTEIN, New York.
18. Venereal Disease Control in the Army.
WILLIAM F. SNOW, New York, and WILBUR A. SAWYER, Berkeley, Calif.

SECTION ON GENITO-URINARY DISEASES

MEETS IN SMOKING ROOM, AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—EDWARD L. KEYES, JR., New York.
 Vice Chairman—MARTIN KROTOSZYNER,* San Francisco.
 Secretary—WILLIAM F. BRAASCH, Rochester, Minn.
 Executive Committee—GRANVILLE MACGOWAN, Los Angeles; LOUIS E. SCHMIDT, Chicago; HUGH CABOT, Boston.
 (Stenographer—Mr. DOUGLAS A. BROWN, Cincinnati)

Wednesday, June 12—9 a. m.

1. Anatomic and Pathologic Study of the Posterior Urethra (Lantern Demonstration).
E. OTIS SMITH, Cincinnati.

* Deceased.

2. The Human Seminal Vesicles at Birth, with Observations on Their Fetal Development (Lantern Demonstration).
ERNEST M. WATSON, Buffalo.
Discussion on the foregoing two papers to be opened by
OSWALD S. LOWSLEY, New York.
3. Why Trained Urologists Should be Employed to Treat Disease Conditions of the Posterior Urethra and the Bladder Neck (Lantern Demonstration).
GRANVILLE MACGOWAN, Los Angeles.
Discussion to be opened by L. BUERGER, New York.
4. Venereal Diseases Incident to War Times.
WILLIAM W. TOWNSEND, Rutland, Vt.
5. Venereal Disease in the Thirty-Ninth Division.
LOYD THOMPSON, Hot Springs, Ark., and JACOB R. BOLASNY, Detroit.

Wednesday, June 12, 2 p. m.

5. "Trench Nephritis." REGINALD FITZ, Boston.
7. Renal Complications of Pregnancy from the Standpoint of the Neurologist (Lantern Demonstration).
HENRY G. BUGBEE, New York.
Discussion to be opened by HERMAN L. KRETSCHMER, Chicago, and JOHN R. CAULK, St. Louis.
8. Experimental Hydronephrosis, Restoration of Function and Anatomic Repair After Relief of Obstruction (Lantern Demonstration).
FRANK HINMAN, San Francisco.
Discussion to be opened by JAMES D. BARNEY, Boston.
9. Changes in the Kidney and Ureter Resulting from Renal Implantation of the Latter Into the Kidney.
ANDERS PETERSON, Rochester, Minn.
Discussion to be opened by H. D. FURNISS, New York.
10. Acquired Stricture of the Lower End of the Ureter (Lantern Demonstration). ROBERT H. HERBST, Chicago.
Discussion to be opened by V. D. LESPINASSE, Chicago.
11. Simple Ulcer of the Bladder.
ARTHUR B. CECIL, Los Angeles.
Discussion to be opened by WILLIAM F. BRAASCH, Rochester, Minn.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

1. New Instruments In Operative Cystoscopy.
BRANSFORD LEWIS, St. Louis.
2. Pathology and Improved Method of Operating For Obstructive Lesions of the Internal Vesical Sphincter (Lantern Demonstration).
LEO BUERGER, New York.
Discussion to be opened by OSWALD S. LOWSLEY, New York.
3. Surgery and Surgical Pathology of the Human Prostate Gland.
OSWALD S. LOWSLEY, New York.
Discussion to be opened by H. L. KRETSCHMER, Chicago.
4. The Silent Prostate. JAMES A. GARDNER, Buffalo.
Discussion to be opened by H. L. KRETSCHMER, Chicago.
5. Radical and Palliative Operative Procedure for Carcinoma of the Prostate (Lantern Demonstration).
JOHN T. GERAGHTY, Baltimore.
Discussion to be opened by GRANVILLE MACGOWAN, Los Angeles, and BENJAMIN S. BARRINGER, New York.
6. Some Cases of Retention of Urine Associated With Defects of the Sacrum; Probably Spina Bifida Occulta.
ARTHUR L. CHUTE, Boston.

Friday, June 14—2 p. m.

7. Treatment of Genital Tuberculosis in the Male (Lantern Demonstration). WILLIAM C. QUINBY, Boston.
Discussion to be opened by JOHN T. GERAGHTY, Baltimore, and JOHN H. CUNNINGHAM, JR., Boston.
8. Colon Bacillus Infection of the Urinary Tract.
J. DELLINGER BARNEY, Boston.
Discussion to be opened by H. L. KRETSCHMER, Chicago.

20. The Significance of Bacteriuria.
LOUIS E. SCHMIDT, Chicago.
Discussion to be opened by GRANVILLE MACGOWAN, Los Angeles.
21. The Diagnostic and Prognostic Value of Blood Urea in Urology. ALBERT E. GOLDSTEIN, Baltimore.
Discussion to be opened by R. B. H. GRADWOHL, St. Louis, and HENRY J. SCHERCK, St. Louis.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN ELIZABETHAN ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

- Chairman—ALBERT H. FREIBERG, Cincinnati.
Vice Chairman—FRED J. FASSETT, Seattle.
Secretary—HENRY B. THOMAS, Chicago.
Executive Committee—NATHANIEL ALLISON, St. Louis; RUSSELL A. HIBBS, New York; E. W. RYERSON, Chicago.
(Stenographer—Miss LULU GAY, Philadelphia)

Wednesday, June 12—9 a. m.

1. Efficient Support for Sacro-Iliac Relaxation.
W. BARNETT OWEN, Louisville.
Discussion to be opened by FRED J. GAENSLER, Milwaukee; CHARLES A. PARKER, Chicago, and JAMES W. SEVER, Boston.
2. Tendon Operation Technic. LEO MAYER, New York.
Discussion to be opened by ROBERT W. LOVETT, Boston; MARK H. ROGERS, Boston, and SAMUEL KLEINBERG, New York.
3. Loose Bodies in the Elbow Joint.
MELVIN S. HENDERSON, Rochester, Minn.
Discussion to be opened by WILLIS C. CAMPBELL, Memphis; E. W. RYERSON, Chicago, and RUSSELL A. HIBBS, New York.
4. Orthopedic Operations on the Hand (Lantern Demonstration). ARTHUR STEINDLER, Iowa City, Iowa.
Discussion to be opened by JOHN L. PORTER and ALLEN B. KANAVAL, Chicago.
5. Cerebral Spastic Paraplegia.
WALTER G. STERN and M. E. BLAHD, Cleveland.
Discussion to be opened by WILLIAM SHARPE, New York, and CHARLES H. FRAZIER, Philadelphia.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON PREVENTIVE MEDICINE
AND PUBLIC HEALTH

6. Chairman's Address: Military and Industrial Orthopedic Surgery. ALBERT H. FREIBERG, Cincinnati.
7. Orthopedic Surgery in Reclaiming the Crippled Soldier.
ELLIOTT G. BRACKETT, Washington, D. C.
Discussion to be opened by JOHN RIDLON, Chicago; JEFFERSON D. GRIFFITH, Kansas City, Mo.; JAMES T. RUGH, Philadelphia, and EMIL S. GEIST, Minneapolis.
8. The Conservation of Man Power in the Industries.
CHARLES G. FARNUM, Peoria, Ill.
9. Conserving Industrial Man Power.
CLARENCE D. SELBY, Toledo, Ohio.
10. Responsibility of the Industrial Board and the Influence of the Medical Examiner.
CHARLES S. ANDRUS, Chicago.
11. Reconstruction Work in Industrial and Military Life.
FRANCIS PATTERSON, Harrisburg, Pa.
Discussion to be opened by HARRY E. MOCK, Washington, D. C., and CHARLES G. FARNUM, Peoria, Ill.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

12. Disinfection of the Knee Joint.
ROBERT B. COFIELD, Cincinnati.
Discussion to be opened by F. J. COTTON, Boston, and WALTER G. STERN, Cleveland.

13. Final Report of Operations for Pott's Disease.
RUSSELL A. HIBBS, New York.
Discussion to be opened by CHARLES M. JACOBS, Chicago.
14. Problem of the Artificial Arm.
DAVID SILVER, Pittsburgh.
15. The Determining of Permanent Disability in Foot Injuries.
PAUL B. MAGNUSON, Washington, D. C.
Discussion to be opened by JOHN R. RIDLON, Chicago.
16. Orthopedic Practice in Army Cantonments.
17. Isolated Disease of the Scaphoid.
CHARLES R. McCLURE, Portland, Ore.
18. Illustrations and Demonstration of Bone-Holding Forceps (Lantern Demonstration).
ROBERT EMMETT FARR, Minneapolis.
Discussion to be opened by EMIL S. GEIST, and ARCHA E. WILCOX, Minneapolis.

Friday, June 14—2 p. m.

19. Infantile Paralysis.
ROBERT W. LOVETT, Boston.
Discussion to be opened by GEORGE DRAPER, New York.
20. A Further Report of an Operation for Stabilizing the Foot and Ankle in Poliomyelitis.
FRANK E. PECHAM, Providence, R. I.
21. Poliomyelitis: Better Results Now Demanded and Obtained by Continuous Orthopedic Treatment from the Onset of the Disease.
CHARLES OGILVY, New York.
Discussion to be opened by ROYAL WHITMAN, New York, HENRY W. FRAUENTHAL, New York, and WAL-LACE BLANCHARD, Chicago.
22. A Study of the Infantile Paralysis Problem.
CLARENCE W. EAST, Springfield, Ill.
Discussion to be opened by JOHN D. TRAWICK, Louisville, Ky., and ROBERT O. RITTER, Chicago.
23. Reconstruction of the Hip Joint in Paralytic Luxation.
ELLIS W. JONES, Los Angeles.
24. Plastic Surgery of the Hip and Its Approaches.
FREDERICK H. ALBEE, New York.
Discussion to be opened by ELLIOTT G. BRACKETT, Washington, D. C., and PHILIP H. KREUSCHER, Chicago.

**SECTION ON GASTRO-ENTEROLOGY
AND PROCTOLOGY**

MEETS IN LADIES' PARLOR, AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—ANTHONY BASSLER, New York.
 Vice Chairman—ALOIS B. GRAHAM, Indianapolis.
 Secretary—HORACE W. SOFER, St. Louis.
 Executive Committee—WILLIAM VAN V. HAYES, New York;
 CHARLES G. STOCKTON, Buffalo; DWIGHT H. MURRAY,
 Syracuse.
 (Stenographer—Mr. H. C. McDERMOTT, Milwaukee, Wis.)

Wednesday, June 12—9 a. m.

1. Chairman's Address.
ANTHONY BASSLER, New York.
2. A Simplified Method of Aspirating Gastric Contents in Hypersensitive Patients.
CHARLES D. AARON, Detroit.
Discussion to be opened by G. W. McCASKEY, Fort Wayne, Ind.; JOHN P. SAWYER, Cleveland, and JOSEPH MERZBACK, Brooklyn.
3. The Possibilities of Fractional Gastric Analysis.
MARTIN E. REHFUSS, Philadelphia.
Discussion to be opened by CHARLES P. HORNER, Chicago; ARTHUR L. HOLLAND, New York; ALLEN A. JONES, Buffalo, and A. F. R. ANDRESEN, Brooklyn.
4. The Importance of Detailed Examinations of Drafted Men With Regard to Their Ability to be Soldiers.
MAX EINHORN, New York.
Discussion to be opened by SEALE HARRIS, Birmingham, Ala.; CHARLES G. STOCKTON, Buffalo, and HARLOW BROOKS, New York.
5. A Résumé of Eight Years' Original Research Work in the Etiology and Treatment of Pruritus Ani.
DWIGHT HENDERSON MURRAY, Syracuse, N. Y.
Discussion to be opened by J. M. FRICK, Toledo; CHARLES H. CHETWOOD, New York; GRANVILLE S. HANES, Louisville, Ky., and W. H. KIGER, Los Angeles.

6. The Comparative Value of Crude Ipecac and Its Alkaloids in the Treatment of Amebiasis.
SIDNEY K. SIMON, New Orleans.
Discussion to be opened by GEORGE DOCK, St. Louis; FRANK C. YEOMANS, New York; J. C. JOHNSON, Atlanta, Ga., and T. C. MARTIN, Washington, D. C.

Wednesday, June 12—2 p. m.**Election of Officers**

7. Pericholecystitic Adhesions: Their Importance and Clinical Recognition.
FRANK SMITHIES, Chicago.
Discussion to be opened by JOHN B. DEEVER, Philadelphia; FRANKLIN W. WHITE, Boston; MAX EINHORN, New York, and DUDLEY ROBERTS, Brooklyn.
8. The Probable Endocrinic Origin of Peptic Ulcer (Lantern Demonstration).
G. A. FRIEDMAN, New York.
Discussion to be opened by FRANK C. MANN, Rochester, Minn.; JACOB KAUFMAN, New York, and WATSON W. ELDRIDGE, JR., New York.
9. The Influence of Diet on the Symptoms and Course of Pellagra.
GEORGE C. MIZELL, Atlanta, Ga.
Discussion to be opened by JULIUS FRIEDENWALD, Baltimore; SIDNEY K. SIMON, New Orleans; FRANK W. FOXWORTHY, Indianapolis, and JOSEPH E. KNIGHTON, Shreveport, La.
10. The Trichomonas Hominis, An Occasional Cause of Intestinal Disturbance.
EMMETT H. TERRELL, Richmond, Va.
Discussion to be opened by JOHN L. JELKS, Memphis, Tenn.; GRANVILLE S. HANES, Louisville, Ky.; GEORGE M. NILES, Atlanta, Ga., and MARVIN H. SMITH, Jacksonville, Fla.
11. The End-Results of Operations for Cancer of the Rectum, With Suggestions for Improving Them (Lantern Demonstration).
J. RAWSON PENNINGTON, Chicago.
Discussion to be opened by COLLIER F. MARTIN, Philadelphia; WILLIAM H. STAUFFER, St. Louis; JOHN M. FRANKENBERGER, Kansas City, Mo., and JAMES A. DUNCAN, Toledo, Ohio.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY,
BUT WILL JOIN WITH THE SECTION ON
MISCELLANEOUS TOPICS

Friday, June 14—2 p. m.

12. The Origin of Pericolic Adhesions With Special Reference to Elbow Deformity of the Colon.
JEROME M. LYNCH, New York.
Discussion to be opened by JABEZ N. JACKSON, Kansas City, Mo.; JAMES C. BLOODGOOD, Baltimore; CHARLES J. DRUECK, Chicago, and J. COLES BRICK, Philadelphia.
13. The Importance of Complete Roentgen Study of the Gastro-Intestinal Tract and Gallbladder in All Obscure Abdominal Cases (Lantern Demonstration).
GEORGE E. PFAHLER, Philadelphia.
Discussion to be opened by BERTRAM W. SIPPY, Chicago; WALTER HAMBURGER, Chicago; LEO H. NEUMAN, Albany, N. Y., and ARMISTEAD C. CRUMP, New York.
14. The Apparent Relation Between Intestinal Stasis and Some Cases of Epilepsy.
WILLIAM GERRY MORGAN, Washington, D. C.
Discussion to be opened by J. RAMSAY HUNT, New York; MARTIN E. REHFUSS, Philadelphia; CURRAN POPE, Louisville, Ky., and JAMES F. MUNSON, Sonyea, N. Y.
15. Reflex Symptoms from Anal, Rectal and Sigmoidal Lesions.
ALFRED J. ZOBEL, San Francisco.
Discussion to be opened by T. CHITTENDEN HILL, Boston; GEORGE B. EVANS, Dayton, O.; DONLY C. HAWLEY, Burlington, Vt., and LOUIS H. ADLER, Philadelphia.
16. The Subnormal Colon.
WILLIAM M. BEACH, Pittsburgh.
Discussion to be opened by RALPH W. JACKSON, Fall River, Mass.; ARTHUR HEBB, Baltimore; JAMES A. MACMILLAN, Detroit, and JAMES A. McVEIGH, Detroit.
17. Intestinal Obstruction: Continued Studies from Surgical Research Laboratory, New York University.
HARRY B. EISBERG and JOHN W. DRAPER, New York.

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Educational Value of the Commercial Exhibit

Following the trend of progress, purveyors of accessories to medical and surgical practice are watchful of the latest and most practical developments suggested to them by medical science. It is with a view of demonstrating to the visiting physician the developments of the past year, as represented in improved apparatus, instruments, pharmaceuticals, new books, etc., that over 100 firms will congregate this year in the Exhibit Hall, banquet floor, Hotel Sherman, under the auspices of the A. M. A.

The progressive physician cannot fail to appreciate the increasing scientific and educational importance of these exhibits. They bring before him just those innovations which, as a scientific and progressive member of the profession, he desires to know with a view to adapting them to his own work. After all, success in practice consists not only of a thorough and practical knowledge of medicine and surgery, but of having equipment that enables one to apply this knowledge to the best advantage. The war, naturally, has placed increased pressure upon the necessity for better methods of treatment, as well as for an increased output of medical and surgical material of both standard and improved types. The exhibit, therefore, will be of added interest to every physician, especially those who are already in or expect to enter the M. R. C.

The idea that these exhibits are for the sole fulfilment of a trade purpose may be dismissed, because nobody will be urged to buy. Everybody will be free to examine every article shown, ask questions, make suggestions and leisurely study the advantages to be derived from the combination of science and industry as applied to the manufacture of the implements of medical and surgical practice.

Every Fellow should visit the exhibits. Your presence and interest will encourage the exhibitor, and will reward him in part for the painstaking efforts and expense in preparing his display for your inspection. Do not hesitate to approach him and ask for information. Be free with your questions. Let him have your doubts or opinions.

A glance at the following descriptions of the features of some of the proposed exhibits will emphasize the fact, which has often been commented upon, that the physician here will have at his disposal the market place of the world for practically everything needed in his work. We wish it had been possible to present in this issue a brief advance description of the exhibit of every firm in the hall,

TO FIND THE LOCATION OF ANY EXHIBITOR ON THIS DIAGRAM, NOTE SPACE NUMBER IN ALPHABETICAL LIST

SCIENTIFIC EXHIBITS ON MEZZANINE FLOOR BELOW

EXHIBITS, REGISTRATION, POSTOFFICE

for the benefit of those who will attend the convention. Unfortunately, however, some exhibitors were not in position to say what they would feature in their exhibits; others undoubtedly intended to supply us with this information, but delayed or overlooked doing so in sufficient time for publication.

BOOKS

A glance at the names of the publishers who will be represented readily suggests an excellent and varied showing of medical books. By spending a little time with the representatives of these Publishing Houses the conventionist can conveniently acquire in a comparatively short time a general idea of what is new and worth-while in the way of medical literature.

—Chicago Medical Book Co., Spaces 46 and 48, will exhibit a line of the latest Medical and Surgical books of all publishers, American and English, special attention being paid to War Monographs.

—Besides the usual features of their list, F. A. Davis Co., Space 63, will exhibit several important and novel publications. Notable among these will be the new DaCosta Handbook of Medical Treatment, in two handsome volumes, Geiger's "Modern Operative Bone Surgery," and a unique book on Psychiatry by Chase entitled "*The Ungeared Mind*."

—Lea & Febiger, Space 15, will submit for inspection their new books and new editions, among which will be found the following: "Thyroid Glands," a new work by Crotti; also the new Urology, in two volumes, by Cabot; Simon's "Clinical Diagnosis," new 9th edition; Cushny's "Therapeutics," new 9th edition; Aaron on the Digestive Organs, new 2d edition; Pocket Formulary, new 11th edition, and others.

—L. S. Matthews & Co., Space 51, will exhibit not only a line of up-to-date medical books of all publishers, but original editions of Beaumont, Laennec, Frost, and a number of other interesting antique volumes. Mr. Matthews will be in charge.

—The C. V. Mosby Co., Space 14, will show their complete line of new and standard publications. Among the new books shown will be Crossen's Gynecology, Sluder's Headaches and Eye Disorders, McDill's Tropical Surgery, Morse's Emergencies of a General Practice, and Luys-Wolbarst on Cystoscopy, also The Journal of Laboratory and Clinical Medicine and The American Journal of Syphilis.

—Oxford University Press, American Branch, Space 93, will show new sets, among which are the Oxford Medical Classics, consisting of seven works selected from the two hundred monographs comprising the Oxford Medical Publications; also, the Oxford Loose Leaf Surgery set with its quarterly supplementary service. Its contributors are Burghard, Kanavel, Penhallow, and other American and English authorities.

—Rebman Co., Space 11, will have as their main attraction a demonstration of the manner in which colored pictures of Skin Lesions and other pathological conditions should be prepared for medical book work.

—W. B. Saunders Co., will exhibit at Spaces 43 and 44. Besides the new editions of many of their standard publications, they will show a new three-volume work on surgery, Warbasse's "Surgical Treatment;" Harvey Cushing's "Tumors of the Acoustic Nerve and the

Syndrome of the Cerebellopontile Angle," the current volume of "The Mayo Clinic," Ewing's "Neoplastic Diseases," Koll's "Diseases of the Male Urethra," and several new books of special appeal to physicians in the national service, such as Albee's "Orthopedic and Reconstructive Surgery," Mock's "Industrial Medicine and Surgery," Leo Mayer's "Orthopedic Treatment of Gunshot Wounds," the new edition of Keen's "Treatment of War Wounds," and Sir Berkeley Moynihan's "War Surgery."

—The Southworth Co., Publishers, Space 33, will feature the "American Atlas of Stereoroentgenology," "Pediatrics" by Dr. Dunn, "Tuberculin and Vaccine in Tubercular Affections" by Dr. Bonime, and "Rational Therapy" by Dr. Lerch. They will also have some works on Surgery.

—The Year Book Publishers, Space 61, will present the initial volumes of the Practical Medicine Series for 1918. The purpose of this series of Year Books is to furnish a permanent and comprehensive record, in systematic text-book form, of all that has been thought and done in recent Medicine and Surgery.

FOODS AND BEVERAGES

The producers of Foods and Beverages who will be represented in the Hall have contributed considerably toward the solution of the dietetic problems which years ago puzzled the average physician. Aside from seeing the newer preparations the visitor at these booths will gather information which can be used to advantage in every day practice.

—Borchardt's Malt Soup Extract, the first American Malt Soup Extract to replace the German product, will be of most interest at the exhibit of the Borchardt Malt Extract Co., Space 64. Borchardt's Malt Sugar will also be shown. The simplicity, convenience and facility with which Dri-Malt Soup Extract and Dri-Malt Soup Extract with Wheat Flour may be used to make Malt Soup will be demonstrated.

—The Horlick's Malted Milk Co., Space 100, direct attention to the display they propose to have at the forthcoming Exhibition, where two or more representatives will be in attendance to distribute samples and furnish information regarding Horlick's Malted Milk.

—Mead Johnson & Co., Spaces 18 and 19, will exhibit Mead's Dextri-Maltose, a non-proprietary malt sugar, a highly assimilable, easily tolerated form of carbohydrate for use in infant feeding. They will also exhibit Mead's Dry Malt Soup Stock, which can be used the same as liquid malt soup.

—The Kaffee Hag Corporation at their exhibit, Spaces 73 and 74, will show the evolution of coffee from the blossom to the caffeine-free article. Kaffee Hag will be brewed and served to all visitors without charge. All are invited to register at this booth, so that a full size package may be sent to their home addresses.

—The Mellin's Food Co., Spaces 37 and 38, extend a cordial invitation to all physicians to visit their booth and

become familiar with the composition of Mellin's Food and to discuss the practical application of a maltose and dextrin product as a modifier of milk, which is the subject of serious interest to all physicians.

PHARMACEUTIC AND BIOLOGIC PRODUCTS

A representation of well-known Pharmaceutical Houses with a multitude of standard products will greet the visitor this year. Much can be said of the commendable way in which these firms have striven to supply the profession with goods of quality and dependability. Their efforts in this direction we believe are universally appreciated, and merit and the cooperation of the profession.

—The Abbott Laboratories, Space 102, will exhibit the Dakin war antiseptics—Chlorazene, Chlorazene Surgical Cream, Chlorazene Surgical Powder, Dichloramine-T and Chlorosane (Dakin's single solvent for Dichloramine-T), also Parresine, the improved wax dressing for burns, Neutral Sodium Soap, Barbitol and Procaine. Moving pictures will demonstrate the technic and application of Parresine for burns, as well as the use of Parresine and Dichloramine-T.

—Armour & Co., Space 39, will exhibit a full line of organotherapeutic agents and preparation of the Endocrine Glands, showing surgical catgut ligatures and sutures of the highest quality manufactured from material selected at the source of supply.

—B. B. Culture Laboratory, Space 27, will exhibit its product, B. B. Culture, a liquid suspension of Bacillus Bulgaricus. The advantages of this preparation as a biological antiseptic in external and internal use will be explained.

—Fairchild Bros. & Foster, Space 1, will exhibit Gastron, the new entire gastric-gland extract, alcohol-free; Pepton (Bacteriological); Enemose, for colonic alimentation; Holadin, entire pancreas extract in enteric capsules; Bile Salts, the sodium glycocholate and taurocholate in their native association, separated from fresh ox gall; Fairchild Culture (and Tablet) of the Bacillus Bulgaricus, products of timely and seasonal interest.

—Farbwerke-Hoechst Co., table space, will display their American-made Salvarsan (Arsphenamine) and Novocain (Procaine). Their efforts will be directed to informing physicians regarding these and the administration of arsenical preparations. They will also display such apparatuses and chemicals as are usually employed in connection with the former products.

—Hynson, Westcott & Dunning, Space 12, will feature an interesting line of unique diagnostic apparatus and Standard Pharmaceutical Products. Their specialties are familiar to the Medical Profession, but many physicians have not seen or handled their colorimetric appliances, functional tests and suspensions for intramuscular injection. Attention will be directed to corpus luteum preparation, Lutein, bulgarian bacillus in tablet form only, and a standardized oxbile product in both tablet and capsule form. The Davis Vacuum Apparatus for automatic suprapubic drainage (new) will also be shown.

—The Maltbie Chemical Co., Space 76, will exhibit Calcreose, a new combination of calcium and creosote. The

Exhibit will consist of samples of the product as contained in the original packages and also of photographs depicting the process of manufacture of Calceose.

—H. K. Mulford Co., Space 57, aside from displaying a complete and descriptive line of Biological products, will specially feature Antipneumococcic Serum, Antimeningitis Serum, Typhoerobacterin and Hay Fever Pollen Extracts, which should be interesting to physicians, especially at the present time when so many of these products are being used at home and abroad.

—Radium Chemical Co., Space 9, will display their new flat surface, glazed face and gold back indestructible dermatological applicator and the tube applicators containing twenty-five and fifty milligrams of radium. A representative will demonstrate the theory and practice of radium application.

APPARATUS

Manufacturers of Apparatus, of all types for practically every purpose, will offer an exceptional opportunity for inspecting the newer devices that have come upon the market within the last year or so.

—W. D. Allison Co., Space 82, will exhibit their general line of physicians' furniture, including their representative styles of chairs, tables, cabinets and accessories.

—A. S. Aloe Co., Space 56, will feature Microscopes, Blood Pressure Apparatus, High Frequency Machines, Sarel-Dakin Outfits, Carbon Dioxide Apparatus, Surgical Equipment, and Surgical Instruments generally.

—The exhibit of Becton, Dickinson & Co., Spaces 24 and 25, will feature B-D Ever Thermometers, Genuine Luer Rings, Yale Quality Needles, Aseptolungerless Syringes and Bender's Ideal Bandages.

—Wilmot Castle Co., Space 84, in addition to showing their regular line of equipment, will feature the Castle Rochester Electric Sterilizer, which is now offered mounted on a white enameled stand. Where a table is not already provided for the sterilizer this mounting has proved exceptionally convenient. On the front of the stand there is a drop shelf handy for instruments either coming out or going into the sterilizer.

—The Central Scientific Co., Space 80, will exhibit a line of electrically heated devices for the Bacteriological and Clinical Laboratory, designed by Captain deKhotinsky. The line includes Constant Temperature Incubators, Paraffine Ovens, Sterilizers, Wassermann Baths, Staining and Fixing Apparatus, and Incubators for Inoculating Needles.

—The DeVilbiss Mfg. Co., Space 49, will interest visitors with their Theromer Wax-Sprayer as is used in the treatment of burns. They will demonstrate two different types of this instrument, and will also show a complete line of their well known nose and throat Atomers, Nebulizers and Powder Blowers for office and prescription use.

—The Foregger Co., Inc., Space 7, will feature two Inhalers which are now under construction. They will be of interest to members of the M. R. C., as well as practicing physicians.

—The Halverson Co., Space 50, will conduct an interesting display of their sterilizers, featuring the Surgical Halverson outfit. This sterilizer has three different degrees of heat, is equipped with two red signal lights, one indicating low heat, one medium heat and both extreme heat. It can be furnished with a warmer attachment for three spray bottles or for tumbler and spray bottles.

—The Heidbrink Co., Space 32, will feature the Heidbrink Automatic Anesthetizer (surgical unit), with new Automatic Obstetrical Attachment, also Improved Heating Devices for Anesthetizer and Tank Regulators.

—Scanlan-Morris Co., Spaces 71 and 72, will exhibit a number of new articles of their own design and construction. Among a number of other articles, one of their new type Balfour Operating Tables, a new infant incubator and bed designed by Dr. Julius H. Hess, and a new physician's office and examining table will be shown.

—C. M. Sorensen Co., Inc., Space 62, will show the different models of the Sorensen Tankless Air Compressors, with demonstrations of the use of the Yankaurer outfit, during Tonsil and Adenoid Operations, also the demonstration of the Dr. L. H. Coffin Combination Sinus Apparatus.

—C. J. Tagliabue Mfg. Co., Space 42, manufacturers of High Grade Scientific Measuring instruments, will exhibit among other instruments their new "Tag-Roesch" Sphygmo-manometer. Mr. P. L. Brand, their Associate Manager, will probably have charge of the exhibit, and will give every interested visitor a demonstration of this popular Blood Pressure apparatus.

—The Taylor Instrument Co. have engaged a private room on the floor (Spaces 122 and 123) with the remainder of the exhibits, where they will be prepared to meet physicians and show them the TYCOS diagnostic products, including the Self-Verifying Sphygmomanometer, special Urinalysis Glassware, etc. At this convention will be offered their new book entitled "Blood Pressure Simplified," which has been prepared by their Medical Department and is a condensed and convenient book of information on blood pressure work.

—Toledo Technical Appliance Co., Space 8, will have their Dr. McKesson present to demonstrate the McKesson Nitrous Oxid-Oxygen Apparatus. This machine was selected by the American Red Cross for service in France.

INSTRUMENTS

The Surgical Instrument industry has been more or less handicapped since the war began by reason of the shutting off of importations. However, this has had its good effect in the increased production and development of American-made instruments. Therefore, the conventionist may be assured of a wide variety of instruments of new and improved type.

—The Bard-Parker Co., Inc., Space 92B, will exhibit the Eynard line of catheters, drains, etc., in addition to a special line of Ureteral Catheters, both regular and X-Ray, and the Bard-Parker Knife, the features of which have been repeatedly announced to our readers through the advertising columns of THE

JOURNAL. An inspection of this exhibit will be well worth while.

—Frank S. Betz Co., Spaces 40 and 41, will, as usual, exhibit a line of instruments, sterilizing equipment, furniture, radiographic and electrotherapeutic apparatus and supplies, as well as a new line of diagnostic instruments introducing a number of novel features.

—V. Mueller & Co., Spaces 94 to 97, will have an extensive exhibit of instruments for every branch of surgery, including practically everything that is new in instruments and apparatus for their particular line of work; instruments for vascular surgery, electrically driven bone surgery apparatus, electrically driven anesthesia and suction apparatus. In addition there will be a complete collection of illuminating and exploring instruments for use in every cavity of the body.

—Sharp & Smith, Spaces 112 and 113, will exhibit their latest and most improved designs of instruments, including many new patterns, and will demonstrate many new items.

—The exhibit of George Tiemann & Co., Space 69B, will contain many new and interesting instruments of their high grade steel specialties, also the Flagg anesthetic apparatus, Forbes electric aspirator, Kemp Proctoclysis apparatus, Ideal electric ophthalmoscope, Tiemann aural suppression apparatus, Paraffin thermometer and Baumanometer.

—Truax, Spaces 125 to 129, will exhibit a line of surgical instruments, physicians' supplies with special reference to office equipment, also a line of sundries. In other words, everything that a physician uses, either for himself or for his patient, will be displayed.

ELECTRO-MEDICAL APPARATUS AND DIAGNOSTIC EQUIPMENT

Scientific developments in Electrotherapy have contributed new types of equipment, that may be seen at the booths of the firms listed under this classification. Advances have also been made in the construction and variety of Electrical Diagnostic equipment.

—The American Surgical Specialty Co., Space 32, will exhibit a line of Electrically Lighted Diagnostic and Operating Instruments covering the field of Oral and General Surgery. A special feature will be the demonstration of a surgically clean and perfectly cool diagnostic lamp and the adaptation of standard lamps and batteries to the every day necessities of the active practitioner.

—The Chicago Surgical Electrical Co., who will occupy Space 59-60, are going to display a new Laboratory Table, which they claim will solve many of the problems now confronting the physician, who wishes to do his own laboratory work. They promise a "working" exhibit, which should prove interesting to the visiting physician.

—Hanovia Chemical and Mfg. Co., Space 101, will show in operation some highly developed therapeutic apparatus for application of ultraviolet rays, among which will be featured the Kromayer and Heraeus Sun Lamps. It will be to the advantage of the visiting physician to see this exhibit and investigate the usefulness of this line of equipment as applied to his work.

—The Weder Mfg. Co., Space 91, will exhibit their De Lyte Surgeon. In con-

junction with this will be their Simplex Surgeon Emergency Surgical Case. The Wistamponade will also be an interesting demonstration.

X-RAY EQUIPMENT

Physicians who do x-ray work will be much interested in the new and improved types of equipment which will be offered for inspection. Demonstrations in the use of x-ray and high frequency apparatus to meet all requirements will be given. These exhibits will, undoubtedly, give evidence of the progressive spirit and willingness on the part of the manufacturers to cooperate with the medical profession in producing superior apparatus to meet the demands of scientific up-to-date roentgenology.

—The American Photo Chemical Co., Space 85, will demonstrate their Diagnostic X-Ray Plates. Every physician who does x-ray work will be interested in this exhibit and is urged to witness the demonstrations that will be given.

—Geo. W. Brady & Co. will exhibit in Spaces 16 and 17 some curious and interesting X-Ray plates, and dental films, also developing tanks, intensifying screens, dental film mounts, and various X-Ray specialties. Cellosilk, a new surgical dressing material, will also be shown in various forms.

—The Eastman Kodak Co., Space 98, will have an exhibit which will appeal to the modern roentgenologist. Dark-room equipment and aids to better photography will be exhibited.

—H. G. Fischer & Co., Spaces 4 and 5, will have an array of Electrical Treatment Equipment, Combination Equipment, featuring such valuable modalities as X-Ray, Diathermy, d'Arsonval, High Frequency, Cautery, Sinusoidal, Tankless Compressed Air, etc., X-Ray Tube Stands, X-Ray Tubes of all kinds.

—The Wm. Meyer Co., Space 65, will show as items of special interest, its Multoscope, an apparatus combining a stereoradiographic table, vertical, horizontal and angular radioscope and tube stand, with several exclusive features, also a new Klinoscope for vertical, horizontal and angular fluoroscopy.

—The Standard X-Ray Co., Spaces 34 and 66, will exhibit the three types of Standard Interrupterless Transformers together with all of their accessories. Their main attraction, however, will be the new Standard Radiographic, Stereoscopic and Combination Fluoroscopic Tilt Table. This will be its first presentation to the medical profession.

—The Victor Electric Corporation, Spaces 105 to 108, will have on exhibition a representative line of modern X-Ray, Electro-Medical and Physical Therapeutic Apparatus. Roentgenologists will find it of interest to look over this exhibit for new and useful suggestions.

—The Vulcan Coil Co., Space 90, will exhibit models of moderate priced Vulcan X-Ray and High Frequency Treatment Apparatus. Attention is directed to their sectional apparatus, so designed that the Roentgen-Ray Machine is used as a base and treatment units may be added as required.

—Wappler Electric Co., Spaces 118 to 121, inclusive, will exhibit the Bellevue Model X-Ray machine, Auto Transformer Control with 100 steps, Auto Transformer 20 step rheostats; a new

Coolidge Filament Transformer, High Frequency apparatus known as the Telatherm, Telatherm Jr., Army size, also Genito-Urinary instruments, such as the new Buerger Universal Urethroscope and the convertible double catheterizing and operating Cystoscope.

OPTICAL GOODS

The Government's large demand for lenses has had its effect upon the optical trade, but not so strongly as to deny the medical profession of this country to any appreciable extent the required quantities of optical goods. There will be a good representation of optical firms at the meeting, and it will, undoubtedly, be to the interest of the physician to visit these exhibits.

—Bausch & Lomb Optical Co., Space 23, will demonstrate their FFS-8 Microscope of high precision, APS Microscope, portable form, Model B Balopticon, for projection of lantern slides for educational work, Centrifuge, for field work, Ophthalmic Test Frame and Lenses designated in Vertex Refraction, Keratometer, Exophthalmometer, Interpupillary Distance Gauge and Corneal Microscope.

—The General Optical Co., Space 10, will show the Universal Ophthalmometer, Hare Automatic Self Registering Perimeter, as well as a full line of Geniothalmic Instruments for the busy oculist.

—F. A. Hardy & Co., Spaces 109 to 111, will exhibit a line of eye, ear, nose and throat surgical instruments and ophthalmological devices. Among the new surgical instruments to be shown are the new Mouth Gag devised by Dr. Frank Allport, Dr. O. J. Stein's Tonsil Snare, and some new Frontal Sinus instruments devised by Dr. Otto Freer.

—E. B. Meyrowitz, Inc., Space 88, will demonstrate a new test type cabinet arranged for operation from the examiner's station and affording four changes of test types. The mechanism is entirely mechanical, there being no electrical parts requiring renewal or attention. A Peters Campimeter, Herbert Ocular Muscle Test, a complete line of electrically lighted operating instruments and a new operating lamp will also be shown.

—Woolf Optical Instrument Co., of New York City, Space 36, will show a complete line of ophthalmic equipment including useful aids for the scientific refractionist. They will feature the Skioptometer with its new automatic cylinder attachment. Scientific demonstrations will be cheerfully given.

ORTHOPEDIC AND SUPPORTIVE APPLIANCES

The exhibits of these firms cover a wide range, all of importance to the specialist and the general practitioner.

—Ambulatory Pneumatic Splint Mfg. Co., Chicago, Space 92A, will demonstrate the Ambulatory Pneumatic Splint, also its adaptability for the reduction of a fracture of the hip, thigh, leg or ankle, and treatment of the patient, both in and out of bed, as soon as applied. The company will also show various styles of their Ambumatic Binders, and other surgical and corrective orthopedic appliances.

—Anatomik Footwear Co., Space 21, will demonstrate Anatomik shoes for the prevention and relief of foot troubles of men, women, and children.

—The Berger Brothers Co., Space 75, will demonstrate the Spencer Rejuveno Supports for enteroptosis, Sacro-Iliac Strain, Hernia, post-operative and maternity supports, Corsets for women, belts for men. The Spencer system of designing a special support for each separate patient so as to meet the patient's individual needs will be explained.

—Carnes Artificial Limb Co., Space 35, will give practical demonstrations of their artificial hands and arms. Each of the demonstrators has had one or both arms amputated, which have now been replaced by the Carnes Arm. The men will be glad to demonstrate how practical a mechanical arm may be.

—The Tetra Co., Space 9, will demonstrate the well known Tetra Bandage. The Tetra figure, showing the various purposes of the Bandage, will be represented on colored glass, lighted. Physicians attending the demonstration will receive samples.

—The Wright Wire Co., Space 89, will show the application of Excelsior Universal Wire Gauze Splint which has been responsible for a marked advance in the treatment of fractures both in America and Europe.

MISCELLANEOUS

Under this classification are the firms whose products or service cannot well be listed under any of the foregoing classifications.

—Realizing that it would be of interest to conventionists, the Albuquerque Chamber of Commerce has determined to use their space (124) as a bureau for the dissemination of information concerning health and climatic conditions in the Southwest. The booth will be in charge of a member of the Chamber of Commerce who is conversant with health and other conditions in New Mexico.

—At the exhibit of the Earnshaw Knitting Co., Space 29, their nurses will demonstrate on models the pinless and buttonless method of dressing the baby. Physicians who in their practices have occasion to consult with the mother as to the correct clothing for infant and child will be benefited by seeing this demonstration.

—The Flaxal Pure Linen Mesh and the Wallace French Linen Underwear will be exhibited by The Linen Underwear Co., Greenwich, N. Y. This underwear is of knitted cloth designed as proper, hygienic, and comfortable underwear.

—The National Pathological Laboratories, of Chicago, New York and St. Louis will occupy Space 47, where will be given practical demonstrations of modern and up-to-date laboratory work, such as the complement fixation tests for syphilis and gonorrhea. Modern bacteriology showing aerobic and anaerobic cultures and different organisms under the microscopes, also tissue diagnosis showing sectioning and microscopical exhibits.

—The exhibit of Weissfeld Bros., Space 67, will show up-to-date and improved hospital clothing. Useful souvenirs will be given to all who call to inspect this exhibit.

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THE ATROPIN TEST IN THE DIAGNOSIS OF TYPHOID INFECTIONS

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With all appreciation of the minimizing effect of typhoid-paratyphoid prophylaxis on typhoid infections in army camps, it is still reasonable to anticipate the occurrence of occasional camp cases. The larger number of such cases will probably arise from among unvaccinated civilian workmen and from the improperly vaccinated soldier. In typhoid infections appearing in persons who have received typhoid prophylaxis completely or incompletely, the disease will usually be characterized by such mildness as not to present the outstanding features of typhoid that so readily permit a diagnosis among the unvaccinated. Facing this difficulty in the recognition of typhoid existence, those medical officers responsible for the prevention of infectious diseases in army camps, and those on whom will devolve the care and treatment of suspected cases, are evaluating all recent developments purporting to be of additional diagnostic aid. At a similar period in the making of the British Army there came into use the atropin test as a means for the detection of typhoid infections. The British Medical Research Committee has sanctioned this test's reliability to the extent of issuing a monograph on the subject, prepared by Marris.¹

In this hospital up to the present time no cases of typhoid have occurred; but in order to be conversant with the merits and technic of the atropin test against the contingency of typhoid outbreak, 228 cases of diverse diseases other than typhoid and paratyphoid have been tested in the manner described by Marris. The results form the basis of this report.

THE RATIONALE AND TECHNIC OF THE ATROPIN TEST

According to the sponsors of this test, the normal individual or the patient ill of diseases other than typhoid infections responds to the administration of atropin with a noteworthy increase in heart rate. In typhoid patients, however, this acceleration either does not occur or occurs to a lessened degree. This difference is attributed to an antagonism of action between the alkaloid and the toxins produced by the organisms

of the typhoid group. This relative lack of response to atropin is the basis of the test, the application of which is as now noted:

The patient lies horizontally and is instructed to remain completely at rest throughout this test, which is not employed until at least one hour has elapsed from the last meal. The pulse rate is counted minute by minute until it is found to be steady; ten minutes of such counting usually suffices. Atropin sulphate is then injected hypodermically in the dose of $\frac{1}{32}$ grain, preferably over the triceps region to insure rapid absorption. An interval of twenty-five minutes is allowed to elapse, and the pulse rate is again counted, minute by minute, until it is clear that any rise which may follow the injection has passed off; fifteen or twenty minutes may be necessary for this purpose when the pulse rate is raised at the first count.

If, for example, a near constant pulse rate of 70 was exhibited at the preliminary counting, and a maximum of 96 was exhibited as the pulse rate subsequent to atropin injection, the inference after this acceleration of twenty-six beats per minute would, under the provisions of the test, be that the condition was not typhoid. If, however, the rate after atropin had attained only to 78 beats per minute as the maximum, the inference is tenable that the existing condition is one of the typhoid group. The test does not discriminate between typhoid and paratyphoids A and B. In Marris' report, the line of demarcation for the interpretation as existing typhoid or nontyphoid is placed at 15; that is, if the acceleration following atropin is less than fifteen beats per minute, typhoid is indicated; if the increase is fifteen or more per minute, typhoid is not indicated. A "positive" atropin reaction is one giving rise to little or no increased heart rate after atropin administration (fourteen or less per minute). A "negative" reaction is one giving rise to an increase of fifteen or greater.

If the patient is admitted during the first fortnight of his illness, the test is applied as soon as possible after admission and is charted with the temperature. When a positive reaction (little or no response to atropin) is obtained, the diagnosis of infection with a member of the enteric group of organisms may be made. In the case of a negative reaction, the test should be repeated after two or three days, and if again negative, it is again repeated. Three negative reactions falling within the first fortnight of the illness exclude the presence of typhoid with a considerable degree of certainty; there are rare exceptions, and in these a continuation of the test is usually suggested by the symptoms and remaining clinical signs.

In the normal individual to whom has been administered $\frac{1}{30}$ or $\frac{1}{32}$ grain of atropin, some or all of the following manifestations may be expected to occur: A slight and transient decrease of the pulse rate (two or four beats per minute) occurs early with a return to normal. This is followed by a rapid increase in heart

1. Marris, F. A.: Use of Atropin as Aid to Diagnosis of Typhoid and Paratyphoid A and B Infections, Brit. Med. Jour., 1916, 2, 717.

rate of from twenty to thirty-five beats. The height of this acceleration is reached in about one-half hour, slowly returning to normal in one or two hours. The classical characteristics of atropin action, lessened secretions and dilated pupils, seldom are observable during the testing period, but at times may be noted

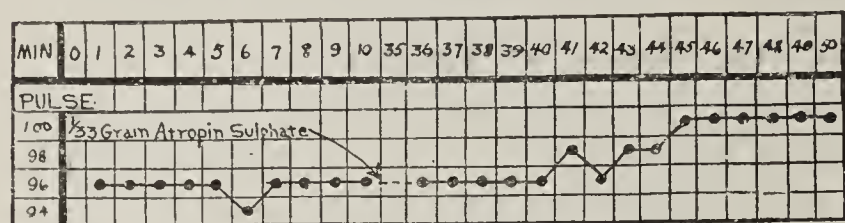


Chart 1.—Typical positive atropin test in measles patient presenting clinical manifestation similar to those of the patient whose reaction is shown in Chart 2. The broken line after the administration of the atropin represents an interval of twenty-five minutes.

within an hour or more subsequent to the testing.

Marris' report records 111 cases of typhoid infections in which a diagnosis was definitely established through the isolation of the organism from blood cultures. The atropin test was accurate in 98 per cent. In these cases the pulse acceleration averaged only 6.6 beats per minute. In another group of patients observed by the same writer, of 247 diagnosed by the less definite agglutination method as having typhoid, 222 reacted accurately to the test. Agglutination as a diagnostic procedure has become of less value because of frequent agglutination concomitant to typhoid prophylaxis.

At the Royal Victoria Hospital in Montreal, Mason² made use of the atropin test as a diagnostic aid during an epidemic of typhoid infections. The technic employed was essentially that described by Marris. In all, 265 tests were made in sixty-three cases of typhoid or paratyphoid. Fifty-six of the number were cases of typhoid fever established by positive blood cultures or by Widal reactions in dilution higher than one in forty. Five of the cases were paratyphoid B, diagnosed bacteriologically, while the remaining two cases were clinically typhoid but the diagnosis was unconfirmed by any bacteriologic or serologic findings. Of the total number (sixty-three patients), fifty-seven were males and six were females; no sex variations were observed. Eleven of the sixty-three failed to give a positive reaction to the atropin test. This departure from the anticipated positive reaction is attributed by Mason to be due in part to the fact that in certain cases only one test was carried out, in part to the restlessness of some of the patients under test conditions. The reaction became positive about the tenth day and disappeared about the thirty-first day of the infection. As a check for these known

typhoid and paratyphoid cases, the test was applied to forty-six patients suffering from various clinical conditions other than the typhoids. Forty-three yielded the anticipated negative reaction, averaging in cardiac acceleration 21.5 beats per minute. Three gave positive reactions without any probability of enteric infection. Mason concludes that in the diagnosis of fevers of the typhoid group, the atropin test is of distinct value and in many cases affords diagnostic data prior to a positive Widal reaction.

TECHNICAL DATA FROM THE PRESENT INVESTIGATION

Early in our series of tests it was obvious that our results would be at variance to the foregoing, for which reason it was deemed desirable that our technic should conform in as many respects as possible to the previous work. This necessitated the discarding from our series the results from fifty-eight cases in which technical innovations had been introduced. In the remaining 170 cases, 198 tests have been carried out

with rigid adherence to the Marris technic. The patients on whom these tests have been made were all men, predominantly of the third decade. All had received typhoid-paratyphoid prophylaxis. These men were patients suffering from the diverse conditions given in the accompanying table. In one group of 170 cases, 108 (63.6 per cent.) were sensitive to atropin (atropin negative test), while sixty-two (36.4 per cent.) were nonsensitive to atropin, giving the reaction described as typical for typhoid infections. Neither the positive nor the negative atropin tests were sharply associated with any particular conditions.

It may be observed in the table that in the various listed processes, the positive and the negative are almost uniformly distributed in the ratios noted above. Charts 1 and 2 are records of the occurrence of distinct positive and negative atropin tests, respec-

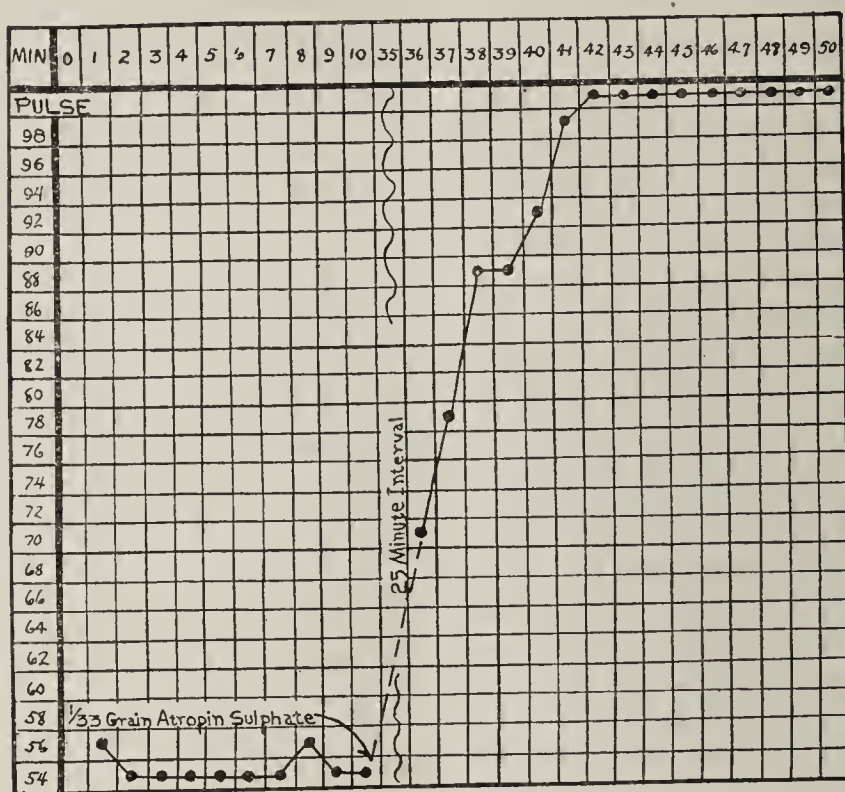


Chart 2.—Typical negative atropin test in measles patient presenting clinical manifestation similar to those of the patient in Chart 1.

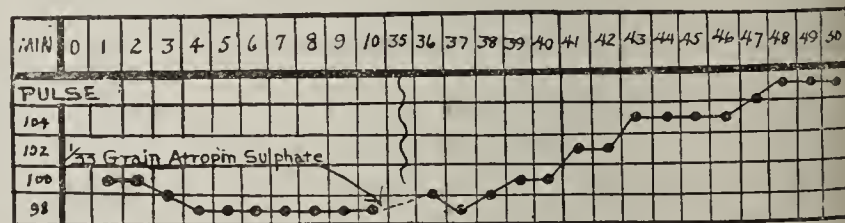


Chart 3.—Typical positive atropin reaction in pneumonia patient whose clinical condition was the same as that of the patient in Chart 4. Broken line, interval of twenty-five minutes.

tively, obtained in two measles cases similar in clinical characteristics. Charts 3 and 4 likewise were obtained, respectively, in two cases of lobar pneumonia of approximately the same degree of severity and at about the same stage of the process.

2. Mason, E. H.: The Value of the Atropin Test in the Diagnosis of Typhoid Fever, Arch. Int. Med., January, 1918, p. 1.

On two successive days the atropin test was made on twenty-seven patients thus distributed: influenza, 11; pleurisy, 3; pneumonia (lobar), 2; pneumonia (bronchial), 1; bronchitis, acute, 4; tonsillitis, 5; ethmoiditis, 1. It was observed that of the total number, fifteen patients were atropin sensitive on both days, four were atropin nonsensitive on both days, and eight were within the limits of atropin positive on one

preted as typhoid infections were there evidenced any clinical or laboratory findings that might remotely be attributed to typhoid or paratyphoid fever.

COMMENT

The conception of a specificity of antagonism of action between atropin and typhotoxins is in no way borne out by the results of our investigation. The occurrence of 36.4 per cent. positive atropin reactions in a series of 170 nontyphoid cases removes from this test all but the most casual significance as a diagnostic procedure. The factors that determine the degree of response of the heart to atropin action are fundamentally the outgrowth of variations in the equilibration of the vegetative nervous system. This lack of sensitiveness to atropin is not peculiar to typhoid infections, but is detectable in many diseases and, in fact, may frequently be elicited in normal individuals as a mark of vegetative nervous system instability.

Not only in other conditions than typhoid is this insensitiveness to atropin encountered; but also in typhoid infections marked cardiac acceleration may be observed, according to Matsuo and Murakami,³ who say: "In our forty-six cases of typhoid fever (including seven cases of paratyphoid B), atropin was quite active, accelerating the rate of pulse, especially in cases of bradycardia. As all our cases were serologically and bacteriologically controlled, the diagnosis was undoubtedly correct." It is noteworthy that such typhoid patients as exhibited a bradycardia exhibited cardiac acceleration after atropin, while the patients presenting a relative tachycardia were for the most part unaffected by atropin. In the series cited by Matsuo and Murakami, all the fatalities occurred among the number giving positive atropin reactions. This observation is in keeping with the well established fact that a tachycardia in typhoid bespeaks a pessimistic

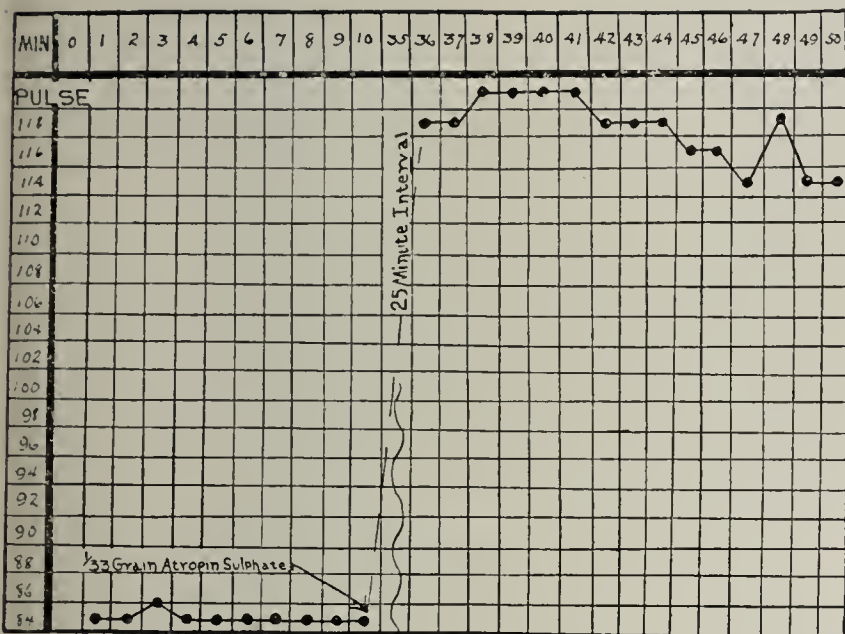


Chart 4.—Typical negative atropin reaction in pneumonia patient whose clinical condition was the same as that of the patient in Chart 3.

day and atropin negative the other day. The last named group of eight may not be cited as evidence of shifting from an atropin sensitive to an atropin nonsensitive state, for the pulse rate changes were such as to fall in one day's test just above or just below the

RESULTS OF TESTS

Diagnosis	Total Number of Cases	Number Sensitive to Atropin, Negative	Number Nonsensitive to Atropin, Positive
Measles.....	39	17	22
Scarlet fever.....	18	6	12
Influenza.....	23	19	4
Tonsillitis.....	8	5	3
Laryngitis.....	1	1	0
Pharyngitis.....	2	2	0
Bronehitis.....	6	5	1
Pneumonia.....	22	13	9
Pleurisy.....	3	2	1
Bronehopneumonia.....	11	9	2
Mumps.....	1	1	0
Mumps-measles.....	2	2	0
Meningitis carrier.....	9	6	3
Diphtheria carrier.....	5	4	1
Diphtheria.....	1	1	0
Ethmoiditis.....	2	2	0
Neuritis.....	1	1	0
Adentis.....	3	2	1
Gastrie ulcer.....	1	0	1
Intestinal stasis.....	1	0	1
Hyperchlorhydria.....	2	1	1
Arthritis, chronic.....	2	2	0
Tuberculosis, pulmonary.....	1	1	0
Jaundice, eatarthal.....	2	2	0
Tapeworm.....	1	1	0
Heart block.....	1	1	0
Hyperthyroidism.....	1	1	0
Secondary anemia.....	1	1	0
Total.....	170	108	62

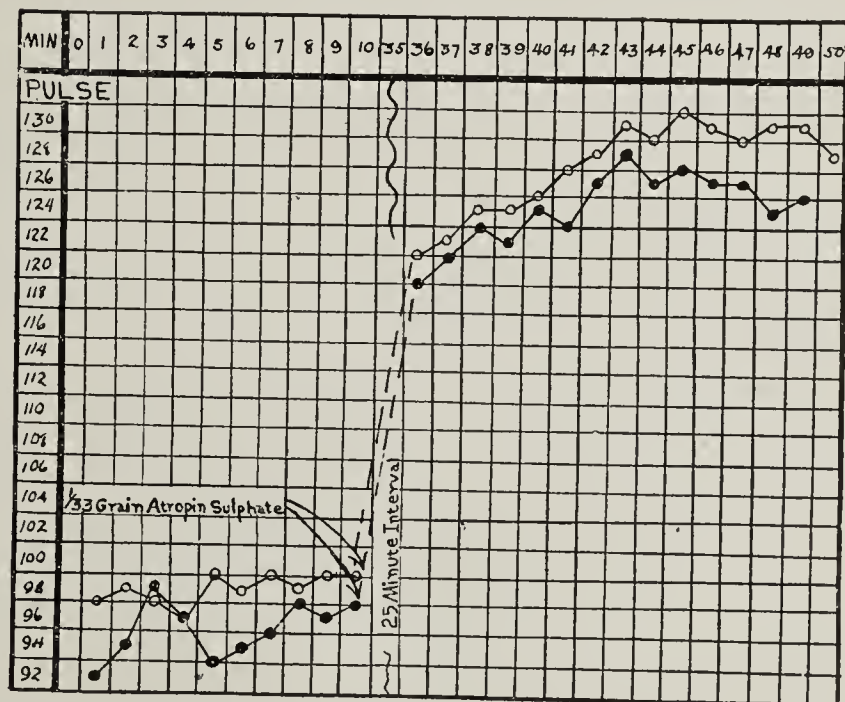


Chart 5.—Conformity of results of two negative atropin reactions made on successive days in a patient convalescing from lobar pneumonia.

prognosis. The atropin reaction for this reason may attain to definite prognostic value.

SUMMARY

A series of 170 nontyphoid patients has been tested with the atropin reaction in the manner described as

3. Matsuo, Iwao, and Murakami, Junichi: Pharmacodynamic Examination of the Vegetative Nervous System in Typhoid Fever, Arch. Int. Med., March, 1918, p. 399.

arbitrarily chosen line of demarcation, and on the following day to fall on the opposite side of the line without there having occurred an actual pulse rate variation of more than six or eight beats. Apart from these borderline cases, the results obtained on the two successive days were closely alike, as shown in the plotted results in one case (Chart 5).

In none of the sixty-two cases giving rise to results that under the provisions of the test would be inter-

reliable for establishing the presence or absence of typhoid or paratyphoid infections. Thirty-six per cent. of the number examined yielded results characteristic of typhoid. Those cases giving reactions typical of typhoid without any evidence of typhoid existence were distributed over thirteen diseases. It is concluded from so high a percentage of discrepancies that the atropin reaction is without especial value in the detection of typhoid infection.

NURSES AND THE WAR*

PHILIP KING BROWN, M.D.

SAN FRANCISCO

Our advent into the war has shown us unprepared in trained woman power as well as man power, and we are confronted with a need of 30,000 more nurses this year in addition to the 7,000 already enrolled. This means probably one half of the available registered nurses in the United States, and it is safe to say that if the war lasts two years more both the Army and the civil population will suffer immeasurably from the shortage. The fact that France long ago took women for nurses' work who had never had a particle of training marks what must happen to us if some more far reaching plan to meet the demand be not put into operation at once. It is well enough to say that the third year nurses can be taken from the training schools, or that married nurses might be drafted and sent to cantonment hospitals, thus releasing a few thousand graduates for more active duty here or abroad. That is a makeshift and not a solution to the problem.

The Army, on which falls the burden of war, has had to change suddenly all its standards and meet the emergency by making several thousand officers out of a picked number of civilians after an intensive training of three months, supplemented with field work and practice service in cantonments during periods of from three to nine months more. Does any one doubt that these men will make valuable officers, or question the expediency of the new order of education and training? Is it not equally plain that the shortage in nurses should be met in somewhat the same way? It would certainly be better to have an adequate supply of fairly trained nurses than to have to fall back on those who are willing to serve, but who have had no training.

In connection with the subject of the intensive training of nurses, it seems pertinent to raise at this time a few questions about the whole nursing situation. As a profession, nursing has increased with rapid strides in popularity. Better hospitals and more of them have increased the number of permanent positions to be filled, as well as the demand for more pupil nurses. The growth in number of apartment houses drives the ill to hospitals for care, and the expense of good care at home is making the hospital better known and a more and more necessary institution. New nurses from first class schools are not now graduated fast enough to meet easily the growing demand, and second and third rate schools have to be tolerated in many communities. Then, too, in addition to the work for permanent nurses in hospitals, marriage removes them rapidly from the profession. There is also a growing demand for nurses in physicians' offices, in the emergency hospitals, and welfare depart-

ments of large factories and stores, and in public health fields, where they may have the problems of tuberculosis, sanitation, contagious diseases, child labor and the disorders of childhood to deal with, so that a good many of the best nurses never actually practice their profession as private nurses. It is unfortunately too true that there is today no adequate training in many of the fields of special work, and most of the best nurses get their training for the field they finally enter, after they graduate from the training schools. Scarcely a school in the United States in its course for nurses gives training in the understanding and care of mental or tuberculous patients, in public health, or in the consideration of the social, economic and community problems of disease, as they can be studied in a clinic where adequate social service work is carried on, and only a few have anything like adequate service in contagious diseases. Indeed, the training generally in any hospitals that have not large wards is apt to be utterly inadequate, since most patients occupying private rooms have their private nurses, who are a decided menace to the educational opportunities of the pupil nurse.

PRESENT SYSTEM OF TRAINING

A review¹ of the practical educational opportunities offered to nurses in California hospitals (Table 1) will illustrate the decidedly limited scope of the present

TABLE 1.—EDUCATIONAL OPPORTUNITIES FOR NURSES IN CALIFORNIA HOSPITALS

Out of 72 schools of nursing, 69 of which are accredited, practical nursing of medical and surgical cases is taught in all.	
Obstetrics in	67,
Nursing of children's diseases in	63,
Nursing of contagious diseases in	14, 6 of them county hospitals
	2 prescribe the course but have no contagious service
	1 offers it as an elective, but has no contagious service
Nursing of tuberculous patients in	13, 8 of which are county hospitals
Nursing of mental cases in	4, in one of which it is an elective
Clinic work is prescribed in	27, 6 of them county hospitals
	4 with no clinic service
	2 with less than 50 beds
	1 elective but no clinic service
	1 elective
Social service in	1
Massage and physical exercise in	0
Hydrotherapy in	3
Practical dietetics in	0
Practical public health in	1 clective
Electives in	9 including 3 months' service in hospital administration, as office assistant, in operating room, children's and contagious diseases, private room service and the public health and social service already enumerated
Occupational diseases in	0
Work treatment (ergotherapy) in	0

training, as compared to the whole field of nursing, which must in some way be covered. Reference to the absence of opportunity of studying occupational disease is made because there is no other way a public health nurse may become familiar with conditions we are trying to eliminate than by observing these end-results as they are uncovered in clinics and hospitals.

It is quite evident from this review that there is a grave defect in scope of training in the vast majority of schools in California, and as a matter of fact it is as bad in almost every school in the country. It is sad, indeed, to think that public health and preventive medicine have called forth so meager an opportunity for nurses in the educational world. One seventh of the people in our country die of tuberculosis, and yet special training in the care of these poor unfortunates is denied 90 per cent. of the graduate nurses. The care

* Read in the Public Health Section of the California Association of Social Agencies, Santa Barbara, April 16, 1918.

1. The data are gathered from the Survey of Schools of Nursing, a report published in 1917 by the California State Board of Health.

given in mental cases is a still sadder picture. Any one strong enough and as a general rule indifferent enough to the subtle conditions of the human mind seems good enough for the insane, who of all patients need the care and consideration of the finest type of trained and intelligent nurses. Without going further into the entire absence of any training in practical psychology, which is absolutely necessary in a nurse handling nervous and mental patients, and of infinite value to every nurse, it is sufficient to add the statement, made earlier, that most nurses get the training in the specialties, which so many of the best ones enter through force of circumstances or finally follow through preference, after they leave the hospital training schools and too often outside its walls. In a large proportion of these specialties the original training as a nurse, valuable as it is, counts for far less than would justify the three years spent in getting it, plus the uncertain methods of supplementing their fields of vision and operation through the chances opened to them in private work. Indeed, the best workers known to the writer in the fields of public health, mental hygiene, tuberculosis problems and social service are not nurses.

It is particularly noticeable to the close observer in most hospitals that nurses prefer surgical to medical work, and for the reason largely that the battle is short and sharp, full of excitement and interest for a few days, and then the rewards of victory, or the satisfaction of the fight well made and a defeat softened by the consciousness of the greater loss to the family and the need of administering comfort and help to them. There are, of course, plenty of nurses who prefer the surgery because it is easier and the strain apt to be shorter. It offers more variety of a kind easily comprehended because of its mechanical aspect. There is also an undue importance, financial and otherwise, attached to surgery. It is true also that the nurse actually understands the surgical process better than she does the medical, and her interest is correspondingly greater. She administers her drugs largely by hypodermic for definite results. Not so with the medical nurse, whose record of a case shows the administration of a teaspoonful of Prescription 91264 every fourth hour, and a tablet of Prescription 26182 after meals. What she gives and why, she does not know in most cases, and is not supposed to ask.

The first objection, then, to the present system is that it is not well balanced, or is wholly inadequate in many departments in most hospitals, is too apt to be largely surgical, and fails to cover a number of important medical conditions in which special training is necessary.

The second objection is that training schools undertake too much academic work which is out of their line and for the teaching of which they are wholly unfitted. Chemistry, bacteriology, anatomy and physiology, taught from the textbooks, merely represent time wasted; and the danger of the little badly oriented knowledge so gained is extreme. Are any of them really necessary? Frankly no, unless it be anatomy, although young women wishing to specialize in surgery or as laboratory technicians must have a thorough round work of laboratory training in all four. Some pathology, not taught in any training school that I know, would be an invaluable aid to nurses in understanding disease, if they could have a preliminary course in gross anatomy. The chief point of it all is

that except in the necropsy room nurses cannot be taught properly to appreciate disease that they are so vitally interested in combating, and the sight of a nurse at a necropsy is a thing I have rarely seen. Why not figure on an entrance requirement for hospital training schools of all these subjects? Let them be given in a three month period in a medical school, if it is thought best to make them requirements, or let them be left out altogether.

I have considered thus far the subjects that are not taught, though they ought to be, in a well balanced school and the subjects that are badly taught and perhaps ought not to be attempted at all. What can be said of the rest of a nurse's education? First of all, it is an education gained largely by practical experience, during which far too prolonged period the gaps are enormous and are filled in by requiring of nurses much in the way of service that could better be done by maids. A girl is poor material if she has not an idea of cleanliness and order when she enters a training school, and she ought to know how to take care of and pick up a room; indeed, she should know something of the preparation of food before she enters. Given such an equipment, and there remains for the training school to build on this foundation an understanding of how to handle the sick and suffering, administer and apply remedies, including dressings, observe surgical cleanliness, tend to the turning and shifting of the patient, handle the functions of excretions skilfully and tactfully, bathe the patient, make and chart the observations called for, and follow the physician's instructions. Six months of this sort of work critically supervised should make most young women thoroughly fitted to continue it unaided. Three months more might be spent in the operating room, where a thorough training in surgical technic could be obtained, and finally, three months as an elective in that particular line of nursing that the young woman wishes to follow after graduation. These three month periods, for those who do not care to elect Army work, might be continued in the study of elective specialties beyond the one required, enabling the nurse to qualify for several kinds of work so that her field might have more variety. Among these specialties are obstetrics, children's diseases, contagious diseases, tuberculosis, mental disease, medical social service, public health, and in the present emergency, Army hospital work. It is plain that the nurses who go into Army work must have a considerable amount of special training even after three years of hospital, and often many more in private work, because the whole range of Army work is so standardized and at times necessarily is carried on at immeasurable disadvantage. If all pupil nurses of one and a half or two years' training could enter at once cantonment hospitals for three months' training, it would release several thousand nurses for overseas work, and the Army hospitals could be turning out a stream of young women trained for their work. At any time she should be able to reenter any good school for a three month period and get exactly what she has found she most needs, or what would be most useful to her.

It is not my intention to dwell in detail on the many abuses of the present system, but it seems only fair to mention here the lack of reciprocity and coordination among training schools, such as exists among all other educational institutions. A girl may spend two and one-half years satisfactorily in a first class school in one part of the country and of necessity have to leave

and perhaps change her place of residence. The principle of crediting her with work done toward her graduation certificate is not an established one anywhere, except that the smaller low grade schools sometimes take such girls and allow them certain time. The system is absolutely unjust, and with the proper standardization of teaching it should be changed.

COST OF INSTRUCTION

This brings up the consideration of the question of whether pupil nurses ought not to pay for their instruction instead of being paid for their services while being taught principles and acquiring practice in nursing. Out of the present system have grown abuses on both sides, the long and irregular hours, unsystematic work, unwillingness of schools to recognize and accredit the work done by nurses in other schools, poor teaching of many of the schools, and inadequate training of most of them in spite of the three year periods. On the other side the hospital schools have had to submit to the regulation of an eight hour day, forty-eight hours a week, which from the patient's point of view makes good nursing impossible except in wards. They have had to pay the pupils small salaries, board and feed them, care for them when ill, and furnish in many

and the art of teaching. Instead of the passing on of information method too much in vogue now in most schools, the teaching and supervision of pupils must be done by trained teachers. This is a further reason for the charging of adequate fees for the training.

At this time let us look into the relative cost in time and money of nurses' training and that of other professions open to women. Teaching is the largest field, and here we have the alternative of a five year course in the state university leading to a high school certificate, and a two year course in a state normal school leading to a primary and grammar school certificate. The entrance requirements in the two professions are practically the same. The tuition in both cases is free. Board in university and normal school towns will average about \$40 a month for the nine months' work. Books, clothing and laundry are extras not demanded of the nurse, for in many schools uniforms, books and laundry are furnished; but these items amount to a good deal for the college or normal school student. Let us put the difference down at the nominal sum of \$100 a year. The nurse has four weeks of vacation in her three year course, the embryo teacher from sixteen to sixty

TABLE 2.—COST OF EDUCATION TO YOUNG WOMEN, AND THEIR EARNING CAPACITY

	Nurses	Public School Teachers	Social Workers	Private Secretaries	Bookkeeping and Stenography	Full Commercial Course
Length of training	3 years	2-5 years	6 mo.-2 years	8 months	6 mo.	12-15 mo.
Tuition (total)	0	0	0-\$250	\$115	\$85	\$150
Board and room per month	0	\$25-\$40	\$25-\$40	\$25-\$40	\$25-\$40	\$25-\$40
Books, laundry, clothes, etc., per month	\$5	\$10	\$10	\$10	\$10	\$25
Earning capacity at graduation and later, per month	\$130-\$150	\$70-\$105	\$75-\$250	\$75-\$150	\$35-\$175	\$35-\$175
Cost of living after graduation, per month	\$20-\$40	\$40-\$60	\$40-\$60	\$40-\$60	\$35-\$60	\$35-\$60
Institutional work: earnings per month	\$60-\$100, including board and laundry					
Public Health work: earnings per month	\$75-\$100, without board					

cases uniforms, laundry and books, not one of which items is a just charge on the hospital, and ultimately on the ill. In the early days of training nurses these things may have been necessary inducements to young women; but they are not necessary today, and the tendency to drop them one by one in the best schools needs encouragement.

Indeed, if a program of intensive training could go through, and nursing as a profession could be put on a proper educational basis, there seems no reason why the nurses should not pay the usual fees for that sort of instruction. Taking the fees charged by schools of civics, applied social science and philanthropy, and the colleges that give such courses the average fees per year amount to from \$125 to \$150. Western Reserve University, which devotes one year to its public health course, charges \$125 for that alone.

A word more should be said about the advantage of an educational standard for a nurse's training in place of the present too largely time standard. There should be no excuse for graduating a girl in one or even three years if her fitness to continue unsupervised is not evidenced by tests of high standard. Finally, there must always be an opportunity for nurses to fit themselves thoroughly in every department of the work and in hospital administration as well as the executive work of supervising the training schools,

weeks, during which time the cost of living is obviously greater for the student. Pupil nurses are paid small sums in most training schools, more recently in proportion to the poorness of the training and consequent difficulty in obtaining pupils. Many good schools no longer pay these salaries, or furnish books or uniforms; but all schools of nursing still provide room and board and more or less absolute boarding school supervision over their pupils. Here enters in one of the most disturbing psychologic problems in connection with nursing. Why should the normal school or college young woman be turned loose in the community to find pretty much her own environment, for which she must pay \$40 more or less a month, and the nurse be boarded and held prisoner, except on the occasion of her having time off once a week when she is privileged to go away unaccounted for, for a number of hours. Time was when a nurse did day or night duty or both according to the demands of the work, and she was conveniently housed in order to be on call at any time. This condition of affairs no longer holds in any but very small hospitals, and the need for nurses being boarded and cared for by hospitals does not exist, any more than it does in any other school for advanced training or professional education. The morale of nurses would doubtless improve to a still higher standard if they were treated by hospital authorities in

accordance with the established precedent in colleges. Under the present system, nurses are too apt to react immoderately to the small measure of freedom allowed them. We trust them with the very lives of patients, and yet we treat them far too much as if they could not be trusted. There is no reason whatever for hospitals to board pupil nurses; and a huge administrative responsibility, as well as financial burden, will be spared hospitals when this outgrown tradition is set aside, and training schools for nurses are conducted as are technical, normal and vocational schools and colleges.

The cost of education of young women in time and money for the positions of private secretary, book-keeper, stenographer, social service worker, and the average earning capacity, with possibility of advancement, is shown in Table 2, to which are added the same data regarding public school teachers and nurses.

One cannot but view with distress the situation that holds with public school teachers whose \$70 a month at graduation is increased slowly to \$105, as a maximum, at the end of eight years. In any survey of the efficiency of our public school situation, one must feel that, considering the time and cost of preparation, the remuneration and the responsibility, it is remarkable how many fine women take up the profession. The long period of vacation, the very limited hours of work each day, the Saturdays and Sundays free, are all favorable conditions; but the nurse has in one sense even greater freedom, vastly more geographic range, wider interests, and a smaller living expense. It is argued by many that the nurses' fees are too high and prohibitively so to the small salaried person. This may be true, and it is possible that the growth in the use of hospitals is dependent on this fact. Even the expense of hospital care is high for the majority, and the health insurance program is the answer offered to his criticism by those who would make generally better care available for every one.

The fact remains that not alone because of war is there a growing demand for nurses, but also in constantly widening fields of public health and preventive medicine, besides the ever present care of the sick and injured. This situation is not being met by training schools, for the field of training in hospital schools is limited one; nor has any plan yet been seriously considered for meeting it. Such movements as cutting down the hospital training by a year to college graduates who have covered certain courses, as has been adopted by Stanford University and the University of California, the opening, to the same end, of a three months' summer training course at Vassar for preliminary work in anatomy, physiology, pathology, bacteriology, applied chemistry, nutrition and dietetics, household management and hospital economics, are enormous strides in the right direction, but wholly inadequate to the solution of the problem.

Miss Delano,² director of the department of nursing of the American Red Cross, has called attention to the fact that special courses of from four to eight months' duration in practical training in public health nursing are now offered in several centers to nurses otherwise qualified who wish to enter the town and country service. The visiting nurse associations in several large cities give field training to such students. Regular eight months' courses are given by Simmons Col-

lege, Boston, Teachers College of Columbia University in conjunction with Henry Street Settlement, New York, Western Reserve University, Cleveland, and by institutions in several other cities. This only emphasizes the facts already called attention to, that specialties in nursing are best prepared for after graduation, and the three year preparation for them is unwarrantedly long, if not almost wholly unnecessary in many cases.

SUMMARY

1. The 7,000 already enlisted Red Cross nurses have created a noticeable shortage, although they constitute only 6 to 8 per cent. of the supposed total of from 80,000 to 90,000 registered nurses.

2. The need expressed by General Gorgas³ for 5,000 nurses within two and a half months and a balance of 35,000 within the year cannot be met by volunteers, and it is doubtful if it could be dealt with by conscription in fairness to the community and the nurses themselves.

3. No plan for an adequate supply of nurses has been seriously advocated, although the curtailing of the three year course for certain well educated women, and the provision of special preliminary training enabling others who take it to cut down the three years, are steps in the right direction.

4. The time for a complete change in the nursing situation is at hand, and the change should be made along the lines of (a) more fitting preliminary training in subjects that hospitals cannot teach to advantage; (b) the cutting of the course in hospitals down to four terms of three months each, for which the young women pay, and during which time they receive more personal supervision from trained teachers, and (c) the abolishing of the boarding of nurses in the interests of getting a better class of women, and lessening the expense of operating hospitals.

3. Gorgas, W. C.: Red Cross Bull., March, 1918.

Health Hazards in the Stone-Cutting Industry.—In *Public Health Reports*, March 22, 1917, Dr. J. P. Leake, passed assistant surgeon, and Dr. D. L. Edsall, consultant in industrial hygiene, U. S. Public Health Service, report on their investigation of the extensive quarrying and stone-cutting industry at Bedford, Ind., relative to the extent to which it affects the health of the workers. The chief attention was given to tuberculosis and the effect on the nervous system of stone cutting, which is done chiefly by compressed air tools. Conditions surrounding the industry were found to be good, the cutting sheds being well constructed and lighted, and conditions for eliminating dust being admirable. Some of the work is done under water spray and some of it dry. The inhalation of dust was found not to be excessive, and the tuberculosis rate in the community among women equaled that among the men; therefore dust was not an important factor in the promotion of this disease. The cutters are men of a superior class, make good wages, work short hours and live well, many in their own homes. The pulmonary hazard is said to be less than in the stone industry in general. In some mills sanitary conveniences and guards against the spread of intestinal infection are satisfactory, but in others improvements should be made. In the hands of stone cutters who use pneumatic hammers, a hypertonicity of the blood vessels was found, appearing as an exaggerated reaction to low temperatures. This is not serious as to life or function, but is uncomfortable and can be overcome to an extent by proper management. Some apprehension exists among some cutters as to the ultimate effects, but Dr. Edsall believes they will not be permanent. The trouble affects chiefly the ulnar side of the hand holding the vibrating hammer, and is avoided by the more skilful operators.

2. Delano: The Women's Great Profession of the Future, *Jour. of Collegiate Alumnae*, March, 1918.

ATONIC DYSPEPSIA

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Of all the diseases of the digestive system, the diagnosis and treatment of the so-called functional disturbances are the most unsatisfactory. This is true from the standpoint of both physician and patient. To the physician they present a clinical picture of such complex composition and vague outlines that diagnosis requires unusual care and study. To the patient the variable course and prolonged duration are exhausting, both financially and physically.

Recent accurate work in diagnosis and treatment of the organic diseases of the stomach has been so fruitful that attention has been focused on that class of diseases to the relative neglect of the equally important functional disturbances. The neglect of the functional diseases by both physician and patient is due to the fact that life is rarely threatened, and acute symptoms are not common; but the importance of such diseases is nevertheless great, because of the prolonged impairment of the patient's social and industrial efficiency.

Physicians of the greatest experience repeatedly state that the more common disorders of digestion are functional in character, and of these the most important is the motor disturbance atonic dyspepsia (gastric atony, the anemic-gastroptotic dyspepsia of Cohnheim, and motor insufficiency of first grade of Boas). Which of the foregoing synonyms is most applicable we need not attempt to decide, provided that when we use our chosen term we have a clear understanding of the clinical entity it serves to designate. Briefly, this is an impairment of gastric tonus and motility, without organic obstruction. There is impairment in motility and delay in emptying, but complete emptying nevertheless occurs. Atony is to be definitely distinguished from motor insufficiency of second grade, in which food remains are still found in the stomach twelve or more hours after a test dinner.

Some writers further divide motor insufficiency of the first grade into (1) atony, in which the stomach does not contract tightly around its contents, and through the weight of normal amount of food becomes temporarily dilated although emptying in normal time (impairment of peristole), and (2) impairment in peristalsis with delayed emptying, though no twelve-hour stagnation or permanent dilation is found. Such writers hold that impairment of peristole (tonus) may exist alone, but is usually associated with some degree of impairment in peristalsis and actual delay in emptying.

Whether atony should be separated from gastrop-tosis is well discussed by Cheney, who says:

The greatest difficulty in diagnosis lies in separating these cases from gastrop-tosis; for neurasthenic symptoms are common to both conditions; and in so-called atony cases, the weak walls permit the greater curvature to sag below normal limits after inflation by carbon dioxide or after the barium meal for roentgenographic examination. There really seems good reason, therefore, to suspect that the cases we class as atony are in fact minor grades of gastric prolapse, and the neurasthenia is a consequence and not a cause.

In my opinion, if it is borne in mind that the essential feature of disease under discussion is impairment of motor function and tonus, without organic obstruction, the position of the stomach becomes a matter of sec-

ondary importance and need only be considered as one of the stigmata of inborn universal congenital asthenia on the basis of which atonic dyspepsia develops, when one or more of the exciting causes are added. Some discussion of these predisposing and exciting factors in the production of atonic dyspepsia is necessary, for if the treatment is to result in any measure of success it must be based on an intelligent effort to eradicate the acquired exciting factors and an adaptation on the part of the patient to those inborn predisposing conditions which cannot be removed.

All the predisposing causes may be summed up under the term "universal congenital asthenia," or the habitus of Stiller, sometimes also known as the habitus of Botticelli, on account of the resemblance to the physique portrayed in the pictures of that artist. The physique is slender and spare. The thorax especially presents characteristic features. The Lenhoff index (that is, the distance from the episternal notch to the symphysis pubis, multiplied by 100, divided by the minimal circumference of the abdomen) is over 80, the costal angle is acute, the tenth ribs often unattached at their costal ends, and the right kidney or both kidneys palpable or movable to a varying degree, with more or less ptosis of all abdominal viscera. The abdominal wall is thin and the muscles relaxed, and a splashing sound is easily elicited. The heart is small and vertically placed, the blood pressure is usually low, the pulse is slow, and the hands and feet are cold.

SYMPTOMS

Temperamentally these patients have characteristics almost as marked and definite as their physical features. They are sensitive, react excessively to normal stimuli, but react inadequately, undertaking more than they can perform, working hard as long as strength lasts, and then, desire having outrun accomplishment, they collapse with some functional digestive disturbance and much mental depression.

With the above-mentioned mental and physical characteristics, the individual may have nothing more serious than occasional complaints of a "weak stomach" till some additional stress is added, which plays the rôle of an exciting cause. This is often some illness such as typhoid fever, influenza, or, in women, a pregnancy or miscarriage. Atonic dyspepsia in its most marked form is especially apt to occur in young adults about the time when they meet the stress of life for the first time, as is seen in young men who work their way through the university or in women who work and also nurse some dependent sick relative. Mental and emotional stress, especially if of a depressing type, is an important exciting cause, as is shown by onset of marked symptoms following some shock, material worries, unhappy love affair, or conjugal infelicity.

The subjective symptoms are so characteristic that a diagnosis can often be made without special examination. A most complete and careful examination should never be omitted, however, for although the dyspeptic symptoms may dominate the clinical field, other conditions, such as incipient pulmonary tuberculosis, chronic appendicitis, or other focal infection, may be present and should of course receive weighty consideration when the treatment is directed.

The most common symptoms complained of are a feeling of weight, discomfort, fulness or pressure, occurring either while eating or soon afterward, the patients often complaining that they feel too full even before they have satisfied hunger, and that the sensa-

tion is present even after soup, milk or a cup of tea and toast. Nausea, sour eructations, dizziness and headache occur, and there is often complaint that food is tasted long after it is eaten. The last-mentioned symptom leads the patient to think that certain foods disagree, with the result that first one article and then another is omitted until the diet is entirely inadequate and malnutrition develops with the establishment of a vicious cycle. Digestants, sedatives and analgesics fail to give relief, unless one of them contains some ingredient that will produce belching, which nearly always affords some temporary relief. The patients complain of a feeling of general weakness, fatigue and lassitude of the body, with mental torpor and inability to concentrate the attention on work, especially for two hours after meals. Actual pain and vomiting very rarely occur in uncomplicated atony. The appetite is quite variable, both with regard to the quality and the quantity of food desired, and the ability to take certain foods varies from day to day. That is, a meal of certain composition can be taken and digested without discomfort on one day, and a few days later the same food will cause marked discomfort. Constipation is common but not constant. After a test breakfast the amount withdrawn is often increased above normal, and after a test dinner there is more definite evidence of impaired motility. In well established cases, food remains are found seven hours after the meal, but the stomach is found empty twelve hours after eating. The acidity is normal or varies only very slightly above or below normal. Blood and other abnormal constituents are absent.

On roentgenographic examination, the stomach is found to be of the fish-hook type, and the gas bubble is large. When examined with the fluoroscope, the barium mixture, without the usual preliminary hindrance to filling in the upper part of the stomach, sinks rapidly to the caudal part, while the pars media remains empty and collapsed. After 1 or 2 ounces of the mixture are taken, the patients often complain of fullness, saying that they cannot swallow any more as the stomach is already full. Peristole, or the ability of the stomach to contract tightly about its contents, is impaired, as shown by a large gas bubble, and peristaltic action is sluggish. The stomach is nearly always dilated to a varying degree, but it is a noteworthy fact that neither the impairment of motility nor the subjective symptoms are always proportionate to the degree of dilatation. Position is not a measure of function.

There is little difficulty in recognizing atonic dyspepsia if the history is taken carefully and the symptoms studied intelligently. The false diagnosis of gastritis is the error most frequently made, though it has also been treated as gastric ulcer with the result of producing increased debility instead of improvement. The most serious error that can be made is to overlook the underlying disease such as chlorosis, nephritis or early pulmonary tuberculosis.

The course of the disease is variable from week to week, with a tendency to become progressively worse. Physical fatigue and mental stress increase the severity of the symptoms, while rest and relaxation produce some amelioration. Under the most favorable conditions the disease is essentially chronic.

TREATMENT

The chief difficulty encountered in the treatment of these patients is not found in the disease itself so much as in depressing economical or social relations, which

often exert such a definite influence as to merit the title of exciting cause. The problem presented, therefore, is essentially one of adaptation. The physician has the general task of effecting an adequate adjustment between a subnormal individual and the environment.

A special feature of this task is the improvement of nutrition. When it is noted that it is an organ of nutrition that is especially impaired in its function, the difficulties may be realized. Two different methods are employed in treatment. One is the well known rest cure, which consists in changing the whole environment of the patient for the better. All of the exciting and aggravating causes mentioned above are removed by placing the patient at rest in bed in a hospital, or preferably a quiet sanatorium. Not only are friends, relatives and business associates excluded, but even letters and newspapers are forbidden. Contact with the old environment having been thus effectually broken, the patient is fed all of the most nourishing food that can be digested, and an effort is continually made to increase the capacity for assimilation. All hygienic measures that may be of aid are employed. Massage, baths and later moderate exercise, are directed according to the needs of the special case. Finally, and perhaps most important, must be mentioned a skilled and tactful nurse who will not only attend to the actual needs of the patient, but will divert the attention of the introspective patient from within to outward things.

This method, which has been barely outlined above, is usually highly successful—the results are striking, it is a brilliant conquest—that is, till the patient resumes the old life. Then the real test occurs; for if the patient is to take any part in the world, adaptation must take place; not all the handicaps can be removed. Excellent as this method is, it should be reserved for the most severe cases, or those complicated by some other disease. For, although it is so pleasing to physician, patients and friends to see such marked improvement in a short space of time, unless great care is exercised and unless the patient realizes the nature of the problem, all that has been gained while in the sanatorium will be lost in an equally short time, with great disappointment and discouragement to all.

In my opinion the second method, although more difficult for the physician, is to be preferred in all except the most severe and complicated cases, because, although the gain is slow, it is accomplished under working conditions and is therefore more likely to be permanent. In this method of treatment the patient is allowed to continue the normal occupation, business, domestic duties or social activities, but in a slightly modified form. Sufficient time must be allowed for meals, excessively long hours and night work avoided. If possible, an hour of rest should be taken after lunch and a half hour rest before dinner. If the patient is a woman, the household duties may be readjusted and social activities reduced to such an extent as to provide time for one or two periods of rest during the day. It is most important that the meals be taken without hurry and confusion. The excitement, tension and anxiety associated with formal lunches and dinners or with seeing the children off to school, has a most pernicious influence and should be eradicated as far as possible. Dietary errors should be sought for, and when found, corrected. The errors are numerous and peculiar. One patient ate six apples

each night, and another drank milk exclusively. The patients, guided now by the advice of friends or something they have read, now by their subjective sensations, make many experiments, but rarely follow any one course long enough to determine whether it is good or bad. The tendency is toward a diet of soup, milk and broth, and raw eggs. The diet really needed is one of highly nutrient value and little bulk. Since the stomach rebels at a normal amount of food at any one time, the alternative is frequent small meals, with a gradual increase in amount. It is especially important that the lunch be adequate in amount and ample time allowed for eating. Discomfort will be present at first, no matter what food is taken; but with encouragement and intelligent direction, the patient may usually be persuaded to continue to eat adequately, especially if a thorough study of the case has been made before treatment is begun. The forced feeding should be continued despite the discomfort. Only real pain or vomiting should indicate a relaxation and change. The often quoted advice to "take exercise, drink plenty of water, and get the fresh air," is vague, indefinite and often harmful. Since such patients are already below normal weight and find difficulty in taking and assimilating a sufficient amount of food, exercise should be reduced where it is possible, and that taken should be in the form calculated to correct some special weakness or restore normal posture and carriage. When improvement is manifest, exercise may be cautiously increased by allowing participation in exhilarating games and dancing, always stopping short of fatigue and following the exercise with a period of rest.

I lay special stress on exercises associated with mental exhilaration, for the good effect of psychic stimulation on the vegetative system is as potent for good as depression is known to be for harm. In this connection it is often beneficial to explain the condition to the patient. Instead of making them more introspective and "neurasthenic," they are usually pleased by a frank prognosis, and encouraged to learn that there is something they can do personally, and that their intelligent cooperation is of much importance.

An abdominal support is of great value; but in order to be effective it must be carefully and accurately fitted, and the patient must be instructed as to how it is to be applied and what is intended to be accomplished. The fact that such supports do not restore the stomach to what is considered its normal position, as revealed by roentgenoscopy, does not negative their usefulness. The elevation of the stomach as much as an inch often relieves the sensation of weight and discomfort when all other methods have failed. When the nutrition has been improved to such an extent that exercises may be taken, then gymnastics such as already referred to become effective, and the support may ultimately be abandoned.

In every case it is necessary to impress on the patient the importance of maintaining the improved condition of health that has been gained. Any unusual physical or mental strain is very apt to induce a return of symptoms, and since the underlying cause is largely inherent in the physical and mental constitution of the patient, continued watchfulness and care are necessary on the part of both the physician and the patient in order that the nutrition may be kept at the highest possible level.

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RENAL INFECTIONS

A CLINICAL AND BACTERIOLOGIC STUDY*

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The whole question of renal infection is complicated by confusing conditions in many phases of the process. The phase, however, that is most complicated and perhaps least understood is that which deals with the routes by which the infecting organisms reach the kidney. Evidence is presented that demonstrates the blood stream as undoubtedly the route of infection in some instances; again there are equally convincing clinical and experimental facts to favor the more or less direct transmission to the kidney through the lymph stream. During the earlier days, it was assumed that all renal infections were ascending directly from the lower urinary tract to the kidney pelvis and parenchyma by way of the lumen of the ureter. This route eventually acquired the disfavor of most of its supporters, who were drawn toward the more attractive hematogenous and lymphogenous theories. For some time the direct ureteral route was considered mechanically impossible excepting in those instances in which there was obstruction to the emptying of the bladder, resulting in dilatation of the ureter and renal pelvis by infected urine. Therefore the solution of this question for a long time centered around the hematogenous and lymphogenous routes, practically all observers agreeing that the clinical and experimental evidence was sufficient to make one suspect one or the other as a possible route in every instance of renal infection. The recent work of David, however, demonstrates that in experimental work renal infection takes place through the lumen of the ureter in most instances, and this in the presence of unobstructed bladders. Just here the confusing condition rests at present, and its solution appears even more remote than ever.

Regardless of the route by which the infection reaches the kidney, there are certain factors within and outside of this organ that predispose it to bacterial invasion. Infection obviously occurs in many previously healthy kidneys; but a kidney already the site of disease, malformation or malposition is known to be relatively more susceptible. Certain diseases more or less constitutional in nature, such as furunculosis, osteomyelitis, teeth and throat infections, and prostate and seminal vesicle infections, as well as gastro-intestinal disturbances, are observed to be closely associated, in many instances, with a homologous infection of one or both kidneys.

While a complete understanding of the factors brought into play in the pathogenesis of renal infection is not possible at present, it is equally impossible in many instances to comprehend the protean nature of its symptomatology. In the usual, typical case there are certain symptoms presented which, to the knowing observer, are logically associated with the pathologic processes as they exist; there are patients

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however, whose symptomatology is altogether atypical. The patient's condition often goes on and on unrecognized until severe destruction of the kidney has taken place; and often he is subjected to one or more surgical operations, either on a wrong diagnosis or on the operator's guess that the appendix, gallbladder, ovary or other abdominal organ might be the seat of the trouble.

The basis of this report is a study of 116 instances of nontuberculous, nonsurgical, renal infections, with special regard to symptomatology and bacteriology, together with notes on their treatment.

ETIOLOGY

Thirty-six, or 31 per cent., of these infections were in males, while eighty, or 69 per cent., were in females, and the ages varied from 13 to 57 years. Lesions within and outside of the urinary tract that may have had some etiologic significance are to be seen in Table 1.

Since this table contains only twelve patients with other abnormalities of the urinary tract, and but thirty-six patients with demonstrable conditions outside the urinary tract, sixty-eight patients, or 58 per

TABLE 1.—LESIONS WITHIN AND OUTSIDE THE URINARY TRACT IN INSTANCES OF RENAL INFECTION

Lesions Within Urinary Tract	No. of Cases	Lesions Outside Urinary Tract	No. of Cases
Narrowing of urethra.....	3	Puerperium.....	12
Obstructed kidney.....	2	Pregnancy.....	5
Incomplete reduplication of ureter.....	2	Salpingitis.....	2
Narrowing of ureter.....	1	Peptic ulcer.....	2
Calculus (passed).....	1	Organic heart disease....	1
Diverticulum of bladder.....	1	Inguinal hernia.....	1
Hydrocoele.....	1	Alveolar abscess.....	1
Uterine cervical fistula.....	1	Cervical adenopathy.....	1
		Tonsillitis.....	1
		Pharyngitis.....	1
		Lacerated cervix.....	1
		Hemorrhoids.....	1
		Retroflexion.....	1
		Spondylitis deformans....	1
		Dementia praecox.....	1
		Undescended testicle.....	1
		Bronchial asthma.....	1
		Abdominal tumor.....	1
		Retroperitoneal abscess..	1

cent., present themselves with no definite abnormal condition other than the renal infection; however, 24 per cent. of these complained of constipation as a symptom which may rightfully be included as a coincident pathologic condition. Also there are many instances of marked mouth and probably sinus infections in this series that may have a bearing on their coincident renal infection. This factor, however, unfortunately was not investigated in all patients.

SIDE INFECTED

It has been said that all cases of renal infection are bilateral excepting instances of septic infarction and those in which there is a preexisting lesion or anomaly of one kidney rendering it more susceptible. Our findings are not in accord with this statement in that only sixty-eight patients, or 58.7 per cent., had bilateral infections, and forty-eight patients, or 41.3 per cent., had unilateral infections. Of the forty-eight unilateral infections, twenty-three, or 48 per cent., were on the left side, and twenty-five, or 52 per cent., on the right side. These findings agree with practically all other statistics in that the right kidney is somewhat more susceptible to infection than the left, the explanation being given that the right kidney is more mobile than the left, and hence more subject to light trauma.

SYMPTOMATOLOGY

For brevity the symptoms are tabulated in Table 2. Three symptoms are seen to be numerically prominent in this table: chills and fever, pain in the back, and frequent painful urination. These symptoms may justly be called the cardinal symptoms of renal infection; there are many patients, however, that complain of none of these symptoms and have an infection not to be distinguished pathologically or bacteriologically from those in the first group; hence a detailed enumeration of these less common symptoms is considered of value. It is pertinent to add that the symptoms tabulated are those volunteered by the patients and

TABLE 2.—ANALYSIS OF SYMPTOMS OF ONE HUNDRED AND SIXTEEN PATIENTS WITH RENAL INFECTION

Frequency			First to Appear			Predominant Symptom		
Symptom	No.	%	Symptom	No.	%	Symptom	No.	%
Chills and fever	56	49	Pain in back	35	30	Pain in back	35	30
Pain in back	52	45	Chills and fever	24	20	Abdominal pain	21	18
Painful frequency of urination	46	40	Painful frequency of urination	18	15	Painful frequency of urination	15	13
Constipation	28	24	Abdominal pain	16	14	Chills and fever	13	11
Headache	27	23	General weakness	14	12	Pain in abdomen and back	8	7
Vomiting	26	22	Pain in abdomen and back	10	8	General weakness	6	5
Pain in abdomen	23	20	Pain over bladder	3	2.5	Hematuria	3	2
Hematuria	14	12	Headache	2	1.5	Pain over bladder	3	2
Loss of weight	13	11	Vomiting	2	1.5	Pain in back and legs	1	0.8
Pain in abdomen and back	11	9	Hematuria	2	1.5	Incontinence of urine	1	0.8
Incontinence	6	5	Incontinence	2	1.5	Constipation	1	0.8
Pain over bladder	5	4	Retention of urine	1	0.8	Pain in neck and legs	1	0.8
Retention of urine	1	0.8	Nocturia	1	0.8			
Pain in neck and legs	1	0.8	Pain in neck and legs	1	0.8			
Pain in back and legs	1	0.8	Pain in back and legs	1	0.8			
Nocturia	1	0.8						

not secured by suggestion; hence a symptom such as hematuria means a macroscopic hematuria, as microscopic blood in the urine may be found in a very much higher percentage of patients.

Pain in the back varies in type and severity from a dull, aching pain in one or both lumbar regions to a markedly acute pain and tenderness over the entire lumbar region not accurately localized. These pains sometimes radiate or are referred down to the bony pelvis and in some instances into the thigh, occasionally simulating a ureteral colic which may actually occur from the passage of cell detritus. The more acute of these "back pains" are often associated with even more distressing abdominal pain; or the latter may be the only pain present. It may be a diffuse

pain not especially severe, or have the general aspect of an "acute abdomen." Keen diagnostic judgment is often necessary to rule out the abdominal contents as the cause of these symptoms, and in not a few instances the abdomen is unnecessarily explored.

The temperature produced by these infections is even more variable than the other symptoms; but in a general way it may be said that the more acute and severe the infection, the higher the fever may rise; while the chronic infections seem to produce no fever whatsoever. In practically all instances, the fever is of an intermittent type. Our series contains thirty-five patients, or 30 per cent., with normal temperatures; thirty-one patients, or 29 per cent., with a temperature ranging from 101 F. to normal; twenty-one patients, or 18 per cent., with 103 F. to normal, and twenty patients, or 18 per cent., ranging from 105 F. to normal.

LABORATORY DATA

Blood.—Leukocyte counts of the blood were made at various times during the course of the infection, usually at the time of the first examination. Some of the patients had had symptoms intermittently for ten years, while the more acute infections were seen on the second day. All grades of chronicity and acuteness between these two extremes were observed, the leukocyte counts varying from 40,000 per cubic millimeter in the most acute down to normal counts in the real chronic forms, the average being 14,000 leukocytes per cubic millimeter.

Bladder Urine.—Of the 116 patients studied, 112 showed leukocytes in the centrifuged specimen of urine which was catheterized from the bladder, while four bladder urines were apparently perfectly normal at the time of the examination, although specimens from these bladders might have contained pus the day before or the day following the examination. Such conditions are known to occur, and in practically every instance leukocytes may be found in the bladder specimen if repeated examinations are made in suspected cases. On one negative urine examination a renal infection cannot justly be ruled out.

Cystoscopy.—The ability of the bladder mucosa to protect itself against infection from which it is often in direct contact is very marked, as evidenced by the fact that thirty-nine, or 32 per cent., of these patients had perfectly normal bladders as observed cystoscopically, whereas fifty-nine, or 51 per cent., presented moderate bladder changes, such as hyperemia about the trigon and adjacent mucosa, but usually most marked about the ureteral orifice or orifices from which the septic urine was coming. Nineteen, or 17 per cent., of these patients had marked changes in their vesical mucosa, such as generalized hyperemia, sometimes associated with edema, which is usually localized but may also be more or less generalized. Mucopurulent material clings to the vesical walls, and observation is often difficult, owing to intolerance of the bladder to fluid and inability to get a clear distending medium. Just this type of infection is difficult to distinguish from a tuberculous process, and it usually requires considerable local treatment before the primary cause of the bladder infection can be ascertained.

Bacteriology.—A standard method of culture was used. Five drops of uncentrifuged urine from a ureteral catheter were used to inoculate 10 c.c. tubes of blood agar. Plates were made and incubated at

37 C. for from twenty-four to forty-eight hours. At the end of this time, if a culture was obtained, the various types of colonies were studied by smear and special stain as indicated. Occasionally it was necessary to make subcultures on special mediums before identification of the organism could be made. No attempt was made at this time to separate the colon bacillus group into its various subgroups.

In common with the usual findings in analysis of this sort, there are found to be two organisms which produce most instances of renal infection, namely, the colon bacillus and the staphylococcus. The number of patients suffering from each infection varies somewhat with each series studied and also with the care exercised in handling the material bacteriologically.

Our findings are not at marked variance with those of others, excepting that our percentage of colon bacillus infections is somewhat higher than usually found. Colon bacillus infection was found in 85 per cent. of our patients, 74 per cent. being pure colon infections. The staphylococcus was found in 19 per cent. of the cases, and 9 per cent. of all gave pure cultures of this organism.

TABLE 3.—BACTERIOLOGY OF ONE HUNDRED AND SIXTEEN INSTANCES OF RENAL INFECTION

Micro-organism	Character	Cases		Right Kidney		Left Kidney	
		Num-ber	Per Cent.	Num-ber	Per Cent.	Num-ber	Per Cent.
Colon bacillus, pure.....	Bilateral	54	47.4				
Colon bacillus, pure.....	Unilateral	35	30	17	14.6	18	15.5
Colon bacillus and staphylococcus.....	Bilateral	7	6				
Colon bacillus and staphylococcus.....	Unilateral	4	3.4	2	1.7	2	1.7
Colon bacillus and streptococcus.....	Unilateral	1	0.86	1	0.86		
Total infections, pure colon bacillus.....	.....	89	74				
Total infections containing colon bacillus.....	.....	101	85				
Staphylococcus, pure.....	Unilateral	3		2	1.7	1	0.86
Staphylococcus, pure.....	Bilateral	6	5				
Staphylococcus and streptococcus.....	Unilateral	1	0.86	1	0.86		
Total infections, pure staphylococcus.....	.....	9	8				
Total infections containing staphylococcus.....	.....	19	16				
Typhoid bacillus.....	Unilateral	1	0.86	1	0.86		
Pyocyanus bacillus.....	Unilateral	1	0.86	.....	.....	1	0.86
Diphtheroid bacillus.....	Unilateral	1	0.86	.....	.....	1	0.86
Diphtheroid bacillus.....	Bilateral	1	0.86				
Leptothrix.....	Unilateral	1	0.86	1	0.86		
Total bilateral infections..	.....	68	58.7				
Total unilateral infections	.....	48	41.3	25	21.5	23	19.8

Table 3 presents a complete analysis of the bacteriologic findings. The two patients having definite leptothrix infection were under investigation for genito-urinary tuberculosis, since somewhat acid-fast structures had been found in the bladder urine before the patients were seen by us. We found no tubercle bacilli, but repeated leptothrix cultures were obtained. These organisms resist destaining with acid alcohol in weak concentration or for short exposures. It is easily possible that a wrong diagnosis may be made from this finding.

DIAGNOSIS

A diagnosis may often be made on the symptoms, but an absolute diagnosis can be made only by a microscopic and bacteriologic study of the urine collected from each kidney. In Table 4 are enumerated the different diagnoses under which these patients were admitted to the hospital.

In justice to the examining room physicians responsible for these diagnoses, it should be said that they

are obliged to make hurried and naturally superficial examinations, as a rule, and often are unable to secure a good history; some of the patients, however, are entered with the diagnosis made by a physician who previously had charge of the patient. While this table represents diagnoses made without thorough study, it at least strikingly emphasizes the conditions in renal infections may simulate and from which they must be distinguished.

TREATMENT

Only thirty of the 116 patients studied were treated and completely cured. Our standard for judging a complete cure was not merely a complete relief of symptoms, but two successive negative cultures from the urine to seven days apart.

The treatment was more or less routine. Those patients suffering from colon bacillus infections were treated internally hexamethylenamin in moderate daily

TABLE 4.—DIAGNOSIS MADE IN ONE HUNDRED AND THREE CASES OF RENAL INFECTION

Diagnosis	No. of Times	Diagnosis	No. of Times
Cystitis.....	12	Pyuria.....	2
Calculus.....	10	Puerperal sepsis.....	2
Monia.....	8	Hysteria.....	2
Urethritis.....	8	Hematuria.....	2
Typhoid fever.....	7	Fibroids of the uterus.....	2
Endometritis.....	6	Acute bronchitis.....	2
Cystitis.....	6	Influenza.....	2
Uterine tumor.....	4	Papilloma of the bladder.....	1
Salpingitis.....	4	Retroflexion.....	1
Perinephritis.....	3	Perinephritic abscess.....	1
Malaria.....	3	Malaria.....	1
Postoperative sepsis.....	3	Postoperative adhesions.....	1
Postoperative adhesions.....	3	Suspected meningitis.....	1
Cystitis.....	2		

for a week, alternating with the administration of alkali for a week. The alkalis were used to the purpose of securing a distinctly alkaline urine, and for this purpose we used sodium citrate or sodium bicarbonate. In coccus infections, hexamethylenamin was administered continuously and prescribed with either acid phosphoric or benzoic acid. Regardless of the numerous reports to the contrary, there seem to be considerable degrees of improvement secured by the proper administration of hexamethylenamin. It is especially noticeable when this drug is alternated with alkalis in colon bacillus infection.

Locally the pelves and calices of the infected kidney were treated by irrigation with from 1 to 5 per cent. silver nitrate every fifth day, a culture being taken just before each lavage. The number of irrigations varied from one to twelve to secure the desired results; the majority of patients, however, required from three to five irrigations, 83 per cent. of cures receiving a number within these limits. There are very definite reasons for our percentage of cures being relatively so low. Since most of the patients were charity cases in a county institution, the persistence of symptoms, to them, is synonymous with a cure and they therefore discontinue treatment too soon.

Some refused further treatment on account of the colicky pains sometimes produced by ureteral catheterization.

The fact that relief of symptoms does not always indicate a cure has been demonstrated to us many times by patients who, having left the hospital symptomatic but with urines positive for the infecting organism, return within the year following with the

same or similar symptoms, and with the bacterial findings found on the first examination. They have had no symptoms from one to several months following their first symptomatic relief. It is logical to assume that during the symptomless period the infection, though still present, was inactive. These patients may justly be considered carriers in the sense that they have infectious foci, potentially dangerous to themselves. In such cases any factor that tends to reduce general or local resistance permits increased bacterial activity manifested by symptoms. It is important, therefore, to insist on treatment until all infection is eradicated. To be practically certain that such a condition is present, we believe that two sterile urines from ureteral catheters one week apart suffice, since there have been no recurrences in the patients so handled thus far, and some have been discharged for over a year. Patients are often examined whose urines are sterile for a period of one week, but yield a positive culture the week following from one or both kidneys. When the urine, however, remains sterile for two successive weeks, the kidneys are likely to be entirely free from bacteria.

The determination of cure in these cases is not altogether unlike that required for the cure of the carrier state in cases of typhoid fever, wherein it is believed that two successive negative cultures from stool and urine is sufficient to indicate that the individual is free from typhoid bacilli. One of the patients of our series had been a urinary typhoid carrier since an attack of typhoid six months before. Her focus was found to be in the pelvis of the right kidney, which disappeared at once with three pelvic irrigations. She had been under observation and medical treatment for six months previously, with no apparent change in her carrier state. She has remained bacilli free for the last four months.

It is a well known fact that passage of a ureteral catheter will in some instances produce a marked alleviation or complete subsidence of symptoms. This observation has influenced some to believe that the entire benefit obtained after pelvic lavage is due to the drainage established by the ureteral catheter. Undoubtedly there are many patients whose symptoms have been produced almost entirely by inflammatory obstruction along the ureter, and it is not unusual under these conditions for the symptoms to be relieved by drainage established by the passage of a ureteral catheter. We cannot conclude, however, that the result is a bacteriologic cure, as numerous occasions have presented themselves to test this point bacteriologically, and invariably the patients relieved by the catheter still have infected urines after a complete disappearance of symptoms. The danger of forcing infectious material into the secreting papillae of the kidney, while anatomically possible under sufficient pressure, is highly improbable when lavage is carefully performed. Therefore it would seem wise to perform lavage on all occasions in which drainage by means of a ureteral catheter is indicated, thereby getting the advantages of both drainage and the beneficial local action of the medicament. Although the medicament does not come in contact with all of the infecting micro-organisms, its action on the inflammatory tissues undoubtedly increases the bactericidal activity of such tissue. The mechanical effect of irrigation may act beneficially in certain instances when suppuration is profuse.

It is now generally agreed that the coccus forms, especially the staphylococcus, have a tendency to infect the parenchymatous rather than the renal pelvic tissue. The infecting cocci and the resultant lesions are therefore usually somewhat distant from the renal pelvis and calices, and anatomically not accessible to renal pelvic medication; on the other hand, the colon group infections being of the pelvis, calices and the immediately adjacent parenchyma, should be the type more suitable for this method of treatment. This bacteriologic and pathologic observation is confirmed by our results in the treatment of these infections. Twenty-seven, or 90 per cent., of all our cures were in infections by the colon bacillus group, and only three, or 10 per cent., were coccus infections. Though many more patients were treated for colon bacillus infection than for coccus infection, the percentage of bacteriologic cures is markedly lower for the coccus infection than the bacillus infection. Five patients with staphylococcus infection were treated for months with the foregoing internal and local treatment, with only temporary or quantitative improvement bacteriologically.

MUMPS MENINGITIS

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The most frequent complication seen in mumps is orchitis. The rarer complications are meningitis, encephalitis, neuritis, ovaritis, endocarditis, arthritis, nephritis, mastitis and vulvovaginitis. The complications appear in most instances in from four to seven days.

The meningitis of mumps is very little known. There is mention of 150 cases, although I have not been able to find more than thirty described, most of them appearing in an article by Acker,¹ in which two of his own cases are reported. During some epidemics, there appear to be more meningeal complications than in others. As most patients recover after a few days' illness, it is very probable that the meningeal condition is lost sight of, particularly in the milder cases. This very likely accounts for the fact that so few cases are on record and that so little is known of this complication.

The pathology, as found in the necropsies compiled by Acker, is that of a serofibrinous meningitis, in some instances invading the brain tissue and the nerves at the base of the brain. The cytologic and chemical tests of the spinal fluid are typical of the inflammatory process in the meninges.

The symptoms and signs resemble those of the meningitis of tuberculosis. The course of the disease, however, is very different.

The diagnosis, as a rule, is not difficult. The coincidence or immediate precedence of mumps is, of course, suggestive. Other forms of meningitis, particularly the tuberculous and epidemic cerebrospinal forms, which often appear to be a primary meningitis, must be ruled out. In tuberculous meningitis, there is usually a history of decline in health preceding the initial headache and vomiting. The course of the disease is very gradual, reaching its height between the second and the third weeks. From the start, epidemic cerebrospinal meningitis is very acute, with high tem-

perature. Mumps meningitis begins insidiously with constipation, headache and vomiting, and little or no fever throughout, the height of the disease being reached in from twenty-four to forty-eight hours, and the complication terminating in from four to seven days. In tuberculous meningitis the spinal fluid during the first forty-eight hours shows no definite changes. In epidemic cerebrospinal meningitis, the spinal fluid is cloudy, and contains the characteristic organism and many polymorphonuclear cells. In mumps there are many mononuclear cells in a clear or opalescent fluid. The diagnosis may be difficult when the complication appears late, after a mild case of parotitis.

Most patients recover, though in some instances temporary neuritis has occurred. Atrophy of the auditory and optic nerves, also hemiplegia, is a feature of the cases. The gravest forms are those affecting the vital centers. If the substance of the medulla, as in poliomyelitis, or the vagus nerves are affected, the cases are sure to be fatal. A better prognosis can be promised those patients in whom the affection of the vital centers is only one of intradural pressure. Here a lumbar puncture, as in one of my cases, may be the means of saving the patient's life.

The following cases occurred in private practice during the months of February and March, when the epidemic of mumps was at its height. They illustrate some of the severer and milder forms one is apt to encounter.

REPORT OF CASES

CASE 1.—G. F., a boy aged 4 years, was bright but undersized, and his parents were neurotic. At birth, the delivery had been made with the aid of instruments. He had been bottle fed from the second month. Two years previously, the time of consultation, he had had an attack of acute interstitial nephritis, complicating influenza. This condition of the kidney had persisted; otherwise the boy had been in apparently good health. Feb. 4, 1918, an acute epidemic parotitis on the right side developed. The temperature was 99° F. The right parotid remained slightly enlarged for two days when the left began to enlarge. Neither side became unusually large, nor was the temperature ever more than 99° F.

February 18, at 10 a. m., the patient was sitting up in bed. There had been obstinate constipation, headache and vomiting for the past twenty-four hours. The temperature, pulse and respiration were normal. The left parotid was slightly enlarged. The abdomen was slightly retracted, but there was no rigidity of the neck or other meningeal signs. As the child had nephritis, the symptoms were attributed to this, and treatment was instituted accordingly.

February 18, at 5 p. m., there were intense headache, irritability and drowsiness. The child was on his back with the head held rigidly backward and the knees flexed. Both Kernig signs were present, together with a scaphoid abdomen and a tympanitic skull. The temperature was 97°, the pulse 72 and the respiration 18. Vigorous catharsis and high enema had been ineffectual.

February 18, at 10 p. m., I heard the typical cerebral cry from the street before I entered the house. The patient was now in a very bad state, with symptoms of intradural pressure. Reaction to all forms of stimulation was very sluggish. The pupils were dilated, showing no reaction to light. The Kernig and Babinski signs were very weak. The temperature was 96° and the pulse 54, being irregular and intermittent. The respiration was 12, and was of the Cheyne-Stokes variety. A lumbar puncture was done, and 20 c.c. of opalescent fluid were withdrawn under considerable pressure. Ten minutes later, the temperature was 97.8°, the pulse 80 and the respiration 18. Two hours later the patient was sleeping restfully.

February 19, at 8 a. m., the patient was sitting up in bed demanding food. He complained slightly of headache. Aside from a slight retraction of the abdomen and we-

1. Acker, G. N.: Parotitis Complicated with Meningitis, *Am. Jour. Dis. Child.*, December, 1913, p. 399.

ernig sign, there were no signs of meningitis. There were, however, a slight erythema and a tache cérébrale, often seen in tuberculous meningitis, over the face and body. The pupils were open. From now on, for the next three days, there was a slight headache, some constipation and irregular pulse, after which the patient was in comparatively good health.

February 28, he experienced severe abdominal pain and vomiting. The temperature was 102, and the pulse 110, being irregular. The abdomen was very rigid and tender, as in peritonitis. These symptoms and signs persisted twenty hours, after which they subsided. The urine contained no sugar nor fat. There were no other metabolic changes present to confirm the suspicion of an acute pancreatitis. From now on the patient made an uneventful recovery. The report on the spinal fluid, made by Dr. Josephine B. Neal in the laboratory of the department of health of New York City, was: Ten c.c. opalescent fluid. Cytology, 99 per cent. mononuclears, great increase. Bacteriology: Spread apparently negative. Culture, negative. Albumin ++ 1. Globulin ++ 1. Fehling's ++ ++.

CASE 2.—H. S., a girl, aged 9 years, was bright, nervous and undersized. Her parents were of nervous temperament. She was fed by bottle from the first month. She had had measles three years previously.

February 24, she had a mild parotitis on the left side. The temperature was 101 F. The parotid gland was normal after five days. There was no fever after the second day.

February 28, intense prostration occurred with headache, vomiting and constipation of twelve hours' duration. There was a rigidity of the neck and spine, also a scaphoid abdomen and a slight Kernig sign. The temperature was 99, the pulse 110 and irregular, and the respiration 20.

These symptoms and signs were present for the next four days, progressively improving. The gastro-intestinal symptoms disappeared first. The irregular pulse persisted for two weeks after the first appearance of the meningitis.

CASE 3.—M. S., a girl aged 5 years, was bright and undersized. The parents were neurotic. She had been fed by bottle after the fourth month. She had had measles two years previous to the date of consultation, and lobar pneumonia with meningismus eight months previous.

March 5, 1918, a bilateral parotitis, moderately severe, appeared. The temperature was 102.

March 9, a severe headache set in, with vomiting and constipation, marked irritability and insomnia. The temperature, pulse and respiration were normal. The abdomen was distended. There was a slight rigidity of the neck, with decreased knee jerks, and a left Kernig sign was present.

The following day, the symptoms and signs were the same, there was greater prostration. From now on, the patient progressively improved, except during a recurrence of the parotitis on both sides, March 11.

COMMENT

The last two cases were relatively mild and would ordinarily have passed as gastro-intestinal attacks. The absence of fever and the marked prostration should, however, make one suspicious. Meningeal irritation, meningismus, is to be thought of in the milder cases although the necropsies have demonstrated definite inflammation in the severer forms. In Case 1, there is no doubt of the diagnosis from the start, its course being very different from that of the other forms of meningitis. The value of early spinal puncture cannot be too much emphasized in this type of case. It was indicated as a therapeutic measure in Cases 2 and 3, in which there were no signs of cerebral pressure.

Audubon Avenue.

Importance of Health.—With a greater degree of health and vigor, religion will become more effective for good, and will have a deeper significance and a wider application. Knowledge will multiply and distribute its blessings widely.—Vaughan.

THE ANAMNESIS IN CARDIOVASCULAR DISEASE

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Cardiovascular disease is now the chief cause of death in the registration area, which covers slightly more than two thirds of the population of the United States. Cardiovascular degeneration, for the most part, is an insidious condition, far more difficult to diagnose in the incipient stages than is tuberculosis, but far more prevalent than tuberculosis and more frequently unrecognized by the practitioner.

As a result, I believe, of the great popularity of nostrums in this country, the millions in capital exploiting nostrums, and the vast propaganda of the nostrum interests that work indefatigably to misinform and mislead the lay public through every available avenue of publicity open to dishonest advertising, the great majority of victims of cardiovascular disease do not consult a physician until some alarming manifestation of the disease drives them to his office. And even then, too often, either the patient is averse to a painstaking examination or the physician is too busy, in his way, to make such an examination, so that the condition drifts on for months and years undiagnosed, nay, unsuspected, until disaster comes and realization bursts on the persons concerned. This is the explanation of the popular notion, a notion sometimes encouraged by physicians, that Bright's disease is generally fatal in a year or two, that apoplexy comes like lightning from a clear sky, that heart failure is a sudden calamity that occurs without warning. This is also the explanation for the shameful abuse of such makeshift terms as "debility," "overwork," "run down condition," "nervous exhaustion" and "neurasthenia" in lieu of a diagnosis of the cardiovascular degeneration of middle age.

It is a well recognized fact that a competent physician can and must make a tentative diagnosis of incipient pulmonary tuberculosis, and institute the proper regimen and treatment, long before bacilli can be recovered from the sputum and long before any serious breakdown of health has occurred. Granted that even the most skilful diagnostician occasionally errs in this tentative diagnosis, no great harm has been done to the patient in any case, since the usual treatment employed for incipient tuberculosis can do no harm if the patient happens to have, say, masked exophthalmic goiter instead, and, indeed, may be precisely the treatment required by such disease. We all know that the best of diagnosticians is bound to make such mistakes; one with mediocre ability must confess such mistakes. But does this fact militate against the wisdom of a tentative diagnosis of tuberculosis? Or does it weaken the physician's morale in his procedure in future cases of similar character? Not if he is a good doctor. The only man who never makes a grave diagnostic error is the man who never makes a timely diagnosis.

The average well trained physician nowadays has the ability to diagnose cardiovascular degeneration long before Bright's disease, heart muscle failure, apoplexy or general arteriosclerosis overtakes the patient. He has the necessary instruments of precision to corroborate his tentative opinion. But he lacks only the courage to be blunt. He fears to frighten his patient.

For years the same phobia handicapped good men in the diagnosis of incipient tuberculosis. It led them to rather sorry lengths. They fell into the bad habit of telling patients that there was "a weak spot" in one lung, "a slight catarrhal condition" in the apex, or "a few râles" audible by auscultation. They frightened the patient but withheld a definite opinion; in short, they quibbled. And quibbling only led to loss of confidence in the physician sooner or later.

Today we are passing through a similar era in our effort to grasp the tremendous problem of cardiovascular degeneration. We are quibbling with the patient. We are diagnosing "high blood pressure," "functional heart trouble" or "autointoxication." Patients with cardiovascular disease are drifting along from month to month, from year to year, in ignorance of their condition, and, what is worse, seeking relief wherever a plausible promise is held out — and plausibility is the hallmark of the modern charlatan.

What does a physician mean when he assures a patient the "trouble is only functional?" The truth is he does not exactly know what he means. He is quibbling with himself. Disease is altered function; if every organ is normal there will be no altered function. Then how can there be any distinction between "organic" and "functional" disease? Every organic disease is functional; if there were no functional disturbances there would be no symptoms. Every functional disease is organic, only our knowledge is sometimes not sufficient to make the diagnosis, or our opportunity is limited by circumstances beyond our control. The patient either will not submit to necessary observation and study, or cannot afford to pay for them.

The anamnesis of cardiovascular degeneration is written in the testimonials published by the nostrum makers, in the news columns of the daily papers, and in scattered, sketchy notes in the practitioner's case records. It is a puzzle picture so cut up and confused in medical textbooks that one succeeds in piecing it together into a significant whole only after some years of general practice. Perhaps the reason the picture is commonly overlooked is that it requires years to complete it in an individual case. And again, the patient is prone to lose interest in the effort and go off to sit for another artist. It is a new idea, this cardiovascular degeneration. The very term has an unpleasant sound. Degeneration, to the lay mind, suggests degenerate, and degenerate suggests something revolting. Deterioration is no better, for the victim in the last stage resents deteriorating. Had our friends the fishwives not already spoiled it, the change of life might meet the requirement; but one would be taking some risk telling a man that he was going through the change. General arteritis might suffice, unless some one has a more acceptable term.

Bearing in mind that cardiovascular degeneration is the most widespread disease of persons over 40 years of age and that it occurs probably ten times as frequently as cancer, one must think of it as a not improbable cause of the general ill health of patients of middle age who seek medical advice after a prolonged trial of the various nostrums and plausible remedies so popular with the public.

The man or woman of 40 or more who comes complaining of loss of strength, falling off in efficiency both physical and mental, gradual accumulation of superfluous weight, mild dyspnea on exertion, "stomach trouble" or "gas" not apparently due to abdominal lesion, restless or unrefreshing sleep, "all tired out,"

"run down condition," fatigue headaches, "poor circulation" or "nervousness" certainly requires a careful study of the cardiovascular system. A symptom that has struck me as rather suggestive in the anamnesis is failure of sexual competence in a middle-aged man not suffering with any discoverable genital lesion.

When repeated measurements at short intervals and at varying periods of the day show a constant elevation of the systolic pressure above 140 mm. of mercury, a diagnosis of cardiovascular disease should be considered feasible until definitely ruled out by rigid correction of the patient's habits.

Inability of the patient to hold the breath for at least thirty seconds without preliminary hyperpnea should raise the suspicion of cardiovascular disease.

A pulse rate remaining more rapid than normal for over three minutes after fifteen deep knee flexions should also arouse a suspicion of the cardiovascular integrity, be the patient a neurasthenic or not. "Neurasthenia" developing after 40 is in itself suggestive of cardiovascular degeneration, irrespective of alleged overwork or worry.

The full, florid or tumid face, with slight exophthalmos, in a person over 35 who has accumulated excessive weight in recent years and boasts of a hearty appetite, though troubled with "biliousness" or fulness after meals (a high stomach, some patients call it), is very likely a mark of cardiovascular disease.

It is the practice of physicians to treat acute respiratory infections, wrongly called "colds" and "grip," in a routine way, the expectant way, without attempting any great refinements of diagnosis. And this practice has proved reasonably satisfactory. But it has long been the practice to insist on great refinement of the diagnosis in cardiovascular disease, although the routine treatment that proves most successful is very much the same whether the individual case be considered myocarditis, arteriosclerosis, nephritis or apoplexy. Diet, medication, physical therapy, rest, exercise are all managed according to individual indications, and not according to the particular expression of the degeneration in a given instance. The administration of digitalis, for example, is not indicated by the expression of the degeneration, but by the patient's general condition as determined by examination. The same holds true of most remedial measures employed in cardiovascular disease. In other words, treatment cannot be intelligently prescribed for the disease, but must be suited to the needs of the patient.

Although the fine art of prognosis seems ever more difficult and unattainable in general practice, one harbors the idea that the best prognosis rests on an intimate knowledge of the patient's general condition rather than on any fine spun anatomic diagnosis of the specific area of his vascular system which is most injured.

In view of the common incidence of chronic cardiovascular degeneration as compared with that of tuberculosis, a diagnosis of the condition in its incipency should be more frequently made than the diagnosis of incipient tuberculosis, and may be tentative as is that of the latter, with only benefit to the patient.

If physicians were in the habit of making such a diagnosis as a routine in daily practice, many millions of dollars now squandered by the laity for worthless and fraudulent nostrums and countless plausible brands of treatment exploited by irresponsible healers would probably be diverted to the useful work of preserving efficiency and prolonging life.

A PLAN OF RECTAL FEEDING

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In devising a plan of rectal feeding, it seems proper to take into consideration the following facts and principles.

Proof that the colon possesses adequate digestive capacity is lacking, and consequently all food introduced by way of the rectum should be completely pre-digested if it is not already in forms suitable for immediate absorption by the colonic mucosa.

It is necessary to think of the protein ration in terms of amino-acids, and of particular amino-acids, because the proteins of different foodstuffs split up into different groups of amino-acids, and the body not only requires for its synthetic purposes a definite variety of amino-acids, but requires them in particular proportions if its nitrogenous economy is to be favored. Articles of food whose protein contains potentially all the amino-acids that the body needs in approximately equal proportions are animal flesh, eggs and milk. Flesh and eggs are undesirable because of their tendency to putrefy. Milk, while possessing all the advantages of flesh and eggs with some additional ones, is comparatively free from this disadvantage, being protected from putrefaction by its finely mingled lactacidifiable carbohydrate. Milk, then, appears to be the ideal source of protein for a nutritive emulsion. And it is obvious that the milk should be fresh and unboiled, so that its vitamins and enzymes may be preserved unchanged; and thoroughly peptonized and pancreatized, so that its protein may be reduced as far as possible to amino-acids. It should also be skimmed, because any considerable amount of fat introduced into the colon apparently cannot be of use and may be harmful.

Glucose in solution supplies carbohydrate in a perfectly available form.

Salts are as necessary in the diet as protein and fuel, and it is desirable that the salts ration be balanced. The salts of milk approximate the body requirements, and desirable salts may be supplied to a limited extent by strained fruit juices, which add, moreover, in the form of levulose, a carbohydrate that seems to be capable of absorption to a limited extent. The carbohydrate of milk, lactose, is apparently not available for fuel, but its susceptibility to lactic acid fermentation makes it useful for inhibiting putrefaction. Additional salts, particularly salts of sodium and calcium, are required if the rectal feeding is kept up for any length of time.

The essentially alkaline character of the diet should be preserved in a pronounced degree. This principle gives additional emphasis from the fact that the unavoidable insufficiency of the carbohydrate ration diminishes the capacity of the body to burn fats completely and increases the liability to acidosis. The human tissues in general require as a constant condition of their life that they be bathed in an alkaline fluid. This requirement would seem to be an inheritance from the primordial era when our remotest unicellular ancestors began life in the ocean. When in later time our ancestors emerged from the ocean to live on dry land, they dragged with them a bag of alkaline fluid not much dissimilar to sea water; and at the present time our body appears as a bag of such fluid with the tissues floating around in it. Oxidation is a condition of life, and oxidation makes for acido-

sis. Acidosis constitutes as universal and constant a chemical menace to the life of our tissues as bacteria do a biologic one.

The vitamins, whose presence is necessary to enable the body to utilize its food, are apparently of two general classes, as regards certain physical characteristics, namely, the water soluble and the fat soluble. The former can be supplied by milk, cereal decoctions and fruit juices, and the latter by milk.

In accordance with these facts and principles, the following prescriptions for rectal feeding have been constructed.

PRESCRIPTION 1 FOR RECTAL FEEDING

This prescription supplies daily 20 gm. of protein, presumably in the form of amino-acids, fuel of the value of about 700 calories, salts and vitamins, and water to the amount of about 50 ounces.

At 6 a. m., a mixture, consisting of glucose, 1 ounce; strained juice of one-half orange; sodium bicarbonate, 30 grains; sodium chlorid, 30 grains, and water, to make 10 ounces, is injected.

At 8 a. m., 5 ounces of skimmed milk, thoroughly peptonized and pancreatized, are injected.

At 12 m., the same as at 8 a. m.

At 4 p. m., the same as at 6 a. m.

At 6 p. m., the same as at 8 a. m.

At 10 p. m., the same as at 6 a. m.

At midnight, the same as at 8 a. m.

Every second day, at 4 a. m., a colonic irrigation with physiologic sodium chlorid solution is given, and the glucose enema at 6 a. m. is omitted.

Modifications of Prescription 1.—The quantity of the glucose enemas may be reduced to 8 ounces.

The amount of the glucose in the glucose enemas may be reduced to one-half or two-thirds ounce.

The amount of the glucose enemas may be increased to 12 or 16 ounces with or without an increase in the percentage of glucose.

A quarter of an ounce of glucose may be added to each milk enema.

The glucose enemas may be omitted altogether, with or without substitution of drink enemas of physiologic sodium chlorid solution.

Calcium chlorid, 5 grains, may be added to each glucose or drink enema.

A culture of acidophilic bacteria may be added to any of the enemas as specified.

PRESCRIPTION 2 FOR RECTAL FEEDING

This prescription supplies daily fuel to the amount of about 700 calories, salts and vitamins, and water to the amount of 60 ounces, but no protein.

At 6 a. m., a mixture, consisting of glucose, 1 ounce; the strained juice of one-half orange; sodium bicarbonate, 30 grains; sodium chlorid, 30 grains, and water to make 10 ounces, is injected.

At 10 a. m., the same as at 6 a. m.

At 2 p. m., the same as at 6 a. m.

At 6 p. m., the same as at 6 a. m.

At 10 p. m., the same as at 6 a. m.

At 2 a. m., the same as at 6 a. m.

Modifications of Prescription 2.—The same modifications may be made of the enemas in this prescription as of the similar glucose enemas in Prescription 1.

The sodium bicarbonate in the enemas may be increased, even to 60 grains.

The orange juice may be temporarily omitted.

Calcium chlorid may be added to the enemas.

The enemas should be introduced at a temperature of 100 F., and slowly; the patient's buttocks should be elevated, and he should lie on his right side for an hour after the injections.

1218 Pacific Street.

THE SENSORY DISTRIBUTION OF THE TRIGEMINAL NERVE

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The charts used to indicate the place, extent and nature of sensory changes due to disease of the ner-

be shown presently. The word "segmental" should be limited to distributions of intramedullary origin.

Some confusion arises from the fact that the first two of the three distributions, segmental, radicular and peripheral, are identical for the spinal nerves. This is aggravated by the fact that no two of the three distributions is the same for the trigeminal nerves (Figs. 1-4). Figure 5 shows that the trigeminal nerve represents several sensory segments which supply sev-

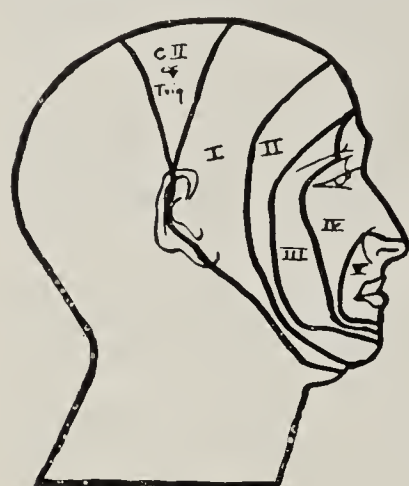


Fig. 1

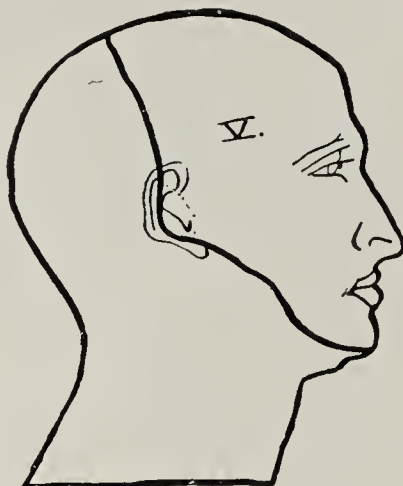


Fig. 2



Fig. 3



Fig. 4

Fig. 1.—Segmental distribution of trigeminal nerve, Section E (Dejerine). Fig. 2.—Radicular distribution of trigeminal nerve, Section C-D (Dejerine). Fig. 3.—Peripheral distribution of trigeminal nerve, Section B-C (Dejerine). Only the areas of the three main branches are shown. Fig. 4.—Peripheral distribution of trigeminal nerve, Section A-B, showing areas of branches of the three main branches: 1. *a*, supra-orbital; *b*, supratrochlear; *c*, infratrochlear; *d*, nasal; 2. *a*, temporal; *b*, malar; *c*, infra-orbital; 3. *a*, auriculotemporal; *b*, buccal; *c*, mental; *d*, gasserian ganglion. Composite of charts of C. L. Dana, Dejerine, Schäfer and Symington in Quain's Anatomy, and F. Merkel in Barker's Monographic Medicine.

vous system fall into two groups: those showing the distribution of peripheral nerves, and those showing the distribution of the spinal segments or posterior roots. The distribution of the trigeminal nerve is sometimes included in both these groups. When it is, it is usually that of the entire nerve root (Fig. 2) or that of the three main branches entering the gasserian ganglion (Fig. 3).

The use of the word "segmental" is somewhat confusing. The terms "segmental" and "radicular" are often used interchangeably, and justly so when they apply to the spinal cord. This cannot be done in the case of the trigeminal, as will

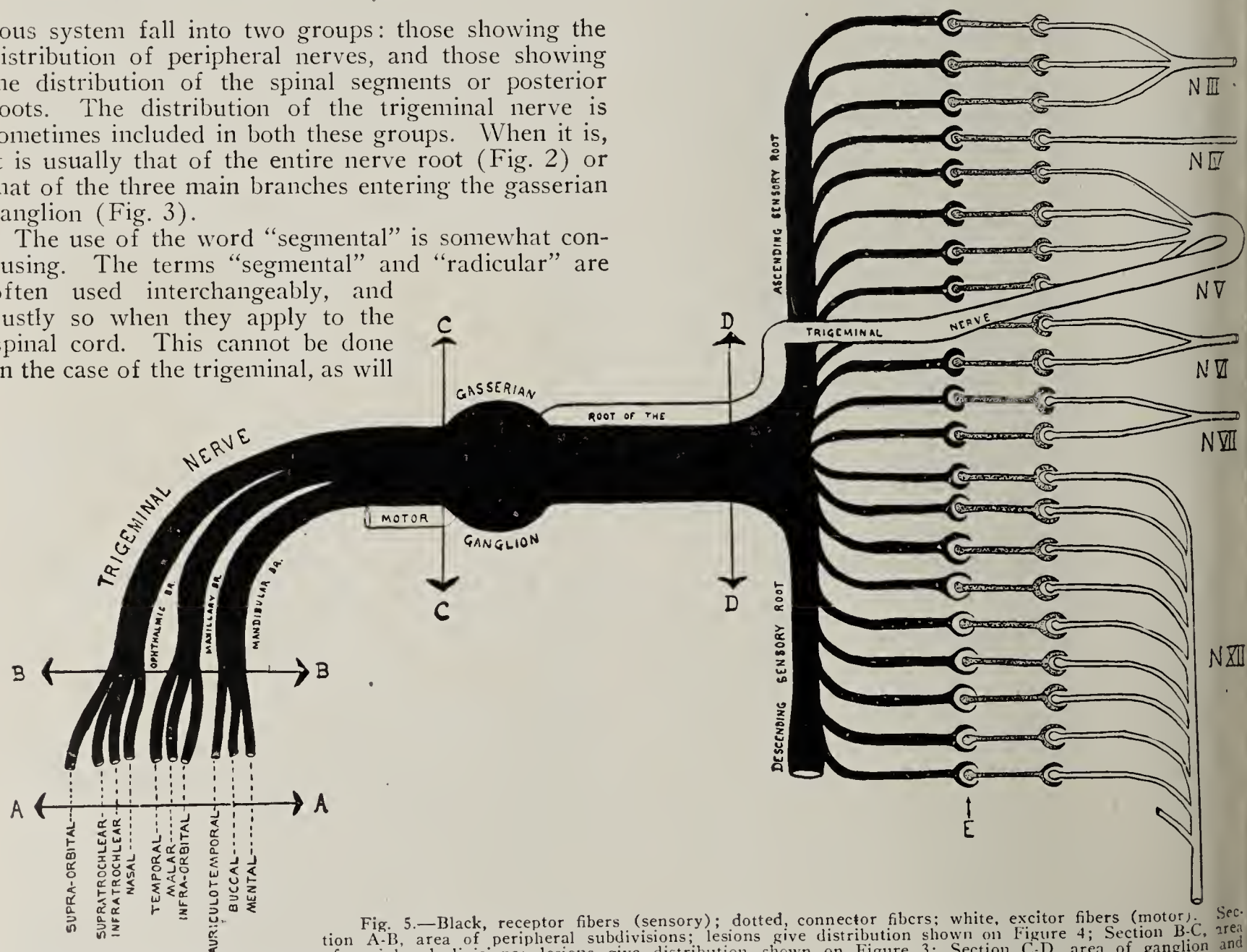


Fig. 5.—Black, receptor fibers (sensory); dotted, connector fibers; white, excitator fibers (motor). Section A-B, area of peripheral subdivisions; lesions give distribution shown on Figure 4; Section B-C, area of peripheral divisions; lesions give distribution shown on Figure 3; Section C-D, area of ganglion and root; lesions give distribution shown on Figure 2; Section D-E, area of ramification of root fibers; distribution of lesions not known with certainty; Section E, area of ganglion cells; place of juncture with fibers connecting to motor nerves and thalamic centers; lesions give distribution shown on Figure 1; lesions above E give distribution of area shown on Figure 2. Each ramification of the entering trigeminal root represents a primitive segment. In the case of the oculomotor roots, one segment has been omitted, in the case of the trigeminal, two, in order not to distort too greatly the relative length of the ascending and descending roots. The diagram is modified from Gaskell's Involuntary Nervous System, 1916, p. 6.

eral motor segments (the third, fourth, fifth, sixth, seventh and twelfth nerves). The diagram emphasizes the segmented nature of the trigeminal.

The inclusion of the radicular distribution of the trigeminal in a segmental chart omits the segmental (Fig. 1). The inclusion of the peripheral distribution (Figs. 3 and 4) is a mistake. The only proper area in a radicular chart would be the entire trigeminal area

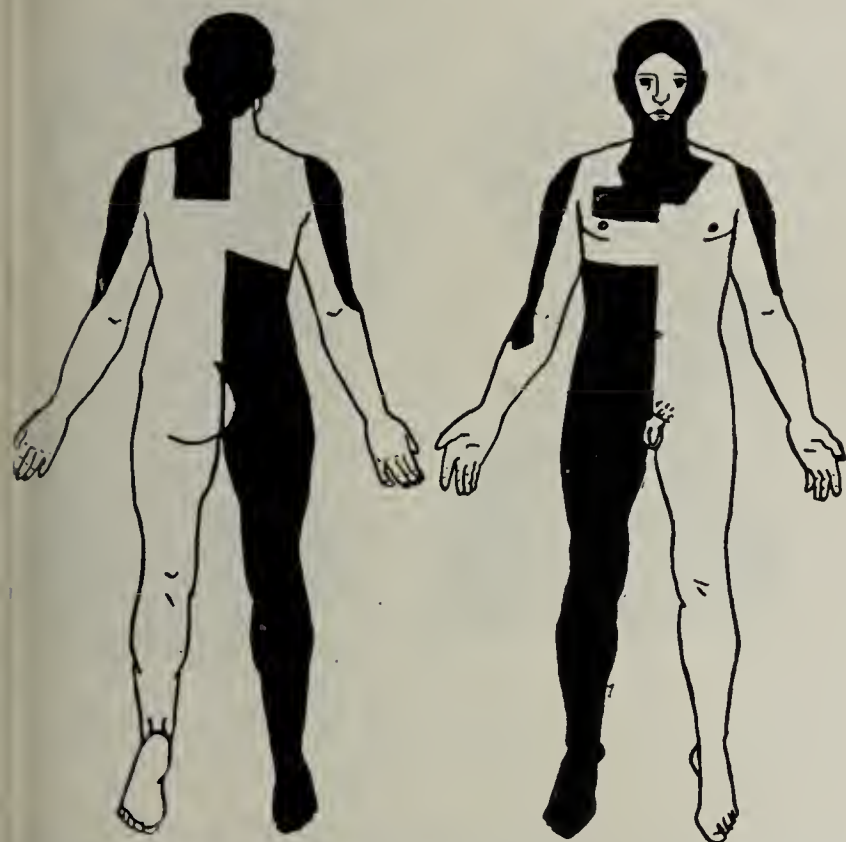


Fig. 6 (Case 1).—Areas of loss of pain sense. Note the helmet shape of analgesia.

Fig. 2). An examination of a number of textbooks in neurology has shown that the segmental distribution of the trigeminal (Fig. 1) is given only in Dejerine's "Sémiologie des affections du système nerveux" and White and Jelliffe's "Diseases of the Nervous System."

The somewhat complicated anatomy of the trigeminal as compared to that of a typical posterior root (Fig. 5) makes the question of the skin distribution of its sensory part equally complicated. Starting with the peripheral endings there are five different sensory distributions. The sections are divided as follows (Fig. 5):

Section A-B. Peripheral endings to the points of union of the branches of the three main divisions, ophthalmic, maxillary and mandibular (Fig. 4).

Section B-C. From the point of union of the branches of the three main divisions to the point of union of the three main branches themselves, that is, the distal end of the gasserian ganglion (Fig. 3). Lesions of sections A-B and B-C give peripheral distributions.

Section C-D. From the distal end of the gasserian ganglion to the entrance of the nerve into the lateral aspect of the pons (Fig. 2). Lesions of this give radicular distribution.

Section D-E. From the point at which the fibers entering the pons begin to pass to the sensory intramedullary nucleus, to that nucleus itself. This nucleus extends from slightly above the level of the entrance of the nerve into the pons down to the third cervical segment (Fig. 5). It may readily be seen that a lesion involving the fibers just after their point of entrance into the pons will give a distribution like that produced

by a lesion of Section C-D of the nerve. No diagram of the distribution which would be caused by a lesion of any part of Section D-E can be given, the reasons being that the description given by Dejerine (p. 836) is not clear to me, no diagram has been found illustrating this distribution, and no cases have been seen in which it has been made out.

Section E. This includes the ascending and descending nuclei and the fibers passing thence to the thalamus at their respective points of emergence from the nuclei. Lesions here give segmental distribution. The course of these fibers to the thalamus is known. They divide into two parts, a dorsal and a ventral. However, the function of the two parts has not been determined with certainty so that it would be impossible to give a chart of their distribution.

Two cases illustrating the segmental distribution are given to emphasize the necessity of having charts on which to indicate it. Only brief reports are given, as the object is only to emphasize the type of trigeminal distribution.

CASE 1.—C. R., man, aged 47, Italian, hod carrier, single, had a queer feeling in the legs, an occasional burning in the right leg, weakness of the legs and the right hand, and pain in the lumbar region. He had had no illness of importance. Onset had occurred five years before, when he noted stiffness of the fourth and fifth fingers of the right hand. Two and a half years later he noted jumping of the left leg and a feeling of burning in the right leg. In the spring of 1917, weakness of the right hand began and also some difficulty in recognizing objects when grasped but not seen (astereognosis). He was unable when seen to feel cold water as such on the left leg. There was no bladder disturbance.

There were signs of involvement of the pyramidal tract, right and left. There was a right and left Babinski reflex, the knee jerks were exaggerated, and there was ankle and patellar clonus. The abdominal reflex was absent on the left. The reflexes of the upper extremity were present and equal.



Fig. 7 (Case 1).—Areas of loss of pain sense.



Fig. 8 (Case 1).—Areas of loss of pain sense.

There was fibrillary tremor of both deltoid muscles and the left quadriceps femoris. There was slight ataxia of the left hand (F-N test). Romberg's sign was absent. The sensation is shown in Figures 6, 7 and 8. Only pain and temperature were involved. Cerebral nerves other than the fifth were not involved.

The diagnosis was syringomyelia, syringobulbia.

CASE 2.—G. W., woman, aged 65, married, housewife, complained of tingling and paresthesia of the arms, especially the left. There was muscular twitching of the arms and shoulders. There was stiffness of the back and a feeling of

constriction about the chest. There was difficulty in speaking and swallowing. Constipation was obstinate. The past history was negative. About twenty years before, the patient sustained a severe injury to the neck from a fall beneath a wagon. She was unconscious. She remained in bed seven or eight months because her back was weak. The left arm was paralyzed, but function was recovered about five weeks after the accident. The neck was weak and remained so for several years, there being difficulty in holding up the head. After a long period of practical freedom from any trouble, the following symptoms began to appear: difficulty in swallowing and talking, unsteady gait, and inability to use the left arm properly. These symptoms appeared about three years before the examination. There was also a feeling of constriction about the chest. All these symptoms have progressed slowly. At the time of the examination the patient was unable to lift her left arm; it felt weak and heavy. There had also developed a feeling of stiffness in the right arm. There had been obstinate constipation for three years. There was no history of bladder involvement. There was palpitation of the heart on the slightest exertion. She had also noted some unsteadiness and difficulty in walking. Four or five years before, the patient, after a violent sneeze, felt a snap in the neck and an electric shock down the left arm. She felt faint.

There was a horizontal nystagmus. The right pupil was greater than the left. Reaction was fairly prompt. As the result of an old accident, the patient could not count fingers with the left eye. She was hoarse. The reflexes were exaggerated at the knees and ankles. The Babinski reflex was elicited on both sides. There was no clonus. Hoffman's sign was observed in both hands. The right arm was freely movable. The left arm could not be raised. The biceps and triceps were powerless. Extension and flexion of the wrist was feeble. The trapezius and deltoid were almost powerless. The sternocleidomastoid was weaker than that on the right; the change, however, was slight. There was myokymia in both arms and shoulders, though mainly in the left. The left arm 50 cm. from the tip of the middle finger measured 1.5 cm. shorter than the right. The gait was slow and shuffling.

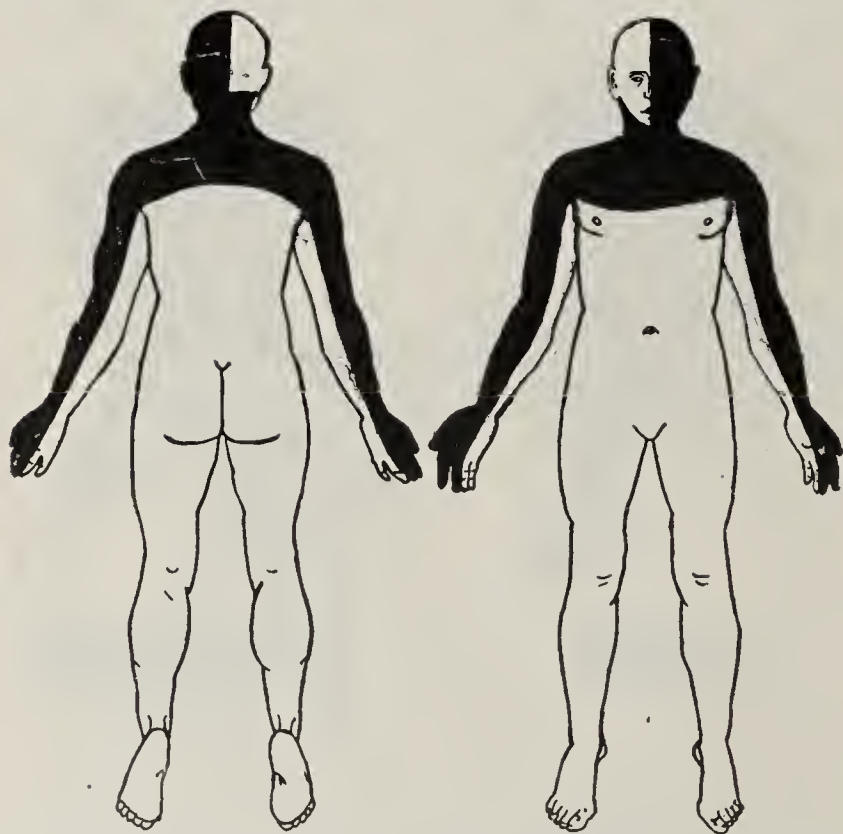


Fig. 9 (Case 2).—Areas of loss of pain sense, October, 1914.

There was no manual or pedal incoordination. There was slight postural difficulty in the thumb of the left hand. The sensation is charted in Figures 9, 10 and 11. Figure 9 shows the condition in October, 1914; there was involvement of the entire left side of the head. Figure 10 shows the condition two months later, and Figure 11 the condition two years after that. These charts are of pain sensation only. The changes of the extent of involvement of temperature sensation is

not discussed, as this paper is meant only as a comment on types of trigeminal sensory distribution.

The diagnosis was syringomyelia and syringobulbia.

It will be seen that in Case 1, V-1 and V-2 are involved while the hypoglossal nucleus is not. This implies that the areas V-1 and V-2 are equivalent to the substantia gelatinosa Rolandi (sensory nucleus of the trigeminal) from the upper limit of the third cer-



Fig. 10 (Case 2).—Areas of loss of pain sense, December, 1914. Note that the whole left trigeminal area was not involved at this time, as in October.



Fig. 11 (Case 2).—Areas of loss of pain sense, November, 1916. Note considerable changes in the contour.

vical segment to about the level of the hypoglossal nucleus. Though we have no evidence like this to indicate that the place of transition between V-4 and V-5 corresponds to the plane of entrance of the nerve, the fact that there is a small part of the sensory nucleus running above this plane would make it probable. The area V-5 would in that case be supplied by that part of the nucleus lying above the plane of entrance of the nerve. As has been said above, we have no clinical evidence at hand to prove this.

It is suggested that charts showing cerebrospinal radicular distribution (Fig. 2) be eliminated. They are unnecessary because a cerebrospinal segmental chart will show the segmental distribution of the trigeminal (Fig. 1) and spinal nerves as well as the radicular distribution of the spinal nerves. On the other hand, a cerebrospinal peripheral chart will show the peripheral distribution of the trigeminal (Fig. 3) and spinal nerves as well as the radicular distribution of the trigeminal (Fig. 2, sum of the three divisions V-1, V-2 and V-3). Even greater usefulness could be obtained from the peripheral chart by giving the areas of the branches of the three divisions, V-1, V-2, V-3, marking the large divisions by a heavier line than that showing their subdivisions (Fig. 4). Thus this peripheral chart (Fig. 4) would show peripheral distribution of both divisions and subdivisions, while the segmental chart would show segmental distribution (Fig. 1); and they both would show the radicular distribution (Fig. 2, sum of V-I, V-II, V-III, V-IV and V-V in the segmental, sum of V-1, V-2 and V-3 in the peripheral). Either chart could be used for thalamic and supratheralamic distributions.

141 West Seventy-Fifth Street.

The Cost of Health.—We hear much of the high cost of living, but we overlook the fact that many of the best things of life can be had for nothing.—*Monthly Bulletin* (La.).

Clinical Notes, Suggestions, and New Instruments

A NEW BED DEVICE FOR FACILITATING THE DRAINAGE OF EMPHYSEMA THORACIS*

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It is with the realization of the gravity of an improperly drained empyema and with the hope of facilitating such drainage, that I present this device.

It consists essentially of two parts: (1) an elevated canvas bed, spanned across the bed frame, with an opening in the canvas to permit the passage of a tube from the pleural cavity through it into the pus bottle below (Fig. 1), and (2) a series of air-tight bottles and tubes below the canvas bed (Fig. 2).

Bottle A (Fig. 3) is an 8-ounce, air-tight, pus bottle communicating with the tube in the pleural cavity. From Bottle A, air is exhausted by means of Bottle B, which is a 2-gallon irrigating bottle in which a vacuum is created by letting water flow out of its spout at the bottom by gravity into Bottle C, which is a 2-gallon plain bottle. When Bottle B is empty, it can again be refilled from Bottle C.

The patient is placed over the elevated canvas bed with the affected side dependent, with the tube from the chest through the opening in the canvas bed. This position favors a constant gravity drainage.

The system of tubes and bottles below the canvas bed, creating a vacuum in the pus bottle, tends to exhaust the pus from the pleural cavity, especially that which is not in direct line with gravity, or which, being too thick and tenacious, would tend to clog the drainage tube.

It would seem at first sight that other and better means of aspiration are available; but the one used in this device, which, with but slight modification, is the one previously used by Dr. Martin W. Ware of the attending staff at Mount Sinai, is perhaps the most useful. It is self-regulating in that, when the degree of vacuum in the pleural cavity is equal to that in Bottle B, the flow of the water from Bottle B to Bottle C stops. When the patient coughs or takes a deep breath, so that the pressure is again raised in the pleural cavity above that in the vacuum system in the bottles, the

attempted—because a cough or deep breath, which in this method acts as an automatic start, would, in case of the use of simple siphonage, cause expulsion of the water from the siphon tubes and thus necessitate an attendant repeatedly to readjust the exhaust system.

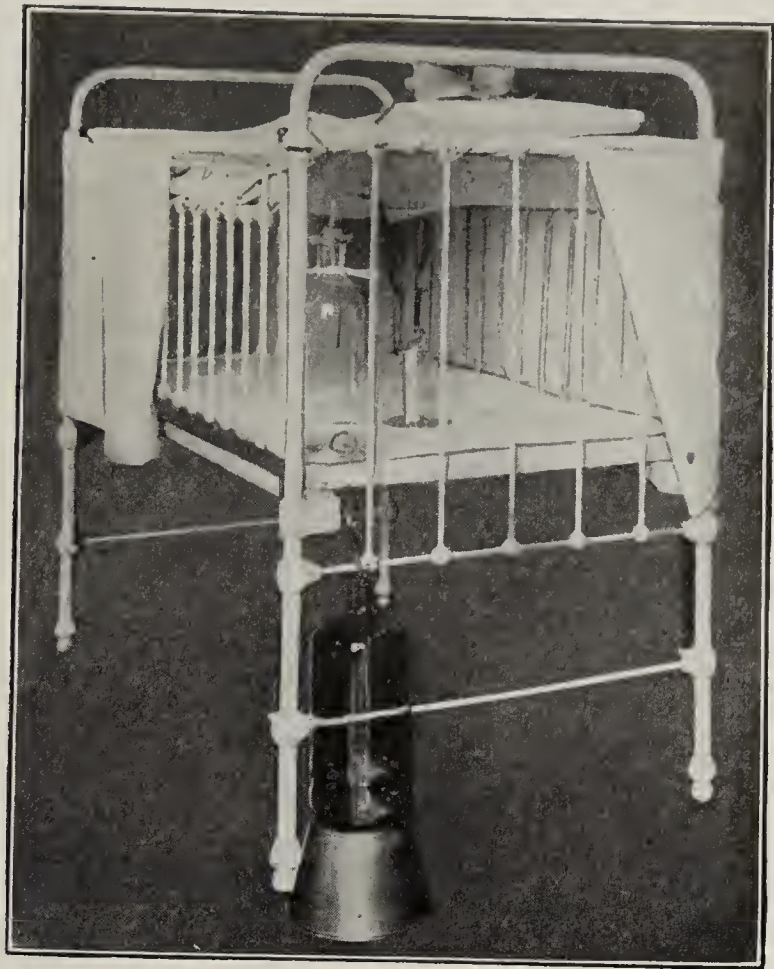


Fig. 2.—Arrangement of bottles and tubes.

ESSENTIALS TO THE PROPER USE OF THE DEVICE

1. The canvas bed should be sufficiently elevated to permit manipulation beneath it (from 16 to 20 inches).
2. The exhaust system should be air tight. Rubber stoppers should be used in all bottles.

3. The glass connecting tips should be of wide caliber throughout.

4. The drainage tube, which during operation is inserted to the depth of the pus cavity, should be withdrawn to about 1 inch from the opening in the chest, within from twenty-four to forty-eight hours after operation, so as to prevent accumulation of pus in the dependent portion of the pleural cavity around the base of the inserted tube.

5. The patient should be placed over the opening in the canvas bed, the affected side in the dependent position, with the tube from the chest pointing vertically downward in the direct line of gravity.

6. The drainage tube should be changed every three or four days in order to prevent plugging by tenacious pus or pieces of fibrin adhering to its lumen.

7. In order that the wound may be dressed, the tube leading from the chest to Bottle A is clamped, and disconnected at D. The tube leading from Bottle B to Bottle C is clamped. The patient is raised sufficiently to be in the prone position (Fig. 4). While the wound is being dressed the tube is secured to the chest wall by means of narrow strips of adhesive plaster,

through a safety pin, which is passed through the wall of the tube, thus preventing the tube from slipping out of the chest.

8. In the case of children under 5 years of age, a binder may be placed across the chest and abdomen, reaching from the axillae to the umbilicus, secured by means of safety pins

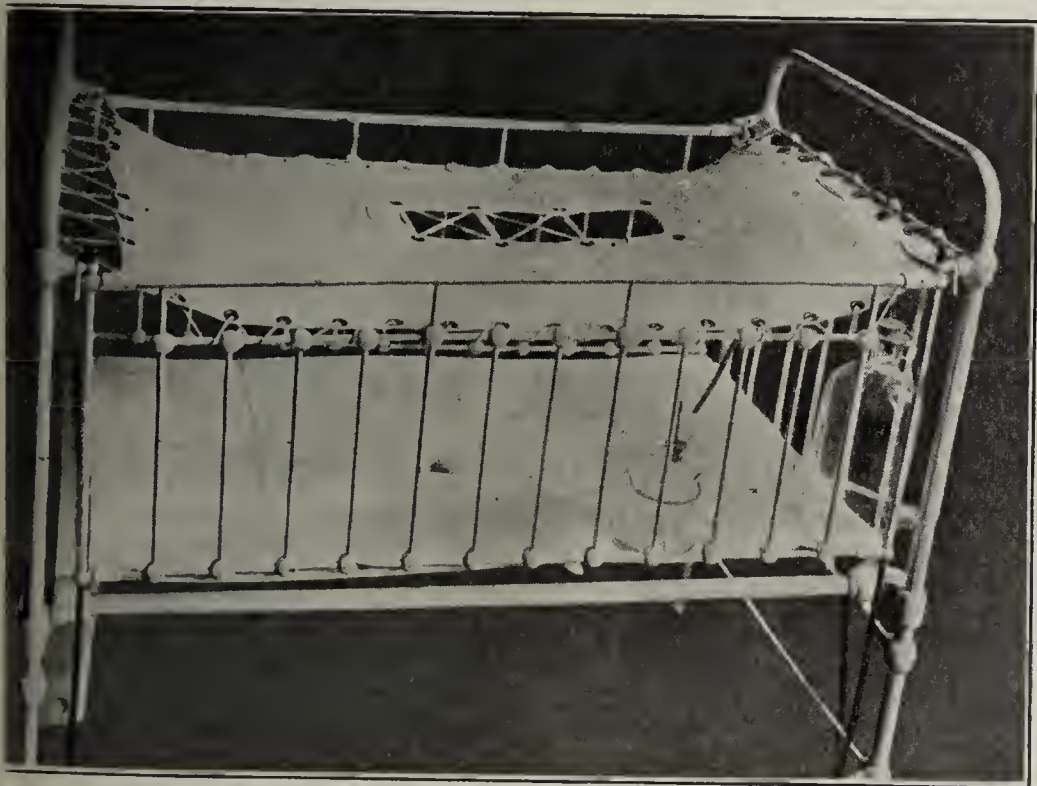


Fig. 1.—Bed device for facilitating the drainage of empyema thoracis.

water begins to flow again automatically, and aspiration continues.

At this point I would caution against the use of siphonage to create a vacuum in the pus bottle—as is often

* From the Surgical Division, Service of Dr. Howard Lilienthal, Mount Sinai Hospital.

to the canvas bed on each side in order to keep them in position. This should not be so tight as to immobilize the child.

9. After ten or twelve days, when only a small amount of serous fluid drains (from 2 to 4 drams in twenty-four hours), the child may be removed from the elevated bed, suction may be discontinued, and a small tube, cut down to the level of the chest wall, may be kept in the wound for three or four days to let the remaining pus drain into the dressing, after which the wound may be allowed to close.

10. Before the tube is finally removed from the chest, or if the temperature is oscillating, a roentgenogram should be taken to ascertain whether or not there is an encapsulated suppurating focus.

ADVANTAGES AS OBSERVED IN HOSPITAL WARDS

1. The constant gravity drainage with the intermittent self-regulating suction, besides emptying the chest in a short

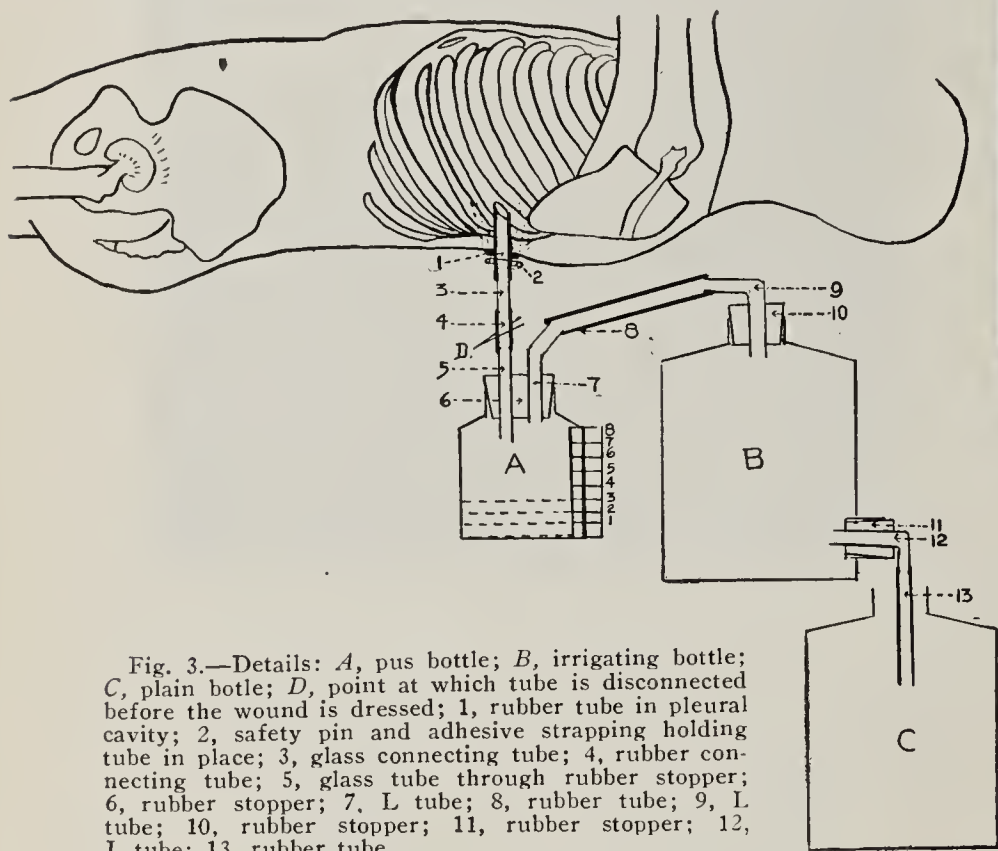


Fig. 3.—Details: A, pus bottle; B, irrigating bottle; C, plain bottle; D, point at which tube is disconnected before the wound is dressed; 1, rubber tube in pleural cavity; 2, safety pin and adhesive strapping holding tube in place; 3, glass connecting tube; 4, rubber connecting tube; 5, glass tube through rubber stopper; 6, rubber stopper; 7, L tube; 8, rubber tube; 9, L tube; 10, rubber stopper; 11, rubber stopper; 12, L tube; 13, rubber tube.

time, also removes subsequently formed pus as quickly as it forms, thus removing the irritating effect of retained pus from the pleural surfaces, so that, within from five to twelve days after operation, only a serous fluid is drained.

2. It prevents retention empyemas, thus incidentally preventing oscillating temperatures and toxicity from absorp-



Fig. 4.—Patient in position for dressing of wound.

tion; therefore, the appetite of the patient is good, and convalescence is rapid.

3. The partial vacuum created by the exhaust system tends to facilitate the early expansion of the impaired lung.

4. Lying on the affected side facilitates the emptying of the pus cavity and removes the weight of fluid, which would press on and impede the function of the sound and compensating lung on the unaffected side.

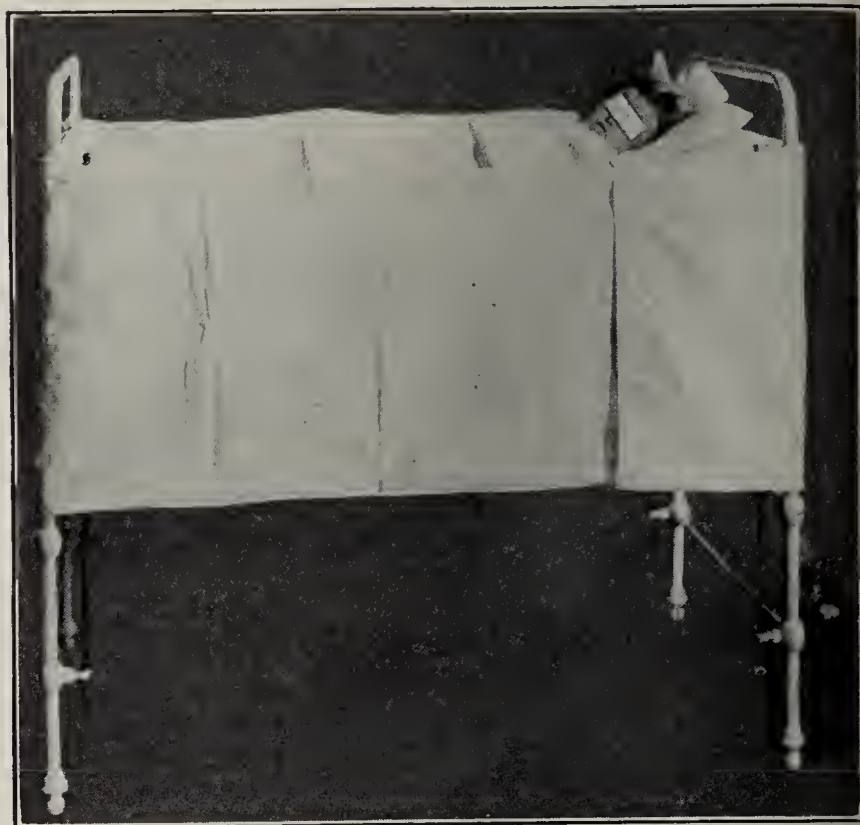


Fig. 5.—Empyema bed as it appears in hospital wards, draped, in order to prevent strong currents of air reaching patient from beneath.

5. Pus does not drain into the dressings, whereby the excoriation of the skin from pus-sodden dressings is prevented.

6. Minor thoracotomy usually suffices, because of ample subsequent drainage.

7. The amount of drainage as well as the character of the pus can be ascertained at a glance by aid of a transparent and graduated pus bottle (Fig. 3).

8. The device is simple in construction, sanitary, comfortable, well ventilated, applicable to any hospital bedstead, and applicable to a child of any age.

This method of draining empyemas has been in use at the Mount Sinai Hospital since August, 1917, and has given a uniformly gratifying result. The number of cases, as well as the details as to the influence of this method of drainage on them, will be reported at a future date.

THE PERONEAL TENDON AS A TRANSPLANT*

M. S. HENDERSON, M.D., ROCHESTER, MINN.

In certain injuries to the hand, the tendons may be divided. The patient may not present himself for some months after the injury, and the surgeon is then confronted with a great gap to be bridged between the ends of the tendon. Fascia lata removed from the thigh has been used with some success to make up this deficiency. Occasionally, the patellar ligament is accidentally divided and there is lack of extension power with the consequent "flop" knee.

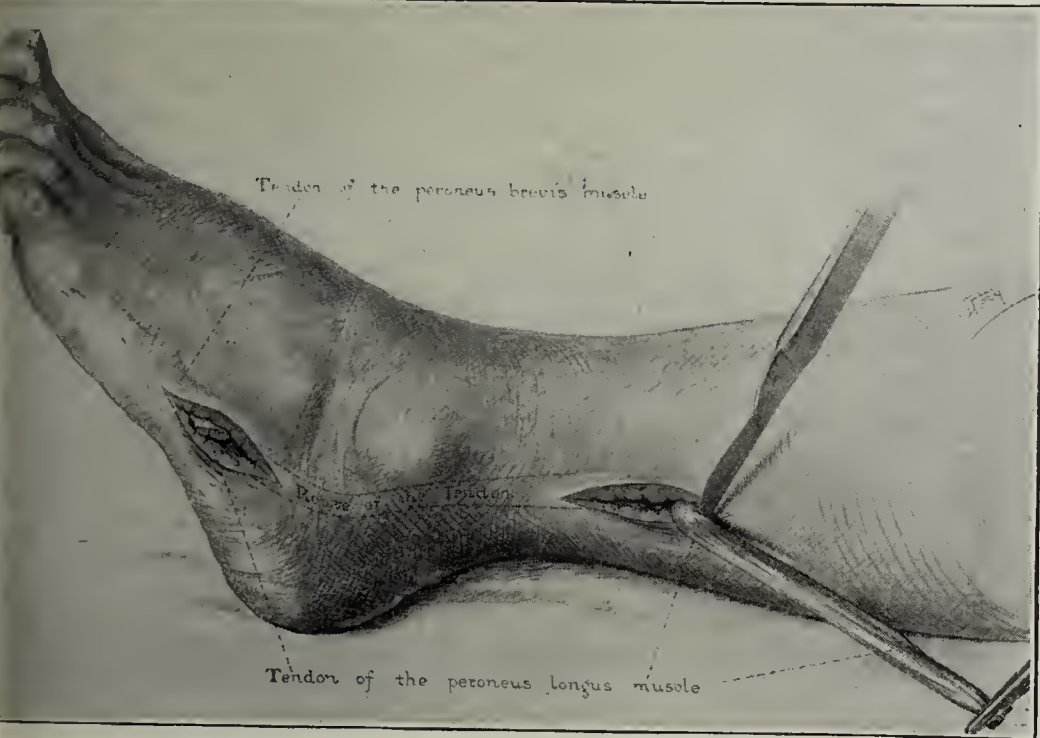
In two cases, one in which the hand was involved, and the other the knee, we removed a large piece of the peroneus longus and used it as a free transplant. In the knee the result was all that could be desired; the operation on the hand is too recent to justify the drawing of conclusions; however, the wound healed by first intention. I have not seen in the literature any reference to the use of the peroneal tendon as a free transplant, and, even though it may have been used, because of the general lack of knowledge concerning it, the method is herewith reported. The tendon has an

* From the Mayo Clinic.

advantage for transplantation over the fascia lata, in that it is a true tendon ready to take on function as soon as nourished in its new home. The removal of the tendon causes no inconvenience to the patient, and it is possible that full regeneration takes place.

About seven years ago I had an opportunity to observe the work of Sir Robert Jones, and since then I have operated in many cases of rigid flatfoot according to his method, that is, removing an inch or more of the peroneal tendons. No bad results or failure of regeneration of the tendons have followed. When a piece of the peroneus longus is removed, the peroneus brevis remains and is ample for function even if the peroneus longus does not regenerate.

After the field where the tendon is to be used is prepared (the leg having been prepared previously), the knee is flexed and the leg is rotated inward. Two small incisions are used. The lower incision is made below and a little in front of the external malleolus where the long peroneal tendon is divided just before it turns around the sole of the foot to be inserted into the head of the first metatarsal bone. The upper incision is made just behind the fibula, about 3 inches above the tip of the external malleolus, and the tendons are exposed. Pulling on the tendons above permits the peroneus longus to be readily identified; it is then divided below, and pulled up



Method of removing peroneal tendon for transplantation.

through the upper incision and divided there. In this manner, 4 or 6 inches of large tendon may be obtained and divided longitudinally into two or three pieces if so desired.

THE PRACTICABILITY OF THE MODIFICATION OF THE LAVATORY CHAMBER

ZAN D. KLOPPER, M.D., CHICAGO

One of the many causes of constipation is the faulty position the body assumes during the time of defecation.

To complete the act more successfully, it is desirable to bring the abdominal muscles into play, producing pressure in the colon and intestine, and forcing the fecal matter into the rectum. Such an accumulation may evacuate itself more forcibly, as a result of the bulk, and the stimulation of the rectal nerves governing the evacuation.

The majority of those persons whose occupations compel them to remain sitting the most of the day, as bookkeepers, machinists, chauffeurs, various officials, students, many artists, and also obese persons who take little or no exercise, find no difference between the seat ordinarily occupied during the day's activities, and the seat of the lavatory chamber.

Figure 1 shows the position of the body on the ordinary lavatory seat. While in this condition the abdominal viscera remain passive, and the abdominal muscles exert no more pressure than during any other activities while sitting. Furthermore, the lavatory seat, being comparatively comfortable, inclines one to reading, meditation or the planning of the day's work. After unsuccessful attempts, many persons will postpone the act for a more convenient time, thus neglecting to form the habit for every day at the same hour.

Figure 2 is a suggestion for a modification of the lavatory chamber. The horizontal seat is raised under the thighs, while a projected step assists in elevat-

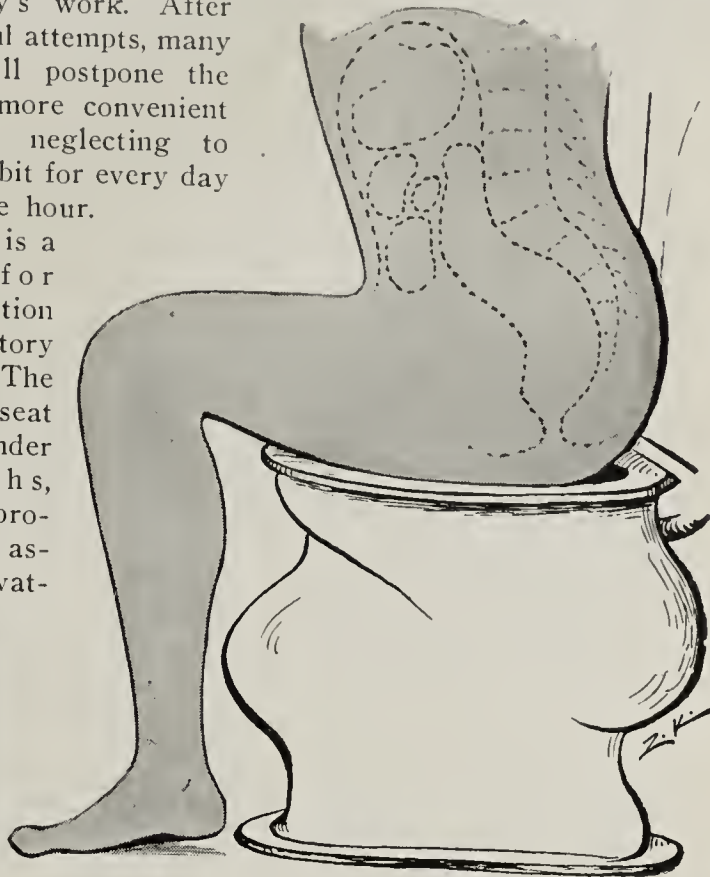


Fig. 1.—Position of the body on the ordinary lavatory seat.

ing the legs, thus bringing the thighs toward the abdomen, and compressing the rectus abdominis muscle anteroposteriorly. The body finds itself in such a position that the pressure from above by the diaphragm can be easily



Fig. 2.—Position of the body on modified lavatory seat.

accomplished, and thereby the contents of the abdominal viscera are easily compressed downward.

1642 West Division Street.

Military Medicine and Surgery

REPORT ON ARSPHENAMIN

SATISFACTORY USE OF THE ARSENOBENZOL BRAND IN
ONE THOUSAND, ONE HUNDRED AND FOUR
INJECTIONS FOR SYPHILIS

VICTOR N. MEDDIS, M.D. (LOUISVILLE, KY.)

Captain, M. R. C., U. S. Army

AND

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Lieutenant, M. R. C., U. S. Army

CAMP ZACHARY TAYLOR, LOUISVILLE, KY.

The product introduced as salvarsan became scarce or unobtainable with the beginning of the European war. Under an act of Congress, a number of firms have been licensed to manufacture this product under the name arsphenamin. This American-made product, arsphenamin, is essentially identical with the product formerly sold as salvarsan.

At the base hospital, Camp Zachary Taylor, Ky., in a series of 1,104 injections of four different preparations, namely salvarsan (Farbwerke-Hoechst Company) of which we gave eighty-five injections, arsenobenzol, 1,011 injections, arseminol, twenty injections, and arsamin, eight injections, the results were the same in each preparation, salvarsan being slightly more soluble than the other preparations.

The method of preparing the solution as used here is as follows: A flask with a capacity of 500 c.c. is used in which to make the solution. Into this is poured 150 c.c. of freshly distilled sterile water with a temperature of about 95 C., and then ten ampules of arsphenamin are added. The solution is vigorously shaken after the contents of each ampule are emptied into the flask, until all the particles are dissolved. The solution is next rendered slightly alkaline by the addition of freshly prepared 15 per cent. sodium hydroxid solution. This at first forms a heavy flocculent precipitate which redissolves on the addition of more sodium hydroxid, and becomes clear. It is tested with litmus paper for final alkalinity, and after being filtered, it is ready for injection. We started by using 100 c.c. of water to each 0.6 gm., but gradually reduced the quantity of water until now it is being given in 30 c.c. of water. In no case were any ill effects seen from using this concentrated solution. The ordinary gravity method is the one employed, and a sufficient quantity for ten injections is prepared at one time. The median cephalic or basilic veins are the ones ordinarily selected, and with a 20 gage needle, 30 c.c. of the solution are allowed to run in, from eight to ten minutes being taken for the injection, the temperature meanwhile being kept at about 37 C. Ten minutes before receiving the injection the patient is given a hypodermic of 10 minims of a 1:1,000 solution of epinephrin subcutaneously to prevent any marked reaction. The injection is given usually in the afternoon, as less time is thus lost from duty. A purgative is given the night before, the noonday meal is omitted, and after receiving the injection the patient is required to remain quiet for the rest of the day.

From a therapeutic standpoint as good results were obtained with the arsenobenzol brand of arsphenamin

as with the salvarsan brand. As a majority of the cases of syphilis were seen in the early secondary stage with initial chancre, macular eruption on the body or mucous syphilids in the mouth, we were able to begin treatment early and found that it required from three to four injections given every seven days to render the patient free from all active lesions. A dark field illumination test was made in all cases presenting suspicious ulcers, whether genital or extragenital, and blood was taken for a Wassermann test in every case. As soon as a man was free from all active lesions he was returned to duty with instructions to report back twice weekly for treatment. A course of treatment ordinarily consisted of eight intravenous injections of arsphenamin and a corresponding number of mercuric salicylate in 1 grain doses, given intramuscularly. These were repeated every seven days. The arsphenamin was usually given either on Monday or Tuesday, and the mercuric salicylate on Thursday or Friday. After receiving a full course of treatment, the patients were instructed to report for weekly inspection. If, at the end of a month, they presented no active symptoms, blood was again taken for a Wassermann test to determine what further treatment was necessary. Rarely in our experience has it required more than four injections to clear up all active lesions entirely, and in only three cases was it necessary to give more than the eight injections, before the first rest period.

Arsphenamin was given in several cases of phagedenic chancroid, that did not respond to other treatment. The improvement was rapid thereafter in all the cases. We regard all slow healing indolent ulcers as syphilitic, and they are treated as such even though the *Spirochaeta pallida* cannot be found in the lesion. As the majority of patients had received some form of local treatment, the presence of the spirochetes was, of course, hard to demonstrate. In some cases, in which the initial lesion did not show the organism, the enlarged inguinal glands were aspirated, a small hypodermic needle being used, and the gland being macerated to obtain some of the contents for examination. This causes very little pain and discomfort, and often the spirochete can be found in this way when it cannot be demonstrated in the initial lesion.

In this series of cases, only three extragenital chancres were seen, two being on the upper lip and one on the lower lip, and giving a history of no genital involvement.

In those cases in which the spirochetes were found in the initial lesion, treatment was begun immediately, and blood taken for a Wassermann test. It was rare for secondary manifestations to develop. In no case was arsphenamin contraindicated after careful examination was made of the heart and kidneys.

We are firmly convinced that the toxicity of arsphenamin is reduced to nil if proper precautions have been taken in preparing and giving the solution.

REPORT OF CASES

Two cases, selected at random, are herewith reported:

CASE 1.—J. W. McL., aged 23, had had an initial lesion on the glans penis two years before, with a macular eruption on the body, and sore throat at that time. He maintained that a ++ Wassermann test was made. He received one injection of neosalvarsan and took mercury pills for four months. He had no further trouble until about three months

before when the right testicle began to enlarge, but was not painful and did not worry him unless he drilled hard. He was sent to the base hospital by the regimental surgeon. A Wassermann test was made. The right testicle was enlarged, hard, smooth and not painful. This was diagnosed as interstitial sclerosis and treatment was started. He was given eight injections of arsphenamin every seven days, and also mercuric salicylate. At the end of the fourth injection much improvement was noticed, the testicle becoming softer and much smaller in size. After receiving the eight injections, he was sent back to duty free from symptoms, with the testicle normal in size and the blood test negative. He was seen again at the end of one month, and two months, and was entirely free of symptoms.

CASE 2.—A. G. D., aged 25, admitted to the hospital, Dec. 1, 1917, had had an ulcer on the glans penis eight months prior to entrance in the Army, and said he did not take any treatment and had no further symptoms until about five weeks before, when he noticed that he was becoming jaundiced. His skin was very yellow, he was easily exhausted on the slightest exertion, and he complained of severe headaches in the occipital region. On admission the patient was markedly jaundiced, the liver was enlarged and the stools were clay colored. The patient said he suffered from constipation. The Wassermann test was ++++. We began treatment, giving him one injection each week both of arsphenamin and mercuric salicylate. At the end of the course of eight injections his general appearance greatly improved, jaundice disappeared, and he returned to duty. At the end of a month and again at the end of two months he was still free from symptoms. The Wassermann test was negative.

Numerous cases could be cited to show the therapeutic value of arsphenamin, would space permit.

CONCLUSIONS

1. The arsenobenzol brand of arsphenamin made in this country is in our experience nontoxic, and equally efficient therapeutically as the original Ehrlich preparation.
2. It may be used in concentrated solution with no effects.
3. Epinephrin, given in a 1:1,000 solution ten minutes before the injection, will control reaction.
4. The only reaction noted in this series of cases is slight headaches; in some cases, diarrhea and slight malaise were noted.
5. In phagedenic chancroids, "arsenobenzol" has a very beneficial effect, and is recommended where the healing is slow and response to other treatment is poor.

USE OF RABBITS AS SUBSTITUTE FOR WHITE MICE IN PNEUMOCOCCUS TYPE DIFFERENTIATION

HAROLD K. FABER, M.D. (SAN FRANCISCO)
Captain, M. R. C., U. S. Army

CAMP LEWIS, AMERICAN LAKE, WASH.

In spite of the usefulness of Avery's rapid method of pneumococcus type differentiation, it is often desirable to resort to animal inoculation either for differentiation or for isolation of pneumococci.

The susceptibility of rabbits to pneumococcus infection is so well known that there may be some reason why they have not been generally used instead of white mice for pneumococcus type differentiation; but the reason is not clear, and no statements on this point have come to my attention.

Intraperitoneal inoculation of rabbits with pneumococcal sputum has been carried out in fifteen instances, and in thirteen of these pneumococci were

found in the heart's blood and peritoneal cavity in abundance, always with characteristic capsules. No other organisms were found by smear in the exudate, but in two instances in which the animals had been killed about twenty-four hours after inoculation a few colonies of other bacterial species were found in the culture. Pneumococcus in pure culture was in these cases recovered from the blood. In the two cases in which pneumococci were not recovered from the peritoneal cavity, the cultures and smears were negative, the Avery culture from the sputum was negative, and no pneumococci had been found in the sputum. It is assumed that the sputum was improperly collected.

The Rockefeller technic of preparation and injection of sputum was followed, except that about three times as much sputum was injected as is recommended for mice. Several of the rabbits died within twenty-four hours after inoculation. The others were killed from twenty-four to thirty-six hours after inoculation, and these yielded abundant exudate.

The age and size of the rabbits in the present small series seemed to have no influence on the severity of the infection, but this opinion may be modified by a longer experience. Rabbits as small as 600 gm., as large as 3,500 gm., and as young as 2 weeks were successfully inoculated.

It is not desired to express an opinion as to the relative merits of white mice and rabbits in this work. A substitute for mice was needed, and it was found possible to employ rabbits with satisfactory results.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CHLORCOSANE.—A liquid, chlorinated paraffin containing its chlorine in stable (non-active) combination.

Actions, Uses, Dosage, Physical and Chemical Properties.—See THE JOURNAL, Feb. 16, 1918, p. 459.

Chlorcosane (Calco).—A brand of chlorcosane.

Chlorcosane (Calco) contains 31 to 35 per cent. of chlorine in stable (non-active) combination when assayed by the Carius method.

Manufactured by the Calco Chemical Company, Bound Brook, N. J. No U. S. patent or trademark.

Chlorcosane-Monsanto.—A brand of chlorcosane.

Chlorcosane-Monsanto contains 27 to 30 per cent. of chlorine in stable (non-active) combination when assayed by the following method:

Mix intimately 10 Gm. of sodium peroxide (Na_2O_2) and 1 Gm. of sodium nitrate (NaNO_3) and place about one-third of the mixture in a Parr bomb as used in sulphur determinations. Transfer 0.2 to 0.3 Gm. of chlorcosane, accurately weighed (from a narrow neck weighing bottle) into the bomb; cover the sample of chlorcosane with the remaining mixture of peroxide and nitrate. Close the bomb and screw down the cover tightly with the clamp. Heat the bomb rapidly to redness. The fusion is complete when a flash of flame is emitted from the small opening in the cover of the bomb. Cool by allowing tap water to flow over the bottom. Open the bomb and place it in a covered beaker containing 200 c.c. of hot water. After solution is complete, transfer the liquid to another beaker, returning the bomb in the first beaker, washing well with hot water and adding the wash waters to the first liquor. Add nitric acid until the solution reacts acid to litmus paper and heat to boiling. Cool and add an excess of tenth-normal silver nitrate solution; the excess is titrated with ammonium-sulpho-cyanide, ferric ammonium sulphate being used as indicator.

A blank test for chlorine is made on the reagent, using the same amounts and procedures but omitting the "chlorcosane." Each Cc. tenth-normal silver nitrate solution used equals 0.003546 Gm. chlorine. The chlorine content of chlorcosane should be not less than 27 per cent. nor more than 30 per cent.

Manufactured by the Monsanto Chemical Works, St. Louis. No U. S. patent or trademark.

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SATURDAY, MAY 18, 1918

SURGEON-GENERAL GORGAS AND THE RESPONSIBILITY OF THE MEDICAL DEPARTMENT OF THE ARMY

No other branch of the Army is nearer the hearts of the people in time of war than the Medical Department. Fathers and mothers whose sons have enlisted may reconcile themselves if these sons are killed in battle; but if they have reason to fear that their sons have been neglected when sick or wounded, they develop a spirit of bitterness for which there can be no antidote. This natural attitude of mind is more or less apparent in all wars. A mother may bear with pride the news of the death of her son struck down in a charge or while stubbornly resisting an advancing foe; there is no consolation when she has reason to believe his death unnecessary, or that his health was not guarded by every known agency. If he dies from disease, as many soldiers must, she wishes to feel that kindness, intelligence and skill were at his service, and that the best of human effort was put forth in the endeavor to save him. If she realizes that he had every aid in his extremity that he could have enjoyed at home, she consoles herself, knowing full well that death must come to all.

While failure of the Medical Corps in the prosecution of war leads to grave disaffection at home, it has an even more serious effect on the morale of the Army itself. The soldier may bear great discomfort in his quarters or on the march—he may even court death on the battlefield—but he expects the best of care, sympathetic and kindly attention, and competent medical skill when he is sick or wounded. In this he is fully within his rights. When these helps fail, he becomes discouraged and even the ardor of patriotism fails to sustain him. Individually he becomes morose and complaining and in the mass inefficient. An army may be decimated by the missiles of the enemy and not only retain its courage, but become contemptuous of danger and death; when wasted by disease, however,

or when its wounded soldiers are neglected on the field, it ceases to be an efficient fighting machine.

The disastrous effects of inadequate protection of the health and life of the soldier are not confined to disaffection at home and demoralization in the ranks; for disaffection and demoralization, even when moderately felt, lead to a great reduction in the fighting strength and the combative spirit. All nations engaged in this war realize the vital importance of the medical service and have provided liberally for its equipment, personnel and maintenance. In the European armies, those of our allies and those of our enemies, medical officers have been given higher rank, invested with more authority and held to greater responsibility than has been known at any time in the past. The medical service has responded most satisfactorily to these advancements in honor, trust and duty, and with the exception of the shameful failure of line officers to heed the reasonable requests of the Medical Corps in the Mesopotamian campaign, there has been no cause for complaint.

So far as we have advanced in this war, there is no ground for serious complaint of or by the medical service. The President of the United States has recommended advanced rank and authority for medical officers, and at the present writing it seems that both houses of Congress are in sympathy with this request. Appropriations have been liberal and, best of all, the Medical Department has so guarded the health of our soldiers that no army, even one-tenth the size of ours, has ever been mobilized with sickness and death rates so low. Indeed, so far as we know, no army of raw troops has been assembled with the death rate calculated for all ages as low as that of the civilian population from which the soldiers have been drawn. In this country this is about 14 per thousand annually. In the Spanish-American War the death rate from disease greatly exceeded this figure, and ran above 20 per thousand. During the six winter months of 1917-1918, the annual death rate among all soldiers in this country was 9.1 per thousand. In many camps the death rate has been lower than in the same age group in those sections of the country from which the troops have come.

This, in brief, pictures the responsibility of the Medical Department of the Army. It is a responsibility which it gladly assumes. It may promise without a tinge of doubt that it will do its utmost to safeguard the morals, the health and the lives of our soldiers. As we write, there stands out the prominent fact that in this work the Medical Department has had as a leader a man who has the respect and confi-

ence of all the American people and of all the scientists of the world.

The public, and the medical profession especially, are fortunate in having at the head of the Medical Department of the Army, in the present crisis, Surgeon-General Gorgas. General Gorgas, renowned for his successful combat with yellow fever, malaria and septic pneumonia on the Canal Zone, the work for which he has received the highest recognition among scientists and the people in general, has had a bigger problem among the troops of our country during the past winter and has achieved the same degree of success. His reputation will now include not only his remarkable record on the Canal Zone, in Havana and South Africa, but also his efforts and the results in our camps during the past winter. He has commanded our first great battle of this war, a battle in which more than a million men were engaged against dangerous diseases; and he has won a great victory.

Few men carry greater responsibilities than does General Gorgas. General Pershing in France must have more, and still more, soldiers. Every unfit man who reaches him is a burden, not a help, and not only adds to his fighting strength but lessens it. Moreover, even the fit who reach France must be kept fit, and this burden also lies on the shoulders of General Gorgas. Still further, he must care for the wounded, return to the fighting line those whom medical and surgical skill can speedily restore, and bring back home those more seriously injured and rehabilitate them that they may return to civil life with the greatest possible comfort and with the least possible dependence on the assistance of others. His tasks are numerous and varied, but in the execution of them he may utilize his long experience and the wisdom it has given him. Moreover, his tasks will be performed with the most sincere sympathy for those involved. In the accomplishment of these duties every specialty in preventive and restorative medicine must be used. That General Gorgas has recognized this to the fullest extent is shown by his calling to his assistance many eminent men in every branch of the healing art. Indeed, he did not have to call, for they came and asked if they could render assistance. The readiness with which the very cream of our profession have left the comforts and attractions of their homes, disregarded their own financial and professional interests, shut their eyes to what it may cost them and their families, and offered their services, is due not only to patriotism, but also to their respect for, and admiration of, General Gorgas. They have rendered him the highest tribute that has ever come to a member of our profession. With General Gorgas

at the head, the medical profession stands ready to fill the medical quota for any number of millions of men the President of the United States may call to arms.

THE WAR SESSION OF THE ASSOCIATION IN CHICAGO

Last week THE JOURNAL contained the preliminary programs of the Scientific Assembly of the American Medical Association and other information regarding the meeting to be held next month, June 10-14. A glance through the programs of any of the sections shows that the scientific work will be up to the usual standard and that, in most of the sections, papers and discussions on the relation of the medical profession to the war will be a prominent feature.

The OPENING MEETING, at the Auditorium Theater, Tuesday evening, will provide the keynote of the Session. In addition to the address of the President—Dr. Bevan—an address will be given by Governor Lowden of Illinois, whose patriotic addresses have been conspicuous for their fervor and for the enthusiasm they arouse.

A GENERAL MEETING, to be held Wednesday night at Medinah Temple, will be addressed by medical military representatives of the allied nations and by American medical officers who have seen service. The spirit of this meeting will be such as to stimulate enthusiasm, to knit in closer bonds the medical services of the allied armies and to develop a cooperative sympathy between the civilian physician and the medical officer.

The PATRIOTIC MEETING Thursday night at the Auditorium Theater will include addresses by Rt. Rev. Charles P. Anderson, Bishop, Diocese of Chicago, Episcopal Church, Judge Charles S. Cutting and Prof. John M. Coulter of the University of Chicago.

In addition to these general meetings and the Sections, three special day meetings of importance will be held: The first, under the chairmanship of Lieut.-Col. Frank Billings, head of the Division of Reconstruction and Rehabilitation of the Surgeon-General's Office, with Major James Bordley, Jr., as vice chairman, and Major Harry Mock as secretary, also of the Surgeon-General's Office, will be held in the Auditorium Theater Thursday and will be devoted to various phases of reconstruction, rehabilitation and reeducation of wounded soldiers. The speakers will be representatives of the Surgeon-General's Office and of the Red Cross. Some of the talks will be illustrated by moving pictures representing actual experiences in the great work of rehabilitation already being done abroad.

Another extremely important meeting will be that on the medical aspects of the selective service. This will be under the chairmanship of Major Hubert Work, medical aide in the office of the Provost-Marshall General, with the assistance of Major Reuben Peterson, vice chairman, and Major John M. Dodson, secretary, state aides to the governors of Michigan and Illinois, respectively. The Provost-Marshall General's Office will be represented by Lieut.-Col. J. Easby Smith and probably by other officers. This meeting will be of the greatest practical value at the present time to the physicians engaged on the boards working under the selective service law. When it is realized that there are some nine thousand physicians engaged in the work of the medical advisory boards and a like number in the work of the local and district boards, the need and the possibilities of this meeting for good may be better realized.

There is also under consideration a meeting on medical education, over which Major H. D. Arnold, who is in charge of this division of the Surgeon-General's Office, will preside. At this meeting will be considered problems of medical colleges and hospitals, medical students and interns in relation to the war. The time and places of the meetings on selective service and education will be announced next week.

MILK-BORNE INFECTION

In late years there has been a disposition in some quarters to question the importance of milk as a factor in spreading disease. Certain writers recognize the possibility of milk-borne infection, but consider it almost negligible from a practical standpoint. The latest report of the Massachusetts Department of Health, just issued, contains some interesting data on epidemics in that state during 1916. From the summaries it appears that among the outbreaks of communicable disease investigated, a number were traced to milk. Twenty outbreaks of diphtheria are summarized, one of these definitely traced to milk. A second "subepidemic" is also mentioned in connection with a small outbreak due to direct contact. Out of eighteen epidemics of scarlet fever, one was caused by milk. Seven outbreaks of typhoid fever are described, four of which, comprising nearly nine tenths of the cases, were due to milk. One outbreak of septic sore throat occurred during 1916. This also was connected with a milk supply.

It is evident from these brief epidemic histories, given in the Massachusetts report, that even after the great improvements that have been effected through inspection and pasteurization, milk is by no means to be ignored as a source of communicable disease. With respect to typhoid in Massachusetts, milk is still one of the chief vehicles of dissemination. This corre-

sponds with what is known about the frequent occurrence of milk-borne typhoid in New York City in the past few years. The majority of outbreaks of scarlet fever and diphtheria are due, as they have always been, to contact infection; but the fact that milk is found to be a source of trouble in every considerable group of epidemics studied shows that we are far from being able to neglect this possible mode of transmission of these two diseases.

If such a condition obtains in the state of Massachusetts, where health administration is highly developed, and if at least 5 per cent. of the outbreaks of scarlet fever and diphtheria and a much larger proportion of those of typhoid fever can be traced definitely to milk, milk-borne infection cannot be dismissed from the attention of public health officials. Since there is reason to believe that a large proportion of the milk in Massachusetts is pasteurized, it is significant that, nevertheless, this important source of infection should still figure prominently in the reports of epidemiologists. We have still a right to be very much on our guard against the milk-borne infection of typhoid fever, septic sore throat, diphtheria and scarlet fever.

THE DIGESTIBILITY OF FISH

The necessity of restricting the use of meat in its various forms in practically all parts of the world now involved in warfare has directed attention more forcibly than ever before to fish as sources of human food. The response has been prompt. Long known species of fish have attained a sudden popularity, and new ones have been brought into dietary prominence. Furthermore, fish have been made available either in fresh or preserved form where they were formerly obtained with difficulty. Friday no longer offers the only opportunity to eat fish. Every day is fish day nowadays.

Although the reputation of fish, as a class, for suitability as a food has come to be fairly satisfactory, their use is not always free from misgivings on the part of the consumers or those who are responsible for the selection of dietaries. One source of this unfavorable tradition is found in the records of real or alleged cases of poisoning by fish. Of course, fish are particularly susceptible to bacterial decay, so that they deteriorate more readily than many other forms of animal food unless they are properly cared for. Fish frozen while fresh will keep for months and even a year without loss of essential good qualities or change of their sanitary characteristics. It is no just criticism of fish to say that they may be harmful unless they are preserved in perfect form. This essential applies to many other food products. The spoiling of an occasional can of salmon must not be allowed to bring ill repute to fish as a class; rather the industry responsible for objectionable products should be penalized.

Another criticism sometimes aimed at fish, namely, the imputation of a less satisfactory digestibility than applies to some other flesh foods, is now rarely heard. All justification for it seems to have been removed by various studies of the digestibility of fish, the most recent ones being recorded by Holmes¹ at the Office of Home Economics in the United States Department of Agriculture. Fish in the form of "fish loaf" was served as the major part of a simple mixed diet, which also included potatoes, crackers, fruit, sugar, and tea or coffee. On an average, the subjects ate 448 gm. (about one pound) of Boston mackerel, 471 gm. of butterfish, 410 gm. of grayfish, or 355 gm. of salmon daily, which would indicate that in every case the fish was eaten with relish. Of the results, the dietary expert of the department has this to say: The average coefficients of digestibility for fish protein were: Boston mackerel, 93.1 per cent.; butterfish, 91.9 per cent.; grayfish, 92.8 per cent., and salmon, 93.2 per cent. In view of the close agreement, it would seem, from a metabolic standpoint, that the different fishes studied would supply protein in equally available form. The average coefficients of digestibility of the fish fats were found to be as follows: Boston mackerel, 95.2 per cent.; butterfish, 86.4 per cent.; grayfish, 94.3 per cent., and salmon, 93.7 per cent. As these figures show, the fats were well assimilated in the case of the mackerel, grayfish and salmon, which, according to the usual custom, are to be regarded as "fat fishes." Considering the experiments as a whole, the very complete utilization of the protein and fat supplied by the fishes studied offers additional experimental evidence that fish is a valuable food and that its extensive use in the dietary is especially desirable.

In the prescription of fish in dietotherapy, the controlling factor of choice has usually been the fat content, which in turn has been assumed to determine the digestibility. Certain fish, such as cod and carp, are sometimes assumed to be "coarser" than others. The present statements, so far as they have any foundation, are presumably based on empiric observations. In order, however, to furnish at least some scientific background to his empiricism or hypotheses, it is well for the dietitian to have some clue to the essential facts of composition. Atwater, who collected data regarding many or more varieties, showed that, on an average, fish contain more than 18 per cent. of protein, and about 10 per cent. of fat. Generalizing from these data, it has been pointed out that fish may be divided on the basis of their fat content into three classes: those with more than 5 per cent. of fat, such as shad, salmon, butterfish and herring; those containing from 2 to 5 per cent. of fat, such as whitefish, halibut and porgy, and those containing less than 2 per cent. of fat, such as bluefish, rock dock and cod.

Were it not for the confusion that still seems to prevail among many persons — even among physicians, in whom it is less excusable — regarding the position of fish in the classes of foods, it would seem ridiculous to make reference to the matter here. As Holmes has summarized the facts: It is evident that fish, like meat, may contribute materially to the fat of the diet, particularly if the fatter varieties are eaten. On the basis of the protein that they supply they also resemble meat, and this is true, too, with respect to the ways in which they are used in the diet. Accordingly, fish should be considered as a protein food and classed with the meats.

Current Comment

THE WORK OF THE AMERICAN RED CROSS

One hundred million dollars seems a big amount of money; to most of us it is a big amount. But when one hundred million dollars has to supply the needs of whole peoples, stricken and bleeding, and suffering continuously from new blows, it is not such a large amount after all. That at least seems clear from the financial statement of the Red Cross War Fund, March 1, 1918, just issued by the American Red Cross. The total receipts credited to the Red Cross War Fund to March 1, 1918, were \$106,158,143.59. Of this amount, \$16,881,424.26 was refunded to Chapters. Of the balance, \$77,721,918.22 had been appropriated up to the date named above. The balance available for appropriation was but \$11,554,801.11. Some idea of the number and distribution of the beneficiaries of money that has been spent can be gathered from the following synopsis of the geographical distribution of the principal appropriations for relief work:

France	\$30,936,103.04
Belgium	2,086,131.00
Italy	3,588,826.00
Russia	1,243,845.07
Roumania	2,676,368.76
Serbia	875,180.76
Great Britain.....	1,885,750.75
Foreign Countries other than those named above.....	3,576,300.00
United States.....	8,589,899.27

The range of relief work has been great in variety as in territorial extent. From an appropriation for a special front-line "rolling canteen" service to provide hot drinks for the United States troops in the trenches, appropriations range to appropriations for the relief of children in Poland, \$200,000; for the relief of Belgian children, \$436,004; for condensed milk for Russian babies, \$531,000; and appropriations of \$1,000,000 for a model Red Cross Health Center, another of \$1,149,129.70 for the care of needy children and the prevention of infant mortality, and a third one of \$2,147,327 for the treatment and prevention of tuberculosis, all in France. The entire financial statement is set forth in considerable detail, with explanatory text, the whole making a pamphlet of 127 printed pages. The field covered, however, is so large that

Holmes, A. D.: Experiments on the Digestibility of Fish, Bull. U. S. Dept. Agriculture, 1918.

the statement presents but a bird's-eye view. But out of it all stand two essential facts—that the work being done is vital to the support of the war and to the rehabilitation of the race, and that more money is needed to carry it on.

THE LIVER AND HIPPURIC ACID FORMATION

The formation of hippuric acid from benzoic acid and glycocholic acid in the body, a reaction of not inconsiderable significance in the genesis of a compound that vies with creatinin in being, next to urea, the most abundant nitrogenous component of the urine, is usually assigned to the kidney. The statements in regard to the place of origin of the hippuric acid are derived in the main from the classic experiments of Schmiedeberg and Bunge, and date back to 1876. The synthesis of the compound by the living cells, a striking phenomenon for that period, was demonstrated by perfusion of the kidneys of dogs. Among the evidences adduced more recently to indicate that such combinations as the production of benzoyl glycolic acid (hippuric acid) are by no means necessarily limited in the way once assumed are experiments from the Nelson Morris Institute in Chicago. Lackner, Levinson and Morse¹ studied the behavior of benzoates when dogs were poisoned with hydrazin sulphate, a substance that has been clearly found to produce extensive hepatic lesions while leaving the kidneys untouched. It appears that under these conditions the output of hippuric acid is lessened. Hence the inference is justified that the liver participates in the synthesis of this compound. The Chicago investigators suggest that it may become possible to gage the functional capacity of the liver by observations on the extent to which hippuric acid can be synthesized in selected persons. In view of the paucity of methods for detecting obscure hepatic disease, the suggestion may be worthy of further serious consideration and clinical investigation.

THE FORT RILEY BAND AT THE CHICAGO SESSION

A distinctive feature of the war session of the Association in Chicago will be the presence of the band from the Medical Officers' Training Camp at Fort Riley, Kansas. This is a band of forty pieces made up of enlisted men from the Medical Department. The Surgeon-General has granted his permission to the band to spend the entire week in Chicago, and it will be a prominent feature in all of the special meetings during the week.

SOME JOURNAL

The Chicago Number of THE JOURNAL—that for last week—was one of the largest issues, considering size and number of copies printed and circulated, that we have thus far issued. It required 86,560 pounds, or more than 43 tons, of paper.

1. Lackner, E.; Levinson, A., and Morse, W.: Aspects of Hippuric Acid Conjugation, Jour. Biol. Chem., 1918, **33**, 16.

Association News

THE CHICAGO SESSION

Entertainment for Visiting Medical Officers

The Chicago Medical Society has appointed a committee under the chairmanship of Dr. W. T. Mefford, to maintain headquarters at the La Salle Hotel for the entertainment of commissioned medical officers of the Army and Navy during the annual session of the American Medical Association, to be held in Chicago, June 10 to 14.

WAR CONFERENCE OF SECRETARIES OF THE CONSTITUENT STATE ASSOCIATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Held at the Headquarters of the American Medical Association, April 30, 1918

(Concluded from page 1380)

OHIO

Dr. E. O. Smith, Cincinnati, said: I have but little to say for the state of Ohio. We have furnished our quota as far as we can learn and taking into consideration the number of physicians from Ohio who are in the National Guard service, those that are doing contract work, and those who are doing Red Cross work, we are considerably over our quota. We are told that our quota of this new call will be 350; the old quota was about 1,200, and I am sure our state will provide its quota, and whatever means you may adopt to get these men will be adopted by us. It is not so much the idea of getting 5,000 or 7,000 men. I think there will be little trouble in getting these men. There has not been a great deal of difficulty in getting the 18,000 or 20,000 men now in the service; but the things to be considered are those that have been mentioned by a number of the speakers, and among them adaptability of the individual to the service. We must consider also the nature of his work and his service at home in the community. Men from medical universities should not be allowed to volunteer, as many of them do; then the teaching forces would not be crippled. Ohio will furnish her quota, I am sure; and whatever plan is adopted, through our state association we can put into execution any sort of plan that is finally decided on.

I should like to ask that the privileges of the floor be granted to Dr. McClellan of Ohio, who has assisted in this work, and he will tell you something about the whole system.

Dr. B. R. McClellan, Xenia, said: In June of last year, Ohio stood low in the list of states in the proportion of men offered to the Medical Reserve Corps, and the Council of Defense selected two of us to go from county to county to arouse and appeal for volunteers. I should like to say a word in emphasis of what Dr. Smith has said as to the need in the future of some systematic way of selecting as well as allowing volunteers for Army work. The volunteer system is robbing communities, industrial centers and educational centers of some men that are absolutely needed; and whatever may have been conditions in the past, as we go on this way and the large number of physicians increase in the corps, it must come to pass that the interests of the communities and of the profession will suffer. Therefore, as much as I was opposed to selective conscription in the beginning, I heartily favor some systematic way of selecting men.

OKLAHOMA

Dr. Horace Reed, Oklahoma City, said: We organized in 1916 at the request of the Council of National Defense. The organization effected was strictly an organization of the state association plus a few members whom we got on the Council of National Defense. We proceeded to do what we could without having any definite plan or system in view to follow, but failed to get ourselves in line. Oklahoma is only about 10 years old as a state, and between the passage of the act creating the state and the constitutional convention several months intervened. There are half a dozen examining boards in the state in the different territories. You know the Oklahoma Territory, which was formerly the Indian Territory, was made up of seven districts. In one particular district it was adver-

ised that any one who could furnish a voucher that he had been practicing medicine could go there and pay the sum of \$50 and get a certificate to practice in Oklahoma. The consequence was that men came to Oklahoma by the hundreds and took advantage of that advertisement, and then an effort was made for the constitution to be retroactive and not pass a law which would undo that. We have a number of men credited in the list that could not be physicians and are not physicians. Another reason common to western states is that we have counties that are sparsely settled and physicians cannot be spared. Still another reason is that, in the beginning, this committee's work was largely in the hands of Dr. Clark, now Major Clark, who is in the service at Corpus Christi in a convalescent hospital. He was secretary of the Medical Association of the Southwest and volunteered to do the work in his office, and the committee was not conversant with the work. He elected Dr. Buxton as chairman of the committee. We are undertaking work which we believe will yield results. Dr. Buxton has sent out a questionnaire to one man in every community representing the county, usually the county secretary. This is done in cooperation with Dr. Thompson, secretary of the state association, and the committee. This questionnaire is to be mailed to every physician between the ages of 22 and 55 in Oklahoma, but it is unsigned.

OREGON

Dr. Clarence J. McCusker, Portland, said: Our committees in Oregon are very much the same as those in many of the other states. The same confusion as to sending out a questionnaire occurs as in the questionnaires sent out by the government and the American Medical Association, and also one from the state society, which was furnished us by the Western Department of War at San Francisco. The one sent out by Colonel Lynch gave the best results, and those who said they would accept service were commissioned, some of them having been assigned to a base hospital, and they have made a trip over the state, and this has given the best results we have had so far. With this confusion of different agencies asking for more men, I fear we are going to find it much harder to get the next 7,000 men than it was the first 7,000, and the next 7,000 will be still harder. We feel the need of a central agency and a classification of the men, so that we can put our finger on them and have the necessary authority to call on them when needed.

PENNSYLVANIA

Dr. Cyrus Lee Stevens, Athens, said: The question now is not what we have done, or what we have not done, but what we are going to do. I believe that each one and all of us propose to go over the top. My friend from Michigan (Dr. Barnshuis) did not exactly steal my thunder, but he used very ammunition, and did it so much more effectively than I could, that I will forgive him for it. As has been intimated by the chairman, our state has sent the second largest number of physicians. We are not planning to rest on anything we may have done, but are ready to take hold and continue our work and be loyal to our government, loyal to our profession and loyal to the organization, whether it be national, state or county.

What has been accomplished in our state is due to several things. I might mention some of them—organization and public professional spirit. All of our county societies have agreed to remit the dues of those who are in the service or in the service of any of our allies. The state society has omitted the per capita assessment of all such. Two of our county societies have insisted on paying the state society per capita assessment. Most of the county societies, not all of them, have promised to protect, so far as they can, the practice of those who have gone or who may go. This, of course, cannot be carried out without failures here and there, without imperfection and without possibly some friction, possibly some misunderstanding. Some have agreed to turn over as high as 60 per cent., some 50 per cent., some 40 per cent., and some 33.3 per cent., and this is being carried out as well as the circumstances of such a delicate thing will permit. This plan has its imperfections. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and our state journal have made constant appeals, which have gone a great way toward inducing physicians to make application to enter the Medical Reserve Corps. Another thing that has enabled us to do our work has been the state committee of the Council of National Defense, Medical Section, which has done very thorough work in Pennsylvania, largely through the efforts of Dr. Edman and Major Jump and others. Like the rest, the department has made its mistakes, we have had more or less applications, and we know more now than we did when we

began; but the committee deserves credit for what has been accomplished. We know pretty well the standing of each man. We have found that some of our rural communities, and not a few of our industrial communities, are really suffering for the want of medical men, and these should be cared for in some way.

RHODE ISLAND

Dr. J. W. Leech, Providence, said: I do not believe there is a lack of patriotism on the part of the profession in our state, but rather in large part it is due to a failure of the government to take men into the service promptly after they receive their commissions. When a man gets a commission, puts his house in order, and is anxious to get into the service, if he has to wait six months it is discouraging to him, and this of itself cannot fail to be detrimental to eligible men who have not received a commission. In a community with a medical population of thirty-eight, eight have accepted commissions, and only four of them have been called to active service. The result is discouraging. I would be in favor of a selective draft to call for physicians at the age of 55 who are physically fit. This is the only efficient and democratic way of getting a full Medical Reserve Corps into the service.

SOUTH CAROLINA

Dr. Edgar A. Hines, Seneca, said: Our work in South Carolina thus far has been similar to that in many other states that have already reported. Much of the work has been done through the state committee of the Council of National Defense. I believe that the public speaking method and the questionnaire method, particularly the latter method, have resulted in as many men as we are going to get. Our state association had a military program in the last few days. We had a representative from the Surgeon-General's Office, and many of the points that we did not understand were cleared up by him. I believe that we are now ready for more intensive work, and I think that this must be personal work. I have doubt about the feasibility of a county committee in a state like ours. I believe that a central committee probably will do the best work. I am convinced that now it is personally a question of putting it up to each man.

TEXAS

Dr. I. C. Chase, Fort Worth, said: We have 278 counties in the state, many of which are officered only by physicians who are encouraged and induced to stay, not because of the prosperity but because of the needs of the ranch people; consequently many of them stay. It is safe to say, after carefully looking over the state, that only seventy counties in the state have a sufficient medical population to furnish doctors. For that reason, seventy of the 278 counties have to furnish the quota for the entire state. Major Jump, in a recent itinerary, after looking the matter over, thought we had done well. I am frank to say that we should not have done so well had it not been for the terrible drought throughout the state which drove many rural districts into a bread and butter situation. The general situation there has been handled in a rather disastrous manner, commencing with a canvass of the state by the committee on medical preparedness, officered by two commissioned officers who are placed at the head in turn of the State Council of National Defense for the collection of statistics, and in turn removed, so that in coming into affairs recently and looking the matter over, I found that one of the two things essential for success in the work, the first and most important part, has been neglected. For that reason, we are compelled to begin again and take a very careful survey of every physician in the seventy counties in the state. This has cost the last two times over a thousand dollars each, and will cost more than that and occupy probably sixty days. We have a committee of forty, each having two counties. We have a committee of five in each of the seventy counties, in all about 400 men, with an office force to handle the work. At the end of sixty days we hope to have detailed information as to the age, physical condition, wife and number of children, property and income, and the needs of the community, etc., to enable the committee thoroughly to canvass the state, and probably select a thousand men and then begin the pressure.

UTAH

Dr. W. Brown Ewing, Salt Lake City, said: We have had all the problems mentioned here. The first affliction wished on us was the State Council of Defense, which conveniently died last week. Major Jump was around in time to witness the embalming, and it has been buried since I left home. A

new one is to spring up, and perhaps we can get something out of it. The one we had did not know anything, or did not do anything. I have the names of fifty-seven men who are actually in the service, approximately 15 per cent. of the profession of the state. I have obtained these names in every conceivable way except from headquarters. Before coming to this conference I convened our state council, some of the members of which are the most practical men in the state, to formulate some plan that I could suggest here, and asked for by the conference in conjunction with the suggestions from the various states, taking the good from each one and leaving out the bad. The plan suggested is something like this: that the country be circularized by the American Medical Association, giving the man's name, age, state and address; the college and year of graduation; the children he has under 10 years of age; debts on the home or obligations that the man was compelled to meet; his ability to serve in the Army in a general way or in a partial capacity; the condition of the individual's health, whether good, fair or bad; the special work he may be engaged in or special work in which he may be the most apt; the industrial position that he at present occupies, whether he is connected with mines, smelters or railroads, and if called into service, whether it would be possible for him to supply a substitute. If these questionnaires are collected at headquarters in Chicago, the American Medical Association can make a classification, say Classes 1, 2, 3 and 4. Class 1 will include men under 40 years of age, in good health, a man who has a wife and no children, or a wife and one child, who has no debt on his home, or the debt can be arranged for so as to be carried without hardship on the family, who has no industrial position or no industrial community to serve. I do not see why a substitute should not be provided in such a case. Class 2 will include men who have some disability or more home ties that might prevent them from going. Then, after the classification has been made, the Surgeon-General of the Army can notify the communities that a thousand men are needed. The American Medical Association can start out from its classification—and if it keeps the classification up as it has done in the past, it will certainly be complete—notifying the Surgeon-General that it has suggested a certain number from each state, giving their names and then send to each man a notification that his name has been sent to the Surgeon-General's Office as being eligible for service. Then whatever pressure can be brought from headquarters should be brought directly to bear on the individual himself. I submit this plan simply as suggestive.

VERMONT

Dr. W. G. Ricker, St. Johnsbury, said: It seems to be necessary that we have a census, an inventory, of the medical and surgical strength of the country. In this voluntary service, such as the gentlemen from Utah, Ohio, New Jersey and New York have described and suggested, there are objections to undertaking a voluntary census, as there are many replies that will not be returned. It is the right of the Surgeon-General's Office, or the War Department, or the United States government, or the President, or whatever name you give to the authority, to know who we are and where we stand professionally, financially, socially and otherwise. Every suggestion that has been made in regard to the questionnaire today is valuable. Let that questionnaire be exhaustive; let it be prepared with care, and let it contain questions that will convey information. With the government in possession of the questionnaire, and the results of it carefully tabulated, when the demand for men comes and the government sends out a call that it wants a dozen men who are operative surgeons, or 800 men who need not have had operative surgical experience, that it needs twenty-five otologists capable of examining and caring for men in the Aviation Corps, or that it needs 100 ophthalmologists, and so on, it can get them. As I understood from reading the correspondence of Dr. Craig, the American Medical Association has made it a point of honor to assume fully the responsibility of supplying the Army with physicians and surgeons. Is that approximately correct?

Dr. Craig: The War Committee has undertaken to supply the requisite number.

Dr. Ricker: It is not incompatible as an obligation, if necessary, to put some of the officers of the American Medical Association in khaki and give directions. These are valuable details. This work can be carried out in absolute cooperation with the American Medical Association. As to the plan I have suggested, there is nothing absolutely compulsory about it except registration.

VIRGINIA

Dr. Paulus A. Irving, Farmville, said: We have 2,371 white and colored, allopaths and homeopaths. I should say of the 2,371 physicians in the state we have in our state medical society 1,800 or more. Three hundred and ninety-three of these are already enrolled in the Medical Reserve Corps—actively enrolled and seventy-one in the Navy, a total of 464. In addition to making this census, we have also made a survey of the profession in Virginia, and we have a complete record of every physician in the state. We have his name and address and age, whether married, single or widower; the number of children, their ages, and so on; whether his family is dependent on him; whether there is any physician in his community to take charge of his work and his practice in case he is called to the service; also the line of work that he is best qualified and adapted for, and whether he should be exempted; if so, the reasons therefor; the age and physical condition of the family dependents, etc. When we get to work on this survey we shall know exactly the number Virginia is called on to furnish, and letters will be addressed to these men by our committee for us, and we shall have a sufficient number of volunteers. Virginia, in the past, has furnished our government with its presidents. She stands ready to furnish the medical profession also.

WEST VIRGINIA

Dr. J. H. Anderson, Marytown, said: I am sorry to say that the organization with reference to securing these men for the National Army has not been what it should be. We have worked largely through the Committee of National Defense. When I received word from the secretary of the American Medical Association concerning this meeting, I prepared and sent out a little questionnaire of my own with reference to the state. I asked the number of physicians that have gone to war from the society and from every society in the state. I asked the number of physicians that have gone to war from the city in which the secretary of that society was located. I asked for the number remaining within the bounds of the society and the number of physicians in the bounds of the city. I asked what the civil population of the territory was, what the bounds of the society were, and what the civil population and bounds of the city were. I asked the men to whom I wrote, who were the secretaries of societies and councilors through the state, the number of men they had that could be spared. I asked these various secretaries whether they were in favor of conscription, and I received about fifty answers. It seems to be the opinion of a good many that the thing to do would be in some way to bring all of the members of the medical profession in our state within the ages thus designated by the government to a point where the government or the American Medical Association, or the people who know what the government wants, would be able to select whom they desire and the men best qualified for those places. I think if that were done, West Virginia will prove loyal and will come up to its quota, whatever you desire from us.

WISCONSIN

Dr. Rock Sleyster, Waupun, said: Shortly before the war, Wisconsin sent a man to the United States Senate who has given us a black eye. I want to assure you that he does not represent the sentiment of the state of Wisconsin. Of twenty-one states in the United States having 2,500 or more physicians, Wisconsin stands second only to Pennsylvania. The discussion today has been largely in the nature of an experience meeting. We have got together and told our troubles, and our troubles have been about the same in every section of the country. When all boiled down, it is about the sins of the volunteer system. We are taking men that ought not to go, and men that cannot be spared, the cream of the profession, men out of teaching positions and other places in professional life, where they should remain; and the slackers and fellows that ought to go are staying at home. It all comes back to this: How can we best bring about the spirit of selective conscription? It is probably impossible for us today to have selective conscription, but I think the results of this meeting should culminate in taking these ideals and putting them into action as soon as we can. I believe compulsory registration, as suggested by the secretary from Vermont, is the logical way of getting at it. The first thing to be done is to make a survey of every state in the Union. We have accomplished it in Wisconsin. Our questionnaire took in all of the information and points which have been enumerated by other questionnaires referred to today. We have a card index in my office which contains all this information of every man in the state. This ques-

tionnaire has been reenforced by a careful survey of every county society, and checking up the survey by councilors of the state medical society. I have repeatedly asked during the past six months several men to report fellows who could be spared, and, at the same time, place men who were poorly located in good positions, and it has been a good service in releasing men who were good material for the Army, without injury to the community which they served. With the information that we have gained of each physician of the state, I have worked out a rather elaborate classification showing the availability of each man, the things that are holding him back, and placing them in several classes regarding their availability. I shall be glad to submit this to whatever committee is appointed at this meeting. But first of all, a careful survey should be made to find out who can be spared and who should go, and bring proper force to get these men into the service.

TASK OF THE ORGANIZED MEDICAL PROFESSION

The Chairman introduced Dr. Arthur Dean Bevan, President-Elect of the Association, who said: I consider this meeting one of the most important that has ever been held under the auspices of the American Medical Association.

In the first place, we have got to find out what will probably be demanded of us. It is evident that this country is going to put in the field from 3,000,000 to 5,000,000 men. How does this affect the medical profession? We have in this country about 140,000 or 150,000 people who are licensed to practice medicine. The demands on that body will be probably somewhere between 30,000 to 40,000 before we are through with this job. Already about 21,000 are in the Army, and the Surgeon-General has called for another 5,000. The Surgeon-General and the Navy has called for 2,000 more men. In order to meet this demand it is evident that just what the American Medical Association is doing and what you gentlemen are doing is the first step, i. e., to ascertain the existing state of facts. This survey of the entire country, which will enable us to find out exactly how many medical men there are in each state and in each county, how many are male physicians, and how many have applied to join the service, and the percentages, will give us these necessary facts.

There are two problems with which we are confronted. The first problem is, we have got to secure the necessary number of medical men for the government. The second problem is not as important as the first, but it is a very important one, and it is that of securing the necessary number of men without crippling any locality or institution seriously. Both of these problems can be met by the organized profession of this country. I believe that each county and each medical school and hospital should furnish as a minimum 50 per cent. of its medical men, and as a maximum not more than 50 per cent.

I have been impressed with the fact that so far we have not organized this thing in the right way. We have had too many committees; there have been too many agencies attacking the problem, and it has not been handled in the best way. So far as the advisory committee of the Council of National Defense is concerned, we should remember that it is a body that is purely advisory; that it has no executive powers of any kind; but so far it has acted very largely through the county societies and state societies of the American Medical Association. This work should be done, as is contemplated, and the Surgeon-General has requested, by the American Medical Association through its state and county societies. This is the job of the organized medical profession in this country. There is no other body of professional men in the world that is organized in such a representative way as the American Medical Association, and it is very fortunate that we have such an organization at this time to place at the disposal of the government.

I want to say that this country and the profession are very fortunate in having at the head of the Medical Department of the Army such a splendid figure as General Gorgas. I know, and you know, that he has the confidence of the entire medical profession; he has the confidence of the entire public. I believe that we are in a position under the leadership of Surgeon-General Gorgas, and with the splendid organization we have in the American Medical Association, to take up this serious problem and carry it through in a splendid way so that in this great war the medical profession of this country will fully do its part.

MISSOURI

Dr. E. J. Goodwin, St. Louis, said: In listening to the remarks of the gentlemen from the different states, the thought has been forced on me stronger than ever, that there

has been splendid work done, especially in the states where there was close cooperation with county societies. In Missouri the county societies have worked with the Council of National Defense and in the city of St. Louis and in Kansas City splendid work has been done recently because the county medical societies of these cities are cooperating fully and harmoniously with the auxiliary committee of the Council of National Defense, Medical Section. In St. Louis we are just completing a survey similar to that reported by Virginia and other states.

Dr. Goodwin then presented the report of the Committee on Resolutions. (See THE JOURNAL, May 4, 1918, p. 1306.)

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 10, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 869, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors, and 395 lieutenants.

MEDICAL RESERVE CORPS: 18,833, including 1,281 majors, 4,629 captains and 12,923 lieutenants. On active duty: 16,690, including 1,205 majors, 4,277 captains and 11,208 lieutenants.

DENTAL CORPS: 209; DENTAL RESERVE CORPS: 5,254, of whom 1,446 are colonels, 246 majors, 150 captains and 790 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 115, including 3 brigadier-generals, 12 colonels, 92 lieutenant-colonels, and 8 majors.

DENTAL CORPS: 209; DENTAL RESERVE CORPS: 5,254, of whom 1,446 are on active duty; DENTAL CORPS, N. G.: 257; VETERINARY CORPS, 17; VETERINARY RESERVE CORPS: 1,442, of whom 748 are on active duty; VETERINARY CORPS, N. G.: 41; VETERINARY CORPS, N. A.: 476; SANITARY CORPS, 1,031, and AMBULANCE SERVICE, 160, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number				
	M.R.C.	M.C.N.G.	D.C.N.G.	San.C.	D.R.C.
Physical disability	652	52	7	7	13
Inaptitude	245	20	0	2	5
Other branches	488	70	8	61	26
Resigned	112	33	4	7	8
Domestic troubles	59	0	0	1	0
Needed by community	48	0	0	0	0
Deaths	69	3	0	1	3
Dismissed	6	2	0	0	1
Duty completed	1	0	0	0	0
No reasons	14	0	0	0	1
	1,694	180	19	79	57

The Surgeon-General's Office in New Quarters

The office of the Surgeon-General of the Army has moved into new quarters. Until recently it has been located in the Mills Building, at the corner of Seventeenth Street and Pennsylvania Avenue, Northwest, and in other buildings in that vicinity. It is now located in an extensive new building, of a temporary character, erected especially for its use, in the immediate vicinity of the Surgeon-General's Library and the Army Medical Museum, on the west side of Seventh Street, Northwest, just south of B Street.

Cited for Bravery

Lieut. George F. Patten, M. R. C., New York, has received the *croix de guerre* for risking his life to relieve suffering and wounded men under fire.

Forty-two medical officers and two sections of the American Ambulance Service were cited in orders by the French, April 20, for extreme courage in evacuating wounded under fire.

Missing Medical Officer Reported as Prisoner

Lieut. John S. Abbott, St. Paul, who was reported missing in THE JOURNAL for May 4, is now included in the official list as a prisoner in Germany. Lieutenant Abbott was captured on March 21 while on duty with an advance dressing station of the British Expeditionary Forces.

Wounded, Missing and Captured

Lieut. Clement A. Fogarty, M. R. C., Philadelphia, was severely wounded, April 18, while on active duty in France. His first active service was performed during the battle of Cambrai.

The following medical officers are reported in recent dispatches as wounded: Capt. Ernest W. Bertner, Houston, Texas; Lieuts. Daniel E. Berney and James E. O'Toole, Scranton, Pa.; Arthur S. Bugbee, Medina, N. Y.; Leonidas B. Faulk, Monroe, La.; William Michel, Frostburg, Md.; Daniel H. Lawler, Baltimore; W. J. McGregor, Wilkinsburg, Pa.; William J. Miehle, St. Louis, Mo.; R. Allyn Moser, Omaha, Neb.

The following medical officers are reported as missing: Capt. John F. Hardesty, St. Louis; Lieuts. Harold A. Goodrich, St. Louis; Thomas B. Kern, Bethlehem, Pa.; Frank K. Miller, Madera, Pa., and Maurice S. Redmond, Pittsburgh.

The following medical officers are reported as prisoners in Germany: Capt. Francis J. K. Hill, M. R. C., Brooklyn; Charles W. Maxson, Baltimore, and Lieut. Robert H. Jeffrey, Uniontown, Pa.

Year Book of the Medical Officers' Training Camp at Fort Riley, Kansas

The medical officers at the Fort Riley training camp have gone into the publishing business, the result of which is a very pretentious volume entitled the "Year Book of the Medical Officers' Training Camp at Fort Riley." The book is dedicated to Major-Gen. W. C. Gorgas, "who above all others has been responsible for the high standing of the Medical Corps of the United States Army and who now represents to the people of the country the ideal of an officer and a gentleman." It contains three full-page portraits of Major-General Gorgas, Colonels Munson and Bispham.

A foreword explains the organization of the camp. This is followed by a biography of Colonel Bispham, an article on the object of the camp, the headquarters, staff and history of Fort Riley, a roster of instructors, rosters of the twenty-three companies of medical officers, the base hospital, the Nurse Corps, the evacuation hospitals, the field hospitals, the ambulance companies, the hospital train, sanitary detachments, gas defense corps and other organizations making up the personnel of the camp. An excellently illustrated article by Charles Spencer Williamson describes the Fort Riley Sanitary Laboratory, of which he is director. Other articles concern the camp exchange, the Army Y. M. C. A., work in the camp and the department of physical instruction and recreation. The final portion of the book is in a lighter vein and is illustrated with many excellent cartoons. The book gives a thorough insight into the work done at this training camp for medical officers. The book contains matters of interest and value to those who propose to enter the Medical Reserve Corps. It will also prove to be a source of enjoyable reminiscence to every officer who has had the privilege of attending the courses at Fort Riley.

The enterprise of these officers should be encouraged, especially since the proceeds of the sale of the book are to be devoted to a worthy cause, namely, to financing a band for the Medical Department, for which the government furnishes no funds. The price of the Year Book is \$2.50. The book may be procured by addressing the Year Book, M. O. T. C., Fort Riley, Kansas.

IMPRESSIONS OF THE FRONT

[NOTE.—The following is taken from a personal letter received by the Editor of THE JOURNAL from Dr. Frank Besley, Chicago, now in France:]

"The first week in January I was ordered away from this unit (Base Hospital No. 12, Chicago) and appointed consultant in surgery A. E. F. and assigned to duty with one of the divisions which went into training in the line with a French corps. While there I had a very unique experience and an unusual opportunity of studying the French medical organization from the front line trenches back along the lines of communication to the hospitals in the rear. I was greatly impressed with the French methods of dealing with their surgical cases. The prevailing conditions permit them to secure definitive surgical treatment in their wounded cases earlier than this is possible with the British forces. The reason is that along most of the French front there has been much less active fighting, and it has been possible to push more permanent hospitals closer to the front and to maintain them there.

The fundamental question involved in the care of a wounded soldier is entirely dependent on the length of time that elapses following his wound before he reaches a place where there are adequate facilities for giving him the proper care. Obviously this is entirely dependent on the kind of

warfare that is being carried on and it is trite to say that during the last month it would have been impossible to have secured anything like proper facilities for doing excision of wounds and primary suture.

However, the transportation arrangements of the British are ideal and it is wonderful the number of wounded men that they handle. . . . It is with pleasure that the Regular Army Corps and the Reserve Medical Corps are working in the most perfect harmony and cordial cooperation. Naturally this sort of team work leads to the best possible treatment for the wounded American soldier and I believe he is getting it and will continue to get it. . . .

The arrangements that have been made with the British authorities for the sending of American troops to serve with the British forces will necessitate the caring for the American soldiers, and arrangements have already been perfected for carrying this out. At the present time we have about 150 American soldiers in this hospital and I presume that in the near future it will be entirely filled with Americans. . . .

. . . THE JOURNALS continue to reach us regularly and they are a source of much satisfaction. The Red Cross Committee in Paris are furnishing us with copies of medical journals so that we are amply supplied."

"SECTS" NOT FOR MEDICAL SERVICE

Surgeon-General's Statement to the Adjutant-General of the Army

According to the *Army and Navy Register*, the Surgeon-General of the Army is opposed to legislation admitting osteopaths and other sects to the personnel of the Medical Corps. It quotes the following memorandum sent by Surgeon-General Gorgas to the Adjutant-General of the Army:

The time has long passed for exclusive adherence to any particular school of medical doctrine or practice, such as is implied by the degree of doctor of osteopathy, of chiropractic, of naturopathy, of mechanotherapy, of eclectic medicine, or any other "pathy." The terms "allopathy," "old school," etc., are equally objectionable. A scientifically educated physician is at liberty, and it is his duty, to employ any method of treatment whatever which he believes will benefit his patient. Homeopathic physicians have the degree of doctor of medicine, and some of their schools furnish an adequate medical education. They have for the most part abandoned their exclusive dogmas; as a class they are rapidly declining in numbers and are being merged in the general profession of medicine. They are eligible to qualify for the Medical Corps of the Army. While practice based on the peculiar tenets of osteopathy may be beneficial in suitable cases, the same or similar methods are open to the use of any physician. Osteopathic procedures applied to cases unsuited for them, as has often been done, result in serious harm. The only safeguard against such adherence to exclusive systems is a good medical education, such as is now demanded for admission to the Medical Corps.

It would be most objectionable to recognize any sort of medical practitioners in the Medical Department of the Army, be it osteopathic, allopathic, eclectic, chiropractic, or any other of the countless sects. Members of the regular profession of medicine, who now enter the Medical Corps, are merely educated physicians and do not constitute a sect in medicine, allopathic or otherwise. They are merely physicians free to follow any method of treatment which they may deem beneficial, in the same sense that a chemist is a chemist and a physician is a physician. It is argued that osteopathic physicians are trained in the principles of scientific medicine and are as well qualified as any physician to practice all branches of the profession. I have already indicated that, in my judgment, this is not true, but, if it were conceded, then the epithet "osteopathic," which sets these practitioners apart as a separate class or sect, could have no significance or value other than a commercial one, and this is not a principle which should be sanctioned in the constitution of the Medical Corps of the Army. . . . Whatever argument can be argued for the admission of osteopaths would apply equally to chiropractics and other medical sects. All cure their patients in certain cases; all do more harm than good when the balance between benefit and injury is struck.

The judge advocate general has advised the Secretary of War to the effect that, while the law does not specifically provide that a physician, in order to enter the Medical Corps, must be a doctor of medicine, unwritten practice does, and the secretary has decided in accordance with this opinion that

he will require that a man coming into the medical corps shall have the degree of M.D. I hope that this decision, which is in accord with all previous practice, will be maintained, and that the degree of D.O. will not be recognized as an equivalent, as is desired by the osteopathic physicians. The admission of osteopathic physicians as such and without the degree of doctor of medicine to the Medical Corps would have the practically unanimous opposition of the medical profession of this country and of all allied countries, could be regarded, and justly so, as lowering the standards, educational and professional, of our Medical Corps, and would have a discouraging and detrimental effect on efforts to secure physicians for the corps both now and in the future, and on the general morale of the corps.

THE MEDICAL OFFICER'S OUTFIT

[NOTE.—At the request of The Journal, Major Frederick Green, M. R. C., secretary of the Council on Health and Public Instruction of the American Medical Association, has prepared the following article for the purpose of enlightening the civilian physician on the first problem that confronts him when, after accepting his commission, he is ordered to active duty. Major Green has been in active service in the Medical Officers' Training Camp at Fort Riley, Kansas, since last August, and for some months has been instructor. Hence he is qualified to write a practical article based on his own experience and observations.—Ed.]

Equipment of the Newly Commissioned Medical Officer

What outfit does an Army medical officer need, and how much must he spend for his equipment? This question is probably being asked today by thousands of physicians, either those who have already accepted commissions in the Medical Reserve Corps or those who are seriously considering doing so. The civilian doctor about to enter Army life reads with growing confusion of cots, bedding rolls, trench boots, folding buckets, basins and lanterns. He hesitates between two clemmas, and either comes to camp without the things he needs or arrives burdened down with an immense amount of baggage which he soon finds is not necessary. He is told on the one hand that a complete outfit can be purchased for \$10, and on the other that his equipment will cost him from \$10 to \$800. What does he really need, and where can he get to the best advantage? These questions cannot be answered by the presentation of one list. The answer rather is that the Army officer, like the technical worker in civil life, accumulates his work-outfit as he needs it. There is no more reason for the Army officer to purchase his entire equipment at once than there is for a hospital intern, just beginning practice, to purchase a complete surgical equipment before opening his office. The extent of the outfit needed depends on the duty to which the officer is ordered. Is he going to training camp for a three months' course? Is he going direct to a base hospital? Or is he to be sent abroad at once? In each case his necessary equipment will differ. But few men are now being sent abroad without army training, and many of the medical officers ordered to base hospitals direct from civilian life are now being ordered into the training camps for delayed training. So in the average case, we can assume that the newly commissioned doctor will be ordered to training camp where he will stay for one to three months, that he will then be sent to a base hospital or assigned to a field hospital, ambulance company or evacuation hospital, and that at the end of two or three months more he will go to France with his organization or be sent with a replacement detachment. But this is in the future. What the newly commissioned officer wants to know is, "What must I get before I leave for the training camp?" The best advice to give him is, "Get only what is actually necessary to get you to the training camp; then complete your equipment during your stay in camp by getting what you find you need from time to time from actual experience, and secure the additional equipment for overseas service when you know you are going." There

are many reasons for this advice. An officer who attempts to buy his entire equipment before leaving home may be discharged for physical disability and find himself with an expensive equipment for which he has no use. He may be assigned to restricted service, in which case he will not need an overseas outfit. No matter what his assignment, it is much better for him to purchase his outfit as he needs it from personal experience rather than to attempt to buy it complete on some other man's advice. Equipment, then, may be divided into five groups. These are:

1. What an officer needs when reporting for duty. This he must buy before he leaves home.
2. Things he already has or can bring from home.
3. What he will need in a training camp or base hospital. These things he can and should buy after he reaches his station.
4. Articles, not necessary, but which may be purchased if desired.
5. Additional articles for overseas service.

Taking these up in order, the first list would include:

FIRST LIST		
	Minimum	Maximum
Uniform	\$35.00	\$75.00
Cap (regulation)	2.50	2.50
Pair shoes	4.50	18.00
Pair puttees	5.00	18.00
Set collar and rank insignia.....	2.00	2.00
Belt .....	.75	.75
Military locker trunk.....	6.12	15.00
Bedding roll	9.00	25.00
	\$64.87	\$156.25

SUGGESTIONS FOR PURCHASING

In purchasing a uniform, an officer has the same liberty that a civilian has in buying his clothes. He can get them ready made or have them made to order. He can get a cheap suit or an expensive one. Officers' uniforms are made of serge, wool or whip cord. They range in price from \$35 for a ready made serge or wool uniform to \$75 or \$80 for a whip cord uniform made to order by a military tailor. A good uniform is a necessity so long as one remains in the service. It is advisable to get as good a uniform as one can afford. Wool is too hot for summer. Whip cord wears better than any other fabric, but is heavy and stiff. Probably the best thing for the average man is to get as good a serge uniform as he can afford. Ready made uniforms can be secured from dealers in any large city as Marshall Field, Mandel Brothers and the Hub, in Chicago, or Wanamaker in Philadelphia, or can be ordered by local clothiers from Hart, Schaffner and Marx, Kuppenheimer or other well known makers of ready made clothing. A regulation cap can be obtained from any dealer. It is worn only for dress, the field hat being worn in camp. Shoes cost from \$4.50 in calf to \$15 or \$18 in officers' shell cordovan dress shoes. In whatever grade, they should be on the regulation Munson last. This is the best shoe ever made. Already shoemakers are beginning to modify this last in order to approximate the conventional narrow toed shoe. Insist on getting the original Munson last. Don't waste money on high priced cordovan dress shoes. You don't need them and you won't wear them. Get the regulation calfskin shoe and save your money for other things. Be sure the shoe fits, especially that it is wide enough. The same advice can be given about puttees. Prices range from \$5 for cowhide to \$18 for shell cordovan. Get a good pair of cowhide puttees, not too heavy, and be sure they fit, especially that they are not too long in the heel or under the knee. Let those who will pay \$15 or \$18 for pigskin or cordovan. Five or six dollars is enough, especially for camp wear. The belt should be the regulation webbing belt. Insignia include two U. S. R. and two caducei in bronze for the coat collar and two rank insignia for the shoulders. If you want to spend money, you can get sterling silver bars, but as you are going to be promoted soon, you might as well save your money and get white metal at 40 cents a pair. A regulation military locker trunk will cost from \$6.12 to \$15, depending on quality. Have your initials or name marked on each end and your name with "M. R. C., U. S. A.," on the top. A bedding roll is a canvas case for your mattress and bedding.

It is also the catchall in which is packed everything that doesn't go in the trunk. It comes in dark brown or khaki colored canvas, with webbing straps. Prices range from \$9 to \$25. The \$9 roll is just as good as any, but the straps are generally too small and too short. Get a pair of extra long webbing straps or two long trunk straps. Have your name stenciled on the outside of the bedding roll. What goes in the roll and how it should be packed will be considered later.

This is all that will be needed for the man ordered to report to a training camp or base hospital. It will enable him to travel to his post and report in presentable and proper condition without taking time or going to the expense of buying a lot of things that he won't need at all or that he won't need for a long time.

ADDITIONAL ARTICLES BROUGHT FROM HOME

In addition to these purchased articles, what does one need to bring from home? This is the second list. It comprises: pajamas; blankets; comfort or quilt; sheets, narrow, three pairs; pillow cases, three; slippers; bathrobe; tennis shoes; underwear; socks; handkerchiefs; toilet cases; white shirts; white collars; black tie; bath towels; blanket coat; coat hangers. Blankets for temporary use can usually be drawn from the quartermaster on memo receipt. Each officer should have at least two O. D. (olive drab) wool blankets for use in camp. For foreign service he is required to have four. If you can get the regulation U. S. O. D. wool blanket, get at least two; better three or four. If not, bring a pair of heavy blankets, preferably dark colored. Hudson Bay Company blankets are excellent if one can get them, in dark blue or gray. One or two cotton comforts or quilts add greatly to one's comfort in sleeping. Two blankets and a comfort are warmer than four blankets. Sheets are optional and depend entirely on one's personal preferences. Some officers prefer sheets and pillow cases. Others sleep between blankets. If you want sheets, bring three or four pairs of narrow ones for an Army cot. An ordinary sheet, split lengthwise down the middle and hemmed, will make a pair of about the right width. Three or four pillow cases may also be enough. Slippers may be leather or felt, but should be soft and easy. Bring an old bathrobe to wear to the latrine when bathing. If you have an old pair of rubber-soled tennis or gymnasium shoes, slip them into your trunk. They will give you much comfort in going to the bath house in wet weather and will keep your slippers dry. Underwear depends on personal preferences; wool, lisle or cotton, in two-piece, union or B. V. D., as desired. Bring plenty of it, whatever it is, for frequent changes are necessary. As to socks, probably the controversy will never be settled between those who like wool and those who don't. Some won't wear woolen socks; some won't wear anything else. *De gustibus non est disputandum*. Bring what you like, at least six pairs, and twelve are better. Handkerchiefs, at least twelve or better twenty-four, not too fine; some of these can be khaki colored. Some kind of toilet case is advisable; otherwise, toilet articles are scattered and lost. The Fitall cases in leather or canvas in varied sizes are excellent. One or two white shirts beside the one worn to report in and half a dozen white collars may be brought for special occasions. Leave shirt studs, valuable cuff buttons, watch chains, etc., at home; also valuable watches. Plain cuff buttons, a leather watch guard and a cheap but accurate watch are best. A black, narrow four-in-hand is the only tie worn. Face and hand towels are soon discarded. A blanket coat large, heavy bath towels serve all purposes. A blanket coat for evening wear in quarters is very comfortable. Half a dozen clothes hangers in wood or wire can be brought from home or bought at a 5 and 10-cent store. A stout and roomy laundry bag with a gathering string at the top and loops with which to hang it is a great convenience. All articles should be plainly marked. In a company barracks with a hundred men, *meum* is often very hard to distinguish from *teum*. Of course, all these articles can be purchased at the camp exchange or at civilian stores after reaching camp, if desired.

PACKING

Now as to packing: Spread your bedding roll flat on the floor; turn out the flaps, head, foot and sides; fold blankets,

comforts, quilts, sheets, etc., as nearly as possible the size of the bedding roll; lay in top of your bedding, as evenly as possible, your bath robe, blanket coat and anything else that you haven't room for in your trunk; fold the head and foot flaps, then the side flaps; tie the strings that hold the flaps in place; if you have a cot, place it, tightly strapped, across the head of the bedding roll; begin at the head and fold the roll over as tightly as possible; strap far enough from the ends to prevent slipping off; check the roll as baggage with your trunk.

TRAVEL ORDERS AND REPORTING FOR DUTY

As to procedure when you get your orders, "travel orders" always come from the Adjutant-General's Office and not from the Surgeon-General or from a bureau chief. Telegrams or letters from any one else than the Adjutant-General are preparatory, but they are not travel orders. Your telegram should read:

FIRST LIEUT. JOHN C. SMITH, WASHINGTON, D. C., March 1, 1918.
Jonesville, Wis.:

You are assigned active service. Proceed to Fort Riley, Kan., and report, April 15, Commanding Officer, M. O. T. C., for course of instruction. Travel directed necessary in military service. McCAIN.

Several precautions should be exercised regarding this telegram. Do not accept it over the telephone. Insist on the local telegraph office giving you a written copy. When you receive it, be sure your name is correctly spelled and that the name of the receiving office is on the telegram. This telegram is worth money to you. Without it you cannot collect mileage. If your name is misspelled or if the town where you receive it does not appear, it is worthless. See that it is correct. Having received it, do not throw it into the wastebasket or leave it on your desk. Don't put it in the pocket of your civilian coat or lock it up in your trunk. Put it in your pocketbook with your money, and don't lose it. If you want transportation, take your orders to the nearest quartermaster or recruiting officer. He will issue a transportation certificate and stamp his notation on the back of your orders. Exchange the transportation certificate at the railroad ticket office for a ticket. Don't let the ticket agent take up your telegram.

When you get to your destination, ask any officer or non-com for the Headquarters Ambulance. There is always an ambulance to meet each train for the convenience of incoming officers. Be sure to go to the place your orders direct you to report to. If ordered to report to the Commanding Officer of a Base Hospital, don't report at Fort Headquarters. If ordered to report to the Commanding Officer, M. O. T. C., don't report at the Base Hospital. Go where you are told. When you get to Headquarters, ask for the Adjutant and hand him your orders. He will enroll you and assign you to quarters or tell you where to report.

ADDITIONAL EQUIPMENT FOR TRAINING CAMP

If ordered to a training camp, what additional equipment will you need?

ADDITIONAL EQUIPMENT FOR TRAINING CAMP

	Minimum	Maximum
Extra serge suit	\$35.00	\$50.00
Two pairs Munson shoes.....	9.00	16.00
Three or four flannel O. D. shirts.....	13.50	32.00
Field hat	2.50	6.00
Hat cord	1.50	1.50
Khaki suit	12.50	18.00
Three pairs khaki breeches.....	10.50	18.00
Sweater	7.50	10.00
Rain coat	2.60	50.00
Two O. D. blankets.....	6.12	6.12
Extra belt .....	.75	.75
	\$101.47	\$208.37

The extra serge suit is needed for a working suit, as long as serge is worn. Three pairs of shoes worn alternately will last five times as long as one pair worn continuously. At least three flannel shirts are needed. Four are better. They cost from \$4.50 to \$8 each. Get coat shirts of medium weight. The field hat is worn exclusively in camp. You can pay \$2.50 for a regulation hat or \$6 for a Stetson or Dunlap. Have your hat cord sewed on. Get an officer's hat cord, black and gold. Don't make the mistake the rooky did who came to camp wearing a General Officer's gold cord. He said that his girl gave him the handsomest one she could find as a Christmas present and he didn't like to hurt her feelings by not

wearing it. Khaki is worn during warm weather. Get one blouse and three or four pairs of breeches. Be sure the breeches have hip pockets. Some haven't. Those that button at the knee are better than those that lace. Get a sweater, O. D. wool, to wear evenings. A raincoat is more necessary this time of year than any other. You can get a slicker, poncho or a regulation raincoat for \$2.60 from the Quartermaster, or you can pay \$50 for an O. D. cravenette mackinaw, belted like a trench coat and lined with leather. There are many grades between. Have your rank stripes put on the sleeves. Two O. D. blankets will cost \$3.06 each. An extra cot is a convenience. This additional equipment costs \$101.47 minimum and \$208.37 maximum. It can all be bought after reaching camp, either from the Q. M. at the camp exchange or at the civilian stores near camp. The assortment, quality and prices will be better than those in the local stores to which the average man will have access at home.

OPTIONAL PURCHASES

There are many things that are not necessary, that may be bought or not, as desired. These are:

OPTIONAL PURCHASES

	Minimum	Maximum
Mackinaw	\$18.00	\$25.00
Overcoat	35.00	75.00
Dress boots	18.00	35.00
Field boots	16.00	25.00
Rubber boots (hip).....	3.50	12.00
O. D. wool uniform.....	35.00	50.00
Cot	3.50	4.50
Mattress	3.50	10.00
Hair	1.50	4.50
	\$134.00	\$241.00

Mackinaws are short coats originally worn by lumberjacks in the northern woods. They are short overcoats, belted like a Norfolk jacket. They are not regulation but are worn in camp in place of the long, heavy, cumbersome dress overcoat. The regulation overcoat is expensive and seldom worn. It is not worn abroad. Dress boots are calf, Russia or corvian. Field boots are for rougher wear and lace over the top or all the way up. Rubber boots are a necessity in camp in the spring. Wool uniforms are all right in winter, but are too heavy at any other time. They are required for foreign service. Whether you bring a cot or not, you will sooner or later want your own. The Gold Medal cot is used almost exclusively. The Medical Department special cot made by the company is higher, wider, stronger and covered with heavier duck than the ordinary cot. One costs \$3.50; the other, \$4.50. The larger cot is easily worth the difference in price. Every man will sooner or later want a chair of his own. The Gold Medal chairs are also best. They come in four or five patterns, from \$1.50 for the camp stool, to \$5.00 for a really comfortable folding armchair. Mattresses may be obtained in silk floss, cotton, felt or hair. The minimum cost of these optional luxuries is \$134; maximum, \$241.

OVERSEAS EQUIPMENT

Overseas service calls for some additional equipment. It includes: basin canvas; bucket canvas; O. D. wool uniform; compass; cup; field glasses; flashlight; gloves, leather and linen; folding lantern; trench coat; overshoes; long woolen stockings; folding bathtub. It is not necessary to go into details in overseas equipment. Each man is given ample time before going abroad and has plenty of time to complete his equipment. All needed articles can be secured at the port Q. M., at the port of embarkation. The cost of additional equipment will average about \$100. Summing up, the expense would be:

TOTAL EXPENSE OF EQUIPMENT

	Minimum	Maximum
Cost of equipment needed to report.....	\$64.87	\$156.25
Cost of equipment needed for training camp.....	101.47	208.37
Cost of optional articles which are optional.....	134.00	241.00
Cost of optional overseas equipment.....	100.00	100.00
	\$400.34	\$705.62

This expense, by getting an equipment as needed, can be distributed over two or three months, possibly more. No attempt has been made to attach any value to the articles to be brought from home, as these are already in the possession

of most men, and their quality and cost varies with individual taste.

LIVING EXPENSES IN CAMP

What expenses does one have in camp? Very little, after one's outfit is completed. Mess bills are generally \$1 a day, or \$30 a month. Soap, matches, tobacco, cigars or cigarettes, newspapers, postage stamps, stationery, all depend on individual taste as at home. An occasional trip to town with a dinner and a moving picture show is not very expensive dissipation, especially to those used to city prices. Laundry at the Post Laundry is cheap and generally good. Probably \$50 or \$55 a month would cover all necessary expenses, including mess bills.

Allowance must be made for difference in prices in different localities as well as individual taste. The articles recommended and the prices quoted above are based on nine months' experience in training camp, three as a student officer and six as an instructor. They are not intended to be dogmatic, but merely as suggestive opinions for the guidance and help of those about to enter the service.

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

MAY 3, 1918.

Camp Wheeler has gone through another epidemic of pneumonia, this time a small but virulent one. The epidemic of influenza, noted in April, was followed by a considerable number of cases of pneumonia: mostly of the streptococcus type—*Streptococcus hemolyticus*. There were cases of the old time "congestion of the lungs" with rapid consolidation, and in some cases death within twenty-four hours. Serum and empyema were also common, adding to the mortality.

The influenza is now past and the pneumonia almost past. During March there were only a few cases weekly, but in April the number increased to as many as sixteen in one day, and totaled ninety-five cases. Our sick report jumped to 8.4 per cent., the highest of any National Guard Division, but is now below 4 per cent. again. It is hoped that this is the last serious epidemic, though measles and mumps are expected with the new draft men. The continued cold, wet weather was favorable to influenza and pneumonia.

NEW RECRUITS

The whole division is deeply interested in the expected arrival of 10,000 recruits—select men. By some strange whirl of the wheels, these men come to the Dixie Division from Illinois and Michigan. No one is displeased, however, by that arrangement. It is expected that they will have less measles and mumps, and, above all, less pneumonia than the men from the Southern states. They will be held in a detention camp until examined and various vaccinations completed. This draft will fill the division to war strength. The arrival of a new general and men to fill up the organizations, together with completion of equipment, lead many to think that the division may at last actually cross the pond.

PERSONAL

Major Gaylord, M. R. C., is to be surgeon of the detention camp, with Major Pendleton as chief examiner, and some forty other medical officers as assistants.—Lieutenant-Colonel Weed, sanitary inspector, has arrived for a sanitary inspection of the camp.

Lincoln Division (Eighty-Fourth), Camp Zachary Taylor, Louisville, Ky.

MAY 13, 1918.

The convalescing infirmary of the base hospital is nearing completion, and some of the twelve two-story barracks have been occupied. When in full operation the infirmary will be a reclamation and reconstruction camp as well as a place for treatment of convalescing patients. With a view of conserving man power, selected men found to have slight physical defects will go through a course of training to build them up and make them fit for active military service.

PERSONAL

Capt. Lee L. Ernstberger of Louisville, assistant to the camp surgeon, Lieut.-Col. John H. Allen, is detailed, in addition to his other duties, as instructor in military hygiene and

first aid training at the School for Chaplains, vice Capt. David N. Roberg, who was relieved.—Lieut. Charles B. Matthews, formerly a physical director of Lexington, Ky., who has charge of giving medical attention to the families of officers and enlisted men of Camp Taylor living in Louisville, has been promoted to captain.

SCHOOL FOR CONVALESCENTS

A circular memorandum from the office of the Adjutant-General of the Army, received here, directs that all patients sent before the surgeon to be examined with a view to discharging them on surgeon's certificate of disability, and who come under the heading of border line cases, will not be discharged but their service records will be indorsed "fit for domestic service only."

All such doubtful cases covering both mental and physical defects, will be held to service in the United States for such work as they may be capable of performing. With the adoption of this method of conserving the man power of the nation announcement is made that arrangements are being completed for the opening of the convalescing infirmary at the base hospital, one of the sections of which is a reconstruction plant to reclaim patients having slight defects that might otherwise disqualify them from active military service.

MEDICAL STAFF AIDS RECRUITING

Lieut.-Col. John H. Allen, division surgeon, and a dozen other medical officers left Camp Zachary Taylor to visit sixteen towns in Indiana in connection with the efforts to secure additional medical officers for the Army. They will address meetings arranged by the Indiana State Medical Association. The medical association of the Hoosier state recently requested Major-Gen. Harry C. Hale, commander of the Lincoln Division, to assign medical officers to address meetings it would arrange.

General Hale granted leave of absence of two days to medical officers who volunteered to go out on their mission at their own expense. Sunday F. E. Rashig, acting executive secretary of the Indiana State Medical Association, came here to confer with Lieut.-Col. John H. Allen and final plans for the trips were made. The itineraries follow: Corydon, Capt. John J. Moren of Base Hospital Unit No. 40; Crawfordsville, Lieut. John Irwin, base hospital; Bluffton, Capt. Roy B. Storms, 159th Depot Brigade; Richmond, Capt. H. J. Ware, 159th Depot Brigade; Marion, Major Granville S. Hanes, Base Hospital Unit No. 40; Connersville and Rushville, Capt. Cecil I. Wayman, 159th Depot Brigade; Newcastle, Capt. Paul B. Coble, base hospital; Greenfield, Lieut. David C. Morton, contract surgeon; Linton and Loogootee, Lieut. Col. C. J. Imperatori, 309th Sanitary Train; Mount Vernon and Versailles, Capt. Miles F. Daubenheyer, 159th Depot Brigade; Logansport, Capt. David N. Roberg, division surgeon's office; Columbus, Capt. Michael R. Larkin, base hospital; Indianapolis, Lieut.-Col. John H. Allen, division surgeon.

REJECTIONS

To date the number of rejections at this cantonment for physical disabilities is approximately 3,000. However, it is likely that some men who were discharged at the outset and who had but minor defects may be recalled and accepted for limited service.

Only those found to be entirely unfit for any service are now discharged from the National Army. Borderline cases now coming to the attention of the medical officers here are classified "for domestic service only" on their records. They are kept under observation and given scientific medical treatment in an effort to upbuild the weak parts. The reconstruction method was put into operation Monday at the convalescing infirmary at the base hospital.

CLEAN UP AT WEST POINT

Lieutenant Sandidge of the United States Public Health Service has appointed Dr. D. C. Roberts assistant surgeon for the service in West Point. Together they are planning a complete clean up of the town. Streets, fountains, even those sacred precincts, family kitchens, every nook and every corner are to come under their wary eyes. The main street of West Point will have their first attention, it being their purpose to have the street cleaned immediately and its dust laid for the summer.

SURGEON-GENERAL BLUE HERE

Surg.-Gen. Rupert Blue, of the United States Public Health Service, spent Friday at the cantonment, accompanied by Major L. D. Frick, who is stationed at Louisville. He conferred with Lieut.-Col. John H. Allen, division surgeon, and Lieut.-Col. Will L. Pyles, commander of the base hospital,

regarding health conditions here and in the territory surrounding the reservation. The department which General Blue heads is especially responsible for health conditions in a 5-mile radius of military camps.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 3, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (Disease only):	
All Troops	1,109.7
National Guard Camps	994.
National Army Camps	1,222.4
Regular Army	1,054.1
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	39.1
National Guard Camps	35.6
National Army Camps	43.8
Regular Army	37.4
3. ANNUAL DEATH RATE PER 1,000 (disease only):	
All Troops	6.3
National Guard Camps	3.6
National Army Camps	6.3
Regular Army	8.19

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 3, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000	Noneffective per 1,000
				Total	New Infections						
Wadsworth.....	6	..	..	9	7	2	1	..	4	223.6	12.9
Hancock.....	1	..	..	53	16	1	..	..	1	514.4	34.5
McClellan.....	4	..	1	106	12	2	..	..	2	818.8	28.1
Wheeler.....	15	..	22	24	1	..	..	..	4	953.7	39.0
Sevier.....	8	..	5	120	53	20	2	3	1	770.6	29.4
Logan.....	8	..	2	193	117	18	1	5	1	1,976.2	41.3
Cody.....	6	..	..	2	1	..	..	..	1	367.8	22.0
Doniphan.....	2	..	..	16	0	..	..	..	0	1,901.9	57.3
Bowie.....	7	..	3	47	43	1	..	..	2	1,125.7	41.2
Sheridan.....	6	..	..	19	15	..	..	1	3	420.2	25.2
Shelby.....	3	2	..	7	0	2	..	..	0	845.6	42.4
Beauregard.....	21	..	21	44	4	3	..	..	2	1,634.7	63.2
Kearny.....	9	..	..	5	0	1	..	..	1	1,706.3	38.3
Devens.....	19	..	..	21	4	5	..	4	3	704.4	33.5
Upton.....	16	..	..	324	16	10	..	4	3	1,172.1	39.2
Dix.....	5	..	..	88	17	16	..	3	1	873.2	31.2
Meade.....	4	..	..	9	2	6	..	..	2	683.5	26.5
Lee.....	5	..	1	106	8	16	1	..	4	879.4	44.8
Jackson.....	13	1	7	231	7	17	3	1	3	1,355.9	46.0
Gordon.....	3	..	1	110	7	44	4	1	8	1,390.3	47.1
Sherman.....	10	..	1	103	4	25	..	9	6	1,159.6	40.3
Taylor.....	7	..	..	137	15	36	2	1	1	1,393.9	61.9
Custer.....	10	..	..	138	6	8	..	10	5	847.6	32.1
Grant.....	8	..	..	10	0	23	1	5	3	635.6	27.5
Pike.....	5	2	..	66	8	32	5	1	4	1,848.6	62.6
Dodge.....	27	..	..	83	0	24	2	8	12	1,871.9	84.9
Funston.....	31	..	..	115	14	6	2	3	9	1,432.3	52.3
Travis.....	6	1	4	67	3	7	..	1	2	2,097.7	40.5
Lewis.....	5	..	1	475	11	15	1	12	2	1,617.6	43.0
Northeastern Dept.....	..	..	..	10	3	5	..	5	0	991.8	32.2
Eastern Dept.....	8	..	1	24	7	13	..	1	7	762.1	27.8
Southeastern Dept.....	2	..	4	38	24	14	..	1	2	812.7	44.8
Central Dept.....	2	..	..	25	11	5	..	3	4	1,285.1	46.6
Southern Dept.....	21	2	2	75	39	9	..	17	12	1,110.8	44.8
Western Dept.....	2	..	..	30	15	4	..	1	3	895.7	27.4
Aviation S. C.....	22	3	4	97	0	26	3	15	18	1,126.7	34.2
Camp Greene.....	..	2	..	39	0	1	..	..	1	523.7	22.8
Camp Fremont.....	2	..	2	17	3	9	..	1	1	757.7	42.1
El Paso.....	..	..	..	11	11	2	..	1	0	628.6	3.1
Columbus Bks.....	1	..	..	26	3	2	..	..	1	1,077.6	39.1
Jefferson Bks.....	14	..	..	30	2	5	..	4	3	2,303.7	100.7
Fort Logan.....	7	..	..	..	..	1	..	3	6	2,242.7	103.0
Fort McDowell.....	..	..	1	17	1	1	..	..	0	1,593.8	46.8
Fort Slocum.....	..	..	..	14	0	1	..	..	2	1,265.0	45.1
Fort Thomas.....	1	..	1	3	0	2	..	..	0	1,165.9	45.4
D. B. Alcatraz.....	..	..	..	1	0	..	..	..	0	3,199.9	..
D. B. Fort Leavenworth.....	..	..	..	2	0	..	1	..	1	1,034.8	35.1
A. A. Humphreys.....	4	..	..	4	0	5	..	..	0	434.6	7.0
J. E. Johnston.....	3	..	..	24	18	11	1	1	0	1,359.9	38.8
Hoboken, N. J.....	24	..	1	147	0	31	..	12	8	907.1	35.0
Camp Stuart.....	16	..	..	196	8	12	2	1	7	2,006.7	63.8
West Point, N. Y.....	..	..	..	..	..	..	..	..	0	610.9	32.2
Edgewood - Aberdeen.....	..	..	..	..	..	1	..	..	0	784.5	25.1
Provisional Depot for Corps and Army Troops.....	6	..	..	12	0	1	..	..	2	945.8	40.2
Camp Holabird.....	..	..	..	1	0	..	..	..	0	661.3	46.2
Camp Raritan.....	..	..	..	2	0	..	..	..	0	742.8	28.0
Springfield Armory.....	..	..	..	..	..	..	..	..	..	..	..
Natl. Guard Depts.....	1	..	..	9	7	5	..	2	1	..	..
Natl. Army Depts.....	11	1	2	69	24	68	4	7	7	..	..
Total.....	417	14	67	3,561	567	574	36	147	176	1,109.7	39.1

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 3, 1918	Regulars in U. S., Week Ending May 3, 1918	National Guard, All Camps, Week Ending May 3, 1918	National Army, All Camps, Week Ending May 3, 1918	Expedi- tionary Forces, Week Ending April 26, 1918
Pneumonia.....	16.6	17.3	17.2	16.7	28.4
Dysentery.....	0.5	0.9	0.3	0.38	0.1
Malaria.....	2.6	2.0	6.1	1.4	1.3
Veneral.....	145.8	108.2	115.9	200.3	40.5
Paratyphoid.....	0.0	0.0	0.0	0.0	0.0
Typhoid.....	0.04	0.0	0.17	0.0	0.0
Measles.....	22.9	20.6	9.0	27.9	6.2
Meningitis.....	1.4	0.9	0.7	2.0	2.3
Scarlet fever.....	5.8	8.4	1.6	6.0	9.7

ORDERS TO OFFICERS OF THE MEDICAL CORPS
AND OF THE MEDICAL CORPS OF THE
NATIONAL ARMY

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Sheridan, Lieut. EDMUND B. SPAETH.
To Camp Gordon, Atlanta, Ga., for duty, from Camp Sevier, Lieut. TASKETT L. CONNER.
To Camp Lee, Petersburg, Va., for duty, and on completion to his proper station, Lieut.-Col. EDGAR KING. For duty, from Camp Dodge, Lieut.-Col. CLARENCE E. FRONK. As assistant to the camp surgeon, from New York City, Lieut. DAVID H. W. GRANT.
To Camp Upton, L. I., N. Y., and Hoboken, N. J., for duty, and on completion to his proper station, Col. DEANE C. HOWARD.
To Chicago, Ill., for duty, and on completion to his proper station, Col. REUBEN B. MILLER.
To Dansville, and East Aurora, N. Y., for duty, and on completion to his proper station, Lieut.-Col. JOHN A. HORNSBY.
To Fort Jay, N. Y., for physical examination to determine his fitness for active duty, and on completion to his home, Major CHARLES V. FARR.
To Fort McHenry, Md., for examination to determine his physical fitness for active duty, and on completion to his home, Major HARRY L. BEERY.
To Fort Oglethorpe for duty, from Camp Wadsworth, Major WILLIAM W. PERCY.
To Hoboken, N. J., for temporary duty, from Rochester, N. Y., Col. GEORGE A. SKINNER.
To Hot Springs, N. C., for inspection, and on completion to his proper station, from Biltmore, N. C., Lieut.-Col. WILLIAM H. SMITH.
To Mineola, L. I., N. Y., for consultation, and on completion to his proper station, Col. WILLIAM O. OWEN.
To New York City, for duty, and on completion to his proper station, Lieut.-Col. WILLIAM F. LIPPITT.
To Ordnance Proving Ground, Aberdeen, Md., and Gas Shell Plant, Edgewood, Md., for sanitary inspection, and on completion to his proper station, Col. ALBERT E. TRUBY.
To Washington, D. C., for consultation, and on completion to his proper station, from Hoboken, Col. GUY L. EDIE; from Camp Devens, Lieut.-Col. WILLIAM A. POWELL; from Fox Hills, Lieut.-Col. HENRY H. RUTHERFORD. On completion to New York City, Major HILIP B. CONNELLY.
To Whipple Barracks, Ariz., for duty, from Fort Bayard, Major ARLE E. HOLMBERG.
Honorably discharged on account of physical disability incurred in line of duty, Major ROBERT E. SIEVERS.

ORDERS TO OFFICERS OF THE MEDICAL
RESERVE CORPS

Alabama
To Camp Gordon, Atlanta, Ga., for duty, Capt. JOHN R. OSWALT, Union Springs. Base hospital, from Camp Wheeler, Lieut. EDWARD HAGLER, Northport.
To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. LEO C. WOODS, Birmingham.
To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. BISHOP WARWICK, Talladega.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. JAMES R. HAIGLER, Montgomery.
To Fort Oglethorpe for instruction, Lieut. SAMUEL S. UNDERWOOD, Anniston.
To Pittsburgh, Pa., Pittsburgh University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Garden City, Lieut. WILLIAM R. ROUSSEAU, Antsville.
Arizona
To Camp MacArthur, Waco, Tex., as member of the board examining command for tuberculosis, Capt. ROY E. THOMAS, Phoenix.
Arkansas
To Camp Lewis, American Lake, Wash., base hospital, from Camp dy, Lieut. HENRY W. A. LEE, West Helena.
To Fort Oglethorpe for instruction, Lieuts. ERNEST M. McKENZIE, rdencle; ERNEST DARNALL, Wildener.
To Jefferson Barracks, Mo., for duty, from Camp Bowie, Lieut. JOHN BROWN, Mansfield; from Camp Pike, Lieut. NOLIE MUNCY, Little Rock; from Fort Riley, JACOB LER. PRITCHARD, Winslow.
California
To Rock Island, Ill., for duty, from Camp Logan, Capt. FRED F. PRAGUE, Los Banos.
Honorably discharged in order that he may accompany a mission to Asia, Capt. JOSEPH W. COOK, Redlands. On account of physical disability existing prior to entrance into the service, Capt. CARO W. PPMAN, San Francisco.

The following orders have been revoked: *To Camp Kearny, Linda Vista, Calif., base hospital, Capt. FREDERICK A. COLLIER, Los Angeles; To Fort Oglethorpe, base hospital, Capt. LAWRENCE H. HOFFMAN, San Francisco.*
To Camp Cody, Deming, N. M., base hospital, Capt. HERBERT P. NOTTAGE, Oakland.
To Camp Kearny, Linda Vista, Calif., base hospital, Capt. HENRY W. MILLS, San Bernardino; from Fort Riley, Lieut. WALLACE DODGE, Los Angeles.
To Fort MacDowell, Calif., for duty, Lieut. JOHN P. STRICKLER, San Francisco.
To Fort Riley for instruction, Lieuts. WILLIAM A. SWIM, Los Angeles; ERNEST C. GRINER, San Francisco.
To New York City, Cornell Med. Coll., for instruction in military roentgenology, from Fort Riley, Lieuts. JOSEPH SAYLIN, El Monte; FREDERIC B. WEST, Los Angeles; ROBERT A. POWERS, San Francisco; BYRON Y. MILLER, San Luis Obispo.
To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. PAUL K. JACKSON, San Luis Obispo.
To Washington, D. C., for duty in the Surgeon-General's Office, from Fort McHenry, Major HOWARD C. NAFFZIGER, San Francisco.
To the inactive list, from Camp Fremont, Lieut. FRED O. BUTLER, Eldridge.
The following order has been revoked: *To Camp Fremont, Palo Alto, Calif., for duty, Capt. WILLIAM W. CROSS, Fresno.*

Canal Zone

To Fort Oglethorpe for instruction, Lieut. HARRY G. EBERSOLL, Balboa Heights.

Colorado

To Camp Cody, Deming, N. M., base hospital, Capt. CYRUS L. PERSHING, Denver.
To Camp Jackson, Columbia, S. C., as assistant to camp surgeon, from Fort Oglethorpe, Capt. EDWARD J. SCANNELL, Trinidad.
To Fort Riley for instruction, Lieut. DALTON K. ROSE, Denver.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. WALTER K. HOTCHKISS, Brighton.

Connecticut

To Camp Sherman, Chillicothe, Ohio, base hospital, from New York City, Lieut. FRANK J. RONAYNE, Hartford.
To Fort Adams, R. I., for duty, Lieuts. FESSENDEN L. DAV, Bridgeport; HOWARD D. MOORE, Danbury.
To Fort Oglethorpe for instruction, Capt. FRANKLIN L. LAWTON, Hartford; Lieuts. FRED F. ARMSTRONG, Ansonia; JAMES R. KNOWLES, Danielson; HERMAN P. DAVIDSON; BERNARD F. GILCHRIST; CHARLES F. McGUIRE, New Haven.
To Fort R. G. Wright, L. I., N. Y., for duty, Lieut. GEORGE P. CHENEY, New London.
To New Haven, Conn., for duty, Lieut. BERNARD C. MARANTZ, New Haven; from New York City, Capt. JOHN B. GRIGGS, Hartford.
To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieut. MAX CLIMAN, Hartford.

District of Columbia

To Dayton, Ohio, Wilbur Wright Field, for duty, from Walter Reed General Hospital, Capt. EDWIN M. HASBROUCK, Washington.
To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Washington, D. C., Capt. CHARLES W. HYDE, Washington.
The following order has been revoked: *To Camp Greene, Charlotte, N. C., base hospital, Capt. DANIEL D. V. STUART, Jr., Washington.*

Florida

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, Lieut. OTIS G. KENDRICK, Tallahassee.
To Fort Riley as orthopedic surgeon, from Cincinnati, Capt. HENRY C. DOZIER, Ocala.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HUBER P. NEWMAN, Bartow.
The following order has been revoked: *To Fort Oglethorpe for instruction, Lieut. CAREY P. ROGERS, Jacksonville.*

Georgia

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieuts. BUFORD C. BIRD, Colquitt; EVERETT J. STOTHART, Savannah.
To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieuts. FRANCIS M. BURKHALTER, Ray City; ORLANDO S. WOOD, Washington.
To Columbus, Ohio, Ohio State University, for duty, from Atlanta, Lieut. ERNEST S. COLVIN, Atlanta.
To Fort Oglethorpe for instruction, Capt. WILLIAM R. McCURRY, Hartwell; Lieuts. CHARLES H. DICKENS, Lawrenceville; MILTON WALTON, Lumpkin; RUPERT H. STOVALL, Macon; SOLOMON YOUNG, Normantown; LEE HOWARD, Savannah.
To Camp Gordon, Atlanta, Ga., base hospital, Capt. FREDERICK G. HODGSON, Atlanta; from Camp Wheeler, Lieut. CYRUS K. SHARP, Arlington. For duty, Lieut. THOMAS H. SMITH, Atlanta.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. WILLIAM J. MYERS, Savannah.
To Camp Meade, Annapolis Junction, Md., to examine the command for nervous and mental diseases, from Washington, D. C., Lieut. JAMES K. PETTIT, Milledgeville.
To Fort Oglethorpe for instruction, Capt. DANIEL B. EDWARDS, Savannah; Lieuts. WILLIAM C. BLANDFORD, EDWIN N. MAUER, Atlanta; JOHN K. BURNS, Jr., Clarksville; WILLIS P. JORDAN, Kirkwood; SOLOMON YEUMANS, Normantown. For duty, Lieut. BENJAMIN E. GRAHAM, Gurley.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. JOHN W. ODEN, Blackshear; THOMAS J. BLACKSHEAR, Dublin.

Idaho

To Jefferson Barracks, Mo., for temporary duty, from Fort Riley, Lieut. DUNCAN L. ALEXANDER, Twin Falls.
Honorably discharged on account of physical disability incurred in line of duty, Capt. OSWALD F. HENNING, Jerome.

Illinois

To Camp Greene, Charlotte, N. C., base hospital, from Camp Sherman, Capt. WALTER D. STEVENSON, Quincy.
To Camp Hancock, Augusta, Ga., base hospital, Lieut. VERGIL A. ROSS, Chicago; from Camp Dodge, Capt. PRESCOTT BENNETT,

Washington; from Camp Joseph E. Johnston, Lieut. WALTER A. FORD, Kankakee; from Camp Meade, Lieut. THOMAS R. MAXWELL, New Berlin.

To Camp Jackson, Columbia, S. C., base hospital, from Boston, Lieut. HERBERT B. HENKEL, Springfield; from Camp Lee, Lieut. WILLIAM J. SIEGLER, Chicago. For duty, Lieut. ANTON J. FIRTIK, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieuts. WILLIAM H. EVANS, Murphysboro; HARRY H. HANLY, Peoria.

To Army Medical School for instruction, from Fort Oglethorpe, Capt. VICTOR M. DALY, Pontiac.

To Camp Cody, Deming, N. M., base hospital, Lieut. WALTER M. PRUYN, Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Lieuts. CLARENCE H. BOREN, HARRY C. DUNLAVY, Chicago.

To Camp Dix, Wrightstown, N. J., for duty, from Rantoul, Lieut. JAY T. WOOD, Springfield.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. SAMUEL L. THORPE, Clinton.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Doniphan, Capt. CARL L. BARNES, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. ALEXANDER A. DRILL, Chicago.

To Camp Meade, Annapolis Junction, Md., base hospital, from New York City, Capt. WINFIELD G. McDEED, Monticello; HUGH L. MARSHALL, Stronghurst.

To Camp Sherman, Chillicothe, Ohio, Camp Dodge, Des Moines, Ia., and Camp Grant, Rockford, Ill., for conference, and on completion to his proper station, Major ALLEN B. KANAVEL, Chicago. As assistant to camp surgeon, from Camp Devens, Capt. FREDERICK A. FISHER, Chicago.

To Colonia, N. J., for duty, Major SAMUEL R. SLAYMAKER, Chicago.

To Fort Leavenworth, Kan., for duty, from Camp Dodge, Lieut. CARL F. LEWIS, Jerseyville.

To Fort Logan, Colo., for temporary duty, and on completion to his proper station, from Camp MacArthur, Lieut. BERNARD BENKENDORF, Chicago.

To Fort Oglethorpe for instruction, Capt. EDWARD J. WHEATLEY, Danville; ANDY HALL, Mt. Vernon; Lieuts. TOM F. BEVERIDGE, LEWIS K. EASTMAN, HENRY G. LESCHER, DAVID J. MARGOLIS, JOHN J. OPITZ, EUGENE A. RUSH, ITALO F. VOIINI, Chicago; GERSON FREDERICKSON, Plano; MANUEL M. FAJNER, West Frankford.

To Fort Riley for instruction, Lieut. HARRY LEWIN, Chicago.

To Hoboken, N. J., base hospital, from Hoboken, Major DANIEL M. OTTIS, Springfield. For duty, Lieuts. ARCHIBALD C. WEAVER, Hoopston; WYLIE L. KELL, Mt. Vernon; LEWIS J. WEISHEW, Oswego; from Camp Crane, Lieut. GEORGE E. O'GRADY, Chicago.

To Jackson Barracks, La., for duty from Camp MacArthur, Lieut. ERWIN R. SCHMIDT, Chicago.

To Jefferson Barracks, Mo., for temporary duty, Lieut. WALTER A. DAY, Fosterburg; from Camp Beauregard, Capt. HARRY ROBERTSTEIN, Chicago; from Camp Dodge, Capt. DUNCAN B. McEACHERN, Chicago. On completion to his proper station, from Camp Dodge, Lieut. JOHN O'CONNELL, Chicago.

Honorably discharged on account of physical disability not incurred in line of duty, Capt. FRANK B. EARLE, CHARLES E. PADDOCK, Chicago. On account of physical disability existing prior to entrance into the service, Capt. JOHN O. GASTON, Park Ridge.

Resignation of Lieut. HARRY F. BEEBE, Antioch, accepted.

The following orders have been revoked: To Fort Riley for instruction, Capt. CHARLES N. YOUNGER, Chicago; Lieut. JOHN J. HOPKINS, Hindsboro.

Indiana

To Newport News, Va., for duty, Lieut. LYMAN OVERSHINER, Summitville.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Wheeler, Macon, Ga., base hospital, Capt. GUSTAVUS B. JACKSON, Indianapolis.

To Washington, D. C., for duty in the Surgeon-General's Office, Capt. HUGH H. MILLER, South Bend.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. JOHN W. BALLARD, Logansport; OTTO H. SWANTUSCH, Metz.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. ROBERT M. RECOBS, Tipton.

To Camp Wadsworth, Spartanburg, S. C., for duty, Capt. BENONI N. ROSE, Evansville.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Major FREDERICK A. TUCKER, Noblesville.

To Colonia, N. J., for duty Capt. LEWIS P. DRAYER, Fort Wayne. To Fort Oglethorpe for instruction, Capt. ARTHUR T. FAGALY, Lawrenceburg; CLARENCE G. REA, Muncie.

To Fort Slocum, N. Y., for duty, from Camp Sherman, Major HARRY M. HOSMER, Gary.

To Hoboken, N. J., for duty, Lieut. WARD C. ZELLER, Union City.

To Lake Charles, Gerstner, Field, Signal Corps Aviation School, from Mineola, Lieut. DONALD D. JOHNSTON, Fort Wayne.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Custer, Lieut. JOHN C. GLACKMAN, Hatfield.

To Topeka, Kan., State Board of Health, as epidemiologist, Capt. MILLARD KNOWLTON, Sims.

To Washington, D. C., for duty, from Camp John Wise, Lieut. BERNARD J. LARKIN, Indianapolis.

Iowa

To Camp Lewis, American Lake, Wash., for duty, Capt. GEORGE A. SPAULDING, Avoca. Base hospital, from Camp Cody, Lieut. DAN W. SHINE, Oelwein.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. FRANK A. PRIESSMAN, Mechanicsville.

To Fort Logan, Colo., for temporary duty, and on completion to his proper station, from Fort Omaha, Lieut. JOSEPH W. TYRRELL, Des Moines.

To Fort Riley for instruction, Capt. JOHN C. DENNISON, Bellevue; JAMES E. McDONALD, Mason City; Lieuts. RALPH F. LUSE, Low Moor; SHIRLEY D. FOLSO, Muscatine; FREDERICK W. SLOBE, Orange City.

To Jefferson Barracks, Mo., for temporary duty, Lieut. ROBERT C. MOLISON, Marshalltown; from Fort Oglethorpe, Capt. CHARLES B. TAYLOR, What Cheer; from Fort Riley, Capt. ALBIN B. PHILLIPS, Clear Lake.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. BEN T. WHITAKER, Boone; CARL KAIL, Stratford.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. JOHN E. MORGAN, Oskaloosa; CARL ASCHENBRENNER, Pella.

To Topeka, Kan., State Board of Health, as epidemiologist, from Fort Riley, Lieut. CHARLES D. SHELTON, Bloomfield.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CHARLES D. BUSBY, Brooklyn; GEORGE J. WENZLICK, Iowa City.

The following order has been revoked: To Fort Riley for instruction, Lieut. CLARENCE McC. WRAY, Iowa Falls.

Kansas

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. OMAR LE G. COX, Iola.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. LEWIS M. SCHRADER, Kingsley.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. ARTHUR B. CULLUM, Garnett.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Sherman, Lieut. GEORGE I. THACHER, Waterville.

To Fort McPherson, Ga., base hospital, from New York City, Lieut. DONALD R. BLACK, Rosedale.

To Fort Riley for instruction, Lieuts. WALTER C. KELLER, Athol; ROSCOE C. WARD, Belleville; GEORGE B. HARRISON, Eureka; GORDON W. HIGGINBOTHAM, GUY R. WALKER, Hutchinson; MARVIN HALL, Wichita.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. CYRIL E. SHEPPARD, Larned; FRANCIS B. SHELDON, Manhattan; CHARLES M. MILLER, Oakley; EARL J. FROST, Wichita.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. CHARLES S. FERGUSON, Atchison.

The following order has been revoked: To Fort Oglethorpe for instruction, Lieut. SEBREE S. MCGINNIS, Dighton.

Kentucky

To Fort Oglethorpe for instruction, Capt. AMPHLIAS O. SISK, Earlington; JAMES B. SMITH, McKinney; SIDNEY J. ANDERSON, Midway; Lieuts. WILLIAM T. LITTLE, Calvert City; OLIVER P. MILLER, Columbia; WILLIAM S. ECKMAN, Covington; KIRTEY B. WOOLERY, Falmouth; from New York City, Capt. OSCAR E. BLOCH, Louisville.

To Fort Sam Houston, Tex., base hospital, from El Paso, Lieut. EMORY L. DRAVO, Jeffersonton.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Baltimore, Capt. THOMAS H. KELLY, Covington.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. CHARLES HUNT, Clinton.

To Fort Oglethorpe for instruction, Capt. DAVID H. DANIEL, Paintsville; Lieuts. ROBERT D. HIGGINS, Ashland; LOSSIE E. GILBERT, Marion; OLIVER P. HENRY, Mount Sterling; FRANCIS E. DENMAN, Nicholasville; BERTON M. BROWN, Quicksand; JAMES C. PRESTON, Smalley.

To Fort Wayne, Mich., for duty, from Fort Omaha, Lieut. CHARLES P. HARROD, South Park; from Rochester, N. Y., Lieuts. ISAAC L. WYATT, Buffalo; JOHN F. HAHS, La Center.

To Jefferson Barracks, Mo., for temporary duty, and on completion to his proper station, from Camp Doniphan, Lieut. SAMUEL T. PARKER, Lexington; from Camp Sherman, Lieut. CHARLES E. VIDT, Russell.

To Washington, D. C., for temporary duty, Capt. WILLIAM C. WHITE, Louisville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. PORTER V. BALLOU, Rowena.

Louisiana

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. THOMAS B. CRACROFT, Kelly.

To Camp Crane, Allentown, Pa., base hospital, from Camp Sherman, Lieut. AUGUST J. PODESTA, New Orleans.

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Lieut. PRESSLEY E. WERLEIN, New Orleans.

To Camp Shelby, Hattiesburg, Miss., as orthopedic surgeon, from Fort Oglethorpe, Lieut. FRANK CHETTA, New Orleans.

To Jefferson Barracks, Mo., to examine the command for tuberculosis, from duty as a contract surgeon, Lieut. PERCY L. QUERENS, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, Lieut. FRANK Y. GILBERT, Portland.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Capt. LORING S. LOMBARD, South Portland.

To Fort Oglethorpe for instruction, Capt. JESSE S. BRAGG, Winter Harbor; Lieut. TRUE E. MAKEPEACE, Farmington.

To Fort Sam Houston, Texas, to examine the command for cardiovascular diseases, from Fort Oglethorpe, Lieut. SETH S. MULLIN, Bath.

To Fort Slocum, N. Y., to make nervous and mental examinations and on completion to his proper station, from New York City, Lieut. ARTHUR C. WRIGHT, Augusta.

To Toledo, Ohio, Toledo University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Garden City, Lieut. JOHN L. PEPPER, Madison.

Maryland

To Camp Dix, Wrightstown, N. J., to examine the command for mental and nervous diseases, from Dansville, N. Y., Lieut. NOLAN D. C. LEWIS, Crownsville.

To Camp Sherman, Chillicothe, Ohio, base hospital, from New York City, Lieut. WILMER M. PRIEST, North East.

To Colonia, N. J., for duty, Capt. HARRY L. WHITTLE, Baltimore.

To Fort Oglethorpe for instruction, Lieut. FRANCIS X. KEANEY, Baltimore.

To Fort Riley base hospital, from Fort Des Moines, Major FRANK MARTIN, Baltimore.

To Hoboken, N. J., base hospital, from New York City, Capt. JOHN P. BEESON, South West City; Lieut. HOWARD J. HAMMAN, Baltimore.

To Washington, D. C., American University, for duty, Lieut. WILLIAM P. FINNEY, Jr., Baltimore; from Camp McClellan, Lieut. GEORGE B. WISLOCKI, Baltimore.

The following order has been revoked: *To Camp Travis*, Fort Sam Houston, Texas, as member of the tuberculosis board, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

Massachusetts

To Boston, Mass., Harvard Medical School, for inspection, and on completion to his proper station, Capt. FRANCIS W. PEABODY, Boston.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ELISHA S. LEWIS, Princeton.

To Camp Crane, Allentown, Pa., base hospital, Lieut. GEORGE W. SHIRK, Hatfield.

To Camp Upton, L. I., N. Y., base hospital, Capt. DONALD MACOMBER, West Newton; Lieut. CLARENCE W. STANSFIELD, Fall River.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Greene, Major HARRY W. GOODALL, Lieut. RICHARD S. EUSTIS, Boston; from Camp Sevier, Lieuts. GEORGE W. PAGEN, WARREN M. PETTINGILL, Boston, from Fort Oglethorpe, Lieut. ROY S. PERKINS, Lowell.

To Camp Devens, Ayer, Mass., base hospital, Capt. WILLIAM K. S. THOMAS, Cambridge; Lieut. HIRAM H. AMIRAL, Boston.

To Camp Dodge, Des Moines, Iowa, base hospital, and on completion to Baltimore, Md., Johns Hopkins Hospital, for instruction, Capt. ANDREW W. SELLARDS, Boston. Base hospital, and on completion to his proper station, from Rockefeller Institute, Lieut. ARTHUR B. LYON, Boston.

To Camp Lee, Petersburg, Va., for conference, and on completion to Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion to Camp Wheeler, Macon, Ga., base hospital, from Camp Wheeler, Major FRED B. LUND, Boston.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. JAMES M. MURPHY, Palmer.

To Camp Meade, Annapolis Junction, Md., base hospital, from New York City, Lieut. WILLIAM B. ADAMS, Springfield.

To Fort McDowell, Calif., for temporary duty, and on completion to his proper station, from San Francisco, Capt. SIDNEY M. BUNKER, Boston.

To Fort Oglethorpe for instruction, Capt. ERNEST B. YOUNG, Boston; WILLIAM J. HAMMOND, Dorchester; NATHANIEL K. NOYES, Duxbury; Lieuts. CARL A. DAHLEN, Brookline; FRANCIS F. ROLLINE, East Boston; CHARLES S. DOUCET, Lowell; DRED GODDARD, Neponsit; GEORGE T. LITTLE, Uxbridge; SIDNEY DALRYMPLE, West Medford.

To Hoboken, N. J., for duty, Capt. EDWARD H. BUSHNELL, Quincy; Lieuts. LYSANDER S. KEMP, Canton; CLAYTON R. LANE, Hitchburg.

To Lakewood, N. J., for consultation, and on completion to his proper station, Major KENDALL EMMERSON, Worcester.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Major FREDERIC J. COTTON, Boston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Major GEORGE OSGOOD, Cohasset.

Michigan

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. ARTHUR OWEN, Lansing.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. FRANK B. McMULLEN, Detroit.

To Camp Upton, L. I., N. Y., base hospital, Major WILEY E. WOODBURY, Detroit.

To Fort Benjamin Harrison, Ind., to make nervous and mental examination of the drafted men, from Fort Riley, Major FREDERICK L. NEWBERRY, Detroit.

To Fort Oglethorpe for instruction, Lieuts. MAURICE C. LOREE, Ann Arbor; THEODORE P. VANDER ZALM, Blanchard; HERMAN ALBRECHT, DON A. COHOE, DANIEL R. DONOVAN, LYELE SHAW, HARRY B. YOH, Detroit; HENRY C. HANSEN, Escanaba; LLOYD K. BABCOCK, Galien.

To Fort Porter, N. Y., for duty, Capt. HOMER E. SAFFORD, Detroit.

To Fort Sam Houston, Texas, for duty, from Camp Travis, Capt. OBERT B. HARKNESS, Houghton. To examine the troops for tuberculosis, from Camp Doniphan, Lieut. RAY L. FELLERS, Detroit.

To Fort Sill, Okla., School of Aerial Observers, for duty, from Mineola, Lieut. RAYMOND S. GOUX, Detroit.

To Hoboken, N. J., for duty, Capt. MARSHALL L. CUSHMAN, Lansing; Lieuts. JOHN F. BARTON, Calumet; CLINTON DAY, Art.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Detroit, Capt. GEORGE E. FORTHINGHAM, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CARL M. McCUISTON, Mount Clemens.

The following orders have been revoked: *To Jefferson Barracks, Mo.*, to examine the command for cardiovascular diseases, Lieut. FORREST OSTRANDER, Lansing. *To New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, Capt. FRANK KINSEY, Grand Rapids. *To Williamsbridge, N. Y.*, for duty, Lieut. RANK T. F. STEPHENSON, Detroit.

Minnesota

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Lieut. HARRY P. WAGENER, Minneapolis.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Capt. PERCY A. WARD, Minneapolis.

To Fort Oglethorpe for instruction, Lieuts. HOWARD L. SARANT, Northfield; OLE S. NESETH, Skyberg; ABRAHAM D. LAPERO, St. Paul.

To Fort Riley for instruction, Lieuts. LEE W. POLLOCK, Rochester; EDWARD N. DEWITT, St. Paul.

To Jefferson Barracks, Mo., for temporary duty, and on completion to his proper station, from Fort Riley, Capt. EARL H. MARCUM, Midji. For temporary duty from Fort Riley, Lieut. WALTER H. ALLORAN, St. Paul.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. CAMPBELL SANSING, Duluth; JEAN B. CLAIR, Winsted.

To report by wire to the commanding general, Central Department, assignment to duty, Capt. MINOR MORRIS, Hopkins.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Custer, Battle Creek, Mich., base hospital, from Camp Arthur, Major CHESTER H. CLARK, Duluth.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, from Camp Grant, Lieut. MILLARD F. SMITH, St. Paul.

To the inactive list, from Minneapolis, Capt. RALPH ST. J. PERRY, Minneapolis.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. WILLIAM J. KUCERA, New Prague.

Mississippi

To Camp Beauregard, Alexandria, La., base hospital, from New York City, Lieut. JAMES S. RIED, Lanekin.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. LITTLE B. NEAL, Jackson. For duty, from Fort Leavenworth, Lieut. EUGENE R. SHURLEY, Lulu.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowic, Lieut. FRANKLIN H. RUSSELL, Wayside.

To Fort Oglethorpe for instruction, Lieut. WILLIAM E. VAN DEVERE, Buca.

To Fort Riley for duty, from Camp Shelby, Lieut. ALLISON T. GRAHAM, Eastman.

To Fort Wayne, Mich., for duty, from Rochester, N. Y., Lieut. MARTIN L. HOLLAND, Schlater.

To Jefferson Barracks, Mo., for duty, from Camp Bowie, Lieut. LEWIS W. KITCHENS, Strayhorn.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. FILO B. COATS, Hardy Station.

Missouri

To Fort Riley for temporary duty, from Fort Riley, Capt. CLIFTON R. DUDLEY, St. Louis. Base hospital, Lieut. WILLIAM C. DIECKMAN, Dexter. For instruction, Lieuts. JAMES G. MONTGOMERY, Kansas City; WALDO H. WILL, Mehlville; MAURICE J. LONSWAY, St. Louis.

To Fort Sill, Okla., for temporary duty, from Fort Riley, Lieut. WALTER E. WEST, Trenton.

To Lakewood, N. J., for temporary duty, from Army Medical School, Capt. GREENE D. McCALL, Fulton.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Kansas City, Mo., Lieut. THEODORE S. BLAKESLEY, Kansas City.

To Camp Crane, Allentown, Pa., base hospital, Capt. CARL M. SNEED, Columbia. For duty, from Fort Riley, Lieut. BERNHARDT W. KLIPPEL, St. Louis.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. CLAUDE L. ARMSTRONG, Webster Grove.

To Camp Greene, Charlotte, N. C., base hospital, from New York City, Capt. FREDERIC HAGLER, St. Louis.

To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. URSA C. WESTON, Osgood.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. BRADFORD F. DEARING, HARRY W. SCHUMACKER, St. Louis.

To Cleveland, Ohio, Lakeside Hospital, for instruction, in anesthesia, from Fort Riley, Lieut. EUGENE A. MILLER, St. Joseph.

To Fort Oglethorpe for instruction, Lieut. OMAR R. SEVIN, St. Louis.

To Fort Riley for instruction, Capt. WESLEY R. HAWKINS, Glasgow; WILLIAM A. POTTER, Lancaster; Lieuts. EUGENE B. MUNIER, Bradleyville; EDWARD J. HAERLE, Kansas City; WILLIAM B. INMAN, St. Louis.

To Hoboken, N. J., for duty, from Jefferson Barracks, Capt. IRA R. CLARK, St. Louis.

To Jefferson Barracks, Mo., for duty, from Newport News, Lieut. DANIEL P. WRIGHT, St. Louis.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. U. S. GRANT ARNOLD, Portage Des Sioux; ANDREW F. KENNEDY, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieut. JAMIE C. THOMPSON, St. Louis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Major WILLIAM J. FRICK, Kansas City; Lieut. MONTAGUS M. MEYERS, St. Louis.

The following order has been revoked: *To Chicago, Ill.*, Presbyterian Hospital, and on completion to Camp Hancock, Augusta, Ga., base hospital, Capt. WILLIAM T. ELAN, St. Joseph.

Montana

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Capt. GEORGE B. OWEN, Polson.

To Fort Riley for instruction, Lieuts. MICHAEL H. GLEASON, Butte; GEORGE H. DAVIS, Custer; EARL E. MEISTER, Missoula.

To Jefferson Barracks, Mo., for duty from Camp Dodge, Lieut. HAROLD SCHWARTZ, Butte. For temporary duty, and on completion to his proper station, from Camp Doniphan, Lieut. JOHN TOBIN-SKI, Missoula.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HILMER G. KOEFOD, Rudyard.

Nebraska

To Camp Dix, Wrightstown, N. J., for duty, from San Antonio, Capt. WILLIAM J. PINKERTON, Bostwick.

To Camp Dodge, Des Moines, Ia., base hospital, from Army Medical School, Lieut. SANFORD R. GIFFORD, Omaha.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, Lieut. JOHN W. DUNCAN, Omaha.

To Camp Pike, Little Rock, Ark., base hospital, from Army Medical School, Lieut. CLARENCE M. HYLAND, Omaha.

To Fairfield, Ohio, Signal Corps Aviation School, for duty, from Fort Omaha, Lieut. FRANK W. SCOTT, Lodge Pole.

To Fort Logan, Colo., for temporary duty and on completion to his proper station, from Fort Omaha, Lieut. WILLIAM E. NOGAN, Petersburg.

To Fort Riley, base hospital, Capt. NORMAN T. HALE, Eustis. For instruction, Lieut. GEORGE H. DE MAY, Wilsonville.

To Houston, Tex., Ellington Field, Signal Corps Aviation School, from Mineola, Lieut. JOHN R. KLEYLA, Omaha.

To Jefferson Barracks, Mo., for temporary duty, from Fort Riley, Lieut. J. IRVIN LIMBURG, Walthill.

To Lonohe, Ark., Signal Corps Aviation School, from Mineola, Lieut. CLAUDE T. UREN, Omaha.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. JOHN R. BEATTY, Butte; Lieut. EARL W. FETTER, North Platte. Neurological Institute for instruction, Major EDWIN C. HENRY, Omaha.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. JOHN H. REGAN, Grand Island.

Nevada

To New York City, Neurological Institute, for instruction, from San Francisco, Capt. BENJAMIN F. CUNNINGHAM, Nevada.

New Hampshire

To Camp Hancock, Augusta, Ga., for duty, from Camp Jackson, Capt. LAWRENCE R. HILL, Concord.

To Cincinnati, Ohio, for further instruction in orthopedic surgery, from Army Medical School, Capt. JAMES B. WOODMAN, Franklin.

New Jersey

To Fort Oglethorpe for instruction, Lieuts. DAVID C. THOMPSON, Bloomfield; JOSEPH C. BALSON, Passaic.

To Fort Riley for instruction, from Camp Lewis, Lieut. LEO V. ROSENTHAL, Trenton.

To Newport News, Va., for duty, Lieut. HOWARD T. BLAIR, Hoboken.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Wheeler, Macon, Ga., base hospital, Lieut. JOHN A. THURSTON, Summit.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. DAVID M. GARDNER, Benson Mines.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Lieuts. THOMAS A. CRAVEN, Atlantic City; CORNELIUS V. CLOCK, Passaic; from duty as a private, Lieut. WARREN Z. DELL, Colden; from Garden City, Lieut. JOHN F. WEBER, South Amboy.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Wheeler, Lieut. THOMAS K. LEWIS, Camden.

To Camp Lee, Petersburg, Va., for duty, Lieuts. MEYER JEDEL, Newark; OTTO KOTHE, Union Hill.

To Fort Oglethorpe for instruction, Capt. HARRIS DAY, Chester; ABIJAH O. BUCK, Elizabeth; WILLIAM H. WARREN, Newark; Lieuts. RICHARD H. STAEHLE, Newark; HENRY H. TOMLIN, Wildwood.

To Fort Oglethorpe as orthopedic surgeon, from Cincinnati, Capt. WILLIAM L. CORNWELL, Bridgeton. For duty, from Camp Doniphan, Lieut. CHARLES W. BUVINGER, E. Orange.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HENRY E. KLAUS, West Hoboken.

To Newport News, Va., for duty, from Camp Dix, Lieut. HUGH V. GILLSON, Paterson.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieut. CHARLES B. KAIGHN, Stratford.

Resignation of Lieut. GEORGE W. WILLIAMS, Trenton, accepted.

New Mexico

To Camp Cody, Deming, N. M., base hospital, Capt. OLIVER J. WESTLAKE, Silver City.

To Fort Sill, Okla., Post Field, for duty, from Mineola, Capt. GEORGE D. CARTER, Mesilla Park.

New York

To Camp Beauregard, Alexandria, La., base hospital, from New York, Lieut. JAMES C. SULLIVAN, Buffalo.

To Camp Crane, Allentown, Pa., base hospital, from Surgeon-General's Office, Major SANGER BROWN, II, White Plains; from Camp Meade, Capt. GEORGE A. BLAKESLEE, New York.

To Camp Devens, Ayer, Mass., with the board examining the command for cardiovascular diseases, Lieut. WILLIAM S. LADD, New York.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Devens, Capt. HENRY W. JACKSON, New York.

To Camp Gordon, Atlanta, Ga., base hospital, from Army Medical School, Lieut. MARK COHN, New York; from Camp Devens, Capt. OTIS H. JOHNSON, New York; from Camp Upton, Lieuts. JOHN SMITH, JR., New York; EDWIN C. FOSTER, Penn Yan; from Fort Oglethorpe, Lieut. FREDERICK C. DEVENDORF, Utica.

To Camp Greene, Charlotte, N. C., base hospital, from Walter Reed General Hospital, Capt. EDWARD DOWDLE, Oswego.

To Camp Upton, Long Island, N. Y., base hospital, Lieuts. EDWARD D. FRASER, Brooklyn; FLOYD H. MOORE, Herkimer; TOM LOWRY, New York; SAMUEL HOUSTON, Wolcott. For duty, from Fort Oglethorpe, Lieut. MICHAEL E. CAVALLLO, New York.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Doniphan, Capt. FREDERICK W. LESTER, Seneca Falls.

To Camp Zachary Taylor, Louisville, Ky., to examine the command for cardiovascular diseases, from Fort Oglethorpe, Lieut. FREDERICK W. HOLCOMB, New York.

To Colonia, N. J., for temporary duty, from Fort Oglethorpe, Lieut. BENJAMIN F. SPIEGEL, Brooklyn.

To Fort McHenry, Md., for temporary duty, Lieut. MATTHIAS L. FOSTER, New Rochelle.

To Fort McPherson, Ga., for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM P. McCROSSIN, New York.

To Rockefeller Institute as instructors, Capt. HAROLD L. AMOSS, HENRY T. CHICKERING, Lieuts. FREDERICK L. GATES, EDGAR STILLMAN, New York. For instruction, and on completion to Williamsbridge, N. Y., for temporary duty, Major WALTER A. SHERWOOD, Brooklyn.

For instruction in laboratory work, and on completion to Army Medical School, for duty, Capt. EWING TAYLOR; Lieut. FRED W. NIEHAUS, New York. For instruction in the treatment of infected wounds and on completion to Williamsbridge, N. Y., for temporary duty, Major WALTER A. SHERWOOD, Brooklyn.

On completion to his proper station, from New York, Capt. FREDERICK N. WILSON, New York. On completion, to Camp McClellan, Anniston, Ala., base hospital, Lieut. LOUIS M. ALOFSIN, New York.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Greene, Capt. THOMAS A. ROGERS, Plattsburgh. On completion to his proper station, from Camp Meade, Lieut. HENRY M. THOMAS, New York.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Doniphan, Major CURTENIUS GILLETTE, New York; from Camp Wheeler, Lieut. ARTHUR E. SMITH, Cohoes; from Fort Oglethorpe, Lieut. JOSEPH LINTZ, New York. With the board examining recruits for cardiovascular diseases, from Camp Sevier, Major ANDREW MacFARLANE, Albany.

To Camp Grant, Rockford, Ill., with the board examining troops for cardiovascular diseases, Lieut. HERBERT MANN, New York.

To Camp Hancock, Augusta, Ga., as assistant to camp surgeon, from Garden City, Major ISAAC W. BREWER, Geneva.

To Camp Lee, Petersburg, Va., base hospital, from Camp Beauregard, Capt. RALPH A. KINSELLA, New York; from New York, Lieuts.

HERMAN B. PHILLIPS, MAURICE M. POMERANZ, New York. For duty, Lieut. WILLIAM A. CKROYD, East Schodack. With the board examining the troops for cardiovascular diseases, from the Surgeon-General's Office, Lieut. MARCUS A. ROTHCHILD, New York.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. ARTHUR J. SMITH, Waverly.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. JOHN J. BOLAND, New York.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. EDMUND B. SULLIVAN, Mt. Vernon. To examine the command for nervous and mental diseases, Major ROSS McC. CHAPMAN, Binghamton.

To Camp Mills, Garden City, L. I., N. Y., as divisional sanitary inspector, from Fort Oglethorpe, Major E. J. BARRETT, New York. For duty, from Camp Mills, Major ISAAC W. BREWER, Geneva.

To Camp Pike, Little Rock, Ark., base hospital, from San Francisco, Capt. RAE W. WHIDDEN, New York City.

To Camp Travis, Tex., to examine the command for tuberculosis, Capt. FRANK FINNEY, Burke.

To Camp Upton, L. I., N. Y., base hospital, Lieut. WILLIAM I. SNEED, New York. For duty, from Camp Gordon, Lieut. JOHN H. WATSON, Buffalo.

To College Station, Tex., for duty, from Houston, Capt. GEORGE W. BEEBE, St. Johnsville.

To Dayton, Ohio, McCook Field, for duty, from Fairfield, Ohio, Capt. GARRETT M. CLOWE, Schenectady; from Fort Omaha, Lieut. PHILIP LEHMAN, Brooklyn.

To Fort Des Moines, Iowa, base hospital, from Fort Slocum, Major PERCY H. WILLIAMS, New York.

To Fort Logan, Colo., for temporary duty, and on completion to his proper station, from Fort Leavenworth, Capt. NOAH P. NORMAN, Watkins.

To Fort McHenry, Md., base hospital, from New York City, Major WILLIAM F. HONAN, New York; Lieut. FREDERICK P. SCHENKELBERGER, Gowanda.

To Fort Oglethorpe for instruction, Capt. JOSEPH C. DEVRIES, Brooklyn; JOHN R. HERRICK, Hempstead; BERNARD S. MOORE, Syracuse; Lieuts. MILTON ARONOWITZ, Albany; RAYMOND G. BELL, Auburn; LAWRENCE N. HACKETT, Bolivar; HAROLD MACM. JOHNSON, Buffalo; GEORGE F. MURNANE, Herkimer; GEORGE C. BARONE, Lockport; KARL GEBHARD, Mount Vernon.

JOSEPH BOGAN, ARTHUR C. BRIGHT, CHARLES H. B. CARNAO, SIMON S. FRIEDMAN, HAROLD GROSS, JOHN G. F. HISS, WILLIAM LIEBERMAN, HENRY TRAUTMAN, New York; THOMAS M. CALLADINE, Perry; CHARLES MAGGIO, CHARLES C. TERESI, Rochester; ALBERT R. ELLISON, Spencer; JOHN L. SLY, Warwick.

To Fort Riley for duty, from Camp Doniphan, Lieut. CARL KAPLAN, Brooklyn.

To Fort Sill, Okla., Post Field, for duty, from Mineola, Lieut. HARRY FRIED, New York.

To Slocum, N. Y., to make nervous and mental examinations and on completion to his proper station, from New York, Capt. WILLIAM H. KENNA, Mt. Vernon.

To Fort Wayne, Mich., for duty, from Fort Omaha, Lieut. LEON S. KUREK, Buffalo.

To Fox Hills, N. Y., for duty, Capt. JEHIEL H. PATRICK, New York.

To Hoboken, N. J., for duty, Lieut. WILLIAM M. HANDLEMAN, New York; from Army Medical School, Lieuts. JAY B. RUDOLPHY, New York; HAROLD E. SMITH, Richmond Hills.

To Jefferson Barracks, Mo., for temporary duty, from Fort Riley, Lieut. JOHN L. LINN, Brooklyn. And on completion to his proper station, from Camp Dodge, Lieut. ALOYSIUS M. MULHOLLAND, New York.

To New Haven, Conn., for duty, Capt. GEORGE H. SHAW, Camillus; LEONARD P. SPRAGUE, Shateaugay; Lieuts. WILLIAM B. EBELING, Brooklyn; ROBERT A. LAMBERT, New York City.

To Newport News, Va., for duty, Lieut. JOHN L. NICHOLAUS, Schenectady; from Camp Dix, Lieut. SOLOMON HENDLEMAN, Brooklyn.

To New York City, Bellevue Hospital and Rockefeller Institute, for duty, and on completion to his proper station, Major RAYMOND P. SULLIVAN, Brooklyn.

To report by wire to the commanding general, Eastern Dept. for assignment to duty, Capt. PAUL H. VON ZIERELSHOFEN, Croghan.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Fort Riley, Lieut. ROY J. MARSHALL, Rome.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieuts. WILLIAM I. McCANTY, Barker; JOHN P. FARSON, New York; from Fort Logan, H. Roots, Lieut. EDMUND W. ILL, New York. For instruction in the treatment of infected wounds, and on completion to Camp McClellan, Anniston, Ala., base hospital, Lieut. FRED W. EASTMAN, New York.

On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. SAMUEL S. ROSENFELD, New York.

To Walter Reed General Hospital, Takoma Park, D. C., for duty from New York City, Lieuts. JACOB H. HIRSCH, Haverstraw; ALEXANDER W. JACOBS, New York.

To Williamsbridge, N. Y., for observation treatment, and report Lieut. FLOYD M. MOORE, Herkimer.

Honorably discharged on account of physical disability, Capt. WILLIAM B. DEGARMO, New York. On account of physical disability existing prior to entrance into the service, Lieut. JOHN A. CONLEY, Penn Yan. On account of physical disability, not incurred in line of duty, Lieut. HERMAN W. SCHLAPPI, Fulton.

Resignations of Capt. NELSON K. FROMM, Albany; THOMAS B. MERRIGAN, New York, accepted.

The following orders have been revoked: To Fort Oglethorpe for instruction, Lieuts. ABRAM B. BRUNER, CHARLES L. McEVEETY, New York.

North Carolina

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILLIAM E. BRACKETT, Caroleen; from Fort Oglethorpe, Lieut. CHARLES E. LYDAY, Albermarle.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Army Medical School, Lieut. JOHN E. WINE, Wilmington.

To Columbus Barracks, Ohio, for duty, from Washington Barracks, Capt. ALBERT DURHAM, Charlotte.

To Fort Oglethorpe for instruction, Lieuts. TIMOTHY G. WILLIAMS, Conetoo; GEORGE F. BULLARD, Elizabethtown; JOHN F. NASH, St. Pauls.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. HENRY B. MAXWELL, Whiteville.
To Camp Kelly, San Antonio, Tex., for duty, from San Antonio, Lieut. JOHN B. POWERS, Wake Forest.
To Fort Oglethorpe for instruction, Capt. BENJAMIN K. HAYS, Oxford; Lieut. ARTHUR E. GOUGE, Bakeraville; HARRY E. BROOKS, Sunberry.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JULIUS N. HILL, Murphy.
The following order has been revoked: To Fort Oglethorpe for instruction, Lieut. ARTHUR E. GOUGE, Bakeraville.

North Dakota

To Camp Gordon, Atlanta, Ga., for duty, Capt. ERNEST E. WANDS, Dixon.
To Cincinnati, Ohio, Ohio Mechanics Institute, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Camp Taliaferro, Lieut. CECIL C. SMITH, Stanton.
To Fort Riley for instruction, Capt. JAMES E. CRAMMOND, Kirby; Lieut. ROSCOE L. GHERING, Larimore.
To Jefferson Barracks, Mo., for temporary duty, from Camp Grant, Capt. ROBERT D. CAMPBELL, Grand Forks. On completion to his proper station, from Camp Sherman, Lieut. WALTER L. BARBOUR, Dering.
To New Orleans, Charity Hospital, for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, from Jefferson Barracks, Capt. BERNARD S. NICKERSON, Mandan.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. JOHN A. D. ENGELSTADTER, Brockton; RALPH DEMING, Mercer; JOHN R. PENCE, Minot; CHARLES R. TOMPKINS, Oberon.

Ohio

To Fort Slocum, N. Y., as orthopedic surgeon, and on completion to his proper station, from Camp Dix, Lieut. HENRY J. PEAVY, Jr., Toledo.
To Fort Wayne, Mich., for duty, from Washington, D. C., Major EDWARD D. SINKS, Lima.
To Fox Hills, N. Y., for duty, Lieut. JOHN C. YOUNG, Cleveland; ALVIN H. CARR, Reading.
To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Lieut. SILAS W. SAXTON, Steubenville.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. HENRY A. PRINGER, Dayton.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. DAVE H. SMELTZER, Youngstown.
To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Capt. MADISON G. BALDWIN, Toledo.
To Camp Devens, Ayer, Mass., base hospital, from Mineola, Capt. ARTHUR C. BACHMEYER, Cincinnati.
To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. FRANK A. LAWRENCE, Elyria.
To Camp Pike, Little Rock, Ark., base hospital, from Army Medical School, Lieut. JOHN D. BOYLAN, Milford Center; from Fort Oglethorpe, Lieut. FREDERICK M. HOUGHTALING, Huron.
To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. HARRY S. NOBLE, St. Mary's.
To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Capt. ORIN W. ROBE, Portsmouth.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. JAMES C. BERRY, Shadyside.
To Cleveland, Ohio, Lakeside Hospital, for instruction in anesthesia, Lieut. JOHN A. MELLON, Columbiana.
To Fort Logan, Colo., for temporary duty, and on completion to his proper station, from Fort Oglethorpe, Lieut. HENRY L. PRICE, Toledo.
To Fort Oglethorpe for instruction, Capt. AMBROSE H. MOUSER, Atty; JULIAN V. WINANS, Madison; IRVING S. WORKMAN, Mount Vernon; Lieut. WILLIAM L. FOX, Akron; FRANK L. ALISBURY, Dayton; EDGAR P. COOK, Granville; LEON E. PANGURN, Levanna; JAY R. CRAWLEY, Marion; FERNAND J. LEBICQ, Sandusky; WESLEY C. REDD, Youngstown; from Army Medical School, Lieut. LORIN G. SHEETS, Cleveland; from Camp Hancock, Capt. EDWARD C. LUDWIG, Columbus; from duty as a private, Lieut. LEO R. MAJESWSKY, Cincinnati.
To Hoboken, N. J., for duty, Capt. THEODORE BROCK, Brecksville; CLAUDE A. TALLMAN, Lima; LUCIUS W. PRICHARD, Leavenworth; from Army Medical School, Lieut. ALBERT F. SNELL, Jr., Cincinnati.
To Jefferson Barracks, Mo., for temporary duty, and on completion to his proper station, from Camp Sherman, Capt. WALTER B. TURNER, Youngstown.
To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. FRANK S. VAN DYKE, Columbus.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. RAY C. ASH, Ashland.
To Washington, D. C., for duty in the Surge-General's Office, and on completion to the inactive list, Lieut. FRANCIS J. GALLAGHER, Cleveland.
To the inactive list from Cincinnati, Capt. ARTHUR E. OSMOND, Cincinnati.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ZALMON C. SHERWOOD, Geneva.
The following orders have been revoked: To Camp Crane, Allentown, base hospital, Capt. JOHN H. HARVEY, Toledo. To Fort Oglethorpe for instruction, Lieut. HENRY B. RAMAN, Farmingdale. To Fox Hills, N. Y., for duty, Lieut. ALVIN H. CARR, Reading.

Oklahoma

To Camp Travis, Fort Sam Houston, Texas, as orthopedic surgeon, from Fort Oglethorpe, Lieut. REUBEN M. HARGROVE, Norman.
To Fort Oglethorpe for instruction, Lieut. ARCHIE BEE, ELIJAH SULLIVAN, Oklahoma City.
To Fort Riley for instruction, Lieut. GEORGE G. HARRIS, Byron; Dallas, Lieut. LEVI P. MURRAY, Milfay.
To Jefferson Barracks, Mo., for temporary duty, and on completion to his proper station, from Camp Doniphan, Lieut. CLYDE F. LOY, Lawrence.
To report by wire to the commanding general, Southern Department, assignment to duty, Lieut. WILLIAM M. TUCKER, Sulphur; JAMES F. PADDLEFORD, Woodward.

To report to the governor, Panama Canal, for duty, from New York, Lieut. CHARLES M. MING, Okmulgee.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM J. WHITAKER, Pryor.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, Capt. CHAS. E. SEARS, Portland.
To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Zachary Taylor, Lieut. BENJAMIN N. WADE, Portland.
To Fort Riley for instruction, Capt. T. HOMER COFFEN, Portland.
To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Portland, Ore., Capt. HERBERT L. UNDERWOOD, LaGrande.
To San Francisco, Calif., Lettermann General Hospital, for duty, from Camp Fremont, Major GEORGE E. DARROW, Eugene.
Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CLAUDE M. PEARCE, Baker.
The following order has been revoked: To Army Medical School for instruction, Lieut. ALBERT W. TIEDEMANN, Baker.

Pennsylvania

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. DANIEL P. RAY, Johnstown; from Boston, Lieut. JOHN B. HAINES, Philadelphia.
To Camp Hancock, Augusta, Ga., base hospital, Lieut. HERSCHEL C. WALKER, Philadelphia.
To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Capt. JOSEPH J. CLARKE, Pittsburgh.
To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. BRADLEY H. HOKE, Coalport.
To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. SYDNEY L. WINGRADE, Philadelphia.
To New York City for investigation, and on completion to his proper station, Major DAVID SILVER, Pittsburgh, Bellevue Hospital for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. LESTER E. WOOLMER, Hontzdale.
To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to Camp Sheridan, Montgomery, Ala., base hospital, Lieut. JOHN C. GABLE, Freeland.
To Riverside, Calif., March Field, Signal Corps Aviation School, from Camp Kelly, Capt. CHARLES G. EICHER, McKees Rock.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Major JONATHAN M. WAINWRIGHT, Scranton. On completion to his proper station, from New York City, Capt. WILLIAM L. ESTES, South Bethlehem. On completion to Camp Upton, L. I., N. Y., base hospital, Lieut. MARTIN S. KLECKNER, Allentown. For instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. ROBERT D. SPENCER, Williamsport.
To Army Medical School for instruction, from Fort Oglethorpe, Lieut. ARNE W. CLOUSE, Geneva.
To Camp Dix, Wrightstown, N. J., for duty, from duty as contract surgeon, Lieut. FRANK M. DYSON, Philadelphia; from Garden City, Lieut. JOHN L. STEFFY, Pittsburgh.
To Camp Dodge, Des Moines, Iowa, base hospital, Capt. WILLIAM D. HEBBACHER, Philadelphia; from Fort Oglethorpe, Lieut. LOUIS SEGAL, Philadelphia.
To Camp Gordon, Atlanta, Ga., base hospital, from Camp Wheeler, Lieut. WALTER M. BERTOLET, Reading.
To Camp Greene, Charlotte, N. C., base hospital, from Boston, Lieut. JOHN B. HAINES, Philadelphia.
To Camp Hancock, Augusta, Ga., base hospital, Lieut. WILLIAM M. DONOVAN, Philadelphia.
To Camp Lee, Petersburg, Va., base hospital, Lieut. EDWIN S. SAYLOR, Philadelphia.
To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. JOHN M. WELCH, Philadelphia.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. SIMEON D. BASHORE, Palmyra.
To Cape May, N. J., for temporary duty, Majors CHARLES H. FRAZIER, DANIEL J. MCCARTHY, Philadelphia.
To Cleveland, Ohio, Lakeside Hospital, for instruction in anesthesia, from Fort Oglethorpe, Lieut. CHARLES D. BIERER, Uniontown.
To Fort Benjamin Harrison, Ind., base hospital, from Camp Jackson, Major HENRY TUCKER, Philadelphia.
To Fort McHenry, Md., base hospital, from New York City, Lieut. EDWARD P. CLARK, Pittsburgh.
To Fort Oglethorpe for instruction, Capt. HARRY BRADY, Graves Landing; HENRY HEILMAN, Philadelphia; HENRY H. THOMPSON, Philadelphia; H. MELVIN ALLEN, Reading; Lieut. THOMAS E. BROWN, Carnegie; GUY E. DUTTER, Hillgrove; LOUIS W. GROSSMAN, New Castle; JOHN LEEDOM, ABRAHAM M. SHARPE, Philadelphia; PAUL C. BRUCE, WILLIAM B. RECTENWALD, SALVATORE C. SUNSERI, CHARLES H. WOLFE, Pittsburgh; HARRY K. HOBBS, Shenandoah; VINCENT J. GRAUTEN, West Chester; JOSEPH W. HARSBERGER, Winbury.
To Fort Riley for instruction, and on completion to Camp Grant, Rockford, Ill., as commanding officer of base hospital, Major WILLIAM H. WALSH, Philadelphia.
To Fort Sam Houston, Texas, for duty, from Camp Doniphan, Lieut. MORRIS H. TINDALL, Philadelphia.
To Fort Sill, Okla., for duty, from Mineola, Capt. JOHN P. GALLAGHER, Philadelphia.
To Fox Hills, N. Y., for duty, Lieut. FRANK W. THOMAS, Philadelphia.
To Hoboken, N. J., for duty, Capt. ARTHUR R. WILSON, Monessen; SNYDER J. H. LOUTLER, Somerset; Lieut. FRANK A. CLAWSON, Meadville; from Army Medical School, Lieut. MYRON A. ZACKS, Philadelphia; HERBERT F. KENNY, Pittsburgh; from Camp Sherman, Lieut. EDGAR J. MILLER, East Berlin.
To Houston, Texas, Ellington Field, Signal Corps Aviation School, from Mineola, Lieut. ROBERT T. M. DONNELLY, Philadelphia.
To Jefferson Barracks, Mo., with the board to examine the troops for cardiovascular diseases, Lieut. THOMAS G. JENNY, Pittsburgh.
To Lake Charles, La., Gerstner Field, Signal Corps Aviation School, from Mineola, Lieut. JAMES DEW. JACKSON, Erie; SYDNEY L. WINGRADE, Philadelphia.
To Markleton, Pa., for temporary duty, Lieut. HENRY F. SCHIANTZ, Reading.
To Memphis, Tenn., Signal Corps Aviation School, for duty, from Mineola, Capt. ROBERT J. HUNTER, Philadelphia.

To Mineola, L. I., N. Y., Signal Corps Aviation School, Lieut. EDWARD R. SIBLEY, Elkins Park.

To Newport News, Va., as orthopedic surgeon in camp, from Army Medical School, Lieut. WILLIAM O. MARKELL, Wilkinsburg. For duty, from Camp Dix, Lieuts. MEDUS M. DAVIS, Indiana; WILLIAM WEISS, Philadelphia.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Jackson, Capt. WILLIAM VAN KORB, Philadelphia.

To Picatinny, N. J., for duty, from Dansville, Capt. WILMARTH S. BUCK, Pittsburgh.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Custer, Lieut. CHENEY M. STIMSON, Philadelphia.

To Saybrook, Conn., for duty, Lieut. SAMUEL W. REEVES, Fawn Grove.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Capt. FRED W. DAVIS, Scranton.

Honorably discharged on account of physical disability incurred in line of duty, Lieuts. CHARLES J. CAVANAGH, JAMES A. SMITH, Philadelphia. On account of physical disability existing prior to entrance into the service, Capt. RAY McK. ALEXANDER, Boliver; Lieut. HARRY B. SOBERNHEIMER, Philadelphia.

Rhode Island

To Camp Sevier, Greenville, S. C., base hospital, from Camp Pike, Lieut. JONATHAN P. HADFIELD, Providence.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. MICHAEL H. SCANLON, Westerly.

South Carolina

To Camp Lee, Petersburg, Va., for consultation, and on completion to his proper station, from Camp Wadsworth, Major CURRAN B. EARLE, Greenville.

To Fort Oglethorpe for instruction, Capt. LOAMI J. SMITH, Ridge Springs; Lieuts. ELLIS B. GRAY, Gray Court; ISHAM W. PITTMAN, Turbeyville.

Honorably discharged, Lieut. JOHN E. BEARDEN, Laurence.

South Dakota

To Fort Riley for instruction, Lieut. LAWRENCE J. BROOKMAN, Vermilion.

Tennessee

To Camp Sheridan, Montgomery, Ala., for duty, from Fort Oglethorpe, Lieut. BENJAMIN F. LORING, Union City.

To Edgewood, base hospital, Lieut. RANDALL E. WYATT, Nashville.

To Fort Oglethorpe as commanding officer of base hospital, Major EDWARD C. MITCHELL, Memphis. For instruction, Lieuts. WALTER W. WIDMER, Laurel Bloemery; SAMUEL N. ANDERSON, South Pittsburg; CHESTER A. SKELTON, St. Elmo.

To Camp Meade, Annapolis Junction, Md., to examine the command for nervous and mental diseases, from Washington, D. C., Lieut. WILLIAM B. LUNSFORD, Nashville.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. ERNEST B. THOMPSON, Nashville.

To Fort Oglethorpe for instruction, Capt. THOMAS E. P. CHAMBERS, Cleveland; JOHN OVERTON, Nashville; Lieuts. CHARLES V. BAILEY, Baileytown; ROBERT G. LATIMER, Capleville; GEORGE W. BURCHFIELD, Dandridge; YOURA S. BROWN, Halls; WILLIAM T. BUSK, Henderson; ORVILLE H. CRIBBINS, Moscow; MATTHEW W. SEARIGHT, Nashville; WILLIAM G. L. BLACKWELL, Ripley.

To Fort Riley for duty, Lieut. SALVADOR L. BOCELLATO, Memphis.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. WILLIAM P. LAW, Westmoreland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. LELAND H. MILLIGAN, Morristown.

Texas

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Army Medical School, Lieut. RUSSELL E. TYLER, Newlin.

To Fort McPherson, Ga., for duty, Lieut. CLARENCE R. MILLER, San Angelo.

To Fort Oglethorpe for instruction, Lieut. IRA F. CANNON, Mart.

To Fort Riley for instruction, Capt. HENRY S. BUNCII, Weatherford; Lieuts. ALLEN M. BAKER, Carthage; THOMAS B. SAPPINGTON, Eagle Ford; ELISHA H. ROBERTS, Fort Worth.

To Fort Sill, Okla., for duty, Lieut. JOHN M. DARROUGH, San Antonio.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. GEORGE P. RAWLS, St. Augustine.

To New Orleans, Charity Hospital, for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Capt. HENRY H. OGILVIE, San Antonio.

To Newport News, Va., for duty, from Army Medical School, Lieut. COLE F. SMITH, San Antonio.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Grant, Rockford, Ill., base hospital, Capt. BARTLETT U. SIMS, Bryan.

To Camp Beauregard, Alexandria, La., base hospital, Lieut. EMMETT L. GRAHAM, McGregor; from duty as a private, Lieut. JOSEPH J. ANDERSON, Coledge.

To Camp Cody, Deming, N. M., as orthopedic surgeon, from Fort Oglethorpe, Lieut. DALLAS SOUTHARD, Stamford.

To Camp Crane, Allentown, Pa., base hospital, from Hoboken, Lieut. SIDNEY C. VENABLE, Sherman.

To Camp Custer, Battle Creek, Mich., base hospital, Major SCURRY L. TERRELL, El Paso.

To Camp Dodge, Des Moines, Iowa, base hospital, from San Antonio, Lieut. EMILE C. SCHULZE, Shiner.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Capt. JOHN V. BLAKE, Floresville.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. GREEN L. REA, Mumford.

To Camp Logan, Houston, Texas, for duty, from Fort Oglethorpe, Lieut. WILLIAM H. BENNETT, Falfurrias.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Capt. SHADROCK L. BOREN, Del Rio.

To Fort Oglethorpe for instruction, Major FREDERICK J. COMBE, San Antonio; Lieut. HOUSTON H. TERRY, Fort Worth; from Benbrook, Texas, Lieut. ROBERT BAILEY, Coleman.

To Fort Riley for instruction, Major CARL LOVELACE, Waco; Lieut. REUBEN W. JACKSON, Dallas; LEON W. NOWIERSKI, Yorktown.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Logan, Capt. WILLIAM B. CARRELL, Dallas.

Honorably discharged, Lieut. DIMETRUS J. LOUIS, El Paso. On account of physical disability not incurred in line of duty, Lieut. ROBERT L. KURTH, Dallas.

Utah

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. CHARLES E. BRAIN, Salt Lake City.

To Jefferson Barracks, Mo., for temporary duty, Capt. ROBERT W. FISHER, Salt Lake City.

Vermont

To Fort Oglethorpe for instruction, Capt. NICHOLAS J. DELEHANTY, Rutland.

Virginia

To Camp Hancock, Augusta, Ga., base Hospital, from Camp Dodge, Capt. KENNETH D. GRAVES, Richmond.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JAMES M. HUTCHESON, Richmond. To examine the command for mental and nervous diseases, from Washington, D. C., Lieut. WILLIAM A. TRIVETTE, Petersburg.

To Camp Sheridan, Montgomery, Ala., for duty, from Lake Charles, La., Major WILSON E. DRIVER, Norfolk.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. GEORGE F. HOLLAR, Dayton.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. DAVID L. KINSELY, Abingdon.

To Camp Lee, Petersburg, Va., base hospital, from Camp Pike, Lieut. JOHN O. BOYD, Roanoke; from Richmond, Lieut. CARRINGTON WILLIAMS, Richmond.

To Camp Sevier, Greenville, S. C., base hospital, Capt. JOHN W. CARROLL, Lynchburg.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. ALFRED B. GREINER, Rural Retreat.

To Fort Oglethorpe for instruction, Lieut. JOHN M. RATLIFF, Marvin.

To Newport News, Va., for duty, from Camp Lee, Capt. THOMAS C. FIREBAUGH, Harrisonburg.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HUNTER McG. DOLES, Norfolk.

Washington

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Riley, Lieut. EARL R. BUSH, Fort Canby.

To Jefferson Barracks, Mo., for duty, from Camp Grant, Lieut. GEORGE I. HURLEY, Hoquiam.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Seattle, Capt. RICHARD W. PERRY, Seattle.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Pike, Little Rock, Ark., base hospital, Lieut. HUBBARD T. BUCKNER, Seattle.

The following order has been revoked: To Camp Kearny, Linda Vista, Calif., base hospital, Capt. FOREST A. BLACK, Seattle.

West Virginia

To Camp Gordon, Atlanta, Ga., for duty, Lieut. ROBERT F. THAW, Sistersville.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. JAMES M. SHULER, Welch.

To Fort Oglethorpe, base hospital, from Army Medical School, Lieut. RALPH LEM. WOODRUFF, Moundsville. For instruction, Capt. WILLIAM C. COVEY, Pemberton; Lieuts. JAMES M. FONTAINE, Charleston; WASHINGTON W. STONESTREET, Morgantown.

To Hoboken, N. J., for duty, Capt. HENRY W. ROLLING, Lost City.

Wisconsin

To Fort Oglethorpe for instruction, Capt. MAX STAEHLE, Manitowoc; from Fort Sill, Capt. WILLIAM E. KRAMER, Milwaukee; from New York City, Lieut. ADAM L. CURTIN, Milwaukee.

To Fort Riley for instruction, Lieuts. ALBERT R. BELL, Tomah; WILLIAM B. CORNWALL, Turtle Lake.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Wadsworth, Lieut. ERWIN G. LINKMAN, Milwaukee.

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, from Camp Dodge, Capt. JOHN M. CONLEY, Oshkosh.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, and on completion to his proper station, from Camp Pike, Capt. HOMER SYLVESTER, Montfort.

To Camp Gordon, Atlanta, Ga., base hospital, from Boston, Lieut. JOHN W. HANSEN, Milwaukee.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. HARRY E. GILLETTE, Packwaukee; from Fort Riley, Lieut. GEORGE E. LINDOW, Watertown.

To Fort Logan, Colo., for temporary duty, and on completion to his proper station, from Camp Taliaferro, Lieut. PAUL M. CLIFFORD, Green Bay.

To Fort Oglethorpe for instruction, Capt. WILLIAM D. HARVIE, Oshkosh; ARGO M. FOSTER, Racine; Lieuts. FRANK A. BOECKMANN, Greenwood; HOWARD M. RIPLEY, Kenosha; CORNELIUS N. STUESSER, Oconomowoc.

To Fort Riley for instruction, Lieut. INGEBRECT JERDEE, Madison.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. EARLE F. McGRATH, Appleton; CARL C. BIRKELO, Rosholt; THOMAS F. LAUGHIAN, Winneconne.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. ERNEST C. GROSSKOPE, Milwaukee; CHARLES E. LAUDER, Viroqua.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Bowie, Fort Worth, Texas, base hospital, Lieut. JOHN E. B. ZIEGLER, Eau Claire. On completion to his proper station, from Camp Grant, Lieut. DONNE F. GOSIN, Green Bay.

The following order has been revoked: To Fort Riley for instruction, Lieut. ALBERT R. BELL, Tomah.

Wyoming

To Fort D. A. Russell, for duty, from Fort Sill, Lieut. OTTO K. SNYDER, Cheyenne.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Health Officers' Meeting.—At the meeting of the association of county and city health officers of Alabama, held in Birmingham, April 19, Dr. Judson D. Dowling, health officer of Birmingham and Jefferson County, was elected president, and Dr. John M. Lowrey, assistant city health officer of Birmingham, secretary and treasurer.

The State Association.—The annual session of the Medical Association of the State of Alabama was held in Birmingham from April 16 to 19, under the presidency of Dr. William D. Partlow, Tuscaloosa. At a patriotic meeting held on the evening of the second day, a service flag bearing 437 stars was presented to the association by Major James N. Baker, M. R. C. The following officers were elected: president, Dr. Isaac L. Watkins, Montgomery; vice president, for the northern district, Dr. Henry S. Ward, Birmingham; secretary, Dr. Henry G. Perry, Montgomery (reelected); treasurer, Dr. Jacob U. Ray, Jr., Woodstock (reelected); censors, Drs. Glenn Andrews, Montgomery, Samuel G. Gay, Selma, and Charles A. Thigpen, Montgomery; councilors, first district, Drs. Claude N. Lacey, Demopolis, John A. Kimbrough, Thomasville, and Percy J. Howard, Mobile; second district, Drs. John C. McLeod, Opp, and Russell A. Smith, Brewton; third district, Dr. George W. Williamson, Hartford; fourth district, Dr. Lee R. Wright, Heflin; eighth district, Drs. Alva A. Jackson, Florence, Hugh Boyd, Scottsboro, and Edwin V. Caldwell, Huntsville; ninth district, Dr. James M. Mason, Montgomery, and tenth district, Drs. William E. Howell, Haleyville, and Robert L. Hill, Winfield. A memorial session was held in honor of the late Dr. William H. Sanders, Montgomery, state health officer, at which appropriate resolutions were adopted.

DISTRICT OF COLUMBIA

Lectures on Public Health.—Surgeon-General Gorgas has arranged for a series of health talks to be given to civilian employees of the War Department, to be held Tuesday and Thursday afternoons in the auditorium of the Department of Interior Building. Among the lecturers are Col Frederick F. Russell, Lieut.-Col. William H. Welch, Elliott G. Brackett, Frank Billings and William H. Smith; Majors William J. Mayo, George L. DeSchweinitz, John R. Murlin and Leonard G. Mitchell; Kate B. Karpeles, acting assistant surgeon, U. S. Army; Miss Annie Goodrich, and Miss M. Sanderson.

ILLINOIS

Action in Regard to Venereal Diseases.—At its April meeting at Rock Island, the Rock Island County Medical Society passed a series of resolutions in which it urges the Secretary of War to create a military medical organization embracing every qualified physician, for the purpose of a continuous fight against venereal disease. A full outline of the purpose, duties, and method of procedure of such an organization was prepared and forwarded with the resolutions. This action is taken in cooperation with similar action by the medical faculty of the state university, the Iowa State Council of National Defense, and a number of county medical societies.

Chicago

Personal.—Mr. Peter Reinberg, president of the Cook County board of commissioners, has appointed Dr. Haim I. Davis assistant physician of the Cook County Psychopathic and Detention Hospital.

INDIANA

Hospital to be Taken Over.—Hope Hospital of Fort Wayne will be taken over immediately for operation under the direction of the Methodist Hospital, Indianapolis. Dr. Charles S. Woods, superintendent of the Methodist Hospital, will be superintendent of Hope Hospital, with an assistant actively in charge there.

Health and Defects Among Schoolchildren.—A meeting has been called by Dr. Herman G. Morgan, Indianapolis, secre-

tary of the board, to devise means for a higher standard of physical health among schoolchildren. Investigation will be made of all schoolchildren in this city in order to find the number of children physically defective.

LOUISIANA

Personal.—Dr. Henry B. White, Lake Charles, medical inspector of the state board of health, has resigned.—Dr. Robert W. Faulk, city health officer of Monroe, fractured his arm recently while cranking his automobile.—Dr. William Schulze, formerly city health officer of Monroe, has resigned to accept the position of medical inspector for the Baltimore and Ohio system at Hagerstown, Md.

MARYLAND

Meetings.—A joint meeting of the Howard, Carroll and Baltimore County medical associations was held, May 15, at the Springfield State Hospital, Sykesville. The principal address was delivered by Dr. C. Hampson Jones of the state department of health, on "The Diagnosis of Smallpox." The members of the associations were guests of the hospital at luncheon.

Personal.—Dr. Herman F. McPherson of Centerville, Md., has been appointed health officer for Queen Anne's County and physician to the county jail.—Dr. Abbott R. Walker was recently appointed health officer for Frostburg, by the Frostburg city council.—Dr. Samuel J. Fort, Catonsville, major in the ordnance department, Maryland National Guard, has been drafted into the federal service and assigned to duty at the school of musketry established at Camp Perry, Ohio.

MASSACHUSETTS

Personal.—Dr. Timothy Leary, medical examiner for Suffolk County, recently fractured his right forearm while cranking his automobile.—Major Frederick L. Bogan, Boston, who was graduated from an officers' training school in France, has been appointed commanding officer of the One Hundred and Second Field Hospital. He has been with the American expeditionary forces since September, 1917.—John P. Reynolds, Boston, has been made a trustee of the Peter Bent Brigham Hospital, and Drs. David L. Edsall, Milton, and Joseph E. Lamoureux, Lowell, members of the public health council.

MISSOURI

Personal.—Dr. Joseph B. Cowherd has resigned as physician in charge of the eye, ear, nose and throat work of the Kansas City school hygiene staff, and has been succeeded by Dr. Thomas T. Sawyer.—Dr. Abraham Weinberg, for eight years physician to the Kansas City General and Emergency hospitals, James I. Gyree, head of the contagious disease division of the Kansas City Board of Health, and Abraham Sophian, meningitis expert of the board, have resigned.

MONTANA

Antituberculosis Meeting.—At the annual meeting of the Montana Association for the Study and Prevention of Tuberculosis, held in Helena, April 18, Dr. A. D. McDonald, superintendent of the state tuberculosis sanatorium, Galen, delivered an address on the relation of the work of the sanatorium to that of the association.

NEW MEXICO

State Board Appointment.—Dr. Walter E. Kaser, Las Vegas, has been appointed a member of the state board of medical examiners, succeeding Dr. Rice K. McClanahan, Las Vegas, who resigned to enter the naval reserve.

NEW YORK

Personal.—Dr. Grace A. B. Carter obtained the highest mark in the competitive examination for city physician of Rochester, held February 28.—Dr. Anna I. von Sholly, Flushing, who went to Europe with the Woman's Overseas Hospital, U. S. Army, is now on duty with the Service de Santé behind the French lines.—Dr. Vittorio Risicato, Albany, is now a captain in the Italian Medical Service and on duty with field hospital O 165 at the front.—Dr. Arthur W. Hurd, medical superintendent of the Buffalo State Hospital, has resigned and will reside in California.—Dr. Frank W. Ross, Elmira, is seriously ill with pneumonia at his home.

The Buffalo Academy of Medicine Protests Against Attitude of American Red Cross Toward Research Work.—At

a meeting called for the purpose of considering the action of the American Red Cross in revoking its decision to appropriate money for animal research work, the Buffalo Academy of Medicine decided to transmit its protest to the American Red Cross, to the local Red Cross and to the medical journals. In this protest it states that Red Cross money could not be better used than in the establishment of a biologic laboratory near the war zone for the study of the diseases of soldiers, particularly those of trench warfare, and thus through animal experimentation probably save the lives of thousands of soldiers. It also contends that this decision of the Red Cross, made in compliance with the wishes of an intolerant minority of its supporters, may be establishing a precedent with far reaching detrimental results, and it urges the medical profession to resist fettering influences such as that which caused the Red Cross to withdraw its support from animal research.

Whitney Measure to Control Venereal Diseases.—The Whitney bill, said to be the most drastic health measure ever enacted by any state, went into effect, May 5. The bill was passed at the request of the federal government and is designed to protect soldiers and sailors against venereal diseases. This bill provides for the arrest and detention of persons afflicted with venereal disease during treatment. The enforcing of the law is placed mainly in the hands of local health boards. The New York City Health Department has taken immediate steps to assist in the enforcement of this law by sending health department officials to the night court. All prisoners will be held for diagnosis. After that, those found to be suffering from venereal disease will be held in city hospitals, or may be released at the discretion of the health authorities on guarantees that they will receive treatment. Men as well as women are being arrested. The state health department, in cooperation with the federal authorities, has outlined an extensive program which, in addition to necessary educational features for both physicians and the public, includes provisions for increased diagnostic facilities, for the manufacture and free distribution of arsphenamin (salvarsan) or one of its substitutes, for free advice and treatment of infected persons unable to pay for it, and for the taking of steps to secure greater hospital facilities for those in need of such care or for those who would otherwise be a danger to the community.

New York City

Tablet Given Society.—At the meeting of the Kings County Medical Society, April 16, Dr. Lewis S. Pilcher presented to the society a plaster cast of the tablet erected 600 years ago in the church of San Vitale, Bologna, Italy, by Mundinus di Luzzi, the anatomist.

Personal.—Dr. Abraham Jacobi, "The Grand Old Man of Medicine," celebrated his eighty-eighth birthday, May 5. He is still actively engaged in the practice of medicine.—Dr. A. J. Kemp was a passenger on the steamship *City of Athens*, which was rammed and sunk by a French war vessel off the coast of Delaware, May 1.—Dr. Frederick S. Kolle fell from a window of his residence in Brooklyn, April 23, fracturing his skull and both patellas.

Columbia University Lengthens Medical Course.—A resolution presented by the Columbia faculty of medicine, adding a clinical year to the medical curriculum, has been adopted by the trustees of the university. A plan for the fifth year has been outlined whereby there will be a redistribution of clinical subjects, which will be transferred to the final clinical year. The clinical year will be conducted under college discipline, and will be made effective for the class entering in September, 1918.

New Base Hospital Completed.—The United States Base Hospital at Fox Hills, Staten Island, is completed and ready to care for wounded soldiers. This hospital is said to be the largest on the Atlantic coast and has been erected in record time. It was started ninety days ago, within which time seventy-five buildings have been completed. Among the buildings are three hospital buildings equipped with 1,000 beds each. Major C. A. Simons is in charge of the hospital. It is reported that the government has plans for doubling the size of the hospital.

Roosevelt Hospital Unit.—The annual report of the Roosevelt Hospital, just made public, describes the work of the Mackay Unit of the Roosevelt Hospital in France, where it has recently had under treatment 3,200 patients. Dr. Charles H. Peck, major, M. R. C., is director of the unit; Dr. James I. Russell, major, M. R. C., is chief of the surgical staff and Dr. Rolfe Floyd, major, M. R. C., is chief of the

medical staff. Twenty other members of the visiting and house staffs of the hospital are with the unit, also sixty-five nurses and picked men from other professions and trades, which number brings the personnel of the unit up to 150.

Halt Health Department Investigation.—Announcement has been made by James E. McBride, civil service commissioner, that the health department inquiry has been indefinitely postponed and that future investigation will be in the hands of the health commissioner, Dr. Royal S. Copeland. Dr. Sigismund S. Goldwater sent in his resignation as a member of the advisory board of the department of health. This Dr. Copeland has refused to accept and signifies his intention of retaining both Dr. Goldwater and Dr. Abraham Jacobi. Dr. Charles F. Bolduan has sent in his resignation as director of the bureau of public health education, which has been accepted.

Volunteer Nurses.—Shortage of nurses has resulted in the placing of volunteer assistants in seven of the city's large hospitals, Bellevue, Presbyterian, St. Luke's, Vanderbilt Clinic, the Lying-In, Gouverneur, and the Italian. To train women for this service, a new course has been arranged for hospital clinical assistants by Teachers' College in cooperation with the Bellevue Social Service, the Federation for Child Study, and the People's Institute. The course will give special training in child hygiene, nutrition and related subjects. It is pointed out that the employment of these clinical assistants not only helps out the shortage of nurses but results in a great saving of time to the physicians, of whom there are now none too many in the hospitals. In order to speed up the training of public health nurses, the Red Cross has given the Henry Street Settlement \$25,000. The Henry Street course will be open to three-year undergraduate nurses and the course will continue from June 1 to September 1.

Older Physicians Needed in Dispensaries.—At a recent meeting of the New York Academy of Medicine, Dr. Charles L. Dana, chairman of the public health committee, brought to the attention of the members the fact that the withdrawal of physicians from civil life into military service has created a shortage of men in the dispensaries of this city, resulting in a curtailment of the services of these institutions. When further calls were made on the medical profession, the dispensary service would be still further decreased unless steps were taken to provide substitutes. Dr. Dana stated that this problem had arisen in Boston and had been met by appealing to the older men in the profession, who had passed beyond the dispensary stage and who, because of age or for other reasons, were not available for military service. These men were asked to volunteer for dispensary duties as their contribution to the war. A similar appeal was now made to the older physicians in New York to come forward and help out in the dispensaries.

NORTH CAROLINA

New Health Editor.—April 15, the state board of health announced the appointment of Donald B. Wilson as health editor for the board.

Health Officers' Meeting.—At the eighth annual meeting of the North Carolina Health Officers' Association, held in Pinehurst, April 15 and 16, Dr. J. Rufus McCracken, Waynesville, was elected president, Dr. D. F. Long, Lexington, vice president, and Dr. George M. Cooper, Raleigh, secretary-treasurer.

New State Society Officers.—At its sixty-fifth annual meeting held in Pinehurst, from April 16 to 18, under the presidency of Dr. Isaac W. Faison, Charlotte, the Medical Society of the State of North Carolina decided on Pinehurst as the meeting place for 1919. It elected Dr. Cyrus Thompson, Jacksonville, as president, and reelected Dr. Benjamin K. Hays, Oxford, as secretary-treasurer.

NORTH DAKOTA

Now in Government Service.—Former employees of the state laboratory, W. W. Hanford, bacteriologist and chemist, and G. E. Richardson and B. C. Ford, bacteriologists, now belong to the United States Sanitary Corps.—Edwin M. Santon, formerly bacteriologist of the St. Mary's Hospital, Detroit, Mich., has been appointed bacteriologist in charge of the Bismarck station.

OHIO

State News.—Plans for the construction of a contagious diseases hospital to cost \$6,000 are being arranged at Lorain.

—The Ohio Supreme Court has upheld a hospital bond issue of \$35,000, at Circleville, which was attacked on a technicality.—At Ravenna, the Visiting Nurse Association, during the week of March 18, raised funds to the amount of \$2,000.—The Mississippi Valley Conference on Tuberculosis will meet in Columbus in September, at which time and place the Ohio Society for the Prevention of Tuberculosis will also meet.—Dr. Albert C. Carney was recently elected president of the Hamilton Antituberculosis League.

PENNSYLVANIA

Philadelphia

University Hospital Unit Arrives.—May 6, news was received of the safe arrival in England of the United States Base Hospital Unit No. 20, recruited by the University of Pennsylvania and under the directorship of Major John B. Carnett.

Personal.—At the meeting of the Atlantic County Medical Society, Atlantic City, May 10, Major William M. L. Coplin, M. R. C., delivered a lantern slide demonstration showing "the care of wounded from trench along the line of communication to base hospital." Dr. Pascal B. Bland gave an illustrated address on a "General Consideration of Uterine Cancer with Special Reference to Its Diagnosis."

Tablet to a Physician.—In memory of Earl C. Peck, who died Sept. 5, 1916, from infantile paralysis contracted in the course of his duties at the outbreak of the epidemic, a tablet has been placed in the corridor of the administration building of the Philadelphia Municipal Hospital for Contagious Diseases. Dr. Peck was the first assistant physician in the scarlet fever ward of that institution, and on the appearance of infantile paralysis was assigned to the supervision of the department in which such cases were received. While engaged in the work, Dr. Peck contracted the disease. The tablet was erected from a fund raised by a number of friends.

TENNESSEE

Hospital Enlarged.—The hospital of the Tennessee Copper Company at Copperhill, Tenn., is being enlarged so that patients besides the employees of the company may have the service of the hospital. The physicians connected with the hospital are Dr. Chauncey W. Strauss, chief surgeon, and Dr. Thomas J. Hicks.—Dr. Charles G. McMahon, formerly of Copperhill, has located at Miami, Ariz.

VIRGINIA

Personal.—Dr. Richard W. Garnett, formerly of Charlottesville and recently health officer of Fauquier County, has accepted a position on the state board of health as an inspector of contagious diseases.

Typhoid Clinic.—At Richmond, the health department has opened a free clinic for the examination of citizens and the giving of antityphoid vaccine. The clinic is located in the health department and is open each day from 8:30 to 1:30 a. m. May 10, there were eight cases of typhoid fever in the city. All of the patients, it is believed, contracted the disease outside.

For a Base Hospital.—The property of the Richmond and Westhampton College at Westhampton will be taken over by the United States government for the establishment of a base hospital. This action has the consent and approval of the college authorities, who are making the arrangements elsewhere for the conducting of the college classes. All the laboratory facilities of the college likewise are to be turned over to the government.

Vital Statistics and Midwives.—Previous to this year, Virginia had no law providing for and regulating midwives. The legislature of 1918, however, has passed a law for this purpose and the bureau of vital statistics of the state department of health has perfected and sent out to the physicians and to the midwives circulars of instructions in regard to the requirements of the law for reporting births, for using the steps to prevent blindness, etc. The pamphlet contains instructions for midwives in regard to the care of women during confinement, and a pledge card to be signed by those applying for licenses as midwives by which they agree to comply, in all respects, with the law for reporting births within ten days. The circulars of information also contain suggestions for registrars, undertakers, and for the public in regard to the importance of reporting births and deaths. The license permit issued to midwives has on the back ten

fundamental rules to guide them in caring for women during confinement. It is expected that the result of this campaign will greatly improve the facilities for compiling the vital statistics of the state.

CANADA

University Admits Women.—McGill University has opened its doors to women. They are henceforth to be admitted to the study of medicine and dentistry. Those to be admitted hereafter must have a degree in arts from a recognized university, or must take the double course of B.A. and M.D., or B.Sc. and M.D.

Personal.—Capt. Frederick C. Harrison, C.A.M.C., Toronto, is now employed in connection with the medical service of the Royal Air Force in that city.—Major Harry H. Alger, Stirling, Ont., who has been overseas, has gained his lieutenant-colonelcy, and has served in various capacities in England and France. He has recently been appointed assistant inspector of drafts, headquarters' staff, Shorncliffe area.—Lieut.-Col. John N. Gunn, C.A.M.C., who practiced in Calgary, Alta., as an eye specialist, is in Toronto on sick leave, convalescing from trench fever. He says that General Porter, director of the British medical service in France, paid a glowing tribute to the work of the Canadian Army Medical Corps. Never before in the history of the war had such dispatch been shown by stretcher bearers as that shown at Paschendaele. There has never been a complaint from any branch of the Canadian force about the work of the C.A.M.C.

Canadian Medical Week.—Canadian medical week will be celebrated in Hamilton, Ont., from May 27 to June 1, when a congress of Canadian organizations, including the Ontario Health Officers Association, the Canadian Public Health Association, the Canadian Association for the Prevention of Tuberculosis and the Canadian Medical Association, will assemble under the auspices of the Ontario Medical Association. The combination has been made in the interests of war time efficiency. The sessions will be held at the Royal Connaught Hotel. The first two days will be occupied by the programs of the two health associations, the third by the program of the Canadian Association for the Prevention of Tuberculosis, and the last three days, by the joint program of the two medical associations. Among the interesting events scheduled on the joint program are two addresses, one on "Cancer," by Dr. Charles H. Mayo, president of the American Medical Association, and one on "Medical Impressions of the Day," by Dr. Frank Billings of Chicago. The last day of the congress, Drs. Mayo and Billings will also conduct a combined medical and surgical clinic on the subjects of simple and toxic exophthalmic goiter, anemias, and focal infections. Other noteworthy features of the congress will be the meetings of the various sections, a round table discussion on a subject of vital interest to the profession, business sessions of the different organizations, class reunions and sectional dinners, and a varied display of scientific exhibits. The last feature includes a series of moving pictures shown daily on medical subjects, especially those dealing with war surgery; an exhibit of roentgen-ray plates; a pathologic exhibit of museum specimens taken largely from the National War Museum of Canada; a demonstration of clinical laboratory procedures, and a display of charts, illustrations and literature from the propaganda department of the American Medical Association, together with a lantern slide demonstration of the work of the Association.

GENERAL

Society Meeting.—The twenty-third annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Denver, August 5, 6 and 7. Dr. Lee Masten Francis, 636 Delaware Avenue, Buffalo, is the secretary.

Clinical Society Organized.—The seventh annual clinic of the John A. Andrew Memorial Hospital, Tuskegee, Ala., closed, April 13, with the formation of the John A. Andrew Clinical Society, which elected Dr. Charles V. Roman, Nashville, Tenn., president; Dr. Charles W. Powell, Atlanta, Ga., vice president, and Dr. John A. Kenney, Tuskegee, secretary-treasurer.

Colored Professional Men Hold Conference.—The annual meeting of the Tri-State Medical, Dental and Pharmaceutical Association was held at Memphis, Tenn., from April 9 to 11, under the presidency of Dr. J. H. Howard, and the following officers were elected: president, Dr. Joseph H. Barabin,

Marianna, Ark.; vice presidents, Drs. Milton V. Umble, Oakland, Tenn.; J. T. Brasfield, Isaac Carroll, F. T. Jones and W. T. Sherrett, Memphis, Tenn.; corresponding secretary, Dr. Robert G. Martin; recording secretary, Dr. Robert B. Pruett, Jackson, Tenn., and treasurer, Dr. S. W. Pope.

Association of American Physicians.—At the recent meeting of the Association of American Physicians, May 7 to 11, the following officers and new members were elected: officers for 1918-1919: president, Dr. Alexander McPhedran, Toronto, Ont.; vice president, Dr. Hermann M. Biggs, New York; secretary, Dr. Thomas McCrae, Philadelphia; recorder, Dr. William W. Ford, Baltimore; treasurer, Dr. Joseph A. Capps, Chicago; councilors, Dr. Theobald Smith, Princeton, N. J., and Dr. Charles F. Martin, Montreal, Que. Active members: Drs. Frederick M. Allen, W. H. Brown, Haven Emerson, Theodore S. Hart, New York; Frank T. Fulton, Providence, R. I.; James D. Heard, Pittsburgh; Thomas Ordway, Albany, N. Y.; George M. Piersol, Philadelphia; Henry S. Plummer, Rochester, Minn.; Gerald B. Webb, Colorado Springs, Colo.; Solon M. White, Minneapolis; Simeon B. Wabbach, Boston. Associate members: George Draper, Reginald Fitz, New York; Joseph S. Evans, Madison, Wis.; Herbert Z. Giffin, Rochester, Minn.; Martin E. Rehfuess and John H. Musser, Philadelphia. The 1919 meeting will be held in Atlantic City during May.

FOREIGN

The Italian Weeklies.—The *Riforma Medica*, *Gazzetta degli Ospedali* and the *Policlinico* now reach us without any cover and minus the advertising pages. A notice states that the authorities have ordered that from now till the end of the war, journals to be sent out of the country should be made up without any advertising pages.

College of Ambulance.—The College of Ambulance in Vere Street, London, has been in existence five years and 20,000 students have passed through it. They have been trained for ambulance and first aid work in military and civil practice. Through the efforts of Sir James Cantlie and Sir James Reid, it is hoped to have a chair of ambulance founded in the University of London, and affiliated with the medical schools.

Repression of Venereal Diseases in Spain.—A royal decree dated March 15, 1918, outlines a system for antivenereal dispensaries throughout the country and medical inspection of prostitutes with hospital care for venereal diseases. The dispensary and hospital service is gratuitous, and the expenses are to be shared by the town, district and state authorities. The military commander in the district is to be a member of each Junta provincial de Sanidad in charge of the campaign against venereal diseases.

Pneumonic Plague.—Dr. Charles W. Young, dean of Union Medical College, Peking, China, has gone to Shansi, taking with him Dr. Chang of the staff of the college, who has had experience in work with the plague in Tientsin. His mission is educational, and he hopes to persuade the governor of the province to stop traffic on the Hwang-Ho River which flows through Saratsi where pneumonic plague is very prevalent. In one town north of the Great Wall, it is said that 1,000 persons died from the disease in five days.

Repatriation of Members of Medical Corps.—The *Presse Médicale* of April 18 states that arrangements have been concluded according to which medical officers, nurses and others covered by the Geneva convention are to be repatriated regularly every two months. The first trainload had already left Constance, and the next is to leave Lyons next month. If the registers and archives of the *formations sanitaires* to which they belonged have been destroyed, the statement of the government to which they belong will be accepted as certifying to the probable correctness of their claims to be of the medical force.

Medical Inspection of Schools in Spain.—The minister of public instruction in Spain has obtained from the king a decree establishing medical inspection of schools in Madrid and Barcelona. There are to be ten inspectors at each place, and the salary is to be 3,000 pesetas annually, about \$600, but as only 25,000 pesetas (\$5,000) has been appropriated for the purpose, the inspectors are expected to serve without pay until the next budget is made up. The positions are to be filled by competitive examinations in each city; at least five years of practice are required. A *Boletín de la Inspección Medicoescolar* is to be issued, to publish the reports of the inspectors and their suggestions. According to *Esculapio*, forty-three candidates have registered at Madrid and thirty-two at Barcelona.

LONDON LETTER

LONDON, April 23, 1918.

Physicians and the Military Service Bill

The new military service bill extends the obligation for military service to all British subjects who have not attained the age of 51 years. In the case of physicians the obligation extends to those who have not attained the age of 56 years. In consequence of the shortage of physicians now left in civil practice, the withdrawal of still more is a serious matter. Sir Auckland Geddes, the minister of national service, stated in parliament that there are districts in which, as the result of the withdrawal of physicians, the supply available is very short, and the young man that is fit is as necessary as in the trenches, and is working practically as hard day and night. It is no good putting an old man who does not know the district and does not know the people into that position. Unsatisfactory medical attendance and the collapse of the physicians would result. It has been tried. In the medical profession, youth and fitness are now required for certain districts at home just as much as at the front. But there are great base hospitals where the work is not normally very hard, so the government is considering whether it cannot make use of some of the older physicians. It has surveyed the whole country. It has plotted out in every town the number of physicians available and the number of the population they may have to look after, and it finds that there are in some of the more comfortably off residential cities, not the great manufacturing cities, but cities in which a retired class live, physicians of from 50 to 54 that are in excess of local requirements. They have comparatively speaking, a small number of possible patients at any time. These men can go without dislocating either the public health service or the ordinary service of attendance on the sick, and they are sufficiently fit for work in the base hospitals. The question is to meet the medical demand for the forces of the army in the way that will make least disturbance at home and without doing harm to the civil population. Physicians are always coming back from overseas to their practices to release a partner, or something of the sort. If physicians were moved from town A to town B so as to replace those who had gone into the service, an enormous amount of trouble would be created and problems raised as to the adjustment of practices and compensation for removal, which can be avoided.

More German Brutality to Prisoners

In a recent letter (*THE JOURNAL*, March 23, 1918, p. 867) was described the organized German brutality to British prisoners captured in the early stages of the war. It was there remarked that subsequently the treatment of British prisoners, though leaving much to be desired, had improved, principally because we had a large number of German prisoners in our hands. Unfortunately, from time to time fresh outbreaks of barbarity of the worst kind have to be recorded. All England has been horrified by the account of the British sailor who was bayoneted by the German sentry because he was trying to escape from the flames of his burning prison. The German government has had the effrontery to give as an excuse that the sentry could not allow the man to escape because there was no officer present to authorize him! We have now another record of systematic cruelty in a report just issued by the Government Committee on the treatment of British prisoners of war, signed by the chairman, Mr. Justice Younger. It has been communicated through the Dutch to the German government. Overwhelming evidence has been received that: 1. British prisoners of war were employed within 30 kilometers of the firing line at least as early as July, 1916, that is, a considerable time before the German government denied that such employment had commenced and sought to justify it as an act of reprisal. 2. These prisoners were treated with the utmost brutality, and most of the deaths at Dulmen attributed by the Germans to such causes as heart weakness and intestinal catarrh were, in fact, directly due to starvation and ill treatment on the western front. 3. Although an agreement was concluded between the British government and the German government at the end of April, 1917, not to employ prisoners of war within 30 kilometers of the firing line, British prisoners were, up to the time of the most recent information, being employed within that limit. 4. British prisoners were treated with extreme brutality on the western front, being forced to work on totally insufficient food, until rendered useless owing to extreme weakness. They were employed on work directly barred by Article 6 of the Annex to the Hague convention,

such work being immediately connected with the operations of war. These men continued to arrive during the autumn and winter of 1917 at hospitals and camps in Germany in a state of misery and semistarvation. Although the fact had never been acknowledged, but on the contrary studiously concealed, there is no doubt that since as early at the latest as August, 1916, the Germans have been systematically employing prisoners on forced labor close behind the firing line, thus deliberately exposing them to the fire of their own guns. As usual, when conduct incapable of justification has been brought to light, the official German apologist has endeavored to gloss over it by asserting that Germany was driven to it by way of retaliation for similar treatment of German prisoners. The allegation is unfounded. The British prisoners were placed all the way along behind the German front in Belgium and France, large numbers being stationed at Cambrai and Lille. Their work included making roads, repairing railways, digging trenches, constructing wire entanglements, making gunpits, loading ammunition, filling ammunition wagons, and carrying trench mortars—work forbidden by the laws of war. The work, excessively hard, lasted from eight to nine hours a day, with long walks to and fro, sometimes 6 miles in each direction, and for long periods was carried on within range of the guns of the allies. Many were killed by these guns; more were wounded; deaths from starvation and overwork were constant. Appalling evidence is given concerning the systematic semistarvation of the prisoners. "We used to beg the sentries," said a witness giving evidence as to conditions at Farquion, "to allow us to pick stinging nettles and dandelions to eat, we were so hungry; in fact, we were always hungry." Another witness from Cambrai said: "If it had not been for the French civilians giving us food as we went along the roads, we should most certainly have starved. If the sentries saw us make a movement out of the ranks to get food they would immediately make a jab at us with their rifles." But it was worse at Moretz, where "if a man stepped out of the ranks he was immediately shot. . . . Two instances are given in the evidence of men who weighed 13 st. [a stone is 14 pounds] when captured. One was sent back from the firing line too weak to walk, weighing 8 st. only; the other escaped to the British lines weighing no more. Another man lost 2 st. in six weeks. Such was their hunger that we hear of them picking up for food potato peelings that had been trampled under foot. One instance is given of an Australian private who, starving, had fallen out to pick up a piece of bread left on the roadside by Belgian women for the prisoners. He was shot and killed by the guard for so doing. The parcels, on which British prisoners much depend, did not reach these prisoners for the reason at their presence in occupied territory was not acknowledged by the German government. When they wrote home they were required to give some prison camp in Germany as their address. Sometimes their very existence was concealed for months. To add to their miseries, the accommodation provided was in many cases pathetically inadequate. The sleeping place, for instance, for a large party was a barn with no roof. The rain poured in on the men. They had to sleep in their wet clothes and work in the same clothes. They had no change of any kind. And some of these prisoners, if they survived so long, were kept behind the enemy lines for more than a year. When utterly worn out they were sent to Germany.

PARIS LETTER

PARIS, April 11, 1918.

Valvular Disease of the Heart from Military Standpoint
At a recent meeting of the Société médicale des hôpitaux of Paris, Dr. Paul Lafosse read a very interesting paper on this subject. Supported by many observations, he has been able to confirm the great tolerance, even indifference, to the disease at the front of men affected with valvular lesions. These observations appear to show conclusively that there is no reason whatever for definitely excluding from the military service men who have valvular lesions. Lafosse claims that auxiliary service is compatible with the well-being of nearly all of these men, whether their condition was congenital or acquired. Nevertheless, according to the degree, the age and manner in which the heart responds to the demands made of it, will depend the nature of the auxiliary service and whether this will be rendered at the front or in the interior. In the discussion of this paper, Dr. Josué, physician to the hospitals of Paris, stated that all physicians have had occasion to note that individuals presenting irrefutable evidence

of valvular lesions have, nevertheless, been able to lead very active lives without any functional disturbance. As a matter of fact, however, because of the existence of the valvular lesion, the fitness of the individual is more or less impaired. Josué has confirmed this observation daily among a very large number of subjects submitted to examination and to a special military consultation at the hôpital de la Pitié, but he says that it will be difficult to lay down absolutely uniform rules. A number of persons affected with a valvular lesion are able to perform very important work, provided one knows of what they are capable and without imposing on their strength, and allowing them to have periods of rest. Therefore, it is proposed to certify for auxiliary service all patients having never presented any symptoms, from their valvular disease, and also those with a lesion not well marked and perfectly compensated. In some cases the lesion is very slight, noticeable only after violent efforts, and these persons should be recommended for auxiliary service, stating precisely how they should be managed, that they are not fit for heavy work, and that they should be under constant medical supervision. If the man presents any symptoms, such as slight dyspnea, fatigue, etc., which it is believed will disappear after rest and treatment, the man should be invalidated temporarily. In cases of marked disturbance, threatening loss of compensation, or complete arrhythmia, the patient should be discharged from service.

Vocational Training of the Disabled, and the Teaching Personnel

According to the law bearing on the reeducation of the *mutilés* passed in January, 1918, all soldiers and sailors, or former soldiers and sailors, who have been wounded or who contracted disease, or whose illness was aggravated during the present war, may demand to be enrolled in a school of vocational reeducation for the purpose of being trained to work again, and be helped to secure a position. With the consent of the premier, the minister of war and the commissioner general of *les oeuvres d'éducation professionnelle des mutilés*, the minister of public instruction has addressed a circular to the teaching personnel in which he points out in a striking manner the necessity of keeping in mind the importance of the reeducation, for the men themselves and for their families. By profiting by the training the disabled man is shielded from the depressing effects of idleness; he resumes his place in *l'activité nationale*; he escapes the risks of a temporary placement, due to passing circumstances; he escapes the mirage of a public office—the number of political positions is limited, and their security does not compensate for the poor remuneration. Often, too, this reeducation makes it possible for him to secure a better position than that which he had held previously. One can no longer count the *mutilés* who, having learned a new trade or having perfected themselves in the one they followed before the war, are now leading a much ampler existence. All this, it must be said again and again, is in the interest of the wounded, their families and their country.

The minister stated that he is ready to study all the suggestions presented by any of the teaching personnel in the institutions for the purpose in the line of improving the general or vocational training of the disabled.

Marriages

LIEUT. LECKY HARPER RUSSELL, M. R. C., U. S. Army, of Columbus, Ohio; on duty with the One Hundred and Forty-Seventh Field Hospital Corps, U. S. Army, stationed at Camp Sheridan, Montgomery, Ala.; to Miss Carita L. Kimball of Lawrence, Mass., at Covington, Ky., May 2.

CAPT. JOHN VAUGHN BLAKE, M. R. C., U. S. Army, Floresville, Texas, on duty as battalion inspector at Camp Greenleaf, Ga., to Miss Mary Long, Del Rio, Texas, at Chattanooga, Tenn., April 13.

JOSEPH T. SCOTT, Williamstown, Ky., to Mrs. Helen J. White, Cincinnati, at Lawrenceburg, Ind., about May 3.

LIEUT. McIVER WOODY, M. R. C., U. S. Army, Boston, to Miss Regina Llewellyn Jones of Chestnut Hill, recently.

ASST. SURG. LIEUT. RUDOLPH HEYM, JR., GR., U. S. Navy, to Miss Mary DeWeese, both of Cleveland, May 2.

PAUL M. HUNSICKER, to Miss Jennie E. Wear, both of Beaver Meadow, Pa., at Allentown, Pa., April 29.

Deaths

Lieut. John Paul Rosenwald, M. C., Minn. N. G., Minneapolis; John A. Creighton Medical College, Omaha, in 1910; aged 33; a Fellow of the American Medical Association; March 26 he received the Distinguished Service Cross, given by the French government on account of services rendered during the fighting on the Luneville sector; twice entered a battery position under heavy fire in order properly to care for the wounded; killed by shellfire in the Luneville sector, about May, 1918.

Paul Nathan Litchfield, Camden, N. J.; Jefferson Medical College, Philadelphia, 1895; aged 44; formerly a member of the New Jersey House of Assembly; formerly coroner of Camden; a member of the staff of the Tuberculosis Hospital at Ancora, and the County Hospital for the Insane at Blackwood; died at his home, May 1, from pneumonia.

William Beverley Pettit, New Canton, Va.; University of Maryland, 1883; aged 64; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia; formerly surgeon at the Richmond Plant of the American Locomotive Company; died, April 27, from a gunshot wound, self-inflicted, it is believed.

Frank Judson Bardwell, Tunkhannock, Pa.; Yale University, Medical Department, New Haven, Conn., 1891; aged 49; a Fellow of the American Medical Association; formerly president of the Tunkhannock Board of Health; died at the Robert Packer Hospital, Sayre, Pa., April 12, from empyema of the gallbladder.

Frederick Blume, Pittsburgh; University of Gottingen, Germany, 1896; aged 68; a member of the Medical Society of the State of Pennsylvania; a member of the American Association of Obstetricians and Gynecologists; a member of the medical staff of the Allegheny General Hospital; died at his home, April 14.

Lieut. John Deming Arnett, M. R. C., U. S. Army, Albany, N. Y.; Albany (N. Y.) Medical College, 1914; aged 29; a Fellow of the American Medical Association; on duty with the Ninety-Ninth Field Ambulance, British Royal Army Medical Corps, on the French front; was killed in action, April 16.

Walter Sewell Wheeler, Kansas City, Mo.; Jefferson Medical College, Philadelphia, 1885; aged 57; a member of the Missouri State Medical Society; for many years city health commissioner, and professor of therapeutics in the University Medical College of Kansas City; died at his home, April 24.

John Nicholas Helmke, Louisville, Ky.; University of Louisville, Medical Department, 1873; Hospital College of Medicine, Central University, Louisville, 1875; aged 83; also a druggist; a veteran of the Civil War; died at his home, April 19, from bronchial pneumonia.

Frederick B. Kobisk, Lombard, Ill.; Jenner Medical College, Chicago, 1906; aged 39; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; was instantly killed, April 25, when a train crashed into his automobile.

Charles Orville Bechtol, Marion, Ind.; University of Illinois, College of Physicians and Surgeon, 1901; aged 43; a Fellow of the American Medical Association; died at his home, April 21, from paralysis, resulting, it is said, from the effects of ptomain poisoning.

Reuben Gardner Moore, Vincennes, Ind.; Cincinnati College of Medicine and Surgery, 1861; aged 81; also a pharmacist; formerly president of the board of trustees of Vincennes University; died at his home in Burnett Heights, April 23, from cerebral hemorrhage.

Peter Thompson Kilgour, Cincinnati, Ohio; Pulte Medical College Hospital, Cincinnati, 1892; aged 57; dermatologist to the Home of the Friendless, Cincinnati; died suddenly as he was entering the Mount Healthy M. E. Church, April 24, from cerebral hemorrhage.

Capt. Clement Edwin Laws, M. R. C., U. S. Army, Tacoma, Wash.; Medical College of Ohio, University of Cincinnati, 1899; aged 36; a Fellow of the American Medical Association; on duty at Camp Dodge; died in a local hospital, April 21, from spinal meningitis.

Albert Le Roy Fisher, Elkhart, Ind.; Hahnemann Medical College and Hospital, Philadelphia, 1871; aged 72; formerly a member of the Indiana State Medical Association; died at his home, suddenly, April 23, from cerebral hemorrhage.

Dwight Welcome Dryer, LaGrange, Ind.; Rush Medical College, Chicago, 1885; aged 61; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; formerly health officer of LaGrange County; died at the home of his daughter, April 25.

Adam H. McCullough, Mansfield, Ohio; Jefferson Medical College, Philadelphia, 1875; aged 67; a Fellow of the American Medical Association; surgeon of the Erie Railroad Company, also a druggist; died at his home, April 20, from pernicious anemia.

John Alexander Galbreath, Pottstown, Pa.; University of Pennsylvania, Philadelphia, 1911; aged 33; a Fellow of the American Medical Association; died at the home of his mother in Lansdowne, Pa., April 13, from pneumonia.

Gideon A. Embry, Irvine, Ky.; Jefferson Medical College, 1867; aged 79; a member of the Kentucky State Medical Association; secretary of the Estill County Medical Society; died at his home, February 5, from senile debility.

James E. Henderson, Springfield, Ill.; Northwestern University Medical School, 1883; aged 62; a colored practitioner; was found dead in his office, April 12, from gunshot wound, self-inflicted, it is believed, with suicidal intent.

Charles Edward Lee, St. Paul; Columbia University, College of Physicians and Surgeons, 1866; aged 76; formerly a member of the Minnesota State Medical Association; died suddenly at his office in Los Angeles, April 23.

John Fred Cleveland, Le Roy, N. Y.; Bellevue Hospital Medical College, New York City, 1865; aged 86; a member of the Medical Society of the State of New York; a veteran of the Civil War; died at his home, April 16.

Frank Grove McKelven, Denver; Western Pennsylvania Medical College, Pittsburgh, 1892; aged 49; a member of the Colorado State Medical Society; died in St. Anthony's Hospital, April 21, from pneumonia.

Elmer E. Barton, Lafayette, Ind.; University of Wooster, Medical Department, Cleveland, 1878; aged 67; for many years engaged in historical writing; died in a sanatorium in Lafayette, April 18, from Bright's disease.

Warren Newell, Okmulgee, Okla.; Starling Medical College, Columbus, 1888; aged 54; formerly a member of the Oklahoma State Medical Association; formerly a practitioner of Idaho; died at his home, April 13.

Gabriel H. Watkins, Hollow Rock, Tenn.; University of Tennessee, Nashville, 1877; aged 72; formerly a Fellow of the American Medical Association; a veteran of the Civil War; died in Clear Water, Fla., April 13.

Oscar H. Rockwell, Monroeton, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 74; a member of the Medical Society of the State of Pennsylvania; died suddenly at his home, April 16, from paralysis.

George Frederick Brooks, New York; University Medical College, New York, 1880; aged 59; a Fellow of the American Medical Association; and the New York Academy of Medicine; died at his home, April 26.

James W. Wideman, Due West, S. C.; Medical College of the State of South Carolina, Charleston, 1873; formerly a member of the South Carolina Medical Association; a veteran of the Civil War; died, April 17.

William B. A. McNutt, Monroe City, Mo.; St. Louis Medical College, 1875; aged 67; formerly a Fellow of the American Medical Association; died at the Missouri Baptist Sanitarium, St. Louis, April 10.

Thomas P. Guilfoyle, Cherry, Ill.; Northwestern University, Medical School, Chicago, 1903; aged 40; a Fellow of the American Medical Association; died suddenly at his home, April 18, from embolism.

Clark Leon Cain, Elmwood, Wis.; University of Illinois, College of Physicians and Surgeons, 1902; aged 39; a Fellow of the American Medical Association; died suddenly, April 18, from heart disease.

William H. Woodruff, Moundsville, W. Va. (license, West Virginia, act of 1881); aged 64; a member of the West Virginia State Medical Association; died at his home, April 21, from pneumonia.

George Davis Fyfe, Jersey City, N. J.; New York University, New York, 1896; aged 47; a Fellow of the American Medical Association; died at his home, April 27, from pneumonia.

William Winfield Nelson, Richmond, Va.; University College of Medicine, Richmond, 1901; aged 38; a member of the Medical Society of Virginia; died at his home, about April 29.

Vance May, Washington, Ind.; University of Louisville, Medical Department, 1894; aged 51; a member of the Indiana State Medical Association; died at his home, January 16, from pneumonia.

Lillian Gertrude Towslee, Cleveland; Cleveland College of Physicians and Surgeons, 1888; aged 57; a Fellow of the American Medical Association; died at her home, April 22, from pneumonia.

Weems R. Winchester, Macon, Ga.; University of Maryland, Baltimore, 1874; aged 69; formerly a Fellow of the American Medical Association; died at his home, April 16, from paralysis.

John Shattuck, Irontown, Ohio; Miami Medical College, Cincinnati, 1872; aged 69; formerly a member of the Ohio State Medical Association; died at his home, April 15, from heart disease.

Robert J. Black, McKeesport, Pa.; College of Physicians and Surgeons, Baltimore, 1881; formerly mayor of McKeesport; died in the McKeesport Hospital, April 27, from heart disease.

James Lee Phillips, Providence, R. I.; Harvard University Medical School, 1892; aged 53; a Fellow of the American Medical Association; died at his home, about April 22.

Judson A. Butts, Brunswick, Ga.; Jefferson Medical College, 1860; aged 88; formerly a member of the Medical Association of Georgia; died at his home, April 18.

Henry L. Barnes, Ripon, Wis.; Western Reserve University, School of Medicine, Cleveland, 1858; aged 83; a veteran of the Civil War; died at his home, April 26.

Joseph Sherman Adsit, Hoopeston, Ill.; Chicago Homeopathic Medical College, 1891; aged 50; a member of the Illinois State Medical Society; died, April 1.

Ernest James McCampbell, Kansas City, Mo.; Kansas Medical College of Topeka, 1908; aged 29; a colored practitioner; died, March 28, from pneumonia.

Julius Adolar Winter, Brooklyn; Long Island College Hospital, Brooklyn, 1888; physician of the Panama Steamship Company; died at his home, April 23.

Charlotte Kent Bailey, Lyons, Ill.; Bennett Medical College, Chicago, 1910; aged 40; fell from the second story porch of her home, April 29, and was killed.

Frederick J. Weber, Highlandtown, Md.; Baltimore Medical College, 1908; Atlantic Medical College, Baltimore, 1909; aged 30; died at his home, April 16.

William Thomas Ellison, Bedford, Ind.; Bellevue Hospital Medical College, New York City, 1875; aged 68; died at his home, April 15, from heart disease.

Edwin Parsons Clark, The Plains, Va.; University of Pennsylvania, Philadelphia, 1858; aged 84; a veteran of the Civil War; died at his home, April 14.

Nicholas Dennis Richards, Belleville, Ont.; University of Toronto Faculty of Medicine, 1877; aged 65; died at his home, April 19, from heart disease.

George F. Broun, Nashville, Tenn.; University of Virginia, Medical Department, Charlottesville, 1892; aged 44; died, April 4, from tuberculosis.

Valter Scott Goodhue, Kansas City, Mo.; Hahnemann Medical College and Hospital, Philadelphia, 1872; aged 71; died at his home, April 22.

Hipley Ezra Woodard, Little Rock, Ark.; Vanderbilt University, School of Medicine, Nashville, 1890; aged 52; died at his home, April 22.

Edgar Snyder, Edgewater, Colo.; Rush Medical College, Chicago, 1876; aged 69; died at St. Anthony's Hospital, Denver, April 17.

John Williams Bosworth, Boston; Boston University, School of Medicine, 1876; died at his home, in Rosendale, at April 6.

Li H. Thurston, Hagerstown, Ind. (license, Indiana, 1897); aged 69; died at his home, April 16, from heart disease.

Anton O. Shrader, Bowling Green, Ohio; Eclectic Medical Institute, Cincinnati, 1902; aged 43; died at his home, April 9.

William G. Caron, Aurora, Ill.; Rush Medical College, 1897; aged 44; died at his home, April 22, from pneumonia.

Walter R. Wright, Sulphur Rock, Ark. (license, Arkansas, 1903); aged 44; died at his home, April 7.

H. McCall, Briggsville, Ark. (license, Arkansas, 1903); aged 74; died at his home, April 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SYPHILODOL

Report of the American Medical Association Chemical Laboratory

The shortage of arsphenamin (salvarsan) has made the sale of substitutes a profitable business. In many of these substitutes the earmarks of dishonesty have been obvious, so that detection of their falsity was relatively simple. In the case of "Syphilodol" marketed by the French Medicinal Company, Inc., New York, the deception has been practiced more skilfully. In the circular announcing their preparations, we read:

"It seems fitting at this time, when the American physicians are doing so much for France, that there should be a reciprocation in some way.

"Attempting to enhance somewhat this mutual interchange, we are presenting some of those scientific products, which have been so successfully used in France,—"

"The effect of SYPHILODOL is very similar to salvarsan and neosalvarsan, but it has the advantage of being more lasting in its results and more pleasing in the manner of its preparations, in that it is put up in the form of tablets, and, also, in hermetically closed glass syringes or ampules, so that it may be administered either by the mouth, intravenously or intramuscularly, at the discretion of the physician. Patients averse to the use of the hypodermic needle may be treated expeditiously by the use of the tablet form of the medicine."

In addition to Syphilodol, the French Medicinal Co. also sell "Vichy Fruti," a combination of salts, "Urodol," an "alkaline salt of the famous European Springs which is noted for breaking up and dissolving uric acid rapidly" and "Syloidol," "French Preventive" which is described as "a solution of iodol incorporated into bougie."

"Syphilodol," we are told, is "a synthetic chemical product of silver, arsenic and antimony, scientifically prepared after the formula of the late Dr. Alfred Fournier of Paris." (Italics ours.—ED.). It is also claimed that "Prof. Metchnikoff and other noted French Scientists have made exhaustive tests of syphilodol and found it superior to the other products, in the treatment of syphilis." In the advertisements, Fournier and Metchnikoff are the only names given of alleged endorsers; both of these men are dead and cannot protest. True, Fournier did considerable work on a legitimate synthetic of antimony, silver and arsenic having a general chemical constitution similar to arsphenamin, but so far as we are aware, there has been no publication by these men on "Syphilodol." It would seem that the valuable work and high reputation of Fournier and Metchnikoff are being capitalized by the French Medicinal Company in their endeavor to foist a nostrum on the medical profession of this country.

"Syphilodol" comes in two forms—ampules and tablets. An order for two 0.4 ampules brought an elaborate case, much like those used to hold the popular style safety razors. The ampule itself was a "classy" affair evidently made by a glass expert; the hypodermic needle was enclosed in a novel sealed glass device. The price of each ampule is \$3. No such fancy garnishments came with the tablets, although they are listed at \$4.50 for twenty-five—18 cents a tablet! In the "Syphilodol" advertising it is emphasized that both the tablets and ampules are to be administered. For example:

"Syphilodol is dispensed in the form of tablets and also in hermetically closed glass syringes or ampules so that it may be used either by the mouth, intravenously or intramuscularly at the discretion of the physician. An advantage of the tablets is that they can and should be given during the interim between the injections."

LABORATORY REPORT ON SYPHILODOL

Several samples of "Syphilodol" were sent to the American Medical Association Chemical Laboratory by readers of THE JOURNAL. An original bottle of tablets was ordered direct from the French Medicinal Company. The bottle contained

25 yellow tablets, having an average weight of 0.276 gm. ($4\frac{1}{4}$ grains). After being powdered, "Syphilodol" was found to be only partially soluble in water (the excipient is soluble) and to be neutral in reaction. These findings contradict the claims on the circular accompanying the bottle to the effect that "Syphilodol is a yellow powder, soluble in water, and has an acid reaction." Qualitative tests indicated the presence of mercury, sucrose (cane sugar), iodid, calcium, sulphate, fatty material, a trace of silver, a trace of arsenic and a very minute trace of antimony; a red dye was also present. Both qualitative and quantitative data showed that the mercury was present in the form of mercurous iodid (yellow iodid of mercury—hydrargyri iodidum flavum). Quantitative estimations yielded the following:

Silver (Ag ⁺)	0.001	per cent.
Mercury (Hg ⁺)	11.1	per cent.
Iodid (I ⁻)	7.8	per cent.
Sucrose (Cane sugar)	72.0	per cent.
Ash (Calcium Sulphate)	2.5	per cent.
Ether-soluble material (Fatty material—Petrolatum)....	3.5	per cent.

Thus each tablet of "Syphilodol" contains approximately $\frac{3}{4}$ grain of mercurous iodid. An ampule of "Syphilodol," labeled 0.4 gram, contained approximately 1.5 c.c. of a liquid which after evaporation on a water-bath left a residue weighing 0.8 mg., or $\frac{1}{80}$ grain. A second ampule held about 2 c.c. of liquid, which contained a trace of arsenic (less than 0.00001 gm., or $\frac{1}{60000}$ grain); a very small amount of mercury was indicated but not definitely established. The liquid had the physical characteristics of water.

Accompanying "Syphilodol" advertising sent to physicians is a circular letter inviting the doctor to become a member in the "United States Bacteriological and Research Institute." The "institute" seems to be a means of suggesting that the physician have bacteriologic, pathologic and serologic examinations made on behalf of his patients. In view of the fact that it is to the commercial interest of the French Medicinal Company to have as many users of "Syphilodol" as possible, it would be interesting to know what proportion of the Wassermann tests are reported negative.

Shorn of its mystery, Syphilodol the "synthetic chemical product of silver, arsenic and antimony" is essentially mercurous iodid—yellow iodid of mercury.

PYOCYANEUS BACILLUS VACCINE OMITTED FROM N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. PUCKNER, Secretary.

Pyocyaneus bacillus vaccine, made from *Bacillus pyocyaneus*, was admitted to New and Nonofficial Remedies in 1910. At that time this vaccine was considered to give promise of having therapeutic value.

Now three of the firms whose preparations of this vaccine are described in New and Nonofficial Remedies advise the Council that they have ceased to manufacture the vaccine because of lack of demand. The fourth firm stated that in the printing of a new list of its biologic products, pyocyaneus vaccine would not be included, and that the preparation would be supplied on demand only.

The referee of the Committee on Serums and Vaccines in charge of pyocyaneus bacillus vaccine held that the discontinuance of the preparation by interested firms, for the reason that there was no demand for it, evidences that it had been proved without value. He reported that a search of recent literature failed to reveal any evidence of its usefulness.

On the recommendation of the referee, the Council directed that the several preparations of the vaccine be omitted from New and Nonofficial Remedies.

Child Hygiene.—When, in addition to our attention to the welfare of infants, we devote greater interest and more earnest efforts to the hygiene of children between the second and fifth years of life, the beneficent effect will soon be indicated in the falling death rate of the whole community.—*Public Health* (Mich.).

Correspondence

A METHOD FOR DECOLORIZING AND STAINING BLOOD FILMS

To the Editor:—Having to make and examine many blood films in the course of our routine work (1,163 in 1917) we found it somewhat of a problem to make Arneth and differential counts, study the morphology of the cells and look for malaria at the same time, with fair assurance that, if present, the malarial parasite could be found while counting and examining 100 or 200 white cells.

Mr. G. E. Burke, C.E., F.R.M.S., who was my co-worker in the blood laboratory, discovered a quick method of decolorizing the unstained films, which, combined with my staining methods, gave us a specimen, in half of which the red cells had disappeared, but the leukocytes, platelets, nuclei, etc., were brought out sharply, and apparently improved in staining qualities; and the other half of which was as of an ordinary smear, and was used for studying the red cells. Our method gives uniformity of results, freedom from precipitates and artefacts, lack of "messiness" and great time saving, and is as follows:

The blood smear is made on a slide, but, preferably, one that is drawn out to extreme thinness, and allowed to dry. It is not fixed.

The lower half of the smear is covered with the clean slide, strong pressure being employed to exclude air, and the exposed half of the blood smear is breathed on heavily. This is repeated if necessary. Where the breath comes in contact with the film, the red cells disappear.

The slide is immersed from thirty seconds to three minutes in stain, transferred to water in a Coplin jar from one minute to three minutes, washed ten seconds in the clear distilled water, and stood upright to dry, or blotted. The same water may be used repeatedly, and eight slides at a time stained.

Being a layman I cannot, of course, speak with much authority on such matters; but Mr. Burke and I would be pleased to learn if this method has been used before, and with what success. If it has not been used before, we think it is worth trying out, especially in malaria. We have had uniform success with the method in ordinary blood work so far. What happens to the erythrocytes when breathed on that they should disappear?

F. W. LACY, F.R.M.S., Fort Lyon, Colo.

"SERUM DIAGNOSIS OF SYPHILIS"

To the Editor:—Permit me to voice a protest against the adoption by Army and Navy laboratories of the method of performing the Wassermann test proposed by Dr. Hideyo Noguchi in THE JOURNAL, April 20, 1918. This method is open to a number of sources of error which would on the one hand tend to brand innocent men with the stigma of syphilis, and on the other cause cases of syphilis to escape detection which could be detected by more exact methods. I think the matter of sufficient importance to request the space necessary to point out these sources of error.

In every complement fixation test the complement acts as a unit of measurement by which the fixing power of a serum under examination is measured. It must be apparent even to the uninitiated that this measuring unit must be a known quantity in order that it may be effectively used as a standard by which to measure an unknown quantity. Wassermann, realizing this, selected guinea-pig serum as the source of complement because its complement content was more uniform than that of any other animal he had examined. In recent years careful workers (compare Ottenberg: On the Reliability of the Wassermann Reaction, *Arch. Int. Med.*, March, 1917, p. 457) have come to the conclusion that even guinea-pig serum varied so much in complement content as to introduce an inexcusable source of error. Dr. Noguchi himself (Noguchi and Bronfenbrenner: Variations in the Complement Content and Fixability of Guinea-Pig Serum,

Jour. Exper. Med., January, 1911, p. 69) showed that the variations in the complement activity of guinea-pig serum was in the ratio of 0.015 to 0.04. So that even when guinea-pig serum is employed as the source of complement, modern authors advise its careful titration before each test. The complement content of human serum is even more variable than that of guinea-pig serum. It may vary from absolutely one to more than a Wassermann unit. And yet Dr. Noguchi proposes here a test in which this wide variation in complement content is to be absolutely ignored; in which measurements are to be made with unknown quantities; in which the serum that contains a single unit of complement is to be treated exactly like a serum containing two units of complement, being tested with the same amount of antigen, the same amount of corpuscles and amboceptor, incubated for the same period of time, and finally read as though there had been no initial variation in complement content. He does not even utilize the very obvious expedient of somewhat minimizing the fatality of his error by utilizing the time factor. If he cut off his incubation on each serum at the moment his control tube shows complete hemolysis, it would compensate to some extent for the complement variation. But even then, a positive serum rich in complement may give only a very mild, doubtful or even a negative reaction, whereas a negative serum weak in complement, or strongly anticomplementary, may give a positive reaction. To explain this statement I may say that I have repeatedly made the observation, though I have never seen it recorded elsewhere, that different serums either guinea-pig or human, vary in their antigen-anticomplementary titer. That is, in titrating the same antigen against different guinea-pig serums or different negative human serums of approximately the same complement strength, appreciably different anticomplementary titers may be obtained for each. One can readily see, therefore, that with a serum weak in native complement, or with strong nonspecific anticomplementary action for the antigen employed, one might easily get not only weak but even strong positive reactions on negative serums in such a method as Dr. Noguchi proposes.

In his proposed method, Dr. Noguchi entirely ignores the observation made by Sellards and Minot (*Antagonistic Action of Negative Serum on Wassermann Reaction*, *Jour. Med. Research*, May, 1916, p. 131) that negative serums exert an antagonistic action on the Wassermann reaction. Dr. Noguchi uses fresh negative serums as complement to activate those serums which are natively poor or deficient in complement or in which the complement has deteriorated through age. As shown by Sellards and Minot, such fresh serums will tend to inhibit or block the specific action of weakly positive serums, and these authors have even gone so far as to propose utilizing this fact to check up on weakly reacting serums to determine whether the inhibition was specific or nonspecific.

Dr. Noguchi (Noguchi and Bronfenbrenner: *The Influence of Inactive Serum and Egg White in the Phenomenon of Complement Fixation*, *Jour. Exper. Med.*, January, 1911, p. 2) has also shown that the relation which the total volume of serum bears to the amount of complement has an influence on the Wassermann test. If, now, he uses, as he proposes, 0.2 c.c. of inactive serum and 0.1 c.c. of an active serum as complement, he has a total volume of 0.3 c.c. of serum. If the complement content of the active serum is at the minimum level, the indifferent fixing protein substances present in the excess of serum may be sufficient to fix part of the complement and bring about a false positive reaction. On the other hand, as he shows in this article, a deteriorated serum which originally contained a large amount of complement, activated with a fresh serum whose complement content is at the maximum level, could easily give a negative reaction, because of the excess of complement and the activating serum added to the interfering action of complementoids present in the deteriorated serum. There is no question but that syphilitic antibodies may be employed in the process of inactivation, and that more positive reactions can be obtained on tests made with the raw serum. It has been shown, however, that some of these may

be false, proteotropic reactions, even when so refined and purified an antigen as the acetone insoluble fraction of lipoids is employed. As a consequence, most careful workers prefer working with inactivated serums, using the raw serum test only as an additional check or more adequately to control treatment. In any event, when the raw serum test is made, the serum should be titrated for its complement content and the antigen and hemolytic system be adjusted accordingly, or the complement brought up to standard by the addition of guinea-pig serum.

The plea that guinea-pigs are scarce or difficult to obtain is not valid, as it is not necessary to kill a pig to obtain serum for complement. Four or five c.c. of blood can be readily withdrawn from the heart. A dozen or two of pigs are not difficult to maintain, and will furnish all the complement needed even in large laboratories.

There is only one thing I am more certain of than this, outside of death and taxes, that if I obtained a positive reaction on my blood in a test made by the method described by Dr. Noguchi, I would not accept the verdict as final, but would proceed to make another more accurate and reliable test. The one thing that I am more certain of is that Dr. Noguchi would do exactly the same thing. Is there a single man in our Army or Navy who is deserving less consideration than this? Better far to make no tests at all, and to rely on our clinical evidence, than to utilize, for the sake of expediency, any method that is anything less than the best.

Dr. Noguchi frequently refers to his method as new. I am at a loss to understand what there is new about it. He himself long ago originated the method of using raw serum and the human hemolytic system. The only essential difference between his present and old method is that he makes use of native complement, and where this is deficient, fortifies the serum with a suitable fresh negative serum. Native complement has long been utilized in Wassermann tests by Hecht and his large school of followers. The use of negative human serum as complement has been advocated in at least two articles of which I have knowledge, one by O. Heath, appearing in the *British Medical Journal*, June 19, 1915, and one by Butler and Landon, appearing in the *United States Naval Medical Bulletin*, January, 1916, p. 1.

J. J. SEELMAN, M.D.,
Milwaukee.

[The foregoing communication was referred to Dr. Noguchi, who replies:]

To the Editor:—In reply to the criticism of Dr. J. J. Seelman, who has expressed apprehension with regard to the reliability of the serodiagnostic procedure described by me in *THE JOURNAL*, I wish to make the following statement:

Dr. Seelman regards my proposed method as less accurate in its quantitative aspect than the Wassermann system because of the variation in complement in different human serums, but he apparently ignores the inherent source of error in the latter from the varying amounts of natural antishoop amboceptor present in various human serums. Now, whereas ninety out of a hundred serums contain a practically constant quantity of complement, and no hypercomplementary serum contains more than twice this average complement content, the amount of natural antishoop amboceptor varies from none to as many as twenty units or more. In the homohemolytic system only the more or less controllable factor of complement variation is present, while in the antishoop system there is the variable amboceptor when the patient's serum has been inactivated, and both amboceptor and complement when the serum is used in the fresh state, as in Hecht's method.

The variation in complement is less than one unit in either direction. In the case of an excess of complement there may be a weaker reaction than with an average serum, but this affects only those serums which are not strongly positive. The reaction cannot be rendered completely negative with a serum containing more than one unit of Wassermann antibody, and complete fixation always occurs when two or more antibody units are present. The influence of an excess of amboceptor, however, such as occurs in some specimens of

human serums tested by the Wassermann reaction, is such that a negative reaction can result when there are less than eight antibody units, so that when the native complement has been removed by inactivation and accurately titrated guinea-pig complement added, this unknown and uncontrollable factor of natural antishcep amboceptor undoes the previous adjustment. It is clear, therefore, that the degree of hemolysis is an index neither to the absolute content of complement nor of amboceptor, but only of the combined effect of both in various proportions. One hundred per cent. hemolysis may express the interaction of 0.1 c.c. of guinea-pig complement and 0.00006 c.c. of amboceptor, or of 0.01 c.c. of the former and 0.0012 c.c. of the latter, that is, one complement unit and one amboceptor unit or one tenth of a complement unit and twenty amboceptor units. There will be as many combinations as there are divisible fractions within the range of activity of the complement and the amboceptor. The hemolytic effect of complement is proportionately enhanced, as the amount of amboceptor is increased, to a point at which the former cannot be augmented. The Wassermann system (antishcep hemolytic system), then, is not a quantitatively accurate method, no matter how accurate the titration of guinea-pig complement and immune antishcep amboceptor, since the relative quantities of complement, amboceptor and corpuscles are, in the final result, unknown, being no longer adjusted to produce a uniform hemolytic system.

The effect of an excess of amboceptor in the fixation reaction is more disturbing and far reaching than that of a narrow variation in complement, when the latter is combined with a known definite quantity of amboceptor. A negative reaction, or a weak instead of a strong positive one, is more apt to result from the excess of amboceptor naturally present in the Wassermann system than from the excess of complement occurring in a few human serums, since in the former case a negative reaction may result if the serum contains less than eight antibody units, whereas in the latter a positive reaction cannot be masked even when the serum contains only two antibody units.

Let us now analyze the results obtained with a serum whose complement activity is below the average. I have recommended the additional amboceptor for those specimens in which hemolysis is incomplete within thirty minutes, because by this means the same hemolytic effect (complete hemolysis in the control) can be secured as is obtained by the combination of the average complement content and one amboceptor unit. To such a procedure I fail to see any objection. As for those serums which have no complement, or too little to produce complete hemolysis, even with additional amboceptor, it has been recommended that 0.1 c.c. (up to 0.2 c.c.) of the serum be mixed with 0.1 c.c. of fresh active nonsyphilitic human serum. Clearly, the test here corresponds with that of a specimen containing the same amount of antibody and one complement unit plus the fraction of a unit naturally present in the serum. The addition of 0.1 c.c. of a negative serum to 0.1 c.c. (up to 0.2 c.c.) of a serum deficient in complement no more affects the sensitiveness of the fixation reaction than does the addition in the Wassermann test of 0.1 c.c. of guinea-pig serum to 0.2 c.c. of inactivated serum. In fact, since the antibody content of 0.1 c.c. of an active human serum is from four to five times that of the same serum when inactivated, the source of interference from the introduction of 0.1 c.c. of active serum is more than taken care of by the intact antibody content.

By actual experiment I have found that when working with the antihuman system, whether guinea-pig or human complement is used, the addition of an inactivated negative human serum (0.1-0.4 c.c.) to any amount of syphilitic antibody representing more than one half the antibody unit has no weakening effect on the reaction. A minute amount of a positive syphilitic serum (0.006 c.c. for example), when mixed with 0.1-0.4 c.c. of inactivated negative serum and then supplemented with 0.1 c.c. of fresh negative human as complement gives just as strong reaction as when no negative serum has been added. Dr. Seelman quotes my earlier observation with Bronfenbrenner regarding a possible complementoid blocking of fixation, but he appears to overlook

the fact that the phenomenon was found to apply mainly to certain animal serums (guinea-pig, chicken, etc.), human serum having shown the least interference. The interference is noticeable when a quantity of negative serum as large as 0.3-0.4 c.c. is used with a very small fraction of the antibody unit (less than one half), but there is none with 0.1-0.2 c.c. In the proposed test, therefore, this source of masking a positive reaction does not exist, as any serologist can demonstrate for himself. The observations of Sellards and Minot, it should be noted, apply only to the antishcep hemolytic system. A serum deficient in complement can be used in a dose of 0.2 c.c. and may be supplemented by a negative human serum in a dose representing one complement unit (0.1 c.c. or more) without danger of masking a positive reaction.

Dr. Seelman's reference to a possible false positive reaction from an excess of "indifferent fixing protein substances" in the mixture of inactivated patient's serum (0.2 c.c.) and negative human serum as complement (0.1 c.c.) seems to be without practical or theoretical basis. If, however, Dr. Seelman refers to the anticomplementary property of the inactivated serum, the answer is that if the added human complement is insufficient to bring about complete hemolysis in the control tube, the test is of course repeated with a sufficient amount of complement. Hemolysis must of course be completed satisfactorily in the control tube before the result is read, in this as in any other fixation method. One occasionally encounters anticomplementary serums, it is well known, and they are handled accordingly, whether one is using the Wassermann antishcep system or the antihuman system, that is, the serum is heated to 55 degrees C. for fifteen minutes to remove its anticomplementary property, or more complement is used, or the amount of the serum is reduced to a noninhibitory quantity.

Dr. Seelman's assumption that a serum containing a subnormal amount of complement should cause a false positive reaction does not apply to the proposed system, as the antigens used in the latter have no anticomplementary property. The antigens used in the Wassermann system, however, consist of either an alcoholic extract of heart, syphilitic liver, or heart extract plus cholesterol (Sachs, Fildes and McIntosh), all of which possess a pronounced anticomplementary property. It has never been defined how small a quantity of a suitable extract should be able to fix complement with a syphilitic serum, the only requirement being that the highest antigen dose should be one half the amount which completely fixes complement without the syphilitic antibody. If the amount of complement were deficient in a system in which such an antigen is used, a false positive reaction would of course result, since half of the complement is taken up by the antigen. The antigen which I recommend, both for the old antihuman hemolytic system and for the proposed system is, however, free from those constituents which impart to the alcoholic extracts their anticomplementary and hemolytic properties and their property of nonspecific reaction with active serum, and it consists of a pure acetone-insoluble fraction of tissue lipoids. The standards that have set for a suitable antigen are as follows: The acetone-insoluble lipoids are kept in absolute methyl alcohol as a 3 per cent. solution, one part of which is mixed with nine parts of 0.9 per cent. saline solution. The opalescent fluid is then tested for its hemolytic, anticomplementary and antigenic titers. If it causes hemolysis or inhibits the action of complement in a dose of 0.4 c.c. in a total of 1 c.c., the preparation is rejected. If it is satisfactory in this respect, however, it is tested for its antigenic property with strongly positive serums, and only those preparations which produce complete fixation in a dose of 0.02 c.c. are regarded as suitable. One tenth c.c. (at least five antigenic units) is used for the test. The antigen preparations used in our laboratories often contain as many as 200 antigenic units in 0.1 c.c. Although the antigen selected according to the standards described is highly active, no nonspecific fixation results even from the use of an excessive dose (within 0.1 c.c.) with active serums. The anticomplementary property of antigen against different guinea-pig or human serums as a source of error causing

else positive reaction clearly, then, does not apply to the antigen defined for use in the antihuman methods.

Dr. Seelman speaks of a possible "proteotropic" complement fixation with purified acetone-insoluble lipoids. As this term was introduced by the writer (1909) to designate the fixation due to various proteins when mixed with fresh serums there is no question of a proteotropic fixation with an antigen containing no proteins.

Dr. Seelman seems to assume that the complement variation of different human serums can be compensated for by cutting short the incubation period, but how? The reaction in my system is allowed to become complete, and no such abortive procedure as Dr. Seelman seems to believe advisable is necessary. The reason for his assumption that I ignore the complement variation as of importance is not clear to me, but it is sufficient to say that a complement deficiency is adequately adjusted in necessary cases.

Dr. Seelman thinks that the complement content of the human serum should be titrated before the test and the antigen and hemolytic system adjusted accordingly, or the complement brought up to the standard by the addition of guinea-pig serum. Such a process may be, in my opinion, indicated in those methods in which fresh human serum is used in combination with foreign corpuscles (for example, Hecht's or Lath's method), but is quite unnecessary for a system in which human corpuscles are used, the former having the two variable factors, complement and amboceptor, and the latter by the controllable variation in complement. As already pointed out, the complement contents of human serums do not vary to any considerable extent, and in only a few specimens there is some excess (usually less than double the average) or some deficiency (a fraction of one unit). Either abnormality is readily detected in the control tubes and subsequently adequately adjusted, and the insignificant academic variations cannot lead to any serious error, certainly not as much as is inherent in the Wassermann system, the quantitative errors of which are more subject to criticism.

I regret that the reference to the work of Emery, Butler, Landon, Myer and Thompson was inadvertently omitted in my paper as it appeared in *THE JOURNAL*. The accidental omission was mine. The fault will be corrected in the revised description of the test which will appear in the next issue of the *Journal of Experimental Medicine*. The methods of Heath and Hecht, however, are not concerned in the discussion of the present method.

It is my belief that, once taken up without prejudice, the present method will prove just as reliable as, and perhaps even more reliable than, the Wassermann system, because of fewer reagents and less manipulation, as well as the stability of the two most important reagents, the antigen and the human amboceptor.

HIDEYO NOGUCHI, M.D., New York.

EXAMINATION OF REGISTRANTS: SUGGESTIONS FOR DETECTING HEART LESIONS

To the Editor:—It has long been evident to me, from conversations with medical students, that aortic regurgitation is the commonly missed of valvular lesions. This belief has been forcibly confirmed and emphasized in recent months in the examination of registrants for military duty. On one of the medical advisory boards of Columbia University I have been referred to me from three local boards a considerable number of registrants with heart murmurs. The number of aortic regurgitant murmurs recognized and recorded is surprisingly small, when it is considered that the examiners on the local boards are no longer students, but practitioners of medicine. These registrants are in over 90 per cent. of instances recorded as having "systolic murmur." Furthermore, the internists examining for other medical advisory boards are having similar experiences. May I therefore be permitted space for a few remarks that may possibly help to the commoner recognition of aortic regurgitation? I shall not review the classical physical signs of this lesion, but wish to mention a few practical points.

The aortic regurgitant murmur (diastolic) is usually soft and low pitched. Soft, low pitched murmurs are often very hard to hear with the ordinary bell stethoscope. They can more readily be heard with the naked ear, or still more clearly with a flat Bowles stethoscope. A prolongation of the second heart sound is often the earliest evidence of aortic regurgitation. On detecting such a prolongation, one should suspect this lesion, and then, substituting the naked ear or the Bowles stethoscope for the common bell stethoscope, one will often clearly detect the soft, low pitched, blowing diastolic murmur. I cannot too strongly urge the adoption of these suggestions. Other adjuvants, such as exercise, and change of posture, are too obvious to require emphasizing.

I fear that in the rush of examinations at the local boards, some of the examiners fail to palpate the pulse, for I have seen aortic regurgitation presenting typical Corrigan pulse, and even clearly demonstrable capillary pulsation, overlooked. It might be permissible here to remind examiners that the pulse pressure in aortic regurgitation is characteristically large. Such a finding may aid in the differentiation of a doubtful case. This evidence is particularly valuable in ruling out a so-called "mitral diastolic" murmur. When, in mitral stenosis, a blowing diastolic murmur produced at the mitral ring, and due to the passive progression of blood from auricle to ventricle through a much narrowed auriculo-ventricular ring, appears, we have evidence of an advanced mitral stenosis. In these cases, the blowing murmur is audible over a narrowly limited area about and within the apex, and the pulse pressure is small.

I hope the foregoing remarks may be of some aid.

MAXIMILIAN SCHULMAN, M.D., New York.

THE USE OF IODIN IN THE PREPARATION OF THE PATIENT FOR DELIVERY

To the Editor:—In connection with the communication by Dr. Thoms (*THE JOURNAL*, April 13, 1918, p. 1115), I wish to say that while I agree that his technic is effective, it is possible to obtain equally good results with weaker solutions than he uses. Lambert of New York has shown us that an aqueous solution of iodine (1:2,000) will prove effective against the *Staphylococcus pyogenes*, and that it will not prevent cell growth. Alcohol alone is an irritant, and any diluted tincture of iodine may cause pain and irritation when used on delicate or sensitive surfaces. After anesthesia has been induced, we use the diluted tincture, U. S. P., 1 part to 3, of 95 per cent. alcohol. This is perfectly satisfactory in skin sterilization of any part of the body or any mucous surface. After an experience of many years I have had no reason to return to the use of stronger dilutions; in no instance has irritation of the skin occurred, nor am I aware of any wound infection wherein a stronger application would have served a better purpose. I would urge against the use of the mercuric chlorid solution as suggested just before applying iodine, as severe dermatitis may result, owing to the formation of red mercuric iodide. A case of this kind was reported in the local medical society a few years ago.

I. S. STONE, M.D., Washington, D. C.

TIN SPRAYER FOR MELTED PARAFFIN IN TREATMENT OF BURNS

To the Editor:—A simple, efficient and inexpensive apparatus for spraying melted paraffin or other paraffin products in the treatment of burns is the ordinary tin sprayer, such as is used in the garden for spraying liquid insecticides on plants. It is first necessary to melt the paraffin before placing it in the tank. Before the spray is used, the tank may be immersed in boiling water or heated over a flame until the paraffin is melted. When once heated, the paraffin remains liquid sufficiently long for all purposes.

L. L. STANLEY, M.D., San Quentin, Calif.
Resident Physician, California State Prison.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COMMUTATION, INCOME, INSURANCE AND EXPENSES OF MEDICAL RESERVE CORPS OFFICERS

To the Editor:—1. What allowance is made by the government for a first lieutenant's wife, there being no children? 2. What would be the gross income for such an officer having a wife and no children? 3. What is the increase in salary for foreign service? Would the allowance for the wife be granted when the officer is on foreign soil, or when he is so located that his wife cannot spend her time with him? 4. What provision is made for insurance? 5. Can you give the approximate cost of a first lieutenant's living expenses while on active duty?

W. D. GILMORE, M.D., Mooresville, N. C.

ANSWER.—1. Commutation for a first lieutenant who maintains a residence for a dependent would approximate from \$40 to \$50 per month.

2. From \$2,400 to \$2,500.

3. Ten per cent. The question of commutation for officers on foreign service—that is, whether they receive single or double commutation—has not yet been determined by the comptroller.

4. Officers are covered by the Federal War Risk Insurance, the cost varying according to the age of the officer and the amount of insurance taken; \$10,000 worth of insurance may be carried for from \$6.50 to \$8.10 per month for the ages between 20 and 40.

5. The living expenses vary from \$40 up.

ELIGIBILITY FOR ADMISSION TO THE MEDICAL RESERVE CORPS—COMMISSIONS IN THE ALLIED ARMIES

To the Editor:—1. Please advise me whether I am eligible for a commission in the United States Army (Medical Reserve Corps)? I was born in England, but have been in this country since I was 3 years of age. Through mistake I have never taken out naturalization papers. 2. What steps would it be necessary to take in order to get an appointment or commission in the Canadian or British army as a physician? Any information you may be able to give as to rank, pay, etc., in the latter armies will be appreciated.

H. R. B.

ANSWER.—1. Since you are not a naturalized citizen, you are not eligible for a commission in the Medical Reserve Corps of the United States Army.

2. Both the British and Canadian armies have representatives in all the large cities of this country. Information may also be obtained by addressing the Surgeon-General, Department of Militia, Ottawa, Canada.

COMMISSIONS IN THE MEDICAL RESERVE CORPS AND IN THE MEDICAL CORPS, NATIONAL ARMY

To the Editor:—1. How can a commissioned officer in the Medical Reserve Corps transfer or get a commission in the Medical Corps, National Army? 2. What advantages or privileges does a commission in the Medical Corps, National Army, give the holder over a commission in the Medical Reserve Corps?

HENRY C. WOLTMAN, Major, Camp Pike, Ark.

ANSWER.—1. By appointment by the President on recommendation of the Surgeon-General.

2. None except such as go with higher rank if appointed to such rank.

PAY OF OFFICERS OF THE MEDICAL RESERVE CORPS

To the Editor:—What pay do medical reserve officers receive?

A. R. REMLEY, M.D., Lawson, Mo.

ANSWER.—Annually: First lieutenant, \$2,000; captain, \$2,400; major, \$3,000; commutation for quarters: lieutenant, \$432; captain, \$576; major, \$720; heat and light: approximately \$80, \$120 and \$160, respectively. The increase in pay for foreign service is 10 per cent.

STATE LICENSING BOARDS AND MEDICAL RESERVE CORPS OFFICERS

To the Editor:—What states will grant license without further examination to officers in the Medical Reserve Corps? Will this continue after the war is over?

W. Y., M.D., Linden, Tenn.

ANSWER.—None.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

FLORIDA (H): Jacksonville, May 22. Sec., Dr. Geo. A. Davies, East Port.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

IOWA: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

NEBRASKA: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WISCONSIN: Milwaukee, June 25. Sec., Dr. J. M. Dodd, Ashland.

British Medical Students and the Army

The *Medical Press*, London, states that a national service instruction has just been issued under which it is provided:

1. That a medical student who is a full-time student at a recognized medical school, who has passed his first professional examination in chemistry, botany and zoology, is not to be called up, whatever his medical category or trade, so long as he remains a full-time medical student.

2. A full-time medical student at a recognized medical school, who produces a certificate from the dean of the faculty that he should be able to pass his first professional examination on or before July 31, is not to be called to the colors before July 31.

3. A medical student protected under this instruction, who does not, within thirty-six months of the date of commencing his professional studies, pass his professional examinations in anatomy and physiology, will forthwith be called to the colors if otherwise available, and required for service.

4. In order to be entitled to the protection under the instruction, a medical student must enrol in an officers' training corps for medical cadets.

5. Protection under the instruction will be withdrawn from any medical student who has been requested, in writing by the ministry of national service, to offer his services as a surgeon probationer in the navy, and who has not within twenty-one days thereafter sent an application for enrolment as a surgeon probationer.

Other provisions apply to medical students in categories B and C, and for the review of all cases where students are protected from military service.

Oregon January Examination

Dr. Herbert Nichols, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 2-4, 1918. The examination covered 10 subjects. An average of 75 per cent. was required to pass. Of the 24 candidates examined, 15, including 1 osteopath, passed, and 9, including 3 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1915)	84
College of Physicians and Surgeons, Chicago	(1906)	75
Kentucky School of Medicine of Louisville	(1892)	81
College of Physicians and Surgeons, Baltimore	(1906)	79
Johns Hopkins University	(1914)	82
Maryland Medical College	(1902)	75
Marion-Sims-Beaumont Medical College	(1902)	76
John A. Creighton Medical College	(1917)	80, 86
Starling Medical College	(1892)	75
University of Oregon	(1917)	79, 85, 86, 89

College	FAILED	Year Grad.	Per Cent.
California Eclectic Medical College	(1914)	75 *
University of Louisville	(1907)	68
Eclectic Medical University	(1917)	67
Missouri Medical College	(1895)	65
University Medical College of Kansas City	(1897)	73
Villamette University	(1913)	80 *

* Fell below 75 per cent. in one or more subjects.

Book Notices

THE FUTURE OF THE DISABLED SOLDIER. By C. W. Hutt, M.A., M.D., P.H., Oxford, Deputy Medical Officer of Health County Borough of Brighton. Cloth. Price, \$2. Pp. 199, with 14 illustrations. New York: William Wood & Co., 1917.

Many physicians and laymen in this country are keenly alive to the problem that will soon be confronting us as to how best to fit the disabled soldier to do what work he can. The government, as is known, is making preparations to care for and train these unfortunates. To all those interested in this question Hutt's book can be recommended, as containing in small compass a dependable statement of the aims and requirements of such work, and what has already been done in other countries than ours. The book is authoritative, scientific and not sentimental; it is inspiring. One rises from reading it, determined not only to do what one can in helping the disabled soldier but also to try to assist all those physically unfit either by youth, old age, disease or accident to find occupation suited to their capacity.

ELECTRO-THERAPY IN GYNAECOLOGY. By Samuel Sloan, M.D., R.F.P.S.G., Consulting Physician to the Glasgow Royal Maternity and Women's Hospital. Cloth. Price, \$4. Pp. 298, with 39 illustrations. New York: Paul. B. Hoeber, 1918.

The venerable author presents this book not as a textbook of electrotherapeutics or in gynecology, but as a record of his own work during the last twenty years in electrotherapy applied to gynecology. He believes that electrotherapy is of value in medical or nonoperative pelvic affections. Formerly it was almost entirely empiric and somewhat unsatisfactory, so that it came to be neglected. The author considers that it has now been established on a scientific basis. The first part is devoted to an elementary presentation of electrophysics. In the second part, the electromedical apparatus is described. In the third part, the principles of electrotherapy, and the action of static, galvanic, alternating and high frequency currents are discussed. Constitutional diseases, mostly functional, to which women especially are liable, are then considered, and the great value of electrotherapy is shown. In the fifth part, devoted to pelvic affections, neuroses of the pelvic structure are found to be especially benefited by electrotherapy. Here the author is in agreement with those gynecologists who have not entirely neglected all kinds of therapy except the operative. In the chapter on sepsis and pelvic inflammation, he comes more in conflict with the usual

professional opinion, for he finds that here there is absolute assurance of success. Numerous illustrations give a good idea of the apparatus and technic of his method of ionization for septic disease. Not so much weight is laid on the electric treatment of fibroids, the proper field for which is the accompanying pain and hemorrhage. He does not discuss roentgen therapy. In the appendix are given in tabular form brief abstracts of the histories of 212 cases on which the work is based. Electrotherapy in gynecologic practice has become nearly obsolete in this country. The high reputation of the author and his conservative, modest presentation of the subject may well lead the profession to study anew the possibilities of a nonmutilating therapeutic agent.

MANUAL OF SPLINTS AND APPLIANCES FOR THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY. Report of a Board Convened for the Purpose of Standardizing Certain Medical Department Supplies: Lieut.-Col. William L. Keller, M. C.; Major Robert B. Osgood, M. R. C.; Major Alexander Lambert, M. R. C.; Major Joseph A. Blake, M. R. C.; Capt. W. S. Baer, M. R. C., and Capt. Nathaniel Allison, M. R. C. Cloth. Price, 75 cents net. Pp. 208, with 173 illustrations. New York: Oxford University Press, 1917.

This manual is the outcome of the report of a board convened for the purpose of standardizing certain medical department supplies under Special Order 73, A. E. F., Aug. 20, 1917. As it is of notebook size (about 4 by 6 inches), it may be slipped into the pocket, ready for instant reference at all times, by the Army surgeon. It epitomizes the subject of splints, appliances and dressings. In determining the character of the standard appliances to be employed, efficiency, correct mechanical principles, simplicity of design, low cost of construction, and transportability were the chief considerations. The manual is in four parts. Part 1 covers general considerations and detailed descriptions of splints and appliances recommended for use at field and evacuation hospitals. Part 2 relates to their use at base hospitals, where the practice is somewhat different. Part 3 covers surgical dressings and accessory supplies. Part 4 contains illustrations showing the exact application of the various splints, appliances and dressings in the multifarious injuries to bones and joints, as well as the accompanying lesions of the soft parts, which may occur in modern war. In leg and arm splints the Thomas wire traction splint with hinged and other modifications, the long interrupted Liston splint, thigh splints of the Hodgen and Cabot types, of the simplest construction, usually of wire, have been adopted. Simplicity in apparatus and brevity in the description of their uses and indications, with excellent illustrations of their practical application, making everything clearly understood, are the result of the deliberations of the board as shown in this well printed manual.

THE THIRD AND FOURTH GENERATION. An Introduction to Heredity. By Elliot Rowland Downing, the School of Education, University of Chicago. Cloth. Price, \$1 net. Pp. 164, with 13 illustrations. Chicago: University of Chicago Press, 1918.

This book is a plea for the application of a sane and practical eugenics, presented in simple, nontechnical language. It is addressed particularly to young people as students, because of their ready adaptability to new facts and their freedom from the traditions and prejudices that hamper the older generation. To emphasize the important part the laws of heredity play in the development of the human race, the author draws an interesting parallel between certain highly pedigreed American race horses and superior families of gifted men like Johann Sebastian Bach and Charles Darwin, contrasting them with the evil strain of the famous, or infamous, Max-Jukes. The problems presented by the contrast, especially the problem of Nature's tendency to perpetuate undesirable as well as desirable traits, he then considers in the light of their relation to sexual reproduction. Mendel's law of the recurrence of dominant and of recessive traits in alternate generations is carefully explained in connection with the latter's famous experiments in plant breeding. Biologic evidence is brought to bear on the theory of the transmission of hereditary traits by means of the chromosomes in the living cells. The student learns that the much emphasized prenatal influence has little to do with the

hereditary characters of a plant or an animal, which are determined at the time of the fertilization of the egg. In applying these laws to the improvement of human stock, the author calls attention to the appallingly rapid growth of the feeble-minded population in the United States, reviews the records of families tainted with insanity in every generation, and makes an appeal for the segregation of the feeble-minded, in order to eliminate the mentally defective, criminal and degenerate stocks.

Medicolegal

Liability of Employer for Physician not Answering Call

(*Owens v. Atlantic Coast Lumber Corporation (S. C.)*, 94 S. E. R. 15)

The Supreme Court of South Carolina reverses an order that sustained a demurrer to the plaintiff's complaint for damages for a breach of the defendant's contract to provide medical attention to his sick wife, for the lack of which she died. The court says that the complaint alleged that the plaintiff was an employee of the defendant; that the defendant deducted \$1 from the monthly wages of each of its employees to maintain a staff of two physicians to render medical attention to them and their families when needed and requested; that the plaintiff called twice on one of the physicians, a Dr. Brown, who refused to give medical attention to the plaintiff's wife, on the pretext of being too busy and because he could not risk his automobile on a certain ferry; that the plaintiff could not find the other physician, and was without means to employ any one else, etc. The trial court took the view that the complaint showed affirmatively that the plaintiff had no cause of action, probably on the ground that the defendant was not liable for the action of the physician, in the absence of an allegation of its negligence in his selection. That was a misconception of the plaintiff's case. He did not seek to recover damages for the malpractice, negligence or unskillfulness of the physician in the management of the case after he took charge of it, but for the breach of the defendant's contractual duty, in his refusal to render any service at all.

It was too plain for argument that, under the facts alleged, there was a contract, and that it was based on a valuable consideration. The only real question was, Did the plaintiff allege enough to show a breach of that contract by the defendant? From the nature of the case, the plaintiff was bound to notify one of the physicians of his wife's need of attention, and, also, of her right to it, by reason of his being an employee, if that fact was unknown to the physician. While there was no direct allegation that Dr. Brown knew that the plaintiff was an employee, it was fairly inferable from all the facts alleged that he did, for he did not refuse the plaintiff's request on that ground, as he probably would have done, if he had conceived that the plaintiff's wife was not entitled to his services for that reason. The giving of other excuses impliedly excluded that one. At any rate, he should not have based his refusal on that ground, keeping it concealed, without inquiring of the plaintiff as to the truth of the matter. Besides, it was inferable from all the circumstances that these physicians were engaged chiefly, if not exclusively, to attend to the defendant's employees, which was enough to put the physician on inquiry which would have disclosed the fact.

The general rule is that notice to one who has been appointed by the master to perform his duty is notice to the master. So, too, as a general rule, a breach of contract that is due to the failure or inability of a third person with whom the party in default has made contracts to enable him to perform his contract does not excuse such breach. In this case the physician was the third person contracted with by the defendant to perform its part of the contract to provide medical attention to the plaintiff's wife. He was the defendant's agent for the performance of its contractual obligation to the plaintiff, and notice to him was notice to the defendant, and his failure to render any service at all was the defendant's failure to perform its contract.

While, in the view taken, the question of whether the defendant would be liable for the malpractice of physicians carefully chosen was not strictly within the issues tendered by the complaint, there is one view of the case in which that question might become important. If the deductions made resulted in direct pecuniary profit to the defendant, then, clearly, it would be responsible for the negligence or malpractice of the physicians employed even with due care, on the same principle that a private hospital conducted for gain, or the physician himself, is made liable.

Use of Liston Splint—Admissible Evidence

(*Baldwin v. Baines (Vt.)*, 102 Atl. R. 338)

The Supreme Court of Vermont reverses, for retrial on the question of damages only, a judgment recovered by the plaintiff for malpractice in the treatment of a simple oblique fracture of the middle third of the right femur, because he was not only allowed, without sufficient evidence, to recover for what he had already lost in earning capacity, but the jury was permitted to speculate as to how his capacity to earn money would be affected in the future. The court says that a long splint, called a Liston splint, was used, and that when it was removed the leg was found to be $2\frac{1}{4}$ inches shorter than the other one, and the ends of the broken bone overlapped so that there was an angular deformity at the point of fracture.

The defendant excepted to the charge of the trial court wherein it allowed the jury to find the defendant negligent for using the Liston method rather than some other, insisting that on the evidence it was not permissible to find that this method did not accord with the degree of knowledge, care and skill that was exercised by physicians engaged in the same general line of practice in that neighborhood. But this exception could not be sustained. It assumed that the evidence was all one way on that phase of the case. It ignored the medical testimony tending to show that this method was obsolete; that it was not used by certain other physicians in that locality; that it would not insure complete fixation, and that it was inefficient in the matter of extension, unless the perineal band connected with it was constantly watched.

The defendant also excepted to the charge because it did not make clear to the jury that the defendant would not be liable if, in selecting a method of treatment, he chose one just as good as those generally recognized by the profession in that locality, even if it was not in general use there. What the court charged was that the defendant could not be held liable for a mere error of judgment in choosing from several well-recognized and authoritative methods of treatment the one he in fact used, and that he could not be held liable if the method chosen was a proper method and one well recognized in the same general neighborhood by those in the same general line of practice. So far as the criticism here made was concerned, the charge was all that the defendant was entitled to.

Another exception to the charge was predicated on the assumption that the court asked the jury to consider the question whether this leg was so put up that there could be no movement of the bones and no shortening of the leg. The language of the court was: "Was it in such a shape that it would hold those bones in apposition? Was it in such a condition that there would be no unnecessary shortening of the limb? Was the leg treated by the method with which it was treated in such a way that there could be no movement to the side?" This language did not make the defendant an insurer of a perfect result. It recognized that there might be some shortening of the limb without liability of the physician. It required a physician to set the leg and hold the bones in apposition, and to guard against crowding the bones sideways. The exception could not be sustained.

A physician, who testified that he had never used or seen a Liston splint, and knew nothing regarding the results of that method of treatment, was shown two roentgenographic plates, which were exhibits in the case, and was asked whether, assuming the plates were taken of the plaintiff's

injured leg, the angular deformity shown was such as would be produced by bandaging the leg to this side splint as done by the defendant, and was allowed to answer that it was. This was not error, either as violating the rule forbidding the expression of an opinion on the question the jury was to decide or because the witness had never had experience with this method of treatment. It is not at all unusual to allow an expert witness to give an opinion that a particular condition is due to a specified cause. Certainly the rule is liberal enough to allow him to say that it might be. The fact that the witness had never had experience with this method of treatment did not disqualify him.

Medical Officer Wrongfully Passing Applicant for Enlistment

(*Ex parte Blackington (U. S.), 245 Fed. R. 801*)

The United States District Court in Massachusetts holds that the fact that a medical examiner may have wrongfully passed an applicant for enlistment does not give the latter any legal right to be discharged from the Army on a writ of habeas corpus. The court says that the petitioner in this case, a member of the bar, claimed that when he was about 3 years old his head was kicked or stepped on by a horse, the calk in the shoe puncturing both the outer and the inner plates of the skull. Trephining was done, and a piece of the skull about half an inch in diameter was removed, but no plate was inserted. The wound was in the front part of the left temple, near the outer corner of the eye, and is now indicated by an obvious indentation. The petitioner's height is 5 feet 3 inches. In June, 1917, he enlisted as a private in a battery of heavy field artillery that was a part of the Maine National Guard, which he expected would shortly be called into the federal service. The medical officer who examined and accepted him for service had conceived a violent animosity toward him because about a year previously he had had occasion in the course of his business to collect a debt from the officer's sister, and the officer said he would get even with him for annoying his sister; that he understood that Blackington was going to enlist in the heavy artillery, and, if he did, he would pass him if he could not see beyond the end of his nose, and would see to it that he was passed by the federal medical examiner, etc. Within a day or two after the enlistment became complete, the petitioner consulted two other physicians on the question of whether he could safely perform military duty, especially near cannon action, and was informed that he could not, and from that time he consistently endeavored to obtain his discharge from the service. After the regiment in which he enlisted was transferred into the United States Army he was examined by the federal medical officers, and was accepted by them. Nothing whatever appeared which cast any suspicion on the fairness of their examination, unless the remark above quoted be regarded. No direct evidence was offered by the petitioner that his physical condition was such that military service would cause more injury or hardship to him than to the average man. The court is of the opinion that, on his own evidence, the petitioner was not entitled to be discharged; and dismisses his petition.

The recruiting officer, or the medical examiner, acts solely for the state or for the United States. The purpose of the examination is not to give to the applicant assurance that he is physically fit for military service, but only to prevent undesirable men from getting into the Army, where their presence would cause difficulty and expense. So, too, the Army regulations governing recruiting are established for the good of the service, and may be waived by the applicant, not of the prescribed height, whose offer of service was nevertheless accepted. As to the effectiveness and bodily soundness, the Army has the right to fix its own standards—if not absolutely, at least within much wider limits than were approached in this case. If the medical examiner, in violation of his duty as an officer, accepted an unfit man, that was a matter for which he might be called to account by his military superiors; but it was nothing that a recruit passed by him could take advantage of, whether such action was inspired by personal hostility, or was the result of mere negligence.

Social Medicine, Medical Economics and Miscellany

OBSTETRIC SUPERSTITIONS*

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Every once in so often, one can take up a medical journal and find an article with a heading something like this: "Obstetric Superstitions Prevailing among the Borneo Head-Hunters" by Dr. So-and-so, who has just returned from being a medical missionary in the Malay Archipelago. Or it may be that Dr. Somebody-else who has been doing Army work in our insular possessions has written very cleverly on "The Childlike Beliefs of the Filipino Regarding Obstetrics, and Some Curious Ideas of the Native Midwives." We read these interesting little monographs in a superior sort of way, smile with a sort of "holier than thou" smile, and patronizingly remark, "Now, isn't it quaint that these poor benighted heathen should believe such ridiculous things!"

It has occurred to me, however, that perhaps we do not have so much right after all to smile at these unenlightened savages, for I have been obliged to assert repeatedly to pregnant patients that raising the arms above the head will not twist the cord around the baby's neck. I have had to tell others that decayed teeth should be taken care of during pregnancy, in spite of the fact that they had been earnestly assured by any number of their friends that they must not have any dental work done while in the family way. And an irate newly made grandmother nearly discharged me on one occasion, when I insisted that she stop picking up the new baby whenever it cried, because she had known for a very long time that "a boy baby must never be allowed to cry for fear of rupture."

There are so many obstetric superstitions and ideas extant, and belief in them is so widespread and common, that I have endeavored to collect them as I have heard them, and to group them according to a similarity of belief or origin. It was not difficult to compile a list of ninety-eight superstitious ideas, and there are, without doubt, many more which have been completely missed. It is interesting to note how well founded on facts a few of them are, while others are a combination of medicine and folk-lore as taught by the ancients, and both the good and the foolish ones are amusing.

If a consideration of the subject of menstruation is permissible under the heading of obstetrics, the first superstition to present is: "A menstruating woman is unclean; if she touches a mare which is with foal, the mare will miscarry; she must not handle milk or it will turn sour; she will be unsuccessful in making jelly, for if she attempts it, the syrup will not solidify." To this superstition may be added the beliefs that if a woman has no children she is likely to have an early menopause, and if a young woman misses a period she will develop consumption; also, if a woman becomes pregnant again after having had a child and no periods have occurred between the two pregnancies, the second child will be sterile.

Coming to the subject of pregnancy itself, we find a multitude of ideas relating to the various ailments of pregnancy: "After the skin grows on the baby, the nausea will stop." "Popcorn is good for nausea of pregnancy." "The husband sometimes has the nausea of pregnancy for the mother." As an additional bit of evidence that the husband counts for something in obstetrics, I would cite the fact that the husband's getting toothache is considered a sign of pregnancy, and one may count from the date of the toothache in estimating the expected time of confinement. "Heartburn makes hair on the baby," or, to express it a little more clearly, "heartburn means that the baby is going to have a great deal of hair," and to cure it, it is recommended that for heartburn one must eat raw potatoes. "Getting the feet wet will cause polyhydramnios," the relation here being quite obvious. "The head of

* Read before the Pittsburgh Academy of Medicine, Feb. 5, 1918.

the baby sinks into the pelvis in the dark of the moon," but "if the patient has gone overtime this can be remedied by dropping new pennies on the floor." As a means of determining about when to call the doctor, you may have your choice between "the occurrence of wild pains indicates that the baby will be born two weeks later to the day," and "if the baby does not come on the exact date calculating from the last period, it will be precisely two weeks late." A pseudocyesis is called a "wind-baby," usually with good reason.

If a young couple desire to arrange beforehand to have either a boy or a girl, as their fancy dictates, they have only to follow these directions: "In order to beget a boy, the father must go to bed with his boots on;" or, "if a boy is desired, coitus should take place before the period, but if a girl is wanted it should occur after the period;" or, "have coitus on the left side to beget a girl, on the right side to beget a boy;" or, "the mother should eat freely of peanuts during her pregnancy in order to have a boy, whereas if she wishes a girl she should eat a great deal of sweet stuffs of all kinds." It is said that "the right ovary produces a boy, the left a girl." But should the prospective parents have any doubt, they will be able to tell absolutely which to expect by the fact that "if a patient has a high color, she may expect a girl," whereas "if the unborn baby is a girl, the patient will be more nauseated than if it is a boy." "If the fetal heart sounds are above 140, one may expect a girl, if below, a boy," because of the fact that a woman's pulse is faster than a man's, this having been applied to male and female fetuses. "If the baby is carried high in front it is a boy, but it is a girl if carried low and the patient is broad in the back"; and anyway, "more boys than girls are born in war times."

The question of maternal impressions and markings of the unborn baby is hopeless. The farther one goes, the deeper into the subject one gets. Suffice it to say that all sorts of things, from black cats crossing one's path to eating strawberries and watching workmen either fall from scaffoldings or stagger home drunk, will mark the baby in various ways. This is all so definite, in fact, that one never need be at a loss to account for any peculiar markings or malformation the newly born baby may show. If the mother, preferably with the help of one or both grandmothers, will merely think back over the nine months of pregnancy, the explanation is sure to be found. There are one or two very important things in the way of maternal impressions that should be avoided during pregnancy. "If the patient raises her arms above her head for any reason, the cord will be twisted around the baby's neck." "The mother must not touch her face, as a habit, or the baby will be marked on the face." "If the baby sticks out its tongue after its birth it means that the mother intensely desired some article of food during pregnancy. If some of this is put on the baby's tongue, this habit will cease."

It is very nice to be able to give one's patients a favorable prognosis as to the character of their labor, and this may be done if one will remember that "if a woman has a large mouth she will have an easy labor, but if the mouth is small, a difficult labor." "More babies are born at night than in the day time," a circumstance probably due to the fact that the moon, which ordinarily shines at night, is responsible in some mysterious way, for it is well known that "the change of the moon starts pregnant women into labor."

The old superstition that the first baby often comes early has more than once proved a good alibi. In connection with this, the fact that "a seven months' baby has a better chance of surviving than an eight months' premature infant" is true, either because it sometimes takes a couple of months to find out that one is pregnant, with a subsequent rush to the marriage license bureau, or else this idea is a survival of the time when seven and multiples thereof were considered lucky numbers.

It is said that oil rubbed on the abdomen makes labor easier, and a superstition extant among the negroes to the effect that "intercourse at the beginning of labor will make a light labor" has caused at least one fatal infection that I know of. "Girls make more trouble during labor than boys," and "the breath must not be drawn in during labor, as that draws the baby back," and "one should blow into a bottle to expel the afterbirth if retained," are superstitions

that speak for themselves. "The patient must keep her mouth shut after delivery to prevent the womb from dilating," but if it does dilate and hemorrhage results, "one should put an ax under the bed, edge up, in order to cut the hemorrhage," or "give the patient a piece of the afterbirth to eat, in order to stop bleeding." "For convulsions, tie pieces of fresh onion over the radial artery." So far as twins are concerned, "it is bad luck for a mother to have boy and girl twins because the mother in all likelihood will not survive."

After the patient has had her baby, it must be remembered that "sheets must have been slept in, in order to take off the chill before the bed is occupied by a puerperal woman," and "an abdominal binder preserves the figure after delivery." It is better to acquiesce in the latter idea, else some woman who has grown stout after the arrival of her offspring may blame her physician for the loss of her figure. "If the mother does not sleep after delivery, put her shoes under the bed with the toes out." If the patient complains of after-pains, you can comfort her by pronouncing the dictum, "the more babies the more after-pains" and, so far as that is concerned, "for every child a tooth." If you must tell the patient that her after-pains are due to the fact that the uterine tone is lost more and more with each baby and that greater effort on the part of the uterus is required each time in order to expel collected blood clots, she will probably tell you that you are altogether too scientific. "Eating fish during the puerperium will cause flooding," but even so, "the patient must bleed forty days after delivery for purification."

"A patient must not have her hair combed while in bed after her baby has come, because this causes brain trouble," and this covers the whole subject of puerperal psychosis much more briefly than the average psychiatrist can do it. The ninth and tenth days of puerperium are troublesome, because "the uterus drops back on the ninth day," and "the bones go back with a click on the ninth day." Even though it is considered by those who believe in this superstition that it may be perfectly proper to get up on the fourth or fifth day, one absolutely must be in bed on the ninth day. "Milk-leg occurs on the tenth day," and "a patient must on no account get up for the first time on Sunday."

In connection with the care of the breasts in nursing the baby, there is a series of ideas, chief of which are: "There are nine days of sore nipples." Breast engorgement is called "the weed." "If one catches cold and it settles in the breasts, one will get a 'bealing' or a 'gathering' in the breasts." "The mother's intestinal gas is transmitted to the baby through the milk." "Tomatoes are acid and should not be eaten by a nursing mother." "Acid food taken by the mother sours the milk." "The mother must never drink water while nursing the baby because it will strangle the child." "She should not take hold of cold scissors or any other sharp, cold instrument because the milk will be chilled." "Ice cream freezes the milk."

Where the grandmothers and midwives shine and folklore runs riot is in the care of the young baby. In the first place, "a boy baby's cord should be cut long so that it will be virile when it grows up," and for the same reason, "one should turn the stump of a boy baby's cord upward." Then burnt gauze is applied to the cord, which really is not bad as a sterile dressing. "Give the baby a teaspoonful of water immediately after birth and it will never have colic," and do not worry if the baby gets thin, because "a baby loses weight as long as the cord remains attached." "If a new-born baby has a surface likely to be exposed to friction, moisten with the mother's saliva and it will not chafe." This superstition is offered for what it is worth to the pediatricians, as well as the one that a boy baby crying will rupture himself. Every one knows that "light hurts a baby's eyes," although it does seem reasonable to suppose that babies would close their eyelids if it did. Considering eyes, we should remember that some babies get sore and discharging eyes; so to prevent this, "wash the baby's eyes with urine." If that fails, "breast-milk is put in sore eyes" and will positively cure them.

Both boy and girl babies occasionally have breasts engorged with secretion, and because there is no especial reason for it, it is supposed to have been caused by a witch and therefore is rightly called "witch's milk."

"If a female child's tongue is tied, it need not be touched," for obvious reasons. "If the baby wrinkles its forehead and rolls its eyes upward, it is a sign of weak-mindedness." "Babies must be picked up, else they will become liver-grown." "If a child has convulsions, keep its hands open because if the hands become firmly clenched the child will not relax and will die," or "salt the palms of the hands of a child with convulsions." "Tie up a baby's hands because it gives him a sense of security," and watch carefully so that "if a baby yawns you may make the sign of the cross over its mouth in order to prevent the devil from jumping down its throat." Also, one must always say "gesundheit" or "God bless it" when the baby sneezes, "because at this time its soul leaves its body for a moment."

The dicta that "a baby should be taken upstairs with a gold piece in its hand before being taken down, so that it will rise in the world," and that "a child's finger and toe nails should be bitten off instead of clipped for the first year, so that it will not become a thief," should be carefully observed because of their profound influence on the child's later life. I commend to the pediatricians as being much simpler than fussy formulas in cases of malnutrition the fact that if you "measure a sickly child and repeat a doggerel, each part measured grows. Tie knots in the string used for making the measurements and throw it away."

"After delivery, one must go downstairs backward for the first time," and "having a baby is good for a patient with epilepsy," while "the use of the baby's urine on the mother's face and hands will help preserve her complexion."

It is considered very lucky to be born with a caul, and "any one possessing a caul will never drown at sea." It will be remembered that Dickens' David Copperfield "was born with a caul, which was advertised for sale in the newspapers, at the low price of fifteen guineas. Whether sea-going people were short of money about that time." David says, "or short of faith and preferred cork-jackets, I don't know; all I know is that there was but one solitary bidding and that was from an attorney . . . who offered two pounds in cash and the balance in sherry, but declined to be guaranteed from drowning on any higher bargain. Consequently the advertisement was withdrawn at a dead loss, . . . and ten years afterward the caul was put up in a raffle down in our part of the country, to fifty members at half-a-crown a head, the winner to spend five shillings. I was present myself, and remember to have felt quite uncomfortable and confused at the part of myself being disposed of in that way. The caul, as won, I recollect, by an old lady with a hand-basket . . . is a fact which will be long remembered as remarkable down there, that she was never drowned but died triumphantly in bed, at ninety-two. I have understood that it was, the last, her proudest boast that she never had been on the water in her life except upon a bridge; and that over her tea . . . she, to the last, expressed her indignation at the impiety of mariners and others, who had the presumption to go 'meandering' about the world."

It was David Copperfield, too, who was born "on a Friday twelve o'clock at night." To paraphrase his own words, consideration of the day and hour of his birth, it was decided by his nurse and some sage women of the neighborhood who had taken a lively interest in him several months before there was any possibility of their becoming acquainted with him, that he was destined to be unlucky in life and privileged to see ghosts and spirits, both these gifts reaching to all unlucky infants of either gender, born toward the small hours on a Friday night.

The natural result of all this knowledge, with the evil results that must follow any lack of such knowledge, is that obstetrics has become a specialty! I defy any one to attempt to know all these vital facts that have been outlined unless he gives the subject his undivided attention. Even then he may not do at all, because "it is most unlucky to have a left-handed doctor in attendance on you during confinement."

It would be a waste of time to gather together these ideas merely for the amusement they might furnish. The lesson to be gained from this collection is that women are unduly impressionable, at least about obstetric affairs. When it is considered that obstetrics forms one of the main topics of conver-

sation at Red Cross meetings and bridge parties, it will be understood how such a multitude of fanciful ideas have sprung up and can be kept in existence. Many of these things are firmly believed; and while only a few of them are likely to cause actual physical harm to a pregnant woman, the mental impression on her is most pernicious. Recently, a patient of mine neglected her teeth to such an extent that she developed a pyorrhea which was followed by pyelonephritis. Nothing that I could say could convince her that it was safe to have dental work done during her pregnancy.

A few women seem to take peculiar delight in telling all the horrible obstetric tales they can think of to their pregnant friends, and the doctor is constantly called on to combat the fears that thereby arise.

Mental disturbances of pregnancy and the puerperium are dreaded complications. The less the pregnant woman thinks about herself, the better, so long as her condition is normal and her progress is being watched by a competent physician. Pregnancy is a physiologic process, not to be shrouded in mystery and surrounded by superstitious ideas. It is my opinion that if the physician is more or less familiar with some of the superstitions I have mentioned, he is better able to allay the fears and explain away the doubts that these old-wives' tales produce.

Report of Harvard Cancer Commission

The work of the Collis P. Huntington Memorial Hospital for Cancer Research and of the laboratories of the Cancer Commission of Harvard University for the year ending June 30, 1917, as summarized by Dr. J. Collins Warren, chairman of the commission, states that in a period of a little over five years the commission has been able to build, equip and conduct a hospital of twenty-five beds and to establish a plant, including its dispensary and laboratories, costing about \$600,000, and involving an expenditure annually of about \$50,000. The research in cancer was at first conducted by the pathologist and the parasitologist, but thus far cancer has not been placed on a microbic basis. The methods of treatment tested include the Hodenpyl serum and the colloidal solutions. The more recent researches and tests have been with reference to the employment of radium and other forms of the application of light rays, and the physicist has been called in, and under the direction of Dr. William Duane, a department of biophysics has been established by the corporation of the university. In connection with the experts of a plant manufacturing electrical apparatus, Dr. Duane has been earnestly engaged in the development of a high frequency and high tension generating plant to be used in connection with the Coolidge tubes for the production of deep penetrating rays which will have the effect of the gamma rays of radium. In this connection, Dr. W. T. Bovie has conducted productive research on the action of the rays of light on the living cell in a state of active division, and has secured new apparatus for carrying on the work. These researches have an important bearing on the problem of cancer growth. The possible chemical solution of the cancer problem has been studied by Dr. Henry Lyman, and Dr. Redfield has made important observations of the effects of radium rays on embryonic tissues. An additional building to be occupied by the laboratories is demanded and will be provided on account of the constant expansion of the work. For the physicians and hospitals of the state, free diagnostic service with relation to cancer has been provided, in connection with which microscopic examinations will be made by competent authorities. Instruction in nurses' laboratory technic has been given during the year by Miss Gibson, who has prepared a textbook on the subject. The chairman says that the work of the past year has shown that slow but steady progress is being made toward the solution of the proper method of treatment of cancer. In the more superficial forms many cures are effected by radium, of which the hospital now has 1 gram. In some internal forms of malignant disease, the results of radiotherapy are encouraging, even though alleviation of suffering for a period is the only result in many cases. Too much stress, the chairman says, cannot be laid on the fact that, in its early stages, cancer is a curable disease.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Ophthalmological Society, New London, Conn., July 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Illinois State Medical Society, Springfield, May 21-23.
Maine Medical Association, Portland, June 4-6.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Meeting held at Philadelphia, March 29 and 30, 1918

(Concluded from page 1330)

A Skin Reaction to Pneumotoxin

MR. CHARLES WEISS, Philadelphia: This study has been instituted with the idea of using the endocellular toxin of the pneumococcus (hematoxin) rather than the bacterial emulsion. The protein living free pneumococci were dissolved in sodium cholate. A specific reaction was obtainable in guinea-pigs and also in persons suffering from lobar pneumonia. The guinea-pigs were sensitized by a sublethal dose of pneumotoxin. The skin test would appear to be a true test for the presence of pneumotoxin in the body of the animal. By various chemical tests it is found that the pneumotoxin is a true protein, and in human lobar pneumonia cases there was a positive reaction demonstrable throughout the toxemia. In children the reaction was most characteristic. In other cases tested, in such diseases as tuberculosis and appendicitis, a negative test was given to the pneumotoxin.

The Influence of Arsphenamin (Arsenobenzol) and Mercury on Antibody Production

DRS. JOHN A. KOLMER and I. TOYAMA, Philadelphia: The possibility of certain drugs acting as antigens has been the theme of several studies by different workers. The antigenic action of drugs may account for acquired drug tolerance and also aid in resistance to infection by stimulating antibody production against microparasites, apart from direct action of the drug on the parasite. The latter phase of the subject is the one particularly dealt with here. Considerable evidence points to the conclusion that many drugs exert a stimulating action on antibody production by the tissues. Such drugs as arsenous anhydrid, phosphoric acid and mercuric chlorid, administered by mouth, are found to act in this manner. Arsphenamin appears to stimulate agglutinin production, according to some workers. The present experiments were conducted on rabbits, to determine if small daily doses of arsphenamin and mercuric chlorid tended to increase antibody response to alien erythrocytes or to typhoid bacilli. After a series of experiments, five in all, on a large number of rabbits and control animals, it was found that no increase of antibody production was shown, after injections of arsphenamin or mercuric chlorid. On the contrary, it would seem that there was a lowering of antibody production, probably due to lessening of resistance by toxic effects. Further experiments, however, are in progress, on the action of these drugs

in experimental trypanosome infections. It is felt that such work should be done on human serums, as work on the serums of lower animals may not be a true index in human cases.

The Bacteriologic Study of Postoperative Pneumonia

MISS MIRIAM OLMSTEAD, New York: I studied 130 cases of postoperative pneumonia, and recorded the recovery of a pathogenic organism in thirty-one cases, a percentage of 23.8. In two cases there was the Type I pneumococcus in the blood stream, one of these pneumococci in preoperative and postoperative sputum. In one there was the Type II pneumococcus in the sputum, before and after operation, and the urine was precipitated by pneumococcus Type II serum. In two cases with an atypical Type II organism in preoperative and postoperative sputum, the etiology was established, in one by a positive agglutination test of the patient's serum, and in the other by a urine precipitin reaction with Type II serum. Type III was established as the inciting factor in five cases; in one there was a positive blood culture; from one the organism was obtained by lung cultures at necropsy; the blood of two agglutinated the Type III, recovered from the postoperative sputum. The urine of these two, and one other, who had Type III in the preoperative sputum specimen, gave a precipitin reaction with Type III serum. In eighteen cases, Type IV was the factor, once being recovered from the blood, and seventeen cases gave a positive agglutination reaction with strains from the sputum. In one of these cases the urine precipitated with Type IV serum. In one case a hemolytic streptococcus was found in the blood stream, and in another a hemolytic streptococcus in the sputum gave a positive thread reaction with the patient's serum. A mucoid streptococcus was found in the sputum and chest fluid in one case. Some of these organisms were undoubtedly the inciting factors of other postoperative pneumonia cases, but no direct evidence could be obtained as to this view. The most common factor was Type I.

DISCUSSION

DR. A. F. HESS, New York: Did pneumonia develop among cases in which the pneumococcus was absent, and if so, how many? In what percentage of cases was there discrepancy in the type of pneumococcus in the preoperative and the postoperative sputum when pneumonia developed?

DR. J. A. KOLMER, Philadelphia: How many patients with pneumococci in the blood stream died? How many showing precipitin reaction died? My impression is that persons showing the precipitin reaction have rather a bad prognosis.

MISS OLMSTEAD, New York: Those persons who gave a urine precipitin test did not seem to have a bad prognosis. No patient died. Three patients had Type III in the sputum and gave precipitin test reactions. No patient died. In reply to Dr. Hess, in three cases there were postoperative findings of pneumococci in the sputum, when none had been demonstrable before operation. The majority of patients had pneumococci before and after operation.

Active Immunization Against Pneumonia

DR. R. KOHN, Boston: Lister gave large doses of heated dead pneumococci of virulent types, at six or seven day intervals. In active immunization against all types, agglutinins and opsonins could be demonstrated eight months afterward. Reports constantly show the desirability of protection against pneumonia. It is believed, however, that immunity against pneumonia was of short duration and that the immune serum deteriorates. Tests were made to discover the protective power of blood serum against infection in white mice, injected intraperitoneally. It was found that normal human serum would protect mice against the minimal lethal dose. Some serum protected against a particular strain. It was found that most persons could be immunized against Types I and II, possibly III, and that after nine months the immunity had not diminished. It may last one year, possibly more. There is no evidence that it is absolutely protective. Adverse conditions may result in a lowering of the danger point.

DR. AUGUSTUS B. WADSWORTH, Albany, N. Y.: I feel a great deal of interest in this work. I have found that different

individuals, exposed to different pneumococcus infections, manifest different degrees of immunity from time to time.

DR. WILLIAM H. PARK, New York: I can cite an interesting case. In the South of France there was a great deal of pneumonia at one camp. The men were vaccinated with cultures from the camp, and in eighteen days the pneumonia disappeared. Another camp used the same vaccine and the results were negative. Using the culture from a camp 50 miles distant did not seem to correspond to the type of infection. It was striking that the cessation of the epidemic in the first camp followed the use of the vaccine.

The Production of Pneumococcus Serum, and the Corresponding Curves Obtained by Protection and Agglutination Tests

DR. G. B. WHITE, New York: The unusual demand for antipneumococcus serum has urged us to put forth every effort to increase the yield from our serum horses. The problem thus has arisen as to how best to spare the horses. The conservation of the animals is an important thing. The heavy draft horses seemed to stand the bleedings better; the lighter types do not last long. A vicious horse with "a great deal of game" is the best type of producer. Type I strain, virulent culture, is necessary to produce Type I antiserum. If live organisms are used, the preparation is made fresh each time and injected intravenously. Three daily injections of dead cocci are made, then three of living; after a week this is repeated, and six days after the second weekly injection the horse is bled. A standard method had been evolved by which 1 c.c. of serum protects against 0.1 c.c. of Type I pneumococcus. The serum is tested against the maximal amount of culture it will neutralize; also the smallest amount of serum that has protective power is estimated.

DISCUSSION

DR. A. P. HITCHENS, Glenolden, Pa.: What is the plan of bleeding as regards the time of injections? What is the interval between the injections?

DR. J. F. ANDERSON, Washington, D. C.: We have been using a method of six daily injections, in three courses, with even day intervals. The horse can be bled in thirty-two days. A standard was made to protect against 0.1 c.c., 0.2 c.c. and 0.3 c.c. culture.

DR. G. W. MCCOY, Washington, D. C.: One point is the unreliability of the agglutination power as compared to the protection value. We have had strains sent back marked "N. G." because they did not agglutinate Type I pneumococci, but still there was a high protection power. All commercial serum, before being sent out, is tested by the Hygienic laboratory.

DR. A. B. WADSWORTH, Albany, N. Y.: Did the high protective serum have any agglutination power at all?

DR. MCCOY: No; it had no agglutination power at all.

DR. WADSWORTH: Was it controlled?

DR. MCCOY: Yes.

DR. WHITE: The horses were bled six days after the last injection. Two courses of injections preceded bleeding. We lost four horses from pneumococcus infection. The first two were protective against 0.1 c.c. culture. Both animals had no pneumonia of Type I.

Preliminary Tests to Blood Transfusion

DR. ARTHUR F. COCA, New York: There is little to add to this practically closed subject, but certain facts should be kept in mind in regard to blood constituents, where transfusion is required. Individuals fall into four groups in regard to the red corpuscle qualities. Two different agglutinable substances are present, *a* and *b*, and the plasma of human beings contains iso-agglutinating substances A and B. It may be stated that *a* is never present with A. All possible combinations of the substances, however, occur in different individuals; as many as 4,000 have been demonstrated. The four groups are: I, with iso-agglutinable substances A and B in the plasma; II, with BB in the plasma; III, with A; IV, substances lacking. Most individuals are of Types I and II. Transfusion is most favorable when donor and recipient

belong to the same group. Most unfavorable results arise when the recipient's plasma contains agglutinins for the donor's corpuscles. As regards technic: Venous blood is obtained, citrated, and the serum of the patient is mixed with washed corpuscles of the donor, and vice versa. If agglutination be present, it does as much harm as hemolysis; hemolysis never occurs without agglutination. One point to bear in mind is that the donor's blood, not being anemic, is richer than the recipient's blood. One part of the donor's blood to nine of the patient's is sufficient. In this proportion agglutination will take place at once, if at all, and can be readily detected.

DISCUSSION

DR. JOHN A. KOLMER, Philadelphia: I should like to refer to a technic that has been employed during the past year and is somewhat similar to that demonstrated by Dr. Coca; this is the microscopic method with Lee's technic. Two tubes are used, one containing 1 c.c. of sodium citrate in a dry test tube, and one with blood. We use blood from the patient and from several donors (separately). The clots are broken up in the platinum loop. We use two drops of patient's serum with one drop of corpuscle suspension of each donor; then two drops of serum from donor and one drop of corpuscles from the patient. Observations are made at the end of fifteen minutes, when agglutination, if any, is marked.

DR. A. F. COCA, New York: The choice of methods lies with the individual and what apparatus he has at hand. As regards transfusion without preliminary tests, it is known that death has occurred from this procedure, and the surgeon may meet serious trouble.

The Isolation, Purification and Concentration of Immune Hemolysin

DR. M. KOSAKAY, Philadelphia: These studies were made in the Institute of Forensic Medicine, Tokio Imperial University. The concentration of antibodies for the purposes of serum therapy, and the elimination of serum proteins in order to avoid serum sickness, were the objects of the research. First, elimination of serum proteins was attempted; second, extraction of immune bodies by antigens and the use of inorganic substances, such as charcoal. Separation of antibodies from the antigenic substance was found possible. Antibodies were found to be coagulable by high temperatures. The serum elements were removed by washing in sodium chlorid, and the antibody in the final preparation could be measured. The corpuscles were treated with hypertonic sugar solution, which does not produce hemolysis; the corpuscles thus remained intact with the hemolysins attached. Some antibodies were discharged into the sugar solution at ordinary temperature, but more were obtained by raising the temperature, to as high as 60 C., without producing hemolysis. Five sixths of the antibodies were thus discharged, and the concentration was found to be of some value. The supernatant fluid was found to contain hemoglobin, and the attempt was made to get rid of this protein by shaking the sugar solution with ether. This produced three layers: first ether; second, gelatinous mass; third, clear layer of sugar and hemolysins. The latter was dialysed and the sugar removed. When the sugar-free, salt-free solution was evaporated, the hemolysin was left and was five-sixth full strength. It was free from protein reactions.

DISCUSSION

DR. WILLIAM H. PARK, New York: Was Dr. Kosakay able to separate the antibodies from the bacteria, as well as from the red cells?

DR. JOHN A. KOLMER, Philadelphia: Is it possible to secure the hemolysin alone, from the immune serum by this method? Is the final solution free from hemiagglutination?

DR. M. KOSAKAY, Philadelphia: It is a good idea to make the hemolysin free from bacteria. It has not been tried. I have not been able to separate the hemiagglutination from the hemolysin.

A Method of Preparing Bacterial Antigens

LIEUT. J. C. SMALL, U. S. Army: This work is based on the fact that fatlike substances occurring in the bacterial cell

greatly interfere in the aqueous solution of bacteria. No entirely satisfactory method for extraction of bacteria has been accomplished. All methods are directed toward disintegration of the bacterial cell, with the idea of extracting the fragments; but this is better accomplished if the fat and lipid constituents of the cell be removed. In the present method a chloroform-ether mixture was used to extract the fatlike substances from dried bacteria. The residue was suspended in physiologic sodium chlorid solution. The chloroform ether extraction was found to break up the integrity of the bacterial cell, so as to facilitate its more ready extraction of the fragments by aqueous solution.

DISCUSSION

DR. J. A. KOLMER, Philadelphia: With regard to heating immune serums at 62 C., I think there is deterioration of specific antibodies present in the serum. This is, however, difficult to measure, as it is hard to differentiate specific from nonspecific factors.

MISS M. A. WILSON, New York: In our experience there is no deterioration. We do not add preservative to the antigen.

DR. H. VON WEDEL, New York: In using tubercle bacilli antigen, it was heated five or six times at intervals, and the value remained, as far as I could tell, exactly the same.

DR. G. H. A. CLOWES, Buffalo: If the alkaloids were entirely removed, the temperature could be raised considerably without causing any effect.

LIEUT. J. C. SMALL: I noticed the nonspecific factors in a large series of animals which we were running for typhoid vaccines. Immunization is being carried on and complement fixations and a very large percentage of animals show non-specificity. Serums with the exception of paratyphosus A, do not show anticomplementary effect.

Experiments on the Passive Transfer of Antibodies to the Cerebrospinal Fluid

DRS. JOHN A. KOLMER and S. SEKIGUCHI, Philadelphia: The removal of blood from normal dogs, followed by intravenous injection of human syphilitic serum (from 30 to 50 c.c. per kilogram of body weight) caused small amounts of syphilis reagin in the cerebrospinal fluid. This reagin was found in the fluid as early as three hours after the transfusion of syphilitic serum. The amount of reagin found was small. After irritation of the meninges by sterile horse serum, more reagin was found in the cerebrospinal fluid. All traces of reagin disappeared from the cerebrospinal fluid of the dogs within forty-eight hours. Dog typhoid immune serum, injected into a normal dog, intravenously, caused traces of agglutinin to appear in the cerebrospinal fluid within three hours; it disappeared within forty-eight hours. It was thus shown that the passage of antibody from the blood to the cerebrospinal fluid is possible, when the antibody exists in the blood in a high state of concentration. In human syphilis the reagin may pass from the blood, but its presence in the spinal fluid generally indicates the presence and activity of *Spirochaeta pallida* in the organs of the nervous system.

DISCUSSION

DR. A. P. HITCHENS, Philadelphia: The question whether the antibodies can find their way from the blood to the spinal fluid is important, especially in cerebrospinal fever. In cases of severe meningitis in the Army camps, we gave intravenous doses as well as intraspinal, of the antimeningitis serum. Results of this line of treatment are encouraging. Dr. Kolmer's work seems to show that this line of treatment is of value.

DR. J. BRONFENBRENNER, Boston: It is a question as to whether bodies can pass from the blood into the spinal canal. I doubt whether this is possible when the pressure is higher in the spinal canal than in the blood. English workers have concluded that there is a toxin produced by the meningococcus and that this toxin is forced from the spinal canal into the blood stream. If the latter contains antitoxin it would get into the serum, and the improvement would be due to that.

DR. A. P. HITCHENS, Glenolden, Pa.: About every eight hours during the severe part of the disease, we remove the spinal fluid, and with the rapid filling up of the canal again some effect is produced.

DR. J. A. KOLMER, Philadelphia: This paper simply dealt with the passage of antibody from the blood to the spinal fluid under normal conditions. I cannot agree with Dr. Bronfenbrenner's remarks on the spinal fluid. This is a secretion of the choroid plexus, at least during health. Even when the tension is high, production continues and increases the hydrocephalus. Evidence would prove that the fluid is produced continuously even after rise of pressure.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

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- 1 *Spina Bifida Occulta. W. M. Brickner.—p. 473.
- 2 *Diataxia Cerebralis Infantilis; Ataxic Type of Cerebral Birth Palsy. J. R. Hunt, New York.—p. 503.
- 3 Angina Abdominis. E. H. Goodman, Philadelphia.—p. 524.
- 4 *Relation of Lupus Erythematosus Discoides to Tuberculous Infection. R. S. Weiss and J. J. Singer, St. Louis.—p. 528.
- 5 *Aneurysm of Abdominal Aorta with Rupture into Duodenum. S. B. Marlow and F. H. Doubler, Boston.—p. 540.
- 6 *Relation of Congenital Syphilis to Mental Deficiency. W. H. Higgins, Richmond, Va.—p. 549.
- 7 Multiple Serositis; Report of Case with Necropsy Findings. G. H. Evans, San Francisco.—p. 553.
- 8 *Estimation of Urobilin and Urobilinogen in Duodenal Contents. H. Z. Giffin, A. H. Sanford and T. L. Szlapka, Rochester, Minn.—p. 562.
- 9 *Pleural Eosinophilia. R. Bine, San Francisco.—p. 579.

1. **Spina Bifida Occulta.**—Brickner believes that the following are legitimate indications for operation in cases of spina bifida occulta: 1. In infants and children, spina bifida occulta with congenital lipoma or hypertrichosis, even though without any symptoms—to reduce the spinal hernia into the canal or to meet any other indication that is found, in the hope of obviating the development of symptoms during adolescence. 2. In adults, spina bifida occulta with sufficiently serious and especially with progressive symptoms, whether or not the spina bifida occulta is marked by external signs (lipoma, hypertrichosis). Progressive gangrene of the lower extremities and incontinence of the sphincters are indications sufficient to justify taking this risk. Brickner has found records of twelve operations. He adds five to these all of the seventeen without mortality, and some with decided benefit. In all five operations for spina bifida occulta within Brickner's personal experience there was no untoward result, and the wounds in all cases healed per primam and without any spinal infection.

2. **Diataxia Cerebralis Infantilis.**—The cases cited by Hunt represent an ataxic type of cerebral diplegia which stands in striking contrast to the spastic type of Little and the flaccid or atonic type of Förster. In all of the cases there was a history of severe injury at birth followed by retarded and defective development of the power of motor coordination. There was no paralysis, and if such existed after birth it was of a transient nature and the gross motor power was eventually completely restored. There were no evidences of spasticity. The active and passive movements as well as the reflexes revealed none of the characteristic signs of pyramidal tract involvement. The tonus of the muscles was slightly reduced and the tendon reflexes showed a corresponding reaction, and were moderately diminished and difficult to elicit. There was no undue flexibility of the extremities as occurs in the severer forms of hypotonia. The essential symptom was a generalized ataxic disturbance affecting the gait, station, articulation and the use of the individual members. This was present in all positions, including the recumbent posture, and Hunt emphasizes the persistence of an ataxic disturbance of the arms and legs in the recumbent posture.

when no effort was required to maintain the equilibrium. The ataxic disturbance was also increased by closure of the eyes, by mental excitement and by any effort to carry out precise and definite movements.

The disturbance of coordination was bilateral and fairly symmetrical. It affected the finer movements of the hands and fingers as well as movements of the larger joints, and seemed to be equally distributed in this respect. There was, at times, a slight tendency to motor unrest, somewhat suggestive of a choreic disturbance, which Hunt regards as a manifestation of ataxia and the effort to maintain posture. The disorder of motility was clearly ataxic, and was characterized by an inability to carry out precise and definite coordinate movements. It was not in any sense a true chorea or thetosis, the restless atactiform movements in certain postures merely suggesting the choreiform tendency. Dysarthria was also a well marked symptom, and was regarded as part of the ataxia. There was no nystagmus. The sensibility, both superficial and deep, so far as could be determined by the usual clinical tests, was quite normal. Especially noteworthy was the preservation of the sense of posture and the stereognostic sense. In none of the cases was there a serious mental defect. The retardation was no more than might follow a severe disturbance of speech and incoordination and the restriction of opportunity imposed on the child. In none of the cases was there any tendency to grand mal or petit mal seizures. The convulsions occurring immediately after the birth had manifested no tendency to recur in later life. Some improvement had taken place in all of the patients, and there were no indications of an increasing mental deterioration or progression of other symptoms. In this respect the ataxic form resembles the spastic type of Little with its well recognized tendency to improvement.

4. Lupus Erythematosus Discoides and Tuberculosis.—Twelve cases of lupus erythematosus discoides were examined for tuberculosis by Weiss and Singer. All available diagnostic methods were employed and a conclusion was reached in each case by study of the combined results and not from any single diagnostic procedure. Ten out of twelve of these cases showed indubitable evidence of tuberculosis, past or present, and it is believed that the other two are also tuberculous. In only one of their series of cases that were definitely tuberculous was there any likelihood of the presence of a circulating tubercle bacillus toxin. In the authors' opinion no evidence has been presented as yet that shows a relation between lupus erythematosus discoides and tuberculous infection or tuberculous disease. It has been shown that tuberculosis past or present may be demonstrated in practically all cases of lupus erythematosus discoides, and this fact should only be interpreted as further evidence of the ambiguity of tuberculous infection and not as evidence of an etiologic relationship between the two diseases.

5. Rupture of Aneurysm of Abdominal Aorta.—Marlow and Doubler report two cases of aneurysm of the abdominal aorta apparently of arteriosclerotic origin which ruptured into the duodenum.

6. Relation of Congenital Syphilis to Mental Deficiency.—The results of the serologic studies on fifty cases admitted to the psychologic clinic are recorded by Higgins. The material for this clinic is drawn largely from the retarded classes of the Richmond public schools, the juvenile court, and other agencies interested in the social welfare of the city. They were sent for the purpose of obtaining the estimate of their mental development as well as a clue to any factors influencing their mental and moral stamina. In this series 21, or 42 per cent., gave a positive Wassermann reaction. Their ages varied from 7 to 16 years. The series is composed largely of the middle and high-grade imbecile and only exceptionally with the low grade idiot. Quite at variance with other reports is the striking relative absence of congenital syphilis or organic lesions of the nervous system. Approximately one half showed a general glandular enlargement. Defects of vision, tonsils, etc., were found no more frequently than in the nonsyphilitic series. The most interesting and suggestive physical aspect was the malformation and caries of the teeth. Temperamentally the series pre-

sented an interesting picture; fourteen of the twenty-one were either incorrigible, disobedient, or displayed fits of temper unlike those usually seen in the normal child. Higgins feels that the listless, low grade idiot is so likely to be of syphilitic origin as the high strung, passionate child with wayward tendencies.

8. Urobilin and Urobilinogen.—With a few slight modifications of technic the authors have used the method of Schneider in estimating quantitatively the amounts of urobilinogen and urobilin in the duodenal contents obtained by means of an Einhorn tube. In a group of twenty-two miscellaneous cases, low values were obtained in patients with anemia from hemorrhage, carcinoma, tuberculous peritonitis, syphilis, portal cirrhosis, chronic infectious arthritis, and gallstones. They were low in three of four patients with myelocytic leukemia. The amounts of these pigments were especially low in cases of anemia from hemorrhage. In hemolytic jaundice the values were consistently high even when severe anemia was not present. The values fell appreciably after splenectomy, but not as promptly as in pernicious anemia. In pernicious anemia the amounts of urobilin and urobilinogen in the duodenal contents were above normal in 84 per cent. of the cases. The amount of urobilinogen was constantly increased when the anemia was severe. Patients over the age of 55 showed lower values than younger patients. The values presented no definite relationship to the size of the spleen. Following splenectomy there was a very definite decrease in the amounts of urobilin and urobilinogen; the decrease in urobilinogen was especially noticeable. The amounts of bilirubin in the duodenal contents did not run constantly parallel to the amounts of urobilin and urobilinogen.

9. Pleural Eosinophilia.—Bine reports two cases of atypical pulmonary infections, followed by pleural effusions. In the first case the blood showed 1 per cent. eosinophils, the pleural fluid 51 per cent. Four years later, long after the patient's complete recovery, the blood still contained 32 per cent. eosinophils. In the second case the pleural fluid contained 30 to 40 per cent. eosinophils, the blood 16 per cent., then 14.5 per cent., 10 per cent., and 19 per cent., three weeks after the first count.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

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- 10 Woman's Hospital in State of New York. J. R. Goffe, New York.—p. 529.
- 11 Intermittent Hydronephrosis and Pyonephrosis in Female with Special Reference to Abnormally Movable Kidney and Ureter. D. Bissell, New York.—p. 543.
- 12 Hypernephroma of Kidney. L. W. Strong, New York.—p. 577.
- 13 Case of Uterus Bicornis with Rudimentary Hemiatretic Horn. E. Schwarz, New York.—p. 583.
- 14 Perforation of Vagina by Papillary Cyst of Ovary. H. Grad, New York.—p. 588.
- 15 Some Problems in Gynecology. A. Flint, New York.—p. 599.
- 16 Toxemias of Pregnancy. F. A. Dorman, New York.—p. 604.
- 17 Ileus Following Gynecologic Laparotomies. E. W. Pinkham, New York.—p. 614.
- 18 Statistical Study of One Hundred Cases of Pyosalpinx. H. Grad, New York.—p. 630.
- 19 Surgical Record System of Woman's Hospital. L. Broun, New York.—p. 642.
- 20 *Bloodless Repair of Cervix Uteri. A. Heineberg, Philadelphia.—p. 652.
- 21 Present Status of Deep Roentgenotherapy. F. J. Shoop, Brooklyn.—p. 656.
- 22 Use of Corpus Luteum Extract Hypodermically in Cases of Repeated Abortion without Demonstrable Cause. J. C. Hirst, Philadelphia.—p. 662.
- 23 Safeguarding Children in War Time. T. King, New York.—p. 678.

20. Bloodless Repair of Cervix Uteri.—The method employed by Heineberg is as follows: Hemostasis is secured through the use of two angulated tenaculum forceps and a rubber ring such as is sometimes employed to hold together the tops of umbrella ribs. The chief feature of the forceps in addition to the angulation is a pedunculated ball which is attached to the outer aspect of each blade above the angle. The balls serve the purpose of retaining the rubber ring in a position to compress the cervix above the grasp of the forceps. The forceps also act as lateral retractors of the vagina.

American Journal of Public Health, Boston

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- 24 How Health of British Army is Maintained. G. G. Nasmith, Toronto.—p. 259.
- 25 Some Considerations Affecting Replacement of Men by Women Workers. J. Goldmark, New York.—p. 270.
- 26 Chicago's Tuberculosis Problem. J. D. Robertson, Chicago.—p. 277.
- 27 Practical Standards for Factory Sanitation. G. M. Price, New York.—p. 288.
- 28 Report of Committee on Nonresident Deaths. W. R. Batt, Harrisburg, Pa.—p. 290.
- 29 Report on Registration Affairs. W. H. Davis, Washington, D. C.—p. 291.
- 30 Hospital Statistics as Aid to Public Health Administration—Philadelphia Plan. C. S. Miller, Philadelphia.—p. 293.
- 31 Standardization of Antityphoid Vaccine. G. W. McCoy, Washington, D. C.—p. 299.
- 32 Need for General System of Sanitary Supervision of Industries in Times of War. E. R. Hayhurst, Columbus.—p. 301.
- 33 Report on Visual Acuity of Members of Corps of Cadets, at Military Training Camp, Peekskill, N. Y. F. A. Woll, New York.—p. 304.
- 34 Concentration of Glucose and Lactose and Viability of Coli-Like Bacteria. H. A. Burling and M. Levine, Ames, Iowa.—p. 306.

American Review of Tuberculosis, Baltimore

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- 35 Elementary Concepts of Tuberculosis. A. K. Krause, Baltimore.—p. 63.
- 36 Control of Tuberculosis. H. M. Bracken, Minneapolis.—p. 72.
- 37 One Hundred and Thirty-One Cases of Tuberculosis Treated by Artificial Pneumothorax. W. B. Kendall and C. C. Alexander, Gravenhurst, Ont.—p. 79.
- 38 Acute Pulmonary Abscess Treated by Artificial Pneumothorax. S. Simon and S. Swezey, Denver.—p. 92.
- 39 Case of Pleural Shock. J. B. McKnight, H. F. Gammons and W. M. Knowles, Carlsbad, Texas.—p. 96.

Annals of Surgery, Philadelphia

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- 40 *Chlorin Antiseptics in Civil Hospital Use. J. A. Hartwell, New York.—p. 385.
- 41 *Bismuth Paste in War Surgery. E. G. Beck, Chicago.—p. 392.
- 42 Injuries to Malar Bone and Zygoma. T. W. Todd, Cleveland.—p. 403.
- 43 Kineplastic Amputations. V. Gaudiani, New York.—p. 414.
- 44 Splint for Treatment and Transport of Cases of Fracture of Femur. J. H. Stevens, Boston.—p. 429.
- 45 Hospital Bed Designed for Military Hospitals. G. W. Hawley, France.—p. 435.
- 46 Tying of Surgical Knot. A. R. Grant, Utica, N. Y.—p. 439.
- 47 *Biologic and Clinical Evidence of Therapeutic Value of Radium and Roentgen Rays in Cancer. I. Levin and M. Levine, New York.—p. 442.
- 48 Conservation of Thyroid in Hyperthyroidism. J. Rogers, New York.—p. 447.
- 49 Madderized Bone as Material for Bone Grafts. M. DeG. Thurlow and C. C. Macklin, Baltimore.—p. 454.
- 50 Use of Small Bone Transplants in Bridging Bone Defect. F. W. Bancroft, New York.—p. 457.
- 51 Case of Isolated Abscesses of Long Bones. A. M. Miller, Danville, Ill.—p. 460.
- 52 Nitrous Oxid, Oxygen, Anesthol Sequence in Oral Surgery. C. H. Sanford, New York.—p. 462.
- 53 Rectus Muscle Transposition in Certain Cases of Inguinal Hernia. W. S. Schley, New York.—p. 465.
- 54 Use of Olive Oil in Blood Vessel Suturing. J. S. Horsley, Richmond, Va.—p. 468.
- 55 Saphenous Varix Simulating Femoral Hernia. E. H. Richardson, Baltimore.—p. 471.
- 56 *Recurrence of Symptoms Following Operations on Biliary Tract. E. S. Judd, Rochester, Minn.—p. 473.
- 57 Acute Dilatation of Stomach Following Prostatectomy; Report of Case. H. L. Kretschmer, Chicago.—p. 489.
- 58 Mechanism of Obstruction in Prostatic Adenoma. A. Hyman, New York.—p. 493.
- 59 Teratoma of Sacrum; Glioma of Upper Abdominal Cavity. J. E. Thompson, Galveston, Texas.—p. 496.
- 60 Repair of Complete Rectovaginal Lacerations. I. S. Haynes, New York.—p. 501.
- 61 Cancer of Rectum. J. M. Lynch, New York.—p. 504.

40. **Chlorin Antiseptics in Civil Hospital Use.**—The following conclusions have been reached by Hartwell and his associates after four months' intensive study at Bellevue Hospital with the chlorin antiseptics: 1. The establishment of the Carrel-Dakin technic presents no undue difficulty. 2. The results obtained in the military hospitals abroad can be duplicated in general civil hospitals in dealing with traumatic cases. 3. These antiseptics are not as efficient in controlling spontaneous infections, that is, those not directly due to trauma. They are not as valuable in burns as other forms of

treatment. 4. Reasonable care prevents skin burns in all circumstances. 5. Dichloramin-T in either chlorinated eucalyptol or chlorinated paraffin oil is not a completely efficient substitute for the sodium hypochlorite solution. These men feel that four months' experience has satisfactorily demonstrated the practicability and the advantages of using the Carrel-Dakin treatment in those civil hospitals where a considerable number of traumatic cases are treated. In those civil hospitals where a traumatic service is not an important part of the hospital work, Hartwell believes it is doubtful whether the inauguration of this treatment will meet with great success, for the reason that the call for its use will not be frequent enough to make it an established routine. Without this, it probably would be no more effectively applied than is any other special form of treatment which is only occasionally demanded in a general hospital service, and if ineffectively applied it cannot be expected that satisfactory results will follow.

41. **Bismuth Paste in War Surgery.**—Beck's experience leads him to advise the use of bismuth paste in war surgery, where the majority of wounds are infected before they reach the base hospital. Carrel employed the method at the French base hospital at Compiègne in 1916 with satisfactory results, with material and instruments Beck sent him at that time. Richter, in charge of one of the Red Cross units which for a time worked in a German base hospital, also used this method of injecting suppurative wounds resulting from shrapnel, gunshot and bayonet, and reported most satisfactory results. Beck urges that in those cases in which early sterilization was not obtainable and the wounds persist in suppurating, the bismuth paste injection or similar formula should be employed, before another radical operation is resorted to. In the residue of cases in which the bismuth paste treatment is not effective, the sutureless skin sliding operation should be employed, since with this method we are able to clear up nearly all of these apparently hopeless cases.

47. **Value of Radium and Roentgen Rays in Cancer.**—On the basis of clinical and experimental investigations the authors conclude that: It is advisable to radiate malignant tumors not only after an operation, but in a certain class of cases also before an operation so as to sterilize and inhibit the proliferation of those cancer cells which may be left behind or transplanted elsewhere in the course of an operation. Such a procedure does not prolong appreciably the time preparatory to an operation and presents no danger to the patient. The fear expressed by some clinicians that the raying may occasionally irritate and increase the rate of growth of the tumor is unfounded. There is no clear experimental evidence of such irritating action of the rays on young proliferating cells. The result is always an inhibition. The clinical evidence of the existence of an irritating action of the rays is also very vague and not convincing. One must keep clearly in mind the fact that any malignant tumor may suddenly increase its rate of growth and consequent malignancy without any relation to the instituted mode of treatment. In a series of twenty cases of carcinoma of the rectum the following observation was made. In the cases in which an attempt at a radical operation was made the condition recurred with greater rapidity and malignancy than in those cases in which there was no operation done and only radium and roentgen-ray treatment given or an exploratory was done followed by radiations. Similar observations are surely made by any surgeon with a large cancer material. In this series of cases the malignant recrudescence of the disease was not caused by the operative interference, but accidentally took place after the operation. The same holds true of the recrudescences which occasionally may take place after radium or roentgen-ray treatment, thus preoperative and postoperative radiations of cancer as a method of inhibiting the proliferating power and the consequent clinical malignancy of the tumor-cells is of undoubted value and presents no danger.

56. **Recurrences After Biliary Operations.**—Judd and Harrington reviewed the histories of patients operated on for recurrence in the past two years at the Mayo Clinic. There were 2,027 operations, of which 219 (10.8 per cent.) were

secondary. A large number (80 per cent.) of the operations were for the removal of the gallbladder, a procedure which has been accepted in the clinic as the operation of choice. One hundred and twenty of the 219 secondary operations were for the removal of gallbladders which had been drained previously. There was only 0.8 per cent. mortality in the series, showing that the risk in the secondary operation is no greater than in the primary operation. In 4 of the 219 cases, secondary cholecystostomy was done because the general condition of the patient contraindicated any further procedure. Two of these patients died. In 109 of the 219 operations, calculi were found either in the gallbladder, the ducts, or in both. One hundred and fifty-three patients had cholecystitis, in some instances associated with stones. Adhesions were especially noted in 148 cases, and in 41 there was a definite pancreatitis. Either a mucous or a biliary fistula was present in 37 cases. Seventeen of the 209 patients were definitely jaundiced. At the time of the first operation stones were found in 154 of the 219 cases; in the gallbladder in 10, in the ducts in 9, and in the gallbladder and ducts in 5. Stones were found at the second operation in 109 cases; in 10 cases in the gallbladder; in 9 in the gallbladder and ducts; and in 41 in the ducts. In 64 of the 219 cases both the primary and secondary operations were performed in this clinic. In 37 of this series a drainage operation had been performed primarily; 29 for stones and 8 for cholecystitis. Of the 29 patients with stones in the gallbladder at the first operation, 10 had stones in the gallbladder at the second operation, and of these had stones in the ducts also. Of the 8 cases in which drainage was done for cholecystitis, in 2 stones or any material which was not present at the first operation was found later. In 12 of the 64 cases, the primary operation was cholecystectomy; in 6 of these stones were removed from the common duct at the second operation. The impressions which Dodd and Harrington have gained in reviewing this series of 127 cases are that: 1. Removal of the gallbladder reduces the risk of later troubles, and ordinarily is to be preferred to cholecystostomy for drainage. 2. It is not necessary to open and probe the common duct at every gallbladder operation. Infection in the liver, gallbladder, or ducts is the most frequent cause of secondary trouble, and many recur many years after the primary operation. 4. The recurrence of stones is more frequent in the gallbladder than in any other part of the biliary tract. The common duct is next in point of frequency. 5. In a definite small percentage of cases stones will be overlooked in the common duct; in other cases stones reform in the duct.

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- Labor, with Special Reference to Use of Pituitary Extract, Morphine and Instruments. A. G. Harrison, Searcy.—p. 211.
- Administration of Ergot Before and After Labor. V. L. Pascoe, Newark.—p. 212.
- Pregnancy and Management of Normal Labor in Country Practice. S. J. Albright, West Point.—p. 215.
- Plea for More Efficient Work in Lying-In Chamber. H. R. McCarroll, Walnut Ridge.—p. 216.
- Fracture of Humerus Complicated with Musculospiral Paralysis. O. Gray, Little Rock.—p. 220.
- When Should Tonsils Be Removed? T. E. Fuller, Texarkana.—p. 221.

Boston Medical and Surgical Journal

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- Venereal Disease Problem in Massachusetts. M. E. Champion, Boston.—p. 483.
- Hemorrhage from Uterus in Nonpregnant Woman. F. A. Pemberton, Boston.—p. 485.
- Intestinal Bacteriology in Relation to Certain Diarrheas of Infants. W. R. Sisson, Boston.—p. 492.
- Efficiency in Examination of Schoolchildren. G. E. Deering, Worcester.—p. 498.
- Gunshot Wound of Posterior Cord of Brachial Plexus. J. K. Young, Philadelphia.—p. 501.
- Use and Value of Statistics. D. M. Lewis, New Haven, Conn.—p. 503.

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- Trench Sanitation. C. E. Burt, Camp Grant, Ill.—p. 567.
- Prevention in Public Health. D. M. Lewis, New Haven, Conn.—p. 571.

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- 78 Fasting as Therapeutic Measure in Treatment of Gastro-Intestinal Disorders in Tuberculosis. C. D. Spivak, Denver.—p. 90.
- 79 Roentgen Diagnosis of Lesions of Esophagus. J. A. Matlack, Longmont.—p. 94.
- 80 Acute Perforation of Abdominal Viscera, Spontaneous and Traumatic. C. E. Tennant, Denver.—p. 98.
- 81 Extract of Hypophysis Cerebri in Polyuria. J. B. Gooken, Hot Springs, Ark.—p. 100.

Delaware State Medical Journal, Wilmington

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- 82 Plea for Medical Supervision of Schools for Delaware. J. Beebe, Lewes.—p. 4.
- 83 Our Duty. H. W. Stubbs, Wilmington.—p. 7.
- 84 Fraternity and Cooperation. P. W. Tomlinson, Wilmington.—p. 13.
- 85 Mitral Regurgitation. D. Rossman, Wilmington.—p. 15.
- 86 Recognition and Treatment of Some Common Injuries and Diseases of Eye. W. O. LaMotte, Wilmington.—p. 17.

Kansas Medical Society Journal, Topeka

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- 87 War-Time Nutrition. C. F. Nelson, Lawrence.—p. 81.
- 88 Two Cases of Interest in Relation to Function of Thyroid. F. A. Carmichael, Osawatomie.—p. 83.

Medical Record, New York

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- 89 Ten Cases of Thyroid Disease. S. P. Beebe, New York.—p. 705.
- 90 Orthopedic Principles in General Medicine. J. M. Taylor, Philadelphia.—p. 711.
- 91 Problem of Venereal Disease in Its Relation to Penal Institutions. E. R. Spaulding, Bedford Hills.—p. 714.
- 92 Macroscopic and Microscopic Findings in Poliomyelitis. J. H. Larkin, New York.—p. 719.
- 93 Mental Disease. J. Smith, Brooklyn.—p. 722.
- 94 Case of Bilateral Total Ophthalmoplegia. A. Wicner, New York.—p. 724.

Neurological Bulletin, New York

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- 95 *Case of Cerebral Neoplasm, Proving to Be Carcinoma of Nasopharyngeal Origin. C. A. McKendree, New York.—p. 35.
- 96 Dystonia Musculorum. M. Osnato, New York.—p. 40.
- 97 Sensory Changes in Traumatic Neuritis from Standpoint of Protopathic and Epicritic Sensibility. I. S. Wechsler, New York.—p. 46.
- 98 Epilepsy with Postneuritic Optic Atrophy. C. A. McKendree, New York.—p. 49.
- 99 Traumatic Extramedullary Hemorrhage with Symptoms Due to Involvement of Lower Cervical Roots. R. Hoyt, New York.—p. 52.
- 100 Two Cases of Friedreich's Ataxia: Brother and Sister. F. M. Hallock, New York.—p. 57.
- 101 *Combined Dystrophy with Loss of Vesical Control. C. A. McKendree, New York.—p. 61.
- 102 Morphology of Gray Matter in Brain Stem of Vertebrates by Reconstruction Method. R. Hoyt, New York.—p. 64.
- 103 *Case of Multiple Sclerosis with Kymographic Studies of Tremor. F. M. Hallock, New York.—p. 69.
- 104 Cortical Hemi-Astereognosis with Acro-Agnosis. I. S. Wechsler and F. Tilney, New York.—p. 75.

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- 105 Borderline Psychoses. F. M. Hallock, New York.—p. 93.
- 106 Pathogenesis of Dementia Praecox in Its Relation to Borderline Psychoses. M. Osnato, New York.—p. 106.
- 107 *New Clinical Test for Temperature Sensitivity. E. L. Cornell, New York.—p. 119.

95. Cerebral Neoplasm Proving to Be Carcinoma.—McKendree's patient presented the following symptoms: itching of the right side of the tongue; a sensation of coolness in the right side of the face; pain in the temporal region and forehead of the right side; a sensation of being pulled outward in the right side of the lower lip; the right eye was turned in. The onset was gradual and the course has been progressive. The intensity of the headache has been variable, but it has progressed recently to such an extent that it is almost unbearable. He was never nauseated and never vomited; except for diplopia his vision has been unaffected. He has not lost weight. There have been no night sweats. His bowels are constipated. There is no nocturia. His sphincters are unaffected. He has never been dizzy, except when he attempts to use his eyes without his exclusion glass. His appetite is normal, although he does not taste as well as he formerly did. In the nasopharynx was a mass situated at the

vault about the size of half an English walnut, spongy in appearance with many minute blood vessels appearing on the surface. Gentlest application of a cotton applicator through the nose causes a hemorrhage from this mass. This mass nearly fills the midline, and to the left of the line. It covers one pharyngeal end of the Eustachian tube on the right. Diagnosis: Carcinoma of hypophysis. Tissue removed later during an exploration proved to be definitely carcinomatous and of the same type as that removed from the vault of the nasopharynx, which proves its origin.

101. **Combined Dystrophy with Loss of Vesical Control.**—In summing up the abnormal features of this case McKendree emphasizes the Aran-Duchenne type of shoulder pelvic girdle atrophy; the Erb's type of pseudohypertrophic dystrophy, the absent ankle jerks, and the vesical incontinence. All of these occurred in a man who is one of three who are similarly affected (except for the bladder symptoms). This case, though not typical of any one type of dystrophy, apparently represents a combination of three well known types of myopathy.

103. **Multiple Sclerosis with Kymographic Studies of Tremor.**—This is a case of definite ataxia, equilibratory and nonequilibratory. The patient cannot stand steady with the feet together and cannot stand at all with the eyes closed; she has an ataxic gait, a coarse intention tremor of both arms and legs, with a mild tremor of the head. She has a dysphonia; also an absolute inability to write, owing to the wide excursions of the tremor. There is a strong probability of Gordon and Schäfer on the right side, practically certain, and the possibility of a Babinski on that side (doubtful). The upper lateral abdominals are possibly unequal, the left less constant than the right. The patient gives a history of gradual onset over a period of five years, including several spells of falling, due to a sudden giving way of the right leg; no loss of consciousness. She also gives a history of several (probably six) fainting spells, the cause of which is not made clear and, further, several attacks of a "hysterical" nature. Hallock is certain that these symptoms point rather definitely to a diagnosis of multiple sclerosis although the reflexes are nowhere exaggerated and are even diminished in the legs and there is no sign of spasticity; and there is an absence of fundus changes and nystagmus. The tracings of the tremor made are of the multiple sclerosis type.

107. **Clinical Test for Temperature Sensitivity.**—Cornell summarizes the results of her study as follows: More than half of the total number of reactions to simultaneous cold and hot stimulation elicit first cold, then hot. The back and abdomen have a higher percentage than other regions of such responses. The proportion of responses to double stimulation that does not include both responses is small—8 per cent. on the average, with a minimum of 3 per cent. and a maximum of 20 per cent. The reaction time to cold and hot stimuli separately does not show any distinct difference, as measured in this way, except perhaps on the abdomen and back. The length of the first interval, when "cold" is the first response to the double stimulation, is about 1.0 second; the length of the second interval, about 0.4 second, on the average. A second interval of more than 1.0 second is rare. The order in which the response occurs whether "cold-hot" or "hot-cold" is probably dependent in part on the simultaneity of application and in part on physiologic conditions. Individual differences in all of these respects are so considerable that a wide deviation from the average must be admitted as normal.

New York State Journal of Medicine

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- 108 Surgical Histology and Anatomy of Breast. P. Syms, New York.—p. 131.
- 109 Treatment of Benign Tumors of Breast. J. B. Deaver, Philadelphia.—p. 137.
- 110 Baby That Cannot Take Milk. T. W. Clarke, Utica.—p. 141.
- 111 Is It Syphilis or Not? W. S. Gottheil, New York.—p. 155.

Northwest Medicine, Seattle

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- 112 Mental Defects Found in Army. R. P. Smith, Seattle.—p. 99.
- 113 Character of Violent Ward. A. C. Stewart, Fort Steilacoom.—p. 103.

- 114 Progressive Pernicious Anemia. W. S. Griswold and W. C. Heussy, Seattle.—p. 105.
- 115 Two Hundred Consecutive Hernia Operations. A. A. Matthews, Spokane.—p. 110.
- 116 Surgery of Spinal Tumors. M. G. Sturgis, Seattle.—p. 113.
- 117 Suspension Laryngology. W. G. Cameron, Tacoma.—p. 117.

Pennsylvania Medical Journal, Athens

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- 118 Acidosis. J. Howland and W. McK. Marriott, Baltimore.—p. 429.
- 119 Thoracic Aneurysms. W. H. Mercur, Pittsburgh.—p. 436.
- 120 Mediastinum, with Clinical Significance of Its Pathologic Lesions. C. L. Palmer, Pittsburgh.—p. 442.
- 121 Foreign Bodies in Bronchi and Esophagus. E. J. Patterson, Pittsburgh.—p. 448.
- 122 Uteroscopy. A. Heineberg, Philadelphia.—p. 458.

Southern Medical Journal, Birmingham, Ala.

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- 123 Uniformity in Wassermann Reaction. W. Litterer, Nashville Tenn., and C. Watterston, Birmingham.—p. 263.
- 124 Parasitology and Serology of Syphilis. A. Keidel, Baltimore.—p. 267.
- 125 Syphilis of Lung; Report of Case. J. A. Witherspoon, Nashville Tenn.—p. 274.
- 126 Syphilis of Heart and Aorta. B. W. Fontaine, Memphis, Tenn.—p. 278.
- 127 Syphilis of Stomach and Intestines. S. K. Simon, New Orleans.—p. 280.
- 128 Gastro-Intestinal Case Illustrating Persistent Psychic and Neurotic Elements. M. H. Smith, Jacksonville, Fla.—p. 288.
- 129 Civilian Influence on Military Problem, Venereal Disease. P. I. Johnson, Washington, D. C.—p. 290.
- 130 Distribution of Vaccines and Serums by State. C. A. Shore, Raleigh, N. C.—p. 296.
- 131 Kidney Surgery. J. R. Caulk, St. Louis.—p. 299.
- 132 Aneurysm of Axillary Artery; Report of Case. T. H. Hancock, Atlanta, Ga.—p. 305.
- 133 Bilateral Tubal Pregnancy (Simultaneous); Report of Case. M. I. Bledsoe, Port Arthur, Texas.—p. 307.
- 134 Five Unusual Cases of Nasal (Sphenopalatine) Ganglion Neurosis. G. Sluder, St. Louis.—p. 312.
- 135 Safety in Cataract Operation. J. W. Jervy, Greenville, S. C.—p. 314.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

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- 136 What Relation, if Any, Does Eyestrain Have to Epilepsy? A. McFarling, Shawnee.—p. 73.
- 137 Indication and Technic for Tonsillectomy. T. L. Higginbotham, Hutchinson, Kan.—p. 79.
- 138 Indications for Operation in Acute Middle Ear Infections. Bailey, Springfield, Mo.—p. 81.

Southwestern Medicine, El Paso, Texas

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- 139 Venereal Clinic. V. V. Wood, El Paso.—p. 1.
- 140 Epididymotomy for Gonorrheal Epididymitis. F. C. Parrott.—p. 3.
- 141 Malignancy of Ovarian Cysts. J. Vance, El Paso.—p. 5.
- 142 Laboratory Study of Cerebrospinal Fluids. H. P. Mills, Phoenix, Ariz.—p. 15.
- 143 Pathologic Significance of Roentgenologic and Hematologic Findings in Tuberculosis. W. W. Watkins, Phoenix, Ariz.—p. 20.

Texas State Journal of Medicine, Fort Worth

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- 144 Recent Advances in Diagnosis of Children's Diseases. M. Hopkins, Dallas.—p. 409.
- 145 Nonsurgical Treatment of Endometritis. M. O'Brien, San Antonio.—p. 411.
- 146 Injuries to Base of Brain. M. M. Walker, Wichita Falls.—p. 4.
- 147 First-Class Risk. W. P. Ball, Cleburne.—p. 415.
- 148 Metastatic Infections. Z. T. Scott, Austin.—p. 417.

West Virginia Medical Journal, Huntington

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- 149 Evolution of Medical Legislation in West Virginia. W. W. Goldsboro, Elkins.—p. 361.
- 150 Cause of Tubal Pregnancy. W. S. Gardner, Baltimore.—p. 370.
- 151 Red Cross Is the Mobilized Heart and Spirit of People. Its Influence in World War. H. A. Giltner, Parkersburg.—p. 273. To be continued.

Wisconsin Medical Journal, Milwaukee

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- 152 Wassermann Test in Relation to Diagnosis and Treatment of Syphilis. O. H. Foerster, Milwaukee.—p. 423.
- 153 Diagnosis, Treatment and Prevention of Defective Hearing. Pfister, Milwaukee.—p. 430.
- 154 Eye in Industrial Accidents. N. M. Black, Milwaukee.—p. 43.
- 155 Two Cases of Anthrax. E. H. Mensing, Milwaukee.—p. 442.

FOREIGN

Articles marked with an asterisk (*) are abstracted below. Single reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 30, 1918, 1, No. 2987

Functional Anatomy of Heart. A. Keith.—p. 361.

*Tolerance of Physical Exertion, as Shown by Soldiers Suffering from So-Called "Irritable Heart." T. Lewis.—p. 363.

Rheumatoid Arthritis. E. A. Dent.—p. 365.

*Treatment of Gas Gangrene. H. M. W. Gray.—p. 369.

Case of Pyemia Treated with Intravenous Injections of Eusol. R. Aitken.—p. 369.

*Treatment of Psoriasis in Army. H. W. Barber.—p. 369.

Electrical Treatment of Muscles in Trench Feet. G. M. Levick.—p. 370.

Irritable Heart Treated by Graded Exercises.—Nearly 100 patients with diagnosis of "D. A. H." (disordered action of the heart) or "V. D. H." (valvular disease of the heart) have been submitted to graded drills by Lewis and his associates. There has been no single accident of consequence. Where several hundred men are drilled each day, a fainting attack on drill is less than a monthly incident. The chief form of attack, and one which may always be regarded as genuine, is that accompanied by a feeble and slow heart action (30-50). It may be preceded by a short interval of dizziness, by a sense of weakness or unsteadiness. Consciousness is lost, and the fall is sudden, but rarely heavy. Pallor and sweating are present. Involuntary movements are slight, and usually confined to the face and arms; a general rigidity may be developed; the tongue is not bitten, neither is the urine passed. Nausea or vomiting may be present. The attack lasts from a few seconds to a few minutes, and is followed by lassitude and headache. A history of earlier attacks is common; these are associated usually with emotion (fright of blood, etc.), long standing at attention or the cessation of sudden effort; they do not occur in recumbency. Recovery is always complete, and an attack should not break the routine of drill for more than forty-eight hours.

Lewis says that attacks which are inconsistent with this nature are to be viewed with suspicion unless they may be attributed to epilepsy. A complaint of fatigue or exhaustion is rarely unaccompanied by other complaints, and may be regarded unless often repeated and accompanied by signs, such as pallor, or by uncontrollable tremor of lips or limbs, or by signs of breathlessness, as the grade of exercise is increased. Stiffness of the limbs or trunk muscles, accompanied by tenderness, is experienced by some unpromising cases to an unusual degree as an after-effect of short exercise. Pain in the axillary region, back, or limbs is usually related to particular action during drill, and as a general rule does not endure.

Treatment of Gas Gangrene.—Gray urges the wide recognition and application of a principle which he believes is essential for the successful prevention and eradication of gas gangrene in war wounds met with in France. The causative bacilli of gas gangrene will not develop in tissues which are provided with a vigorous circulation of healthy blood. They thrive best when the circulation is entirely stopped, for example, in a person dead of gas gangrene or in a limb of a living person where the main vessels have been severed. Long application of a tourniquet often allows the opportunity to obtain a firm hold. Feebleness of circulation in a wounded part, whether from a general cause, such as shock, or from a local cause, such as tension, from effused material or pressure of foreign bodies, favors its development. If the injured muscle or group of muscles is deprived, in part or whole, of its normal blood supply according to whether the file severs the main nutrient vessels or merely causes laceration of lacerated portions. Pressure in the neighboring tissues, whether caused by effused material in the wound, by inflammatory reaction, or by external constriction, interferes further with the circulation, and forms a most important link of the ever widening vicious circle of spreading inflammation.

From purely clinical observations, the following principle has been evolved by Gray: Whether one undertakes preventive, preinflammatory operation, or curative operation

after the gangrene has developed, success and safety are assured only when the wounded parts are excised until definite bleeding of the cut surface is seen. The bleeding must be definite; it need not be free. In preinflammatory operations the use of a tourniquet during operation may be permissible; it is not advisable unless the patient is exsanguinate. In cases in which gangrene is already well marked it should not be used. Care must be taken that in excising parts at the later stages of the operation the blood supply of tissues left behind at an earlier part of the operation is not interfered with; therefore, as a rule, proximal parts should be excised before distal parts. Gray has usually found it easy to decide, when this principle is kept in view, how much should be excised—whether only part of a muscle, the whole muscle, a group of muscles, or the limb. Surgeons who base their work on this principle have more success, and have to perform fewer secondary operations than those who do not follow it.

6. Treatment of Psoriasis in Army.—Out of 1,100 patients admitted to the hospital for skin disease, Barber says, fifty-six (that is, about 5 per cent.) are being treated for psoriasis. In order to return these cases to duty as quickly as possible he has adopted the following method, which has afforded more rapid and uniform results than any other that he has yet tried. The patient attends for treatment twice daily. Every morning he is given a bath, to which on the first two days cresol (1 ounce to an ordinary sized bath) and an alkali (a handful of sodium or potassium carbonate) are added; on subsequent mornings the cresol is omitted. After the morning bath, and again in the evening, the following ointment is applied to all affected parts from the neck downward, excepting the genitals:

R	Chrysarobinae	1	66
	Acidi salicylici	1	66
	Phenolis	6	66
	Zinci oxidi	6	66
	Lanolini et petrolati	30	66

Throughout the period of treatment a suit of pajamas is worn next the skin night and day, and thus becomes thoroughly impregnated with the ointment. The patient is inspected by the medical officer at least every second day.

As a rule, the ointment is well tolerated, but, should any area of skin become acutely inflamed and tender, the application of the ointment to that part is at once discontinued, and, instead, some soothing preparation, such as Lassar's paste (to which a little ichthyol may well be added), is kept thickly applied to the affected region. The genitals are throughout protected by Lassar's paste. At the end of a week, sometimes earlier, the eruption in most cases is to a large extent cleared, whereon Lassar's paste, containing 10 grains of salicylic acid to the ounce, is applied to the treated parts, to allay irritation and assist desquamation. A clean suit of pajamas is at the same time issued to the patient, and at this stage a bath on alternate days only is given.

Resistant patches are commonly seen on the elbows and knees, wrists and hands, in the hollows just behind the great trochanters, and sometimes elsewhere. In the treatment of these a stronger ointment is employed as follows:

R	Chrysarobinae	1	33
	Acidi salicylici	1	66
	Phenolis	6	66
	Zinci oxidi	6	66
	Lanolini et petrolati	30	66

This is rubbed well into the patches twice daily, and is also kept applied to them on lint during the night, providing the healthy skin immediately surrounding them is not actively inflamed. In order to prevent the occurrence of conjunctivitis the chrysarobin ointment is not used on the scalp and forehead. The hair is cut very short and the scalp shampooed three times a week. An ointment of the following composition is kept applied by means of lint, or, better, a closely fitting linen cap:

R	Acidi pyrogallici	1	66
	Acidi salicylici	1	66
	Phenolis	6	66
	Unguenti hydrargyri oxidi flavi	30	66

As a rule, psoriasis of the face and front of the neck will yield to zinc ointment containing 10 grains of ammoniated

mercury and 20 to 30 grains of salicylic acid. In more resistant cases the pyrogallic acid ointment, as recommended for the scalp, has proved effectual.

Internal treatment is only adopted in certain cases. Florid persons with an inflamed eruption are kept for a time on a milk diet, with plenty of fluids, and freely purged, and a mixture containing vinum antimoniale and potassium citrate is prescribed thrice daily. In another class of patient there is evidence of intoxication from some septic focus—frequently, apparently the mouth. In these cases a thymol mouth wash is directed to be used several times a day, the sockets of the teeth are cleansed with hydrogen peroxid, the bowels are kept well opened, and a mixture containing dilute hydrochloric acid and nux vomica is given after meals.

Very acute cases, and those in which the eruption is inflamed and angry looking, should not be treated at once with the chrysarobin ointment. Free purgation and diuresis, a milk diet, and the administration of vinum antimoniale, together with the local application of Lassar's paste, containing salicylic acid and ichthyol, form the lines along which treatment should first be directed. When the acuteness of the eruption has subsided the method of treatment already described may be cautiously begun. No patient who is suffering from boils or other forms of pyoderma should begin the treatment until these have been cured; otherwise very acute dermatitis is apt to be provoked.

As seborrheic subjects are peculiarly susceptible to all forms of external irritation, the treatment of psoriasis in them must be carried out under very careful supervision in order to avoid chrysarobin dermatitis. The following alkaline citrate mixture is very useful in these cases: sodium citrate, 30 grains, potassium carbonate, 15 grains and 15 grains of sodium bicarbonate thrice daily one hour before meals.

Edinburgh Medical Journal

April, 1918, 20, No. 4

- 8 Crossed Aphasia; Mirror Writing. B. Bramwell.—p. 220.
- 9 Quinin Urea Hydrochlorid in Pneumonia. E. Matthew.—p. 227.
- 10 Cerebrospinal Fever: Symptoms and Diagnosis. P. W. MacLagan.—p. 232.

Dublin Journal of Medical Science

April, 1918, 145, No. 556

- 11 Scope of Hysterectomy in Malignant Disease of Uterus. R. D. Purefoy.—p. 201.
- 12 Impressions of Value of Roentgen Ray Treatment. W. G. Harvey.—p. 204.
- 13 Case of Poisoning by Corrosive Sublimite. G. Fitzgibbon.—p. 215.
- 14 General Law and Individualism. E. Wooton.—p. 220.

Glasgow Medical Journal

March, 1918, 89, No. 3

- 15 General Survey of Five Years' Work in Sanatorium. J. Crockett.—p. 129.
- 16 Causes of Infantile Mortality. L. Findlay.—p. 145.

Lancet, London

April 13, 1918, 1, No. 4937

- 17 Cardiac Pathology. F. W. Price.—p. 521.
- 18 Treatment of Fracture of Lower Limb. G. C. Sneyd.—p. 524.
- 19 *Cardiac Disabilities of Soldiers in France (V.A.D. and D.A.H.). W. E. Hume.—p. 529.
- 20 *Delayed Primary Suture of Wounds. J. T. Morrison, J. N. J. Hartley and E. F. Bashford.—p. 534.
- 21 Incarcerated Sepsis. A. E. Morison.—p. 535.
- 22 Impressions of Roentgen Ray Treatment. W. G. Harvey.—p. 536.

19. **Cardiac Disabilities of Soldiers.**—The results of an inquiry into the cardiac and circulatory conditions of 5,000 soldiers who were sent to a base with the diagnosis of "V. D. H." (valvular disease of the heart) and "D. A. H." (disordered action of the heart) are detailed by Hume. All these cases were admitted to a convalescent camp, and on admission a history was taken and a physical examination was made. At the first examination, 8.3 per cent. of patients were found to be suffering from easily recognizable diseases which were in no way circulatory in origin. The remaining 51.7 per cent. of patients complained chiefly of breathlessness, pain in the chest, palpitation, giddiness and other less easily

definable symptoms. This entity has been described as the soldier's heart, the irritable heart of soldiers, and in the army nomenclature as disordered action of the heart. In this group are fifty-five cases of organic disease of the heart, in which are included three cases of paroxysmal tachycardia. One hundred and sixty-nine had been sent with a frank diagnosis of valvular disease of the heart, though in only fifty-five cases was there any justification for such an opinion. Hume says that the proneness to make a diagnosis of organic disease of the heart seems to be due to the misinterpretation of systolic murmurs heard in the region of the heart, and especially at the apex. If a systolic murmur in the region of the apex is due to a leak at the mitral valve, there is almost invariably an alteration in the size of the heart, in the position of the apex beat, and in the intensity of the pulmonary second sound. Hume asserts that a systolic murmur without the accompanying evidences of dilatation and hypertrophy of the heart can be disregarded.

Of the patients with obvious valvular disease of the heart 56.3 per cent. had suffered from rheumatic fever. Into the same category fall many who are convalescent from infectious diseases, namely, the enteric group of fevers, influenza and trench fever. In the tachycardia following shell shock and in neurasthenics the fault lies in the nervous innervation of the heart rather than in the heart muscle itself.

No matter how the condition may be produced, the rational of treatment is the same in all cases. The most important factor in all cases is the abolition from the patient's mind of the idea that he has a diseased heart. Good food, undisturbed sleep and outdoor exercise, regulated and under discipline are the sole factors necessary for the improvement of all types. By this method 50 to 60 per cent. can be sent back to their original work after four to five weeks. The remaining 40 to 50 per cent. are unable by reason of poor physique, actual disease, or of age to undertake every kind of work and hardship. Apart from those who suffer from actual heart disease or some organic disease of other systems, nearly all are fit for some service in France.

20. **Delayed Primary Suture of Wounds.**—The term "delayed primary suture" the authors have applied to all cases of suture performed in the first five days after infliction of the wound, with the exception of those closed at the preliminary cleansing operation. It is a suture performed before the full development of granulation tissue and before complete establishment of the natural defenses of the body by active immunization. Of 290 consecutive gunshot cases thirty-six were sutured within five days of being wounded. Five of these were not up to suture standard and were closed tentatively. The remaining thirty-one cases, 10.7 per cent. of the whole series arrived at the base up to suture standard. Of these thirty-one cases, twenty-eight made a perfect recovery being healed on an average of 10.5 days from the date of suture. The remaining three cases were partially successful. Carrel's bacteriologic standard was of the greatest value in the choice of wounds for delayed primary suture. Morrison and his associates remark that the importance of *suture précoce* cannot be overestimated. At this period is a wound so easily closed as it is before the onset of cicatrization and fixation of tissues in abnormal position. Not only does closure of a wound obviate the danger of secondary infection and the expense and pain of many dressings but leads to the quickest and most perfect restoration of function. To be able to close wounds of soft parts and convert compound into simple fractures is the ideal of military surgery. That this has been attained in 10 per cent. of cases recently arriving from the front the authors believe a tribute to the work of the casualty clearing stations.

Medical Journal of Australia, Sydney

March 16, 1918, 1, No. 11

- 23 Clinically Aberrant Form of Acute Poliomyelitis. A. Brein.—p. 209. To be continued.
- 24 Soldiers' Eyesight. F. A. Pockley.—p. 214.

March 23, 1918, 1, No. 12

- 25 Clinically Aberrant Form of Acute Poliomyelitis. A. Brein.—p. 229.

March 30, 1918, 1, No. 13

Diagnosis and Treatment of Syphilis on Active Service. G. G. Anderson.—p. 251.

Archives des Maladies de l'App. Digestif, etc., Paris

March, 1918, 9, No. 9

- *Dilatation of Stomach from Atony. L. Timbal.—p. 481.
- *Appendicitis in the Gassed. F. Moutier.—p. 493.
- *Physiology of Rectum. Friedel.—p. 505.
- *Chronic Inflammation of the Intestines. A. Mathieu.—p. 515.

27. **Dilatation of Stomach from Atony.**—Timbal insists that hypersecretion in the fasting stomach is not necessarily a sign of ulceration. It may be a consequence merely of atonic dilatation. The resulting motor disturbances and stagnation of stomach contents irritate the walls, and secondary Reichmann's disease follows. As the motor functioning returns to normal, the secretion becomes more regular. Contrary to the hypersecretion with ulcer, with dilatation the hypersecretion is always pure at first, without admixture of lactic acid. The hypersecretion with dilatation from atony does not require direct treatment. What is needed is to overcome the atony. These patients are debilitated, thin and nervous, and should be treated on this basis. As they become better nourished and stronger, the atony subsides, and along with the tendency to hypersecretion.

28. **Appendicitis in the Gassed.**—Moutier says that in addition to the ulcerations that have been noted in esophagus, stomach and upper bowel from the toxic action of chlorin gas shells, he has witnessed a number of cases in which the appendix evidently shared in the lesions. He describes six cases in detail in which the appendix had been previously supposedly sound, and three in which there had been a previous suggestion of appendix mischief. The "incubation" was from one to eight days in the first group, and twice this or more in those with old lesions. The symptoms did not indicate serious disturbances, and they subsided under local applications. He does not attempt to decide whether the appendicitis is the result of swallowing some of the gas or of a general toxic action.

29. **Physiology of Lower Intestine.**—Friedel's research was on the sigmoid flexure and rectum. He studied the sensibility, motor function, secretion, absorption and the act of defecation. He emphasizes the importance of gases for the act of defecation, although in some persons they are always absorbed before reaching the anus.

30. **Chronic Catarrhal Inflammation of the Intestines.**—This article, found among Mathieu's papers after his death, is a review and comment on Crämer's book with this title published in 1914. He takes issue with Crämer in a number of points.

Archives de Médecine des Enfants, Paris

April, 1918, 21, No. 4

- *Walled-in Meningitis. M. Acuña and A. Casaubon.—p. 169.
- *Insular Sclerosis in Youth. P. Gautier and C. Saloz.—p. 199.
- *Hypertrophic Stenosis in Infants. J. Comby.—p. 205.

1. **Walled-in Meningitis.**—This is not a good translation of the original title, "Formes cloisonnées et ventriculaires à l'ité close de la méningite cérébro-spinale épidémique," but it expresses the main feature of the cases, the lesion inside the ventricle, without communication with the rest of the ventricle contents and spinal cavity. This form has been described in adults, but this article is devoted to its occurrence in infants and young children. There may be several walled-in foci and ordinary serotherapy does not reach them. In one of the various cases described, necropsy showed besides the walled-in suppuration in the ventricles, adhesions of the spinal meninges, with formation of isolated pockets of suppuration. Lumbar puncture was repeatedly negative. The anatomic conditions in young infants favor this development of the disease in isolated foci, as the openings for communication are proportionately very small and easily become plugged by the purulent secretion. The meningitis in infants is liable to develop insidiously and escape recognition for some time. This prevents early effectual serotherapy. By the time the serotherapy is begun, adhesions have already developed and closed cavities resulted. The lumbar puncture

fluid then grows more and more limpid and scanty, while the general condition and signs of intracranial pressure are growing worse—the reverse of the usual course. The serum injected into the spinal canal is not absorbed. An instructive reflex phenomenon follows intravenous injection of 0.5 to 1 c.c. of the serum. In from ten to thirty minutes symptoms develop suddenly suggesting an anaphylactic shock, congestion of the face and disordered respiration and heart action. All this subsides in four or five minutes; it might be explained by the sudden congestion induced by the intravenous injection raising the pressure in the floor of the fourth ventricle. All the protracted cases of epidemic meningitis are probably of this walled-in type. The antiserum should be injected into the ventricles as well as into the spinal cavity. Seven instructive cases are described in detail in infants from 2 to 28 months old, with the necropsy findings in six cases. The effect of the intraspinal serotherapy was prompt and satisfactory, but it had no action on the disturbance in vision in the one child that did not die.

Archives de Médecine et de Pharm. Militaires, Paris

November, 1917, 68, No. 5

- 34 Arrangement of the Surgical Service of the Army. G. H. Lemoine, Dupuich and G. Lardennois.—p. 673.
- 35 The Advanced Surgical Stations. J. Okinczyk.—p. 694.
- 36 The Central Sterilization Post. E. Rousseau.—p. 711.
- 37 *Shortening Sound Femur. J. Calvé and M. Galland.—p. 727.
- 38 Skin Diseases in Colonial Troops. Gougerot.—p. 744.
- 39 Eyelid Reflex from Auditory Stimulus. G. Poyet and M. Lallemand.—p. 754.
- 40 Frame for Lifting the Wounded in Bed. L. Bois.—p. 763.
- 41 *Conclusions Adopted by Third Interallied Surgical Conference.

37. **Shortening the Sound Femur to Match.**—Calvé and Galland have worked out a technic which gives the maximum of security and precision for shortening the sound mate to correspond with a limb shortened by disease or a war fracture. The sound femur is sawed transversely and then the end of each stump is cut off slanting except that the lower stump has a piece left at the higher end of the slant. The outline of the part cut out is thus a triangle. The part left serves as a tenon to fit into the other slanting stump which serves as the mortise, a corresponding inset having been cut out of the second stump. The two stumps thus fit solidly together and hold firm against pressure from any direction. The sawing of the slant is done with a small circular saw, run by Albee's electric motor, and the tenon is cut with an arrangement of two very small twin saws, the distance between being the desired width of the tenon. The leg is then placed in a plaster cast which includes the pelvis and base of the chest with a strap over the shoulder. Their roentgenograms show that the results were extremely satisfactory in a boy of 13 with a shortening of the leg from an old tuberculous process. The anatomic condition entailed a shortening of 6.5 cm., and the vicious attitude additional shortening of 5 cm. Osteotomy was done on the crippled limb and the sound femur was shortened by the above technic. The difference between the length of the legs is now only 1.5 cm.

41. **Conclusions Adopted by the Interallied Surgical Conference.**—This conference was held last November to discuss treatment of osteomyelitis, fractures of joints, remote results of treatment of fractures of long bones, complications of skull wounds, and thoraco-abdominal wounds and wounds of nerves. In regard to fractures of joints, the trend was toward the maximum of conservation; defective functional results can be treated by orthopedic resection later. Fractures of the femur were said to give only mediocre results on account of the usual extent of the wound, inadequate reduction and contention plus infection. Primary suture is giving much better results. On the whole, the transformation of chemical into mechanical sterilization of the wound is gaining ground more and more as the war progresses. The disappointing results of operations on nerves were ascribed to the usual long delay before the operation is done, but at the same time it must not be attempted while there is any suppuration. The conference also modified some of the conclusions that had been adopted at the preceding conference. The primary suture

then was regarded as only exceptionally indicated, but it is said now to be the general method of treatment.

The advisability was suggested of holding a conference of bacteriologists to determine exactly which germs are most to be dreaded with the primary or postponed primary suture. To date, the streptococcus and the spore-bearing anaerobes are incriminated and possibly the proteus. Alkaline treatment of the acidosis with gas gangrene has given encouraging results. Some patients have been given specific serotherapy, antiperfringens, etc. The latter seems to have aided in warding off gas gangrene in certain cases, given as a preventive. The treatment of shock has also been modified to conform to the three processes involved, the hemorrhage, the infection or intoxication, and the true shock. The number of red corpuscles in the venous blood during the first few hours after the wound reveals whether there has been much hemorrhage from the wound on the limb. Transfusion is useful here. In true shock, heating the bed is the main thing. English surgeons advocate intravenous injection of 500 c.c. of a 4 per cent. solution of sodium bicarbonate. No other saline solution has given conclusive results to date. The conference emphasized the immense progress realized in treatment of fractures by adoption of a unified plan.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 25, 1918, 42, No. 3

- 42 Circulation in Arm after Chest Wound. H. Vignes.—p. 66.
- 43 *Benzene in Leukemia. H. Vaquez and J. Yacoel.—p. 68.
- 44 *Rat-Bite Disease. H. Grenet and Lehucher.—p. 73.
- 45 Epidemic of Bacillary Dysentery. Florand, Bezançon and Paraf.—p. 81.
- 46 *The Heart in Scarlet Fever. Florand and Paraf.—p. 84.
- 47 *Epinephrin Test of Functional Capacity of the Heart. Loeper, Wagner and Dubois-Roquebert.—p. 90.
- 48 Intestinal Parasites in the Troops. De V. de Lavergne.—p. 95.
- 49 Distomatosis of the Liver. De V. de Lavergne.—p. 97.
- 50 Congenital Hemolytic Jaundice. L. Giroux, Verdier and Forestier.—p. 98.
- 51 Congenital Cystic Pemphigus. L. Giroux.—p. 102.
- 52 Total Inversion of Viscera. L. Moreau.—p. 104.

43. **Benzene in Treatment of Leukemia.**—Vaquez and Yacoel report three cases of leukemia which confirm anew the favorable action of benzene (benzol, C_6H_6) in this disease. They tabulate reports from eleven other clinicians, all showing improvement in the general health, and reduction in the size of the spleen and in the numbers of leukocytes, while the numbers of reds increased. The most striking change was in the patient of F. Deutsch whose whites dropped from 836,000 to 7,000, but Frank Billings has reported a case not far behind this. Even with a pathologic increase in the reds, the benzene has likewise a regulating effect, but its leukolytic action is so pronounced that when given in the dose sufficient to reduce the reds from 8 to 6 millions, it reduced at the same time the whites down to 1,200. The leukocytes of normal persons are quite resistant to the benzene, comparatively speaking. Given parallel to a healthy person and to a patient with leukemia, the whites in the former dropped from 7,800 to 3,000 while in the leukemic it dropped from 800,000 to 16,000. They begin by giving 40 drops of benzene a day, increasing to 100 drops by the fifth day. This is continued during the first twelve days of each month, examining the blood every week and watching over the urine likewise. If the leukocytes are being destroyed too rapidly, the drug should be suspended for a fortnight. They give the benzol in capsules or in wine or milk. Given in this way it can be kept up for months. A supplementary course of radiotherapy may be useful. They alternate the courses of each. The patients in the cases reported were a man and a woman of 50 and 51 and a young soldier. The stimulating effect on the blood-producing organs is shown by the drop of whites from 525,000 to 15,000 in one case seven weeks after the benzene had been begun, while the hemoglobin has reached 75 per cent. and the reds gone up from 3,500,000 to 5,000,000. After this the whites ranged between 8,000 and 12,000, and the general condition has kept satisfactory.

44. **Rat-Bite Disease.**—Two typical and two abortive cases of rat-bite disease are described, all with the characteristic long incubation, two, three or four weeks after the bite of the

rat, then the lymphangitis, adenitis, induration of certain muscles, more or less extensive exanthem, and attacks of fever. Sometimes the fever is very high, but it does not last long, and the attacks are separated by about five days of complete apyrexia. The lymphangitis drags along for more than a month. Bacteriologic examinations were negative and no effect was apparent from the usual antipyretics. No attempt was made to give arsphenamin, although this has proved successful in certain cases on record. The five-day periodicity of the fever suggests the "five-day fever" of the Germans.

46. **Cardiac Manifestations of Scarlet Fever.**—Florand and Paraf report complications on the part of the heart in four out of twenty-seven scarlet fever cases during a recent brief period. The mitral valve was the one affected; the aorta did not seem to be involved. In four cases the valvular lesion persisted in a chronic form; in the others all signs of the heart complications disappeared, leaving merely palpitations and instability of the pulse. De Massary, in the discussion that followed, said that in his latest series of 35 cases of scarlet fever in soldiers, there was nothing to suggest that either the endocardium or pericardium had been affected, except in those who presented signs of established heart or vascular disease when first seen. He has encountered a typical case of aortic insufficiency developing in the course of scarlet fever in a young woman and persisting to date, but in his experience such complications are rare. In the series of scarlet fever cases in the military hospital, few of the men complained of pains suggesting rheumatism but they always yielded promptly to sodium salicylate. The arterial pressure was always high, but there were few cases of renal complications; only two cases of early and transient hematuria and seven cases of tardy and tenacious albuminuria. No special treatment was given, merely rinsing the throat and gargling often with sodium bicarbonate, two tea spoonfuls to the liter, and three times a day a medicated oil was instilled into the nose; restriction to milk for ten days, then milk and potato purée, then vegetables, and then full diet the last ten days. Netter told of a case of severe scarlatinal myocarditis in which epinephrin internally had resulted in an absolutely unanticipated cure. Epinephrin, he remarked, renders incomparable service in such cases. Complications on the part of the heart are rather frequent in children. They generally coincide with joint complications and sometimes with chorea.

47. Summarized page 1195, abstract 75.

Journal d'Urologie, Paris

March, 1918, 7, No. 2

- 53 *Anaerobic Gangrene of Bladder. F. Legueu.—p. 105.
- 54 *Military Aspect of Stricture of Urethra. O. Pasteau.—p. 117.
- 55 *War Wounds of Kidneys. P. Noguès.—p. 123.
- 56 *Cancer of Kidney. R. de Berne-Lagarde.—p. 135.
- 57 Calculus with Stricture of Urethra. Maringer.—p. 143.
- 58 War Wounds of Urethra. Hourtoule.—p. 147; Rousseau.—p. 1.
- 59 *Extraction of Hairpin from Bladder. F. Legueu.—p. 151.
- 60 *Conference of Army Urologists.—p. 155.

53. **Anaerobic Gangrene of Bladder.**—Legueu's patient had retention of urine two days after an operation for extraction of shrapnel balls in buttocks and pelvis. The daily catheterization set up anaerobic gangrene and thick pus was rinsed out. When the bladder was opened, what was supposed to be omentum, covered with calcareous concretions, presented in the opening in the bladder, and a rupture of the bladder was assumed. But when this thick tissue was lifted up, it proved to be a loose sac, the inner lining of the bladder. When it was lifted out, the stench was terrible. The vessel walls were thick and red but did not bleed, and under frequent lavage with tepid oxycyanid the bladder gradually returned to normal size. Recovery was afebrile, but one kidney later required nephrotomy. Certain symptoms now suggest incipient disease in the other kidney. Legueu incriminates the catheter required for the accidental retention of urine as responsible for the introduction of the anaerobes.

In another case a woman at the eighteenth day of malarial typhoid developed signs of infection of the nervous system.

with retention of urine. Eight days after the beginning of the urine trouble, what seemed to be a false membrane protruded from the urethra. Legueu was able to extract it through the urethra and it proved to be a sac, the cast off inner lining of the bladder, studded with calcareous concretions. The woman is recovering and micturition is normal, but there was incontinence of urine for ten days. He cites a few cases of this desquamating gangrene on record. The retention has always been regarded as responsible for the distention, but its rôle is indirect, as it acts only by compelling catheterization. He isolated from his latest case Jungano's anaerobic *Bacille neigeux*. The mucosa has rapidly regenerated in the cases on record, but incontinence is liable. The soldier still is wearing a urinal six months later, this false incontinence being the result of the small capacity of the bladder. Ascending pyelonephritis is liable to develop at any time.

54. Urethral Stricture from the Military Standpoint.—Pasteau advises that in all cases in which the complications are the predominant feature, the men should be sent to hospitals in the home zone for treatment. Stricture without severe complications should be treated in the genito-urinary special centers with the army, or in the interior, if the stricture can be overcome with progressive dilatation or urethrotomy. If not amenable to this treatment, the men should be transferred to the auxiliary service or dismissed. Men with stenosis of the posterior urethra (fracture of the pelvis), are unfit for any military service.

55. War Wounds of the Kidney.—Noguès discusses what should be done at the advanced surgical station for war wounds of the kidneys.

56. Cancer of the Kidney.—Lagarde describes in detail a case of epithelioma developing in a kidney subject to hydro-nephrosis. Hematuria was the first symptom, and nephrectomy was done in two months, with smooth recovery.

59. Extraction of Hairpin from Bladder.—Legueu slips a long hook, something like a buttonhook, through the cystoscope arranged for unilateral catheterization. As the hook seizes the hairpin and pulls on it, the hairpin swings around to present its rounding end to the hook, and it is easily removed.

60. Conference of Army Urologists.—The two subjects of the addresses and discussions were war wounds of the bladder and urethra, and what should be done for soldiers with incontinence of urine. The conclusions adopted favored emergency cystostomy for wounds of the bladder or urethra. The principle of primary suture cannot be applied in these cases. Incontinence of urine requires examination by a specialist. The man should be given treatment for not longer than two months. If the general condition is good and the incontinence is found to be incurable, at least within two months, the man should be sent back to the ranks. The conference emphasized the importance of specialist centers where the men with urinary disease can be sorted out, and those that can be treated there retained, and the others sent back to the interior. The necessity for keeping records of the health and hospital history of each man in the force was also emphasized. The diagnosis and the treatment should be recorded, and the case history should go with him or follow him to each hospital he enters.

Lyon Médical

March, 1918, 127, No. 3

61 *Radium in Gynecology. R. Condamin and L. Nogier.—p. 97.

62 **"Mustard" Gas. R. Rendu.—p. 108.

61. Radium Therapy in Gynecology.—Condamin and Nogier give the details of six cases which show the great advantages of radium treatment in its own special field, namely, for inoperable and recurring uterine cancer, for fibroma when an operation is inadvisable, and also preliminary to or following operative measures. They state that war conditions have evidently cooperated in allowing uterine cancers to get beyond the operable stage before they reach a physician. Since 1914 they have applied radium therapy in 500 cases of

this kind. In one case an abdominal tumor reached two fingerbreadths above the umbilicus, in a girl of 12, with extreme cachexia and retention of urine. Under forty-eight hours of application, the radium in the center of the growth, the tumor disappeared completely and perfect health was restored. The total dose given was 24.03834 millicuries. No microscopic examination was made of the neoplasm tissue, as a complete necropsy in a short time was confidently expected. The tumor was undoubtedly malignant and originated in the ovary. It was as large as the child's head. The condition grew graver during the first two or three weeks after the exposure, evidently from absorption of toxins. This confirms the wisdom of removing all that can be easily removed of an inoperable tumor before applying the radium. In some of the cases reported this was done so effectually that there was no nausea, fever or other sign of toxic action after the exposures. In a case of inoperable cancer of the uterine cervix in a woman of 50, the cure has been complete for three years to date. The patient has complained at times of slight pains in and around the uterus, but there is no sign of recurrence, and the pains are probably from compression of some nerve fibers in the scar tissue. In this and similar cases, the whole of the uterus has atrophied so completely that there is no need for the proposed hysterectomy. One disadvantage of preoperative radium treatment is that the patients feel so much improved, that they then withdraw their consent to an operation. A week after hysterectomy, in another case, radium was applied to the sound tissue left, and a severe toxic, febrile reaction followed, showing that the by-effects of radium occur with sound as well as with diseased tissue. In one woman of 36 the cancer returned three years after hysterectomy, but the recurring tumor disappeared under radium treatment, and there has been no further sign of malignant disease during the nearly three years to date.

62. Effects of "Mustard" Gas.—Rendu describes the lesions induced in the upper air passages by the new *gaz vésicants* used by the Germans. They are all practically alike, resembling a burn of the second degree, and leaving white eschars. The latter are most frequent on the anterior two thirds of the free margin of the vocal cords.

Nourrisson, Paris

March, 1918, 6, No. 2

63 *Roentgen Aspects of Rachitis. E. A. Weil.—p. 65.

64 Mercuric Lactate for Syphilitic Infants. A. B. Marfan.—p. 86.

65 Arresting the Decline in the Birth Rate. E. Apert.—p. 94.

66 *Glycuronuria in Infants. R. Raimondi.—p. 104.

63. Roentgen Findings in Rachitis.—Weil remarks that the lesions of rachitis are best studied, usually, on the wrist and hand or on the knee, as he describes in detail, with eighteen illustrations. He emphasizes in particular the opaque border of the end of the bone next the cartilage, *le signe de l'os bordé*, early in rachitis. This indicates that ossification is more intense here, while the rest of the bone shows decalcification. The ends of the shaft also spread out broad, or show a mushroom-like protuberance on the end, or they cast a cupule-shaped shadow. In advanced cases there may be two or four dark strips in the end of the shafts. When rachitis is acquired near puberty, the roentgen findings resemble closely those in young rachitic children. The roentgen findings with osteomuscular dystrophy and tendency to stunting of the growth differ from those of rachitis. In a case of tendency to dwarfism of this type, he applied moderate roentgen treatment to the ends of the long bones. The boy of 11 had shown no sign of growth of the bones for several years. The ossification in his knees was no farther advanced than in a normal child of 5, and the shadows closely resembled those of early rachitis. The growth was accelerated by the roentgen exposures.

66. Glycuronuria in Infants.—Raimondi extols the determination of the glycuronic acid in the urine of infants as a simple, easy and rapid test for estimating the functioning of the liver. With hypoglycuronuria the food should be changed and measures taken to stimulate liver functioning (calomel, opotherapy, alkalines and camphor). These conclusions are based on the study of the urine of twenty-one infants, healthy,

frail or diseased, supervised for several months in the Paris Institut de Puériculture. Comparative tests were made with different technics for determination of the glycuronuria and Roger's method was found most sensitive and reliable. It was described in detail in THE JOURNAL, Jan. 13, 1917, p. 152.

Revue Médicale de la Suisse Romande, Geneva

March, 1918, 38, No. 3

- 67 *Medical Inspection of Rural Schools. C. Pahud.—p. 169.
- 68 *Mitral Stenosis and Tuberculosis. R. Burnand.—p. 182.
- 69 *Femoral Hernia. A. Kotzareff.—p. 188.
- 70 Progressive Scleroderma in Child. L. Exchaquet.—p. 197.
- 71 Cesarean Section at Term with Fibromas. Veyrassat.—p. 204.

67. **Medical Inspection of Country Schools.**—Pahud describes what has been accomplished in the canton of Vaud, Switzerland, on behalf of the schoolchildren outside of the large cities. He practices in the little town of Romainmotier, and he has inaugurated a system of thorough physical examination of all the schoolchildren once a year, including the skin tuberculin tests, with the parents' consent. Those found below par are partially examined again in the fall. An individual record is kept for each child, recording date, age, weight, height, chest measure at inspiration and expiration, vision, hearing, aptitude for work, and previous tuberculin test, with space for remarks by teacher and physician. The teachers superintend the weighing of the children once a month; the height is recorded once in six months, the school rating once a quarter. Douches are given once or twice a week, and sun baths and gymnastics are given daily in pleasant weather, the children in bathing trunks. A conference for parents, to explain the system and especially the advantages of the tuberculin test, is given before the spring main examination. Only for twenty out of sixty-four children were they unable to obtain the consent of the parents for the Pirquet test. Each child is tested separately, with care not to hint at the findings. The whole system is completed and stabilized, he says, by the Assurance-Maladie infantile, a splendid institution, sustained by the canton and the state, which for two or four francs (40 or 80 cents) insures the child against sickness, so that when the parents are informed that their child is physically backward or the Pirquet test is positive, and medical care and measures are required, this is all provided for without further expense to the parents, by this insurance which, Pahud remarks, should make all the other cantons green with envy. The day is not far distant, he adds, when all the expense of the insurance will be borne by the community, and then the health of the country schoolchildren will be placed on a solid basis. Medical school inspection is incomplete and fails of its purpose unless supplemented by opportunity for medical treatment for which the parents do not have to count the expense. In conclusion Pahud mourns that the care of the teeth is still a weak link in the chain. Among 66 children examined, 14 had one or two decayed teeth; 30, two or three; 12 from three to five, and 9 more than five. Almost always the first lower molars decay first.

68. **Mitral Stenosis in Connection with Pulmonary Tuberculosis.**—Burnand comments on the three aspects of this connection, namely, (1) that mitral stenosis tends to protect the lungs against tuberculosis by the chronic stasis which it induces; (2) that mitral stenosis is often of tuberculous origin, and (3) that mitral stenosis may induce a set of symptoms in the lungs deceptively simulating those of tuberculosis. These three conceptions are less contradictory than they appear at first. The third type may be the result of the impeded circulation in the lungs associated with some minute and latent tuberculous apical focus. In a case described in detail the young man with mitral stenosis had been always frail, and suddenly he had a profuse hemoptysis (1 liter) but there was no cough or expectoration. A few months later there was another hemorrhage, after exertion, and this time there was fever for ten days. The course of the case confirmed the assumption of congestive tuberculosis of the lungs with no tendency to destructive processes. Burnand reports further six cases of pure mitral stenosis with a similar mild fibrous tuberculous process at one apex; two cases in which

the tuberculous process developed with a somewhat graver course, and three cases of mitral stenosis and insufficiency with a mild apical process. All but two of these eleven patients were women. Only three had a history of acute articular rheumatism. Nearly all the others had an inherited tuberculosis taint, and some had previously shown symptoms of tuberculosis, but in all but two the tuberculosis had always maintained a mild attenuated character, inflammatory, never destructive. Hemoptysis was the most constant and striking feature of the cases.

69. **Femoral Hernia.**—In Kotzareff's experience and from what he can gather from the literature, femoral hernia seems to be more common in women than in men, and it occurs predominantly on the right side. He describes the anatomic conditions responsible for this, and emphasizes that in the operation the fibrous ring is what has to be severed, and not the adjoining ligaments. It is this fibrous ring that is responsible for the strangulation. He prefers the Berger technic for herniotomy, but instead of three loops of the suture material he takes only one, passing it through the pectineus muscle and aponeurosis, bringing it out near the sheath of the vessels, traversing Poupart's ligament, and back to the pectineus aponeurosis. To reenforce this suture, he takes several slanting sutures to unite this aponeurosis with Poupart's ligament, thus completely and solidly occluding the opening, as he shows in an illustration.

Policlinico, Rome

March 17, 1918, 25, No. 11

- 72 *Adenoids with Pituitary Feminism. S. Citelli and P. Caliceti.—p. 245.
- 73 Antipyrogenic Serotherapy for War Wounds. R. Mosti.—p. 251.
- 74 *Hot Paraffin Bath for Infected War Wounds. A. L. Soresi.—p. 253.

March, 1918, 25, Medical Section No. 3

- 75 Paralysis of Peripheral Nerves. S. Ricca.—p. 65. To be continued.
- 76 *Action of Asphyxiating Gases. D. de Conciliis.—p. 88.

72. **Pituitary Feminism with Adenoids.**—Citelli reports three more cases of adenoids injuring the pituitary body enough to modify the development of both body and mind. The coexistence in the three soldiers of a feminine type of body, lack of sexual appetite, and rise in temperature and general disturbance after injection of pituitary extract, all confirm this theoretical explanation of the abnormalities observed. There was no tendency to eunuchoidism. Such cases emphasize the importance of early removal of adenoids supplemented by pituitary extract treatment, when an inherited or acquired predisposition to pituitary or psychic abnormality is detected.

74. **Pasteurization of Infected Wounds.**—Soresi places the limb in a deep bath of paraffin, kept at a temperature that pasteurizes the tissues. His clinical results with this method have been better than with any other technic he has tried, but he had not been able, at date of writing, to obtain bacteriologic control of the sterilization actually realized by this method of active hyperemia.

76. **Injury from Gassing.**—De Conciliis insists that the inflammation in the bronchioles is the most important pathologic localization of the action of the asphyxiating gases. The edema of the lungs is secondary in importance, in the cases in which death does not occur at once. The bronchioles contract as the gas comes in contact with them, and hence bear the brunt of the attack while the alveoli beyond are saved for a time. The pathognomonic lesion is a fibrinous bronchiolitis or fibrous stenosis of these passages. Treatment, therefore, should be with pneumotherapy, associated with medicated air, and kept up even after the anatomic cure. By this means we ensure the ventilation of the lungs, the hunger being the main source of the atrocious sufferings of the gassed and the cause of death.

Riforma Medica, Naples

March 9, 1918, 34, No. 10

- 77 Fat Grafts to Fill Gaps in Bones. L. Caforio.—p. 182.
- 78 Protracted Pneumonia and Traumatic Pulmonary Tuberculosis. Rossi.—p. 188.

Boletín de la Asociación Médica de Puerto Rico, San Juan

March, 1918, **14**, No. 118

- 79 *Anaphylatoxin and Anaphylaxis. F. G. Novy and DeKruif.—p. 175.
80 *Pituitary Extract in Obstetrics. D. P. Marchand.—p. 186.
81 Magnesium Sulphate in Tetanus. M. Janer.—p. 190.
82 Ether or Chloroform. J. S. Belaval.—p. 194.
83 Stab Wound of Lung. A. Santaella.—p. 200.
84 *The Cancer Question. J. del Toro.—p. 202.
85 *Cancer as Problem of Social Medicine. J. Aviles.—p. 207.

79. **Anaphylatoxin and Anaphylaxis.**—This is mostly a translation of Novy's work published in *THE JOURNAL*, May 6, 1917, p. 1524.

80. **Abuse of Pituitary Extract in Obstetrics.**—Marchand relates that the midwives in her district have learned to appreciate the potent action of pituitary treatment, and they are using it blindly in all kinds of obstetric cases. Delivery is accompanied by lacerations and other complications from its routine use of pituitary extract. She urges restriction on its sale, as it is a weapon too dangerous for the hands of ignorant midwives. In a recent case, she was called to a primipara who had been given four injections of the pituitary extract. The woman was moribund, lying in a pool of blood, the inverted and relaxed uterus exposed to view. In a second similar case Marchand had time to reduce the uterus and combat the collapse following the terrific hemorrhage. This primipara had been given three injections when the cervix had barely begun to open. In these cases the judicial reprimand of the midwife did not help her victim. Even in skilled and experienced hands, pituitary extract must be handled with caution, respecting its still unknown total effects. Restrictions have been imposed by the Harrison law on the sale of narcotics, and she urges similar safeguards against certain other dangerous drugs now used freely.

84. **Cancer in Porto Rico.**—Del Toro states that cancer has increased from 1.09 to 1.35 per cent. of the total mortality of the island since 1912. In the public hospital there have been 51 cases of cancer since its opening in 1909; the growth was operable in almost 50 per cent. Only 12 per cent. of the cases were in a promising condition for operation. The uterus was the seat of the malignant disease in over 33 per cent.; the mamma in about 8 per cent. He warns that even physicians are not always insistent enough for a prompt operation; they are liable to delay for absolute certainty, or to try this or that treatment, or they send the patient to the continent for radium treatment. He emphasizes that the progress of surgery has deprived it of so much of its dangers that an operation should no longer be reserved for a last resort, and he warns that to wait for the classic symptoms of malignant disease dooms the patient.

85. **Cancer and Social Medicine.**—Aviles quotes some figures to the effect that while 659,528 persons died in the Civil War, there were 1,021,513 deaths from cancer alone in the United States between 1900 and 1915. There is a death from cancer every six and a half minutes. In Porto Rico during 1915 there was one death from cancer every day, and in the city of San Juan last year three deaths every month. In 1890, Agnew of Philadelphia declared that there never had been a case cured of mammary cancer, but Halstead the same week operated on a patient who was entirely free from cancer when examined in 1913. Fully 60 per cent. of the deaths from cancer might have been avoided. Aviles urged the medical association to cooperate with the Public Health Service to publish circulars to educate the public, with lectures for those who cannot read or do not get the circulars. He also advocated frequent discussion of cancer problems to disseminate all that can be learned on the subject. He added that it would be a good plan for women's clubs to be enlisted in the work of educating the public in respect to cancer, and urging the press to aid the propaganda.

Medicina Ibera, Madrid

Feb. 14, 1918, **2**, No. 15

- 86 *Tuberculin Treatment of Pityriasis. J. S. De Grado.—p. 193.
87 *Gangrene from Arterial Obstruction. Blanc y Fortacin.—p. 197.
88 Ulceration from Mortification of Tissues. Sicilia.—p. 199.
89 Influence of Gouty Tendency and Endocrine Disturbance on Heart Disease. Huertas y Barrero.—p. 222. Continuation.

86. **Pityriasis Rubra Pilaris.**—De Grado's experience with the case described confirms the assumption that the tubercle bacillus has something to do with this disease. Under diagnostic injections of tuberculin the lesions showed a typical response, and under tuberculin injections and application of 4 per cent. salicylate salve great improvement was realized in the young man.

87. **Arterial Gangrene.**—In Blanc's case the gangrene from obliteration of an artery was too far advanced for any treatment except amputation. The site for the amputation was decided by applying an Esmarch band. After its removal the blood rushing into the limb colored it pink in all the regions where the blood circulated. The line where the tint remained unmodified was the limit of sound tissue. In another case of incipient gangrene, he had fair results from anastomosis between the artery above the obstruction and an adjoining vein. This transformed the vein into a kind of artery. It became dilated and the aspect of its wall changed to resemble an artery wall. The central stump of the vein was ligated above.

Hygiea, Stockholm

Sept. 30, 1917, **79**, No. 18

- 90 Pyocyanus Otitis Media. H. Key-Aberg.—p. 926.
91 Axis of Rotation and Axis of Joints. C. Hesser.—p. 938.

Revista Sud-Americana de Endocrinología, Buenos Aires

January, 1918, **1**, No. 1

- 90 *Plague Pseudo-Tuberculosis. S. Dessy.—p. 5.

90. **Plague Pseudotuberculosis.**—Dessy reports the case of a working man of 26 who died eighteen days after the physician had been called on account of symptoms ascribed to typhoid fever. Necropsy showed, however, that the intestines were free from ulceration while the liver contained numerous nodules resembling those found in rats with plague; the lungs presented the aspect of miliary tuberculosis. If it had not been for the nodules in the liver, the case would have been recorded as a matter of course as miliary tuberculosis. But the microscope revealed in six hours the presence of the plague coccobacillus in the condensation water of agar tubes inoculated with material from the lungs and liver. Inoculation of laboratory animals confirmed the diagnosis. The histologic findings are reproduced. They suggest that the infection occurred by way of the intestines, passing thence in the blood to the liver and lungs. The nodular lesions show that the plague bacteria in question were not very virulent for the human organism, although they induced plague septicemia in white rats and guinea-pigs, fatal in forty, fifty-six or seventy-five hours.

Semana Médica, Buenos Aires

Jan. 17, 1918, **25**, No. 3

- 91 General Principles for Vaginal Operations. A. Chueco.—p. 65.
92 Provisions for Care of the Sick and Poor at Buenos Aires. E. R. Coni.—p. 79. Continuation.
93 *Retrocursive Epileptic Seizures. G. Mingazzini.—p. 88.

Jan. 24, 1918, **25**, No. 4

- 94 *Suprarenal Hematoma. F. A. Deluca.—p. 93.
95 Deafness in Schoolchildren. A. Quadri.—p. 97.
96 Symptoms and Findings with Mole. J. C. Berri.—p. 103.
97 *Suprarenal Form of Malaria. C. Fraga.—p. 113.

93. **Retrocursive Epilepsy.**—Mingazzini applies this term to epileptic seizures in which the motor phenomena are almost exclusively merely stepping backward. In another type of seizure there is a tendency to run in a circle. He describes the case of a boy of 8 with this retrocursive epilepsy. The boy feels first formication in the left hand, then loses consciousness, and steps backward on a straight line for 3 or 4 meters, and then falls with general clonic spasm. He has been having from ten to fifteen of these seizures a day for the last few months.

94. **Suprarenal Hematoma.**—Deluca reports two cases of placenta previa with child stillborn or dying the fifth day, and necropsy revealed a suprarenal hematoma in each child. The delivery of the one born alive had been difficult and protracted, and inherited syphilis was probable. The third

day the child's pallor attracted attention (hemorrhage), then came jaundice, prostration, and screams of pain; the fourth day convulsions and the fifth, sudden death—this sequence of symptoms explained by the hematoma in the suprarenals. The woman in the other case had been given pituitary extract, and there is a possibility, he suggests, that this might have caused such forcible contractions of the uterus as to compress the fetus' abdomen and force blood out from the inferior vena cava.

97. **Suprarenal Form of Malaria.**—Fraga describes three cases of an evident suprarenal syndrome in the course of malaria, with necropsy in one. They confirm his assertion that we must reckon with a *forma suprarenal de la parasitosis tropical*, and be on the alert to apply the specific treatment. In the severer cases, intravenous injections of artificial serum with epinephrin may tide the patient past the danger point. When the emergency is not so great, ordinary opotherapy may answer the purpose.

Siglo Medico, Madrid

Feb. 2, 1918, 65, No. 3347

- 98 Reform in Medical Education. V. Prieto.—p. 82.
99 *Endemic Goiter in Spain. J. Goyanes.—p. 85.

99. **Endemic Goiter in Spain.**—In this instalment of his study of the endemic foci of goiter in the mountain districts of Spain, Goyanes calls attention to the frequency of deaf-mutism among the families with goiter. Cretinism is common, but exophthalmic goiter is extremely rare. He has photographs of one family in which two of the daughters of a woman with goiter are deafmutes. He has seen a number of deafmutes with goiter in the district of Avila, and also deafmute cretins. The antecedents always showed goiter in the mother or father or grandparents of the cretins.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 2, 1918, 1, No. 9

- 100 *Radioactive Balances. H. Zwaardemaker.—p. 602.
101 *Measures against Plague in Holland. M. A. van Andel.—p. 614.
102 *The Recording of Nystagmus. H. J. L. Struycken.—p. 621.
103 Unilateral Paralysis of Phrenic Nerve. J. Hekman.—p. 625.

100. **Radioactive Balances.**—Zwaardemaker reports here further research on the living isolated frog heart perfused with Ringer's solution made with some radioactive salt in the place of the potassium of the original Ringer solution. There seems to be an antagonism between the action on the frog heart of the radioactive light metals and the radioactive heavy metals. Research in this line has elicited a number of new biologic facts as he describes in detail. Among them is that fluorescein seems to sensitize the heart so that a smaller amount of the radioactive salt has a greater effect than a large amount without it.

101. **Prophylaxis of Plague in Seventeenth Century.**—Van Andel gives the instructions issued by the "plague-master" of Gorinchem in 1601. The plague-master was given a good salary, the records show, and the authorities sustained him in his efforts to check the disease and alleviate the condition of the sick.

102. **Recording Nystagmus.**—Struycken obtains a record of the movements of the eye by photography, using a delicate wire tripod that fits over the eyeball. This shows on the film drum the various types of the nystagmus, horizontal, vertical, undulating, rotatory, circular, etc.

Hospitalstidende, Copenhagen

March 6, 1918, 61, No. 10

- 104 *Deforming Spondylitis. K. Mallng.—p. 289.
105 *Pseudoleukemia. J. Nordentoft.—p. 298. Commenced No. 8, p. 225.
106 Therapeutic Parenteral Injections of Milk. H. Boas.—p. 309.

104. **The Nervous System with Spondylitis Deformans.**—Malling remarks that it is still a question whether the various forms of chronic spondylitis are separate entities or not. No one seems to have studied the slighter manifestations of deforming spondylitis, and as a contribution in this line he tabulates the findings in twenty-five cadavers from 21 to 80

years old. In none of them had there been any noticeable deformity of the spine or pronounced nervous symptoms during life. In eighteen of the cadavers there were evidences of more or less severe spondylitis, and in two the findings were dubious. Thus only five of the total number were free from exostoses, and none of these were over 50, and only one was a man. He could not find anything to suggest that these exostoses developed inwardly and thus injured the spinal cord or nerve roots. It is possible, however, that in certain cases, pain, sciatica, etc., may be the result of pressure on the nerve at the root. It is a tempting explanation of certain nervous disturbances, such as spastic paraplegia, to assume pressure on the nerve roots by these changes in the vertebrae which are practically constant after a certain age in working people, but Malling warns that this will often lead one on the wrong track.

105. Summarized in Abstract 110, page 1344.

Ugeskrift for Læger, Copenhagen

Feb. 28, 1918, 80, No. 9

- 109 *Present Status of Roentgen Therapy, especially for Brain Tumors. S. Nordentoft.—p. 331.
110 *Calomel for Pruritus Ani. O. Hamburger.—p. 347.
111 *Safety Match Box Dermatitis. A. Barfoed.—p. 349; W. Olivarius.—p. 350; S. Lomholt.—p. 351; A. Jacobsen.—p. 352.

March 7, 1918, 80, No. 10

- 112 *Orthostatic Albuminuria. V. Scheel.—p. 385.
113 Mania in Deafmute. A. Wimmer.—p. 395.

109. **Roentgen Treatment of Brain Tumors.**—Nordentoft now has a record of twenty cases of brain tumors in which he has applied systematic courses of roentgen exposures. The results are quite encouraging, especially when compared with the 100 per cent. mortality of operative cases of cerebellar tumors in the Scandinavian countries. There is only one case known in Denmark in which a tumor elsewhere in the brain was successfully removed with long survival. He describes his technic and the findings and results in his twenty cases. The favorable experiences in his first series of eight cases have continued to date; there has been no recurrence of the growth or return of symptoms.

110. **Calomel for Pruritus Ani.**—Hamburger has had a number of patients freed from long persisting anal pruritus when they rubbed the region with dry calomel. The part is wiped off first with moist cotton, the finger is moistened, and the powder is taken up on the finger and rubbed into the crevices. The itching generally subsides permanently, or at least for several months, after four or five applications of the calomel.

111. **Safety Match Box Eczema.**—Four writers in turn describe cases of a dermatitis which they were unable to explain in the otherwise healthy patients until they learned of Rasch's experience with local poisoning of the skin from the use of a certain brand of safety matches (Jönköping). In most of them the burnlike dermatitis was on the thigh corresponding to the trousers pockets in which they carried the match boxes. Rasch's communication on the subject was summarized on page 1344.

112. **Orthostatic Albuminuria.**—Scheel gives an analysis of fourteen *orthotikers*, as he calls them. All were children about puberty, except four young men and one woman of 30. All gave a normal response to Strauss' accommodation test, ingestion of a liter of weak tea in the morning, fasting, after a day of test diet. Orthostatic albuminuria requires special treatment, but differentiation is extremely important as otherwise unnecessary restrictions and other measures are imposed for the assumed underlying nephritis. This is particularly disastrous in these cases because persons with orthostatic albuminuria are usually frail; some of his patients have shown symptoms of tuberculosis since. Another feature of the cases is the tendency to oxaluria. He found that the albuminuria disappeared completely or became much attenuated when the oxaluria was arrested by giving a level teaspoonful of calcined magnesia two or three times a day. With nephritis, the albumin content of the urine shows little change day or night.

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THE POINT OF ELECTION AND MODES OF INVASION IN PULMONARY TUBERCULOSIS

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In this review of the modes of invasion in pulmonary tuberculosis, all minor avenues of entrance of the bacillus have been disregarded, and only inhalation and ingestive methods will be considered.

It is generally accepted by pathologists that the first stage of pulmonary tuberculosis is an involvement of the glandular and lymphatic structures of the lungs. Postmortem and roentgenographic evidence seems to prove that tuberculous foci are not established in lung tissue proper until after the peribronchial glands have been seriously damaged by the invading organisms. This is the so-called pretuberculous stage of the disease. In hundreds of reported necropsies, especially of children, foci in the peribronchial glands were the only demonstrable lesions in the body. This analogy has also been reported in comparative pathology, especially in cattle, which have been more carefully examined than other animals. In pseudotuberculosis of sheep and cattle, the pulmonary glands are first involved. Pulmonary pigmentation in man and animals shows first in the peribronchial glands. This view of the matter is strengthened further by the observation of human and veterinarian pathologists that if a focus is found in the lung tissue proper, this lesion is invariably accompanied by involvement of the pulmonary glands.

If the dosage is maintained, and other conditions are favorable, crippling of the peribronchial glands is followed by the arrest of a bacillus and the formation of a tubercle in lung tissue proper; and if this focus progresses to softening, it breaks through into the air vesicles, or into adjacent healthy tissue, where, in the latter case, bacilli that have been set free are again arrested by the highly complex system of lymph channels and glandular locks. In many cases, experts in roentgen diagnosis are now able to demonstrate involvement in the peribronchial glands, especially in children, long before the appearance of cough and sputum, thus furnishing the clinician ample grounds for the long entertained belief that cough and expectoration are secondary and late manifestations of pulmonary tuberculosis.

The problem, then, is to analyze the common anatomic methods, or routes, by which tubercle bacilli reach the point in lung tissue where they are arrested and colonized.

THE POSSIBILITY OF FOREIGN MATTER BEING INHALED DIRECTLY INTO THE AIR VESICLES

Minute particles of carbon, stone and such dust reach lung tissue, but the deposit of foreign matter in the interalveolar tissue or the lymphatic channels or the pulmonary glands does not prove that it was carried there in the ordinary process of respiration, as this function is commonly understood.

The general belief that anthracosis is due to the direct inhalation of dust is based largely on the fact that in miners and firemen, and certain stone cutters, the deposits of gritty matter can be demonstrated macroscopically as well as microscopically. This view of the question was seemingly upheld by Rindfleisch, who was able, in a series of necropsy studies of the lungs of charcoal workers, to demonstrate, and actually to classify, the carbonized wood deposits in the microscopic sections of the pulmonary tissues and in the peribronchial glands.

Nevertheless, if the histology of the respiratory mucous membrane is kept in mind, one cannot escape the conviction that the tidal air in its excursions up and down the trachea and bronchia would undoubtedly impinge foreign bodies somewhere on the long stretch of ciliated mucous membrane. One step further, by granting such a probability, establishes a profound doubt in one's mind whether dust or bacteria are ever actually driven directly into the air sacs in the ordinary act of breathing, or even by forcible inspiration.

And yet, pneumococci, influenza bacilli and other bacteria actually reach and grow in the air vesicles. The speculation that phagocytes might carry these organisms direct to the air sacs and plant them there has been offered as a solution of this perplexity, but it is a more reasonable explanation that these organisms, gaining a foothold on the bronchial mucous membrane, finally reach the air vesicles by an extension of the colony growth. Many writers believe that phagocytes pick up coal dust on the bronchial mucous membrane and carry it into the air sacs, and thence into the pulmonary lymph stream; but this seems improbable, if it is considered that even though the wandering cells do pick up dust and bacteria on the bronchial mucous membrane, these cells surely would be wafted along by the cilia, and finally driven out through the trachea, just as coal dust is driven out.

Many careful sections have been made of specimens from the lungs of miners accidentally killed while at work, and though the bronchia were markedly filled with coal dust, it was difficult for these investigators to demonstrate to their entire satisfaction any foreign matter in the air sacs themselves, notwithstanding the fact that the interlobular spaces and lymph channels were filled with carbon deposits.

However, there is a histologic peculiarity of the deeper portion of the respiratory mucous membrane that must not be overlooked in this connection. The minute, terminal branches of the bronchioles are not supplied with cilia, and if bacteria or dust got past the cilia and reached this deeper portion of the bronchia, undoubtedly the suction or pull of the adjacent lymph streams would draw them backward into the air sacs, and thence into open lymph vessels, in which they would drift until arrested in some glandular storehouse along that chain.

Piersol says:

Between the air vesicles, minute openings or stomata exist; they usually connect with microscopic passages leading into the lymphatic channels. By means of these channels, particles of inhaled foreign matter, often deeply pigmented, are carried from the air sacs into the lymphatics, and become lodged within the interlobular connective tissues.

Cornet presented to the medical world a mass of experimental evidence in proof of the inhalation method of infection of the lungs. Fluegge demonstrated that fine droplets of sputum were driven to considerable distances by consumptives in the act of coughing or sneezing. Hoffman infected guinea-pigs

mg., while it required 10 mg. of the same culture to infect by feeding.

Not satisfied with these experiments, which were still open to objection, Findel opened the trachea of dogs and calves and produced pulmonary infection by direct inhalation of tubercle bacilli. This particular experiment has been confirmed by a number of investigators. Similar inhalation experiments with the *Bacillus prodigiosus* were made by Hartman and Hartl, with mold fungi by Hilderbrand and Ballin, and with India ink by Kuss, for the purpose of demonstrating that these organisms and the ink could enter the lung tissue as foreign bodies by way of the respiratory mucous membrane.

Arnold and Penfick went a step further by attempting to produce experimental anthracosis by means of inhalation, but Grysez and others could not confirm Arnold's and Penfick's work, and they concluded that anthracosis was a condition that was induced by swallowing dust, the carbon reaching the lungs by way of the intestinal tract.

Finally, because of the constant involvement of the apex as the primary focus of infection in human tuberculosis, Grober's claim that the mode of infection was commonly through the tonsil, and thence to the parietal pleura opposite the dome of the apex, misled pathologists for a time, until attention was called to the fact that the lymphatics of the tonsil empty into the deep cervical chain, and they in turn, together with the chain from the parietal pleura opposite the apex, empty into the great veins, in the angle of the neck, making it highly improbable that such a backward infection is possible. Latham's assertion that there may be, and probably is, a backward invasion of the lymphatics by the tubercle bacillus, also has never been confirmed by necropsy studies, and lacks the pathologic analogy in syphilis or anthracosis, both of which progress in the course of the lymph stream.

THE POSSIBILITY OF FOREIGN MATTER REACHING THE LUNGS THROUGH THE INTESTINAL TRACT

Several reliable investigators have demonstrated by animal experimentation that the continuous introduction of lampblack into the intestinal tract, over a long period of time, will produce well marked anthracosis. Weigert had demonstrated previously that the younger the animal the more readily did foreign matter pass the barriers of the lymph nodes. In old cows, pigmentation of the lungs and bronchial and mediastinal glands, exactly corresponds to the anatomic fields invaded by the tubercle bacillus. Guerin and Grysez, working with Calmette failed in numerous experiments to produce anthracosis in animals exposed to a constantly saturated atmosphere of lampblack if the esophagus was closed but anthracosis invariably followed if the lampblack was introduced into the stomach by means of a tube or if mixed with the food.

The same investigators proved by repeated animal experimentation that tubercle bacilli, introduced into the stomach by means of the esophageal tube, penetrated the intestinal mucosa without demonstrable lesions, the organisms being recovered at varying periods in the lungs and mediastinal glands. Nicola and Descas fed tubercle bacilli to fasting dogs, and recovered the organisms in the chyle duct as early as

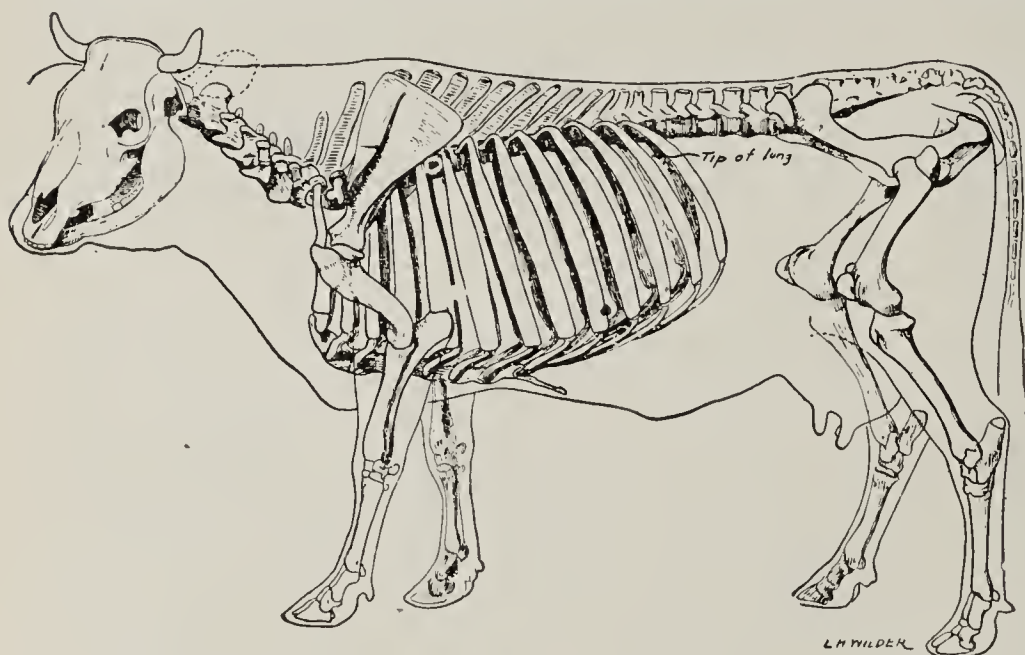


Fig. 1.—Skeleton of cow. Arrow points to location of tip of lung, which is the point of election in bovines. From Sissons.

by means of a spray of tuberculous sputum. Buchner and Enderlein succeeded in infecting small animals without the spray, merely by exposing them in the room to droplets of sprayed sputum. The ordinary inhalation method was used by Nocard, Rossignol and Kossel to infect calves, by Reichenbach to infect goats, and by Tappeiner to infect dogs.

Guerin and Grysez raised the issue that the possibility of swallowing had not been eliminated in these experiments, but the objection was immediately countered by Fluegge, Bartel and Neumann, using guinea-pigs, and by Titze and Weber, using calves, all of whom demonstrated that within a few minutes after exposure to infected dust, every portion of the lung showed the presence of tubercle bacilli, while the control exposure by feeding was much slower. Findel, working with guinea-pigs, used graduated dosage in the two methods, and found that it required only a fractional dose to infect by inhalation; while in the control animals, it required a hundred times greater dosage to infect by ingestion. Titze and Weber, working with calves, demonstrated that the average dose required to infect the animal by inhalation was 0.01

three hours after ingestion. Ravenel and Klebs immediately paralleled this experiment by introducing into the stomach of dogs, by means of the esophageal tube, tubercle bacilli suspended in a mixture of melted butter and warm water, the organisms being recovered from the chyle ducts and mesenteric glands in less than three hours in some of the experiments.

Behring has shown that even the anthrax bacillus will penetrate the intestinal mucosa in a few hours.

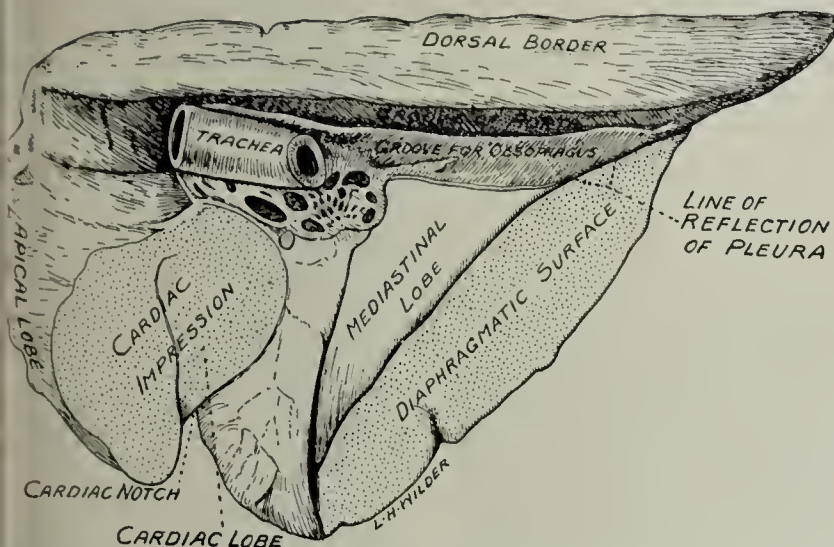


Fig. 2.—Lateral view of the bovine lung, the shaded portion of the tip showing the point of election. The bovine apical lobe also is frequently involved, but infection of the cardiac lobe, the most dependent portion of the bovine lung, rarely occurs, even in the last stages of the disease. From Sissons.

Schlossmann and Engel injected tubercle bacilli, suspended in cream, into the stomachs of guinea-pigs, and after six hours the animals were killed, and portions of lung tissue inoculated into other guinea-pigs, with positive results.

This experiment was also repeated by Ravenel, in a most careful manner, with positive findings. He opened the abdomens of guinea-pigs, and with a very thorough technic, introduced bacilli into the stomachs of the pigs by means of sterile needles, which were coated with paraffin, the intention being to avoid planting bacilli in the stomach wall while introducing the needle. The animals were killed at intervals of four and six hours, and portions of lung tissue injected into control guinea-pigs, with positive results. In another series, the animals were killed and examined at the end of six weeks. Nine out of ten had tuberculous foci in the lungs, besides more or less involvement of the thoracic and mesenteric glands.

Oberworth and Rabinowitch went a step farther in avoiding possible error in a similar series of experiments, and succeeded in producing positive primary lung involvement, by feeding tubercle bacilli to young guinea-pigs through established gastric fistulas.

THE MODE OF INVASION IN HUMAN AND BOVINE TUBERCULOSIS

In analyzing the possible methods of infection of man with the tubercle bacillus, one is justified in basing fairly definite conclusions on experimental data that have been subjected to comparative pathologic analogies. Therefore, it is reasonable to assume that in whatever way the cow is infected it will be found that anatomically, the manner is not dissimilar in man; but at the very outset believers in the ingestion method, especially those who are wedded to the theory that milk is the prime factor in the spread of tuberculosis, are confronted with the confusing fact that the cow herself is not a milk feeder, notwithstanding her marked susceptibility to tuberculosis.

If one stops short here, and throws out of consideration the ingestion method of infection in bovines, then likewise one should exclude this method in the study of human tuberculosis; but the experimental data quoted above do not justify any such action.

As early as 1868, Chauveau produced pulmonary and general tuberculosis in young calves by feeding them ground material of diseased organs of tuberculous cows. Swine tuberculosis is undoubtedly by ingestion—nearly always by tuberculous milk. Experimentally, calves have been infected in this manner when the surroundings were otherwise controlled to prevent the possibility of contracting the disease by inhalation. Avian tuberculosis is by ingestion, without question.

The cow's infection is also by ingestion, notwithstanding the fact that she is not a milk feeder. A study of the habits of this animal is convincing that an infected cow spreads the contagion by explosive coughing, thus sending droplets of sputum in all directions, on her own food and on the food of her adjoining neighbors. Ravenel has proved that the cow does cough, and that she does throw off sputum in this manner.

Friedberger and Fröhner, long ago, called attention to the fact that when a tuberculous cow is placed in a stable, the disease progresses along a row, passing from one to another in regular order. Adams and Jobson made the interesting observation, on two different herds in which the cows were stalled in pairs, solid partitions as high as the animals' backs separating each pair from other pairs, that the tuberculous cow of the pair invariably infected her mate, but the cows in the adjoining stalls, if healthy, remained so.

Of course, this evidence in and of itself alone does not rule out the possibility of infection by inhalation; and yet, if viewed in the light of the methods by which swine and fowls contract the disease, it certainly deserves careful consideration.

There seems to be good ground for the stand taken by Aufrecht that tubercle bacilli gain the circulation, however introduced, and then traverse the blood vessels as foreign bodies until arrested, or until screened out in some organ, most commonly in the pulmonary terminal arteries. Here the bacillus passes the thin vessel wall barrier, to be picked up by lymphocytes,

probably, and promptly carried to the nearest lymph node. That is the histologic picture of invasion in man and in animals. The pathologic picture does not come into view until a bacillus is arrested.

THE POINT OF ELECTION

Pathologists are now convinced that the tubercle bacillus, however introduced into the body, gains

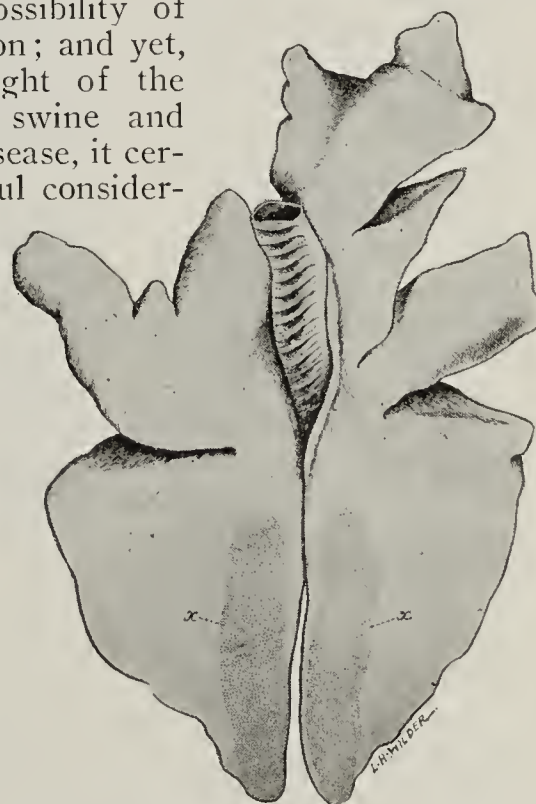


Fig. 3.—Superior surface of bovine lung, shaded portions marked x showing point of election. From Theobald Smith.

entrance to the circulation in man and in animals without demonstrable lesion. The final point of lodgment of the organism affords a wide field for theorizing, much of the vast literature on the subject of the initial site of pulmonary tuberculosis in man being wholly speculative, and often illogical, especially when subjected to the analogies of comparative pathology. It seems only fair to assume that whatever biologic or anatomic factor is advanced as the reason for primary involvement of the apexes in man, the same causes must apply in like manner to the initial site in the bovine.

The hypotheses that the two different bronchial angles subject one apex to greater exposure to infection on a particular side; the recent resurrection of Freund's theory to damage done to the apex by shortening of the first costal cartilage, followed by shortening of the first rib by ossification; the supposed unstableness of the apexes in mammalian life; vocational postural effects on the upper lobe; reversal of the respiratory rhythm; atelectatic zones, and many other similar assertions, fall to the ground in attempting to account for the point of election in bovine tuberculosis. If any of these fanciful theories appeal to the imagination, then it seems fair to insist that whatever causative factor is used to explain apical involvement in man, the same logic, under like conditions, should be applied to elucidate the point of election in the lungs of cattle.

Pigmentation of the lungs in man, and in cattle, corresponds precisely to the fields of invasion of the tubercle bacillus. In man the apexes are the initial sites of demonstrable tuberculous foci. This is also true in anthracosis. In the cow, however, the initial lesion is at the very tip of the caudal lobe, the most superior portion of the bovine lung, anatomically corresponding to the most dependent portion of the human lung (Figs. 1, 2 and 3). This portion of the cow's lung is the most expansible, and has the best lymphatic drainage. None of the quoted hypotheses offers a reasonable explanation why this portion of the cow's lung is the point of election. The reason must be purely anatomic, for if bacilli first gain the blood stream through the lymph channels, then the pulmonary circulation must of necessity distribute them uniformly to all portions of the lungs, in cattle, as well as in man.

To emphasize a point, it is restated that in cattle, as well as in man, the deposits of foreign matter are anatomically the same as for tubercle bacilli. The

lungs of old cows show the greatest pigmentation in the superior portion of the tip of the caudal lobes, which is shown in Figure 3. The shaded portions in the caudal lobes, marked *x*, are the points of election in bovine tuberculosis.

It has been repeatedly demonstrated that the very tip of the caudal lobe of the cow's lung is more generously supplied with lymphatics than any other portion of the lung. These vessels converge at the root of the lungs and empty into the peribronchial glands. Lying contiguous to, and just above the tip of the caudal lobe, is the large posterior mediastinal gland, which picks up the lymphatic plexus on the thoracic surface of the diaphragm, and those from the pericardium and lower portion of the esophagus. The esophagus, thoracic aorta, inferior vena cava and thoracic duct lie immediately above this gland. Exactly beneath the gland, as shown in Figure 2, and separating it from the lung tissue, are the parietal and visceral layers of the pleura, which enclose the pleural lake.

How this gland is infected, and why it shows such constant pigmentation, is the first and foremost problem to solve. In one series of fifty-three careful necropsies of tuberculous cows, Theobald Smith demonstrated that this gland was always involved when there was a focus in the caudal lobe, and in several instances the gland showed old, calcareous lesions, while the tip of the nearby caudal lobe, lying across the pleural lake, was probably invaded at a more recent date. Out of a series of over 40,000 necropsy studies of bovine tuberculosis in the Budapest abattoir, it was demonstrated that the infection in over one third of the cases was confined to the peribronchial and posterior mediastinal glands, a large

percentage—figures not stated—of this number showing that the posterior mediastinal gland alone was involved. In one particularly interesting case, Mohler, of the United States Bureau of Animal Industry, demonstrated tuberculous foci in this gland in a five months' bovine fetus, with no other lesions in the carcass. In pseudotuberculosis, or caseous lymphadenitis of sheep, which certainly is not an inhalation disease, the same topographic involvement of the sheep's lung and posterior mediastinal glands takes place, just as with foreign matter and tubercle bacilli.

If one keeps the anatomy of this region of the thorax clearly in mind, especially the relations of the two pleural surfaces, it seems a reasonable belief that bacilli and pigmented foreign matter must cross the

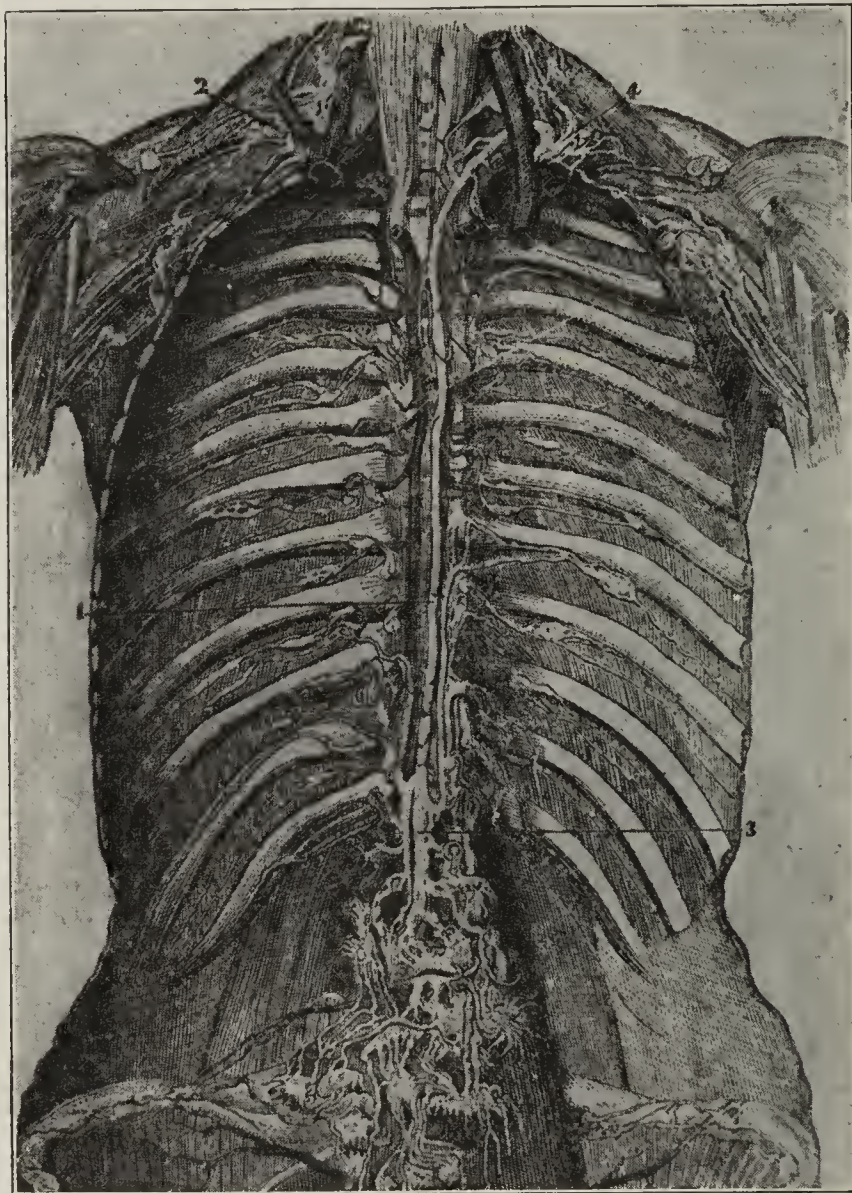


Fig. 4.—Thoracic duct, and the deep cervical lymphatics that anastomose with the parietal pleura opposite the apexes of the human lungs. By Mascagni. From Cuneo.

pleural lake, either from the lung side, upward to the gland, or from the gland, downward to the lung. The problem is confusing from either view, especially if the attempt is made to prove that the gland is first invaded, and the lung secondarily infected.

The reasonable conclusion is that bacilli and foreign matter are arrested in that portion of the lung shown in the shaded portion in Figure 3. At that point of the lung there must be an area of lymph stasis induced by the suction of the large posterior mediastinal gland, which, by means of a network of lymph vessels, drains that portion of the parietal pleura lying exactly opposite.

It seems fair to presume that the gland either receives its infection from the immediate underlying lung tissue, or that this portion of lung tissue receives its infection from the posterior mediastinal gland lying just above. In either event the pathologist is confronted with the fact that if bacilli are first screened out of the circulation at this point, or first penetrate the air vesicles, bacilli, and foreign matter as well,

must pass through two layers of pleura to reach the gland; or if they are first screened out in the gland they must pass to the underlying lung tissue by the same route.

That there are counter currents in the two pleural layers at this portion of the cow's lung is undeniable, and these counter currents, if they possessed any appreciable force, could most assuredly create a lymph stasis at a demarcating area somewhere between the points of suction. The mechanics of this assumed lymph stasis is not hard to understand if the anatomy of the great thoracic duct is held clearly in view (Fig. 4).

This duct, as large as a good sized vein, is generously supplied with check valves throughout its course, to prevent a backward flow of chyle and lymph. Opposite the fifth dorsal vertebra, in the bovine, it receives a large lymphatic vessel from the enormous posterior mediastinal gland. The circulation in the thoracic duct is maintained almost wholly by means of the suction caused by the venous flow past the orifice of the duct at its opening into the subclavian vein (Fig. 5). The pull in the trunk of the duct would certainly influence the flow of lymph from the posterior mediastinal gland, and this in turn would drain the pleural lake in that area, and the visceral layer of the pleura, beyond. Then if the peribronchial glands have been previously damaged by invading organisms or by deposits of coal dust, accidental microscopic foreign matter falling within this exact zone of lymph stasis would most likely be temporarily arrested, with the subsequent formation of a focus of infection in the case of the tubercle bacillus.

If bacilli first reach the circulation, as most pathologists now believe, then there is no good reason to doubt that all portions of the human and bovine lung

are exposed to an equal degree of infection or dosage, whether they enter the circulation by way of the alimentary tract, or are inhaled directly to the air sacs and then penetrate to the underlying interalveolar tissue. Tubercle bacilli have no selective power for any particular portion of lung tissue. Once they are arrested and gain a foothold, they will grow as rapidly in one portion of the lung as in another.

The lodgment, then, of bacilli and foreign matter by apparent selection in a special organ, and in the superior part of this organ, as is the case in both the cow and man, contrary to the clinical observation that pneumonia always attacks the lower lobe, and contrary to the laws governing ponderable matter, must be due to mechanical causes influencing them along unusual lines. In man, that portion of the parietal pleura lying contiguous to the apex of the lung is drained by a vast network of lymph vessels that empty into the deep cervical chain (Fig. 4). Nowhere else in the human thorax is there a decided counter lymph current; and granting that there is this counter current,

it could account for an area of lymph stasis in the apex of the lung.

Study of the pulmonary lymphatic distribution in man shows that the apex, apparently, is not well protected by its separate set of small peribronchial glands. Reasoning from this fact alone, one is liable to jump to the conclusion that this seeming lack of glandular defense might account for the greater frequency of apical infection. Comparative pathology saves one from this error, however, as the point of election in the cow's lung has the greatest defensive lymphatic barrier. Carrying the analogy still further, it is the most plentifully supplied with lymphatics, and if posture has any

bearing on the question, the caudal lobe, by its superior position in the thorax, has the best bronchial drainage. In fact, in taking any view of the method, or methods of infection in man, every anatomic or biologic argument that has been cited must apply with equal force in explaining the method of bovine infection.

CONCLUSIONS

Pulmonary tuberculosis, in man as well as in animals, is primarily an infection of the lymphatic vessels and lymph glands in the lungs.

Cough and expectoration are late manifestations of the disease.

With the experimental evidence at hand, it is a fair assumption that, commonly, infection in man and animals is by the ingestion method.

Even where the bacillus is planted on the respiratory mucous membranes by means of dried sputum, or by dried feces, as is often the case with cattle, the anatomic method is still by the intestinal tract, for the reason that the number of bacilli that would be swal-



Fig. 5.—Terminal bend of the thoracic duct. From Cuneo.

lowed under such conditions is out of all proportion to the very doubtful number that might possibly reach the air vesicles by inhalation.

The granting that infections are commonly by the intestinal tract does not lessen at all the potential danger of infected dust, as much of this dust would be swallowed, even though planted on respiratory mucous membranes by inhalation.

All portions of the lungs, in man and in animals, are invaded with dust and tubercle bacilli in equal measure, whether the route be through the trachea or through the intestinal tract.

The lower, as well as the upper, peribronchial glands are equally pigmented in anthracosis, and roentgenograms show the same involvement in early tuberculosis. Pigmentation and infection of the lower lobes in man do not appear until the defenses of the peribronchial glands are permanently damaged.

No portion of the lung possesses a specific biochemical constituent that would sensitize it to the tubercle bacillus, nor does the bacillus possess selective properties for any special portion of the lung.

Whatever exact reason exists for the constant invasion of a specific area in the lungs of man and cattle, the causes for this point of election must be wholly physio-anatomic.

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SODIUM AND POTASSIUM IODIDS IN ROENTGENOGRAPHY

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A few weeks ago, in a preliminary report,¹ attention was called to some experimental results in the use of potassium and sodium iodids as opaque mediums in roentgenography. Since this report was made, these solutions have been put to practical use in a sufficient number of cases to warrant a report of their clinical application.

PREPARATION OF SOLUTIONS

For pyelography, a 25 per cent. aqueous solution of sodium or potassium iodid is used. Thus, 100 gm. of solution is made by dissolving 25 gm. of the salt in 75 c.c. of water. For cystograms, a 15 per cent. solution gives sufficient density. As was noted in the previous article, these solutions are stable, neutral in reaction, and cause no precipitation in urine or bloody urine. On standing, they become slightly yellow, but this causes no trouble. There are no special precautions to be observed in preparing the solutions, and they are easily sterilized by boiling.

CLINICAL RESULTS

These solutions have been used by us or in our presence in eight human cases, which have included the examination of two bladders, three kidneys and three chronic sinuses. In all cases the roentgenograms have been entirely satisfactory. The pyelograms were made with solutions varying from 25 to 33 per cent. in

strength, the potassium and sodium salts being used interchangeably. A 25 per cent. solution of the sodium salt casts a shadow sufficiently dense for all purposes, though a denser solution may be safely used if greater contrast is desired. For cystograms, a 15 to 20 per cent. solution of either salt is used.

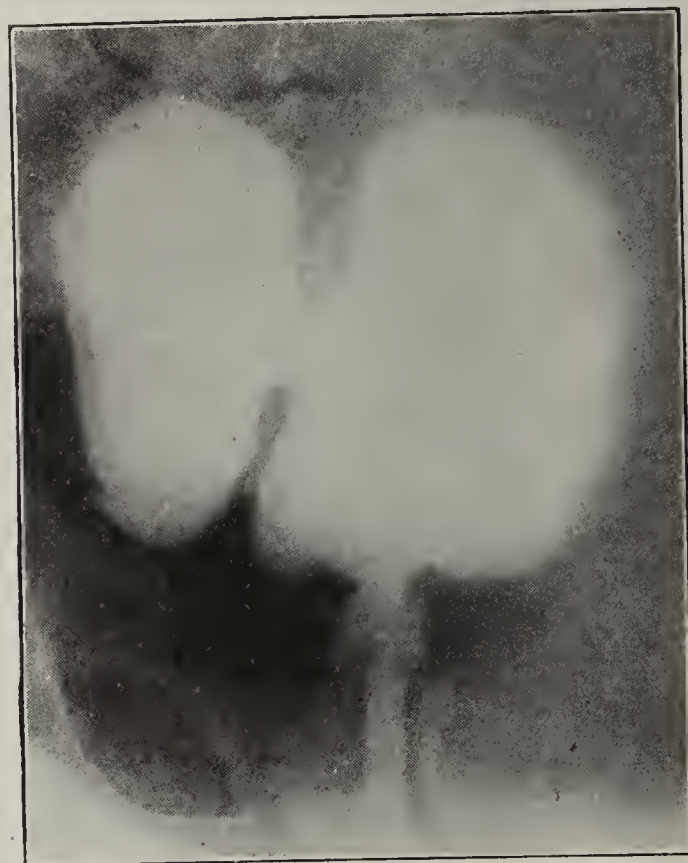


Fig. 1.—Cystogram of bladder filled with 15 per cent. solution of sodium iodid; patient of Dr. Bransford Lewis. In addition to the large diverticulum, the prostatic cavity is shown. The prostate gland had been removed elsewhere some time before. (Courtesy of Drs. Bransford Lewis and Neil S. Moore.)

As regards pain or discomfort to the patients, in making the two cystograms, there was no complaint of any kind in either case. In making the pyelograms there was complaint of some pain over the bladder and along the course of the ureters, but no more than is often seen following ureteral catheterization alone. Since the solutions when introduced into the bladder caused no unusual sensation of any nature, it is probable that the discomfort in filling the kidney pelvis was due to mechanical causes and not to the character of the solutions. The patients walked to their home after the pyelograms were made, and complained of no further trouble. One voided a small quantity of blood-tinged urine after the ureteral catheters were withdrawn; after this, and in the other cases, the urine voided was unchanged in character. The large bladder diverticulum, shown in Figure 1, was removed by Dr. Lewis four days after the cystogram was made. After operation the bladder showed no sign of any irritation due to the solution used.

In view of this experience, though rather limited in quantity, we feel reasonably safe in recommending these solutions for this kind of work.

After one of us had been ordered to duty in St. Louis, we were fortunate in having Drs. Bransford Lewis, J. R. Caulk and H. G. Greditzer volunteer to use the solution. We acknowledge their kindness in allowing us to use the accompanying illustrations.

CHOICE OF SOLUTIONS FOR PYELOGRAPHY

Colloidal silver solutions are quite satisfactory for this work. These solutions, however, are relatively expensive, and in addition possess undesirable physical properties. In the past three years the thorium sol-

1. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography: Preliminary Report, *THE JOURNAL A. M. A.*, March 16, 1918, p. 754.

tion introduced by Burns² has become very popular. Its cost is much less than that of colloidal silver of equal density, it is a clear solution, it does not stain, and it has a relatively low viscosity. A little more than ordinary care is necessary to prepare the solution, it being necessary to neutralize the aqueous solution of thorium nitrate, which is acid in reaction, and to add sufficient amount of sodium citrate to keep the thorium from precipitating. Though this is not at all a difficult procedure, most users have preferred to buy the prepared solution which, as sold at present, affords the makers a considerable profit. At present thorium salts are rather difficult to obtain and are not listed by several large wholesale chemical firms which formerly kept them. At the present retail price of sodium and potassium iodids, a 25 per cent. solution of these salts is about half as expensive as the prepared 15 per cent. thorium solution. The sodium salt is a little more expensive than the potassium, and in the same concentration gives a slightly denser shadow for the reason that its relative iodine content is higher. These iodid solutions have all the desirable features of the thorium preparation, and in addition are made with much less trouble, are less expensive, and the ingredients are obtainable at any drug store. In the event of absorption in ordinary amounts, these salts are known to be nontoxic.

The prevailing retail price of a pint of the silver, thorium and iodid solutions of the same density is about \$10, \$5 and \$2.50, respectively. The wholesale price is approximately 25 per cent. less.

THEORETICAL CONSIDERATIONS

It is obvious that a sufficiently concentrated solution of any iodid or element of high atomic weight will be opaque to the roentgen ray. For use in pyelography, however, these solutions must be nonirritating and

the common chemical substances that might be used, the iodid solutions recommended seem to be most suitable. On general principles it would seem better to have solutions of lower osmotic pressure. Aside from using colloidal solutions, this result could be obtained by using salts whose molecules in solution contain



Fig. 3.—Pyelogram of right kidney of a man. A 33 per cent. potassium iodid solution was used. (Courtesy of Dr. H. G. Greditzer.)

several atoms of high atomic weight which are not ionized to a high degree. Thorium iodid came to mind as a possibility. This could not be obtained on the market, and in any event its scarcity and expense would rule it out. Strontium iodid has several properties to recommend it. It is easily obtained, is nontoxic, and is not very expensive. It forms a neutral solution in water, and a 20 per cent. solution casts a good shadow under the roentgen ray. The one objection to its use is that when mixed with urine a very light, flocculent but appreciable precipitate occurs, requiring some time, however, to form and settle. Though this is not so serious, it should be a bar to its use in cavities which cannot be well irrigated. Other iodid and heavy metal solutions were tried, but none were found which are so free from objections as the two recommended.

SUMMARY

1. Excellent pyelograms have been obtained through the use of from 25 to 33 per cent. aqueous solutions of sodium or potassium iodids as opaque mediums. A 25 per cent. solution of the sodium salt is recommended for this work, though if greater contrast is desired, a stronger solution may be used. A 15 to 20 per cent. solution is sufficient for good cystograms.

2. These solutions have been used, either by us or in our presence, on eight patients. No undesirable effects of any nature have been noted.

3. The solutions are made by dissolving the proper amount of the salt in water. The solution thus formed is neutral in reaction, quite saline in taste, but nontoxic and nonirritating to the bladder or kidney pelvis, and causes no precipitation when mixed with urine or blood-tinged urine. Of all solutions used in pyelography, we are familiar with none so easily made and so inexpensive.



Fig. 2.—Pyelogram of woman patient with floating right kidney. The kidney pelvis was partly filled with a 25 per cent. sodium iodid solution. The malposition of the kidney prevented a better technical result. (Courtesy of Dr. H. G. Greditzer.)

nontoxic, and must not form precipitates with urine or bloody urine. These restrictions limit the field considerably. From a more or less systematic survey of

2. Burns, J. E.: Thorium. A New Agent in Pyelography, Bull. Johns Hopkins Hosp., 1916, 27, 157.

A CASE OF DOUBLE SPONTANEOUS
PNEUMOTHORAX *

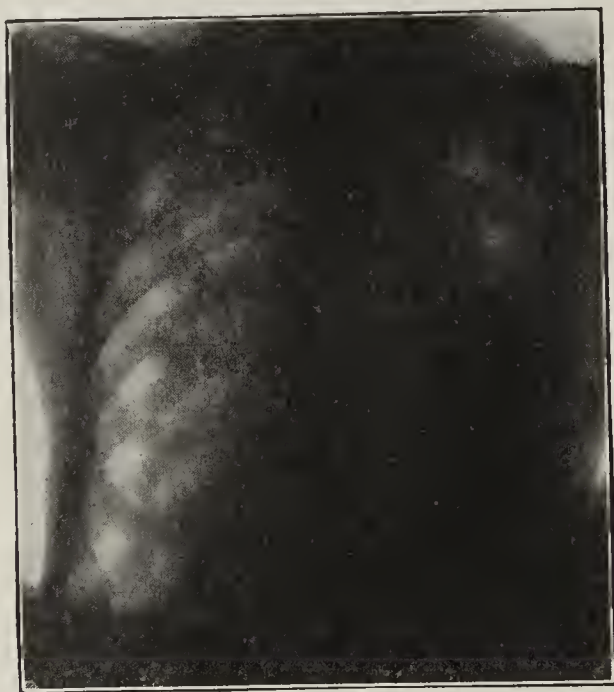
M. I. MARSHAK, M.D.

EDGEWATER, COLO.

Spontaneous or natural pneumothorax is not an infrequent complication in pulmonary tuberculosis. Double spontaneous pneumothorax, however, is exceedingly rare. In a review of the indexed literature I was unable to find a single case report on record.

REPORT OF CASE

I. S., a man, aged 50 (Case 2714), a merchant, admitted, Jan. 2, 1917, presented a negative family history, aside from the fact that the father died of probable pulmonary tuberculosis. The patient had measles during childhood, but had made a good recovery with no complications. No other illness was noted until the onset of pulmonary tuberculosis about 1905. The type of onset was insidious, with anorexia, loss of weight, cough, expectoration, and night sweats. The patient later developed pain in the right axilla, and occasional streaked sputum. The sputum was found positive at that time. Since the onset in 1905, the patient had been



Right side: Complete collapse with fluid to fourth rib. Pneumothorax of longer standing. Left side: Acute type of pneumothorax, partial in extent.

subject to frequent colds and to attacks of sore throat. He wandered over a considerable portion of the United States in search of health, and eventually came to Denver, Jan. 2, 1917, to be admitted to the Sanatorium of the Jewish Consumptives' Relief Society.

On admission the symptoms were severe cough (worse at night and on lying down), expectoration, occasional chills, temperature rising to 100 F. in the afternoon, with a pulse range of from 80 to 104. There were no night sweats, weakness was marked, and there were occasional blood streaks in the sputum, which was positive for tubercle bacilli. Dyspnea was marked on the least exertion. There was rather severe pain over the right side, which had been present, off and on, during the past twelve years. The appetite was good and the bowels were regular.

The patient was markedly emaciated, and looked more than 60 years of age. He was somewhat cyanotic, with marked depressions above and below the clavicle, in both suprascapular and infrascapular spaces, and in the intercostal spaces. The secondary muscles of respiration were markedly developed, the costal angle was acute, the glands were not palpable, the skin was dry and somewhat scaly, the hair was sparse and dry, the eyes, nose, throat and ears

were normal, there were no pulsations in the neck, and the thyroid gland was not enlarged.

The heart was to the right, the right border being at the right nipple line. The left border was under the sternum. The sounds were normal, the radial arteries were palpable, the superficial veins on the extremities were dilated, and the venous flow was sluggish. The systolic blood pressure was 94, and the diastolic, 64. The abdomen was negative. The liver, spleen and kidneys were not palpable. The urine was normal. There was a marked tenderness over both posterior tibials, the reflexes and the bones and joints were normal, and the muscles were atrophied throughout. The chest examination revealed infiltration to cavity formation throughout both lungs. There was a tendency to hyperresonance over both lungs which we thought was due to associated emphysema. No signs of fluid and no splash were present.

The patient left the institution, Feb. 12, 1917, after a disagreement with a fellow patient, and went to live at a farmhouse a few blocks distant from the sanatorium. A few days later we heard that he was very ill and had a great deal of pain on the right side. He was up and about in a few days. March 4, Dr. Joseph W. Craighead saw him and, although the patient was so sick and in such severe pain that an examination could not be properly made, he made a diagnosis of spontaneous pneumothorax, from the symptoms observed. A few hours later when admitted to the sanatorium the patient was moribund, and twenty minutes later he died.

To verify our diagnosis, a necropsy being unobtainable, we examined the body by fluoroscopy and discovered a right-sided pneumothorax with fluid. This being of sufficient interest, we made a roentgenogram of it. On developing the plate we were much surprised to find what looked like an acute pneumothorax on the left side.

We concluded that the patient developed the pneumothorax on the right side soon after leaving the sanatorium, and that the pneumothorax on the left side developed, March 4, and diminished his breathing space sufficiently to produce death.

ARTIFICIAL PNEUMOTHORAX IN THE
TREATMENT OF PULMONARY
TUBERCULOSIS

RESULTS IN PRIVATE AND DISPENSARY PRACTICE

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HOUSTON, TEXAS

The basis of this report is a record of thirty-two cases of pulmonary tuberculosis treated by an artificial pneumothorax of nitrogen gas during a period of three and one-half years. It has been claimed that sanatorium regimen is an essential element in the management of patients treated by pulmonary compression. Our results in this series will, I hope, disprove the necessity, although I fully admit the advantage of sanatorium treatment, and cause us to realize that a great deal can be done for the many patients at home, unable or unwilling to seek the western sanatoriums for relief.

These cases were taken chiefly from the material afforded by the Houston Anti-Tuberculosis League Clinic, and the patients were in many instances unable to procure the rest and nourishment prescribed for them. Nineteen men and thirteen women were treated for an average period of six months each; three patients were treated for eighteen months each; four for one month each, and the other patients for varying periods between. The patients were classified as follows: seven, or 22 per cent., in the first stage; fourteen,

* From the Sanatorium of the Jewish Consumptives' Relief Society.

4 per cent., in the second stage, and eleven, or 34 per cent., in the third stage. Their ages varied from 15 to 60 years. Our first seven cases were selected chiefly because they were seemingly hopeless. But later we began to discriminate more closely as we came to realize that in this procedure we had an exceedingly effective measure for assisting these unfortunates in resting their disease.

A Floyd-Robinson apparatus was used, and the operation was performed under procain (novocain) and epinephrin anesthesia. The physical examination was, in most cases, supplemented by a careful roentgen-ray examination. An effort was made to secure unilaterally involved cases, or patients with slight involvement of the untreated lung. The degree of activity of the untreated lung is of more consequence than the amount of lung tissue involved per se. This

the treated lung; while in the opposite, that is, the better lung, none of the cases had any sign of cavation.

The technic is comparatively simple, and the operation safe, if the indications are rigidly followed. It is self evident that, for the successful performance of the operation, pleural adhesions should be at least limited in extent, and preferably nonexistent. In 15 $\frac{2}{3}$ per cent. of our cases, we encountered troublesome adhesions which prevented us from carrying out the treatment. The use of the fluoroscope is of the greatest value in this particular, although it is possible in a majority of the cases to determine the presence of adhesions by the usual methods of physical examination. With a well marked Litten's sign and fair basal excursion, and the absence of marked chest retraction, it is reasonable to assume that troublesome adhesions are absent. The choice of the site of puncture is

SUMMARY OF THIRTY-TWO CASES

Case	Occupation	Sex*	Age	Race†	Duration of Disease	Duration of Treatment	Involvement		Stage			Result During Treatment			Present Condition					State
							Unilateral	Bilateral	First	Second	Third	Adhesions	Improved	Unimproved	Improved	Unimproved	Arrested	Dead	Unknown	
W. E. N.	Carpenter	♂	47	H. S. White	1 yr.	6 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
J. A. D.	Telegrapher	♂	31	H. S. White	1 yr.	1 $\frac{1}{2}$ mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
J. R. K.	Dentist	♂	20	H. S. White	1 $\frac{1}{2}$ yr.	6 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Single
E. J.	Farmer	♂	36	H. S. White	6 mo.	1 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
H. W.	Tailor	♂	32	H. S. Colored	1 yr.	1 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
H.	Farmer	♂	46	H. S. White	3 yr.	0	..	+	..	+	..	+	..	..	..	..	+	..	+	Single
F. S.	Housewife	♀	48	H. S. White	3 yr.	6 mo.	..	+	..	..	+	..	+	..	..	+	..	..	..	Married
G. F. W.	Farmer	♂	61	H. S. White	5 yr.	6 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
G. P.	School girl	♀	15	H. S. White	6 mo.	18 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
L. L.	Farmer	♂	24	Italian	6 mo.	2 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Single
P. L.	Farmer	♂	24	Italian	2 mo.	2 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
M. B.	Housewife	♀	35	White H. S.	1 yr.	0	..	+	..	..	+	+	..	..	..	..	+	..	..	Married
R. F.	Solicitor	♂	36	White H. S.	1 mo.	3 da.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
T. S. H.	Clerk	♂	50	White H. S.	1 yr.	18 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
J. B.	Elevat'r boy	♂	19	White H. S.	1 yr.	0	..	+	..	..	+	..	+	..	..	+	..	..	..	Single
C. W. B.	Clerk	♂	31	White H. S.	7 mo.	18 mo.	..	+	..	..	+	..	+	..	+	..	..	..	..	Married
R. E. L.	Clerk	♂	31	White H. S.	8 mo.	0	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
W.	Housewife	♀	28	White H. S.	6 mo.	0	+	..	..	+	..	+	..	..	..	..	+	..	..	Married
A.	Shoemaker	♂	43	Jewish	3 yr.	2 wk.	+	..	..	+	..	..	+	..	..	..	+	..	..	Single
C. W. S.	Foreman	♂	50	White H. S.	10 yr.	7 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
L. A. H.	Housewife	♀	28	White H. S.	2 mo.	1 yr.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
A. F. B.	Housewife	♀	33	White H. S.	3 yr.	1 yr.	+	..	..	+	..	..	+	..	..	..	+	..	..	Married
R. H.	Brickmason	♂	30	White H. S.	5 mo.	14 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
F. W. G.	Housewife	♀	40	White H. S.	5 yr.	6 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
J. J. T.	Housewife	♀	30	White H. S.	3 mo.	6 mo.	+	..	..	+	..	..	+	..	..	..	+	..	..	Married
B. L.	Clerk	♂	46	White H. S.	1 yr.	2 mo.	..	+	..	+	..	..	+	..	+	..	..	..	..	Single
M. A.	Housewife	♀	32	White H. S.	5 yr.	8 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
E. M. H.	Housewife	♀	26	White H. S.	1 yr.	8 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
F. S.	School girl	♀	17	White H. S.	10 mo.	4 mo.	..	+	..	..	+	..	+	..	+	..	..	..	..	Single
C. F. S.	Housewife	♀	33	White H. S.	2 mo.	9 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
M. H.	Sailor	♂	27	White H. S.	2 mo.	8 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Single
V.	Housewife	♀	32	White H. S.	1 yr.	6 mo.	+	..	+	..	..	..	+	..	+	..	..	..	..	Married

* In this column, ♂ denotes male, and ♀ female.

† In this column, H. S. means American nativity.

because a relatively larger area of nearly quiescent tuberculous lung tissue will bear the strain of having to act vicariously for the collapsed lung better than a smaller area of actively diseased tissue. As will be seen in the case reports, this ideal was not possible because we had to accept the material available for treatment. Twelve of the patients had involvement of the untreated lung, which was of a more or less active type. An area without cavities and râles in the untreated side, even involving the greater portion of a lobe, will offer a better prognosis than a small, active focus in that lobe. It is unwise to treat any case, except palliatively, which presents a tuberculous focus in the untreated basal lobe. The opposite lung, acting vicariously for its compressed mate, and therefore subjected to greater expansible effort, will more readily activate a focus in the base where the expansibility is greatest. All the eleven rather extensively involved bilateral cases presented signs of cavity in

usually at the fourth or fifth interspace in the anterior axillary line, or at the angle of the scapula. It is well to percuss lightly the area to be elected, and unless a fair quality of resonance is present, adhesions are liable to lie beneath, and another site should be chosen.

I shall not attempt to describe every case in detail, but shall give a summary of the histories of six cases, classifying them as follows:

1. Hopeless, bilaterally involved, advanced tuberculosis (Case 1).
2. Chronic, bilaterally involved, fibroid tuberculosis (Case 2).
3. Acute pneumonic tuberculosis (Case 3).
4. Pulmonary hemorrhage (Case 4).
5. First-stage tuberculosis (Case 5).
6. Chronic tuberculosis, with a large cavity in the compressed lung, and moderate involvement in the better lung (Case 6).

REPORT OF CASES

CASE 1.—W. E. N., aged 47, an American carpenter, married, had suffered from the disease one year before the first examination. The disease was extensively bilateral, most marked in the right lung with signs of cavity in the right upper lobe. As a third-stage case, it was hopeless. The patient was bedridden, expectoration was profuse, and there were night sweats, dyspnea and high temperature. Artificial pneumothorax on the right side was begun, June 3, 1914. The temperature dropped to 99 F. in the afternoon, and for four months was never above 99.2. The patient improved wonderfully. The sputum decreased, the night sweats stopped, the appetite improved, and the patient gained in weight and strength until he could get out of bed at will. In November, a right-sided pleural effusion appeared which partially compressed the lung until the patient's death in March, 1915.

CASE 2.—F. S., a widow, aged 48, an American, referred by Dr. C. C. Green, gave a history of loss of weight, slight expectoration, night sweats, and afternoon fever—symptoms that had been present for the previous three years. The woman was frail, with extensive involvement of the right upper lobe, and of the right middle lobe to a lesser degree. The lower lobe was slightly involved, with considerable fibrosis throughout the right lung. The apex of the left lung was also slightly involved; the lower lobe was practically normal. Artificial pneumothorax was begun, Feb. 6, 1915, in the right pleural cavity. Some difficulty was experienced because of pleural adhesions, and only a partial collapse was secured. Injections were continued at intervals until July. Meanwhile, between that time and the previous date of April 25, she had been absolutely free of fever. In July the injections were discontinued, and for a number of months the patient improved and continued to do well. Her surroundings were poor and she took practically no care of herself from that time on. May, 1917, she reported that she was not doing well at all and she looked very thin, coughed a great deal and expectorated considerably.

CASE 3.—G. P., a schoolgirl, aged 15, American, had suffered from the disease for six months. She complained of high afternoon temperature ranging from 102 to 103 F., of drenching night sweats, of loss of weight, etc. The right upper lobe and the upper part of the right middle lobe were involved throughout. The right inferior lobe was practically normal. The left apex showed a slight involvement. The left lower lobe was normal. Artificial pneumothorax was induced in October, 1915, and within a few weeks' time after this procedure the patient showed great improvement. Injections were continued until the following July. By this time, she had gained 20 pounds and I decided it would be safe to stop the injections. In two months' time, however, she began to have some cough and slight afternoon rise of temperature. There were a few râles in the right upper lung. The right pleural cavity was again injected and the compression has been continued until the present date. She has been without fever and any symptoms of tuberculosis for months, and at the present time I consider her case arrested.

CASE 4.—M. H., a man, aged 27, American, single, sailor, reported that this present trouble had begun about a month and a half before the first injection, with cough, night sweats, and loss of weight, appetite and strength. He had been expectorating a considerable amount of purulent sputum. Two days before he was seen, he had a pulmonary hemorrhage of rather large amount. This was followed in about twelve hours by a second hemorrhage of rather large amount. This was followed in about twelve hours by a third hemorrhage. Since that time he had been coughing up a considerable amount of black blood. Examination revealed dulness, and a great many bubbling râles in the left upper lobe. Nitrogen gas was injected at intervals of two days until the lung was collapsed. After this, there was no further hemorrhage, and ten days later the patient reported that he had greatly improved. The highest temperature after the injection was 99.4, and after that time it was normal. He had very little expectoration, the sweats stopped, the appetite improved and he gained a great deal in weight and strength. March 9, the patient had a hemorrhage of about 2 ounces of

bright red blood. I injected 1,200 c.c. of nitrogen gas into the left pleural cavity. There was no further hemorrhage, and the improvement has continued until, at the present time, the disease is arrested.

CASE 5.—L. A. H., a housewife, aged 28, American, was referred by Dr. Gavin Hamilton. The trouble began in January, 1916, with hemorrhage, after which she began to decline in weight. There was very little expectoration, with afternoon rise of temperature ranging from 99 to 100. Examination revealed a frail woman weighing 93 pounds with tuberculosis of the right upper lobe. The diagnosis was confirmed by the roentgen ray. February 22, artificial pneumothorax of the right pleural cavity was begun. The injections continued without incident until March 10, 1917. In June, 1917, she presented no signs of the disease, had no abnormal temperature, cough nor night sweats, and had gained 28 pounds in weight. The case was arrested.

CASE 6.—R. H., a bricklayer, aged 30, American, single, referred by Dr. C. U. Patterson, had been ill with the present trouble since November, 1915. The patient complained of free and purulent expectoration, night sweats, considerable afternoon rise of temperature, and loss of 30 pounds. Examination revealed a man weighing 140 pounds with involvement of the upper and middle lobe and, to some extent, the lower lobe of the right lung. There was a cavity in the lower portion of the right upper lobe. The left upper lobe also was somewhat involved. Artificial pneumothorax of the right pleural cavity was begun, March 19, 1916. Further injections were without incident, and the injections were continued at intervals until April 6, 1917. For many months afterward, this patient had no abnormal temperature, and expectoration gradually ceased. In June, 1917, the patient was at work as a night detective, and he said he felt absolutely well. At that time his weight was 172 pounds, a gain of 32 pounds since the beginning of the treatment.

COMMENT

The decided improvement noted in Case 1 was more than we expected. The man's life was prolonged for months. During this period he was more comfortable than formerly. Patient 2, with fibroid chronic tuberculosis, was temporarily benefited, but the improvement was not permanent. In my opinion, such cases are not suitable for artificial pneumothorax, and should not be treated by this method unless large unilateral cavities with profuse expectoration are present. In our cases of acute pneumonic tuberculosis, the improvement was striking. The patients improved rapidly showing a cessation of night sweats, a marked lessening of the cough, a stopping of the expectoration, a rapid declination of temperature, and a steady gain in weight and well-being. In five cases, pulmonary hemorrhage was successfully combated, and in three of these the pulmonary process was subsequently arrested. We have departed from the beaten path in advocating artificial pneumothorax in unilaterally involved first stage cases, as exemplified in Case 5. The result in this case was excellent, and the patient is now well. Case 6 demonstrates a type of pulmonary tuberculosis in which the patient may be greatly benefited by artificial pneumothorax. As was noted in this case the improvement was rapid in onset and lasting in duration.

A great deal has been written in regard to the question of technic. I have purposely omitted this feature of the work. I should like to suggest in passing, however, that it is better to inject small amounts of nitrogen gas, from 300 to 500 c.c., at short intervals than to use larger amounts at longer periods. Several of my earlier patients have received temporary setbacks because I injudiciously used from 1,000 to 1,200 c.c. of gas at single injections. It has seemed

to me that pleural effusions have more frequently followed in these cases. On several occasions, high fever with severe vomiting ensued, which, however, ceased in a few days.

No cases of pleural shock, pleural infection, gas embolism, harmful puncture of the lung, or cardiac dilation were encountered. If these dangers were so formidable, this circumstance seems the more striking, because our patients, in many instances, were injected without prolonged preliminary observation, and in every case at the patient's home or in the office. Subcutaneous emphysema was frequently encountered in the earlier cases. But it was never alarming, although in one case the gas infiltrated into the tissues of the neck. We believe that the earlier cases presented this feature because we injected a large amount of gas, and allowed the patients to get out of bed too soon. Excessive coughing will cause this complication, as was demonstrated in one case. The use of a sharp needle for the subsequent refilling injections will aid in obviating subcutaneous emphysema.

In 20 per cent. of the cases treated, pleural effusions occurred. No attempt was made to withdraw this fluid, as the amount was never large. The injections were continued as before, except that smaller amounts were given at longer intervals. We have begun to look on this complication as favorable, because every patient has been benefited when an effusion occurred.

Because of pleural adhesions it was impossible to perform the operation in five of the thirty-two cases. All these five patients are now dead. In three other cases the continuation of the treatment was refused, and only one of these is living. Of the eight untreated patients only one is alive, and he is in very poor condition. Twenty-three of the other twenty-four patients are living. The patient who died (Case 1) was a hopeless third-stage consumptive. As four, or 12.5 per cent., of the total number of cases, were unimproved by the treatment, it was discontinued. Nineteen, or 80 per cent., of the twenty-four patients treated were greatly improved. Of these, six, or 20.5 per cent., were classified as improving, and thirteen, or 54 per cent., as arrested. It is significant that 96 per cent. of the patients treated are living.

The improvement in the patients' clinical symptoms was in most cases very rapid. The fever ceased, or fell considerably, night sweating ceased, the sputum decreased, the appetite improved, and the patient gained rapidly both in strength and weight.

CONCLUSIONS

We feel that a procedure which will bring about an arrest in 44 per cent. of the cases, or 32, in which the method was tried, and 60 per cent. of the cases treated, has a well established place in our therapeutic armamentarium. First-stage cases unilaterally involved could be treated by an artificial pneumothorax, and I am of the opinion that the time is not far distant when this will be more generally done. In the future we should select our cases more carefully, and give the earlier first-stage cases the benefit to be derived from an artificial pneumothorax.

Clay Pipe as a Breast Pump.—According to *Le Nourrisson*, a woman seeking a position at Paris as a wetnurse kept her breasts in good condition by pressing the bowl of a clay pipe over her nipple, and sucking the milk herself through the pipe-stem. This autosuckling breast pump by means of a tobacco pipe was suggested by Mesnard in 1743 to spare fissured nipples.

THE MARGIN OF ERROR IN THE DIAGNOSIS OF NEUROSYPHILIS OF THE PARETIC TYPE

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The study of our errors may injure our vanity, but if honestly made and executed, it proves a healthy "mental catharsis" and materially aids our general understanding. In 1910, Southard¹ reviewed forty-one cases of clinical neurosyphilis of the paretic type that had come to necropsy at the Danvers State Hospital, and found an error of 15 per cent. in those cases that the staff had unanimously considered to be general paralysis of the insane. At the same time, the necropsy reports in 186 cases in which this disease was not considered clinically were studied, and two of these were found, by the plasma cell criterion, to be general paralysis of the insane. The cases considered in Southard's paper were diagnosed before the general application of biologic tests, and it is my present purpose to determine whether this addition to our diagnostic technic has been beneficial, or whether it has made us careless in our clinical examination to such an extent as to vitiate its usefulness.

The accompanying table shows at a glance the important points found in a study of 168 patients admitted to the Warren State Hospital between January, 1913, and January, 1918, and examined at necropsy. For the sake of comparison, figures taken from Southard's paper are placed in an adjoining column.

CLINICAL DIAGNOSIS AND NECROPSY FINDINGS IN NEUROSYPHILIS OF THE PARETIC TYPE		
	Darling	Southard
Number of cases studied.....	168	227
Number of cases unanimously diagnosed as neurosyphilis of the paretic type.....	45	41
Number of cases unanimously diagnosed as neurosyphilis of the paretic type and proved to be that disease at necropsy	45	35
Number of cases about which opinions were divided, with some favoring neurosyphilis of the paretic type.....	6	20
Number of cases about which opinions were divided, with some favoring neurosyphilis of the paretic type, and proved at necropsy to be that disease.....	0	8
Number of cases proved to be neurosyphilis of the paretic type at necropsy, but not diagnosed clinically.....	0	2

The pathologic diagnoses of these cases are based on records made by Dr. Paul G. Weston, to whom I am indebted for aid in their interpretation, and also for making additional microscopic examinations in all doubtful cases. A final diagnosis of neurosyphilis of the paretic type is here based on the presence of ependymitis, chronic lymphangitis, and varying degrees of pial edema in the gross specimen; with cortical gliosis, perivascular infiltration with plasma and round cells, endothelial proliferation, presence of stab cells and disarrangement of cortical architecture in the microscopic section.

From the table it is seen that all of the forty-five cases unanimously diagnosed as neurosyphilis of the paretic type were proved at necropsy to have been that disease. It is worthy of note that every one of these patients was found to have a positive Wassermann reaction² in the spinal fluid at some time, and that all of those admitted after July, 1914,³ gave a paretic colloidal gold curve⁴ when the spinal fluid Wassermann

1. Southard, E. E.: Jour. Nerv. and Ment. Dis., 1910, 27, 1.
2. Weston, P. G.: Jour. Med. Research, 1914, 30, 377 (Wassermann technic used).
3. Prior to 1914, the colloidal gold test was not a routine procedure.
4. Weston, P. G.; Darling, I. A., and Newcomb, P. B.: Am. Jour. Insan., 1915, 71, 774 (colloidal gold test used).

reaction was positive. In several of these cases there were argument and divergence of opinion relative to the possible presence of complicating factors, such as epilepsy, gross sclerotic lesions, and toxic conditions secondary to heart and kidney disease. In spite of this, a definite preference for paresis as the basic condition was expressed by every one present at the conference.

There were six other cases which some of the staff members believed to be paresis, but concerning which the opinions were not unanimous. When these patients were examined microscopically at necropsy, none of them showed evidences of cerebral syphilis. It is also interesting to observe that five of these six patients failed to give positive serologic signs of syphilis in either the blood or the spinal fluid, and that the sixth patient died before any specimens for laboratory tests could be obtained.

I believe that many errors are made by placing too much dependence on one laboratory examination of the blood and spinal fluid. Several workers have drawn attention to the fact that the blood of a syphilitic will frequently be found negative to the Wassermann reaction at one time and positive at another. The records of the Warren State Hospital show many instances of this and also numerous similar irregularities in the findings in the spinal fluid examinations. Because of this recognized liability to variation in serologic findings, all the physicians presenting cases before the hospital staff have been very careful to have several specimens of blood and spinal fluid examined in all questionable cases before asking the staff to aid in the final classification, and this has, without doubt, aided materially in making accurate diagnoses.

These findings confirm the opinion that I expressed⁵ in 1915, namely, that with the aid of modern laboratory methods, probably 100 per cent. accuracy could be obtained. It does not necessarily follow that this high percentage could be maintained indefinitely; but the facts presented in this study prove that the error in diagnosing neurosyphilis of the parietic type can be made almost negligible if a careful clinical examination is combined with repeated serologic tests made by a competent laboratory worker.

5. Weston, P. G., and Darling, I. A.: Am. Jour. Insan., 1915, 72, 325.

School Lunches.—Along with other sociologic problems of increased importance during the war, the subject of school lunches for children in the large cities, particularly, has been the subject of augmented interest. The New York School Lunch Committee, maintained by the New York Association for Improving the Condition of the Poor, has published information concerning the work of the committee in New York, where lunches are provided in thirty-five of the 208 schools of the city. On account of the increased cost of everything, the price of the dishes of these lunches has had to be raised somewhat, and still the income has not equaled the expenditure for food and service, to say nothing of the cost of equipment. The income from lunches in thirty-four of the schools during the period from 1916 to 1917 was \$38,369.81, while the operating costs, including capital expenditures, amounted to over \$60,000, leaving a deficit of nearly \$22,000. The need for this work has been demonstrated, and its good results have been apparent not only in the benefit derived by the children, but also in the example set for the parents at home, where diet conditions have been improved. The committee says that there is an almost universal belief among those who have seriously considered the problem that school lunch work is school work and should be taken over by the board of education. Heretofore, the funds have come from public-spirited citizens.

THE PRESENCE OF SPIROCHETES IN THE KIDNEY*

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In May, 1917, at Tokyo, Futaki demonstrated spirochetes in the urine and the renal casts of typhus-infected kidneys, and reported them as the specific causative agent of typhus fever. Two months later, Futaki's report was discussed by Miyashima, Kusama and Koga. Miyashima and Kusama had not been

TABLE 1.—CASES EXAMINED AT NECROPSY

No.	Age	Sex*	Diseases	Spirochete
1	10	♂	Chronic nephritis.....	+
2	18	♂	Tuberculous appendicitis; earles of ileum.....	—
3	20	♂	Acute nephritis; uremia.....	++
4	20	♂	Chronic nephritis.....	+
5	20	♂	Pulmonary tuberculosis.....	—
6	21	♂	Tetanus.....	—
7	22	♂	Suppurative appendicitis, peritonitis and acute nephritis.....	—
8	23	♂	Nephrolithiasis; uremia; hemorrhagic nephritis.....	+
9	25	♂	Pulmonary tuberculosis; acute nephritis.....	+
10	27	♂	Chronic nephritis.....	+
11	28	♂	Chronic parenchymatous nephritis.....	++
12	28	♂	Suppurative oophoritis.....	+
13	28	♂	Suppurative nephritis.....	+
14	29	♂	Valvular endocarditis.....	+
15	30	♂	Chronic nephritis.....	—
16	31	♂	Valvular endocarditis.....	—
17	32	♂	Multiple cystic kidney.....	++
18	37	♂	Diabetes mellitus; chronic nephritis.....	+
19	38	♂	Puerperal nephritis.....	—
20	40	♂	Parenchymatous nephritis.....	+
21	41	♂	Chronic nephritis.....	+
22	44	♂	Acute nephritis; septicemia.....	—
23	45	♂	Multiple cicatrization of the kidney.....	—
24	46	♂	Contracted kidney; pyemia.....	—
25	47	♂	Pulmonary tuberculosis; chronic parenchymatous nephritis.....	—
26	47	♂	Pulmonary tuberculosis; acute parenchymatous nephritis.....	+
27	47	♂	Hepatic cirrhosis; hepatic carcinoma.....	—
28	54	♂	Lead intoxication; chronic nephritis.....	—
29	54	♂	Hepatic carcinoma; contracted kidney.....	—
30	54	♂	Ulcerative endocarditis of aortic valves.....	+
31	54	♂	Hepatic cirrhosis.....	—
32	55	♂	Chronic nephritis.....	—
33	61	♂	Gastric carcinoma; chronic nephritis.....	+
34	61	♂	Chronic nephritis.....	—
35	61	♂	Chronic nephritis.....	+
36	62	♂	Gastric carcinoma; chronic nephritis.....	+
37	64	♂	Contracted kidney.....	+
38	65	♂	Suppurative nephritis.....	+
39	69	♂	Contracted kidney.....	+
40	72	♂	Cerebral apoplexy; chronic nephritis.....	—
41	72	♂	Sarcoma of the leg; phlegmon; hemorrhagic nephritis.....	+
42	76	♂	Contracted kidney.....	—
43	77	♂	Chronic nephritis.....	—
44	80	♂	Valvular endocarditis; congestive induration of the kidney.....	+
45	..	..	Acute parenchymatous nephritis.....	—
46	..	..	Contracted kidney.....	—
47	..	..	Contracted kidney.....	—
48	..	..	Congestive induration of the kidney.....	—
49	..	..	Multiple cystic kidney.....	++
50	..	..	Contracted kidney.....	—

* In this column, ♂ denotes male and ♀ female.

able to find any spirochetes in the kidneys or other organs of experimental typhus-infected animals (rabbits and guinea-pigs). Koga had found many spirochetes (the *Spirochaeta smegmatis*?) in the urine of patients suffering from different diseases and also in healthy persons, but he could not find any points in which morphologically the spirochetes differed from the spirochetes of Futaki. There was, however, a stronger pulse than in the presence of spirochetes in the kidneys. For control examination we observed many kidneys, which were mostly affected

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acute and chronic nephritis, in which casts were present. These we stained by Levaditi's method. We found many silver-stained spirochete-like bodies in the casts of kidneys in different diseases. It may be said, therefore, that the question of the presence of spirochetes in the kidneys in various diseases other than typhus fever is such an interesting problem that more attention should be paid to it. We have examined many kidneys in both dead and living bodies harboring various diseases, and we here record the results of our observations.

We have examined fifty kidneys of dead bodies and twenty-six of living bodies in the course of operation and found spirochetes in twenty-five of the former and fifteen of the latter. The results are set forth in the accompanying tables.

The spirochetes in the kidney were found mostly in hyaline casts, hyaline clots and also in the granular substance of the cortex, but not so many were found in the medullary substance. We have also noticed two cases of hyaline clots in Bowman's capsule, and two cases of homogeneous and granular casts in con-

TABLE 2.—CASES EXAMINED AT OPERATION

No.	Age	Sex*	Diseases	Spirochete
1	20	♀	Left tuberculous kidney.....	+
2	24	♀	Left tuberculous kidney.....	—
3	27	♀	Right tuberculous kidney.....	—
4	28	♀	Left tuberculous kidney.....	+
5	31	♀	Tuberculous kidney.....	—
6	34	♀	Right tuberculous kidney.....	+
7	35	♀	Left tuberculous kidney.....	+
8	38	♀	Nephrolithiasis.....	—
9	40	♀	Left tuberculous kidney.....	+
10	41	♀	Right tuberculous kidney.....	+
11	54	♀	Left tuberculous kidney.....	+
12	..	♀	Right tuberculous kidney.....	+
13	..	♀	Right tuberculous kidney.....	+
14	..	♀	Right tuberculous kidney.....	+
15	..	♀	Left tuberculous kidney.....	+
16	..	♀	Hydronephrosis.....	+
17	..	♀	Left tuberculous kidney.....	—
18	..	♀	Right tuberculous kidney.....	+
19	..	♀	Tuberculous kidney.....	—
20	..	♀	Left tuberculous kidney.....	+
21	..	♀	Tuberculous kidney.....	+
22	..	♀	Tuberculous kidney.....	—
23	..	♀	Left tuberculous kidney.....	—
24	..	♀	Right tuberculous kidney.....	—
25	..	♀	Tuberculous kidney.....	+
26	..	..	Right tuberculous kidney.....	—

* In this column, ♂ denotes male and ♀ female.

genitally cystic kidneys. In contracted kidneys, we found spirochetes in the so-called cysts of retention. The location of the spirochetes in the casts of the urinary tubules was not always constant. In the same cases, we occasionally found only hyaline clots, but in other clots, and in from ten to twenty preparations we also found a few of them.

The spirochetes we found we stained a deep black, according to Levaditi's method. They formed delicate spiral curved organisms, their average length being from 6 to 10 microns. The smaller forms were from 2 to 5 microns in length. Organisms 22 microns long have been observed, both ends of which are pointed. Morphologically, they may be divided into three types. Type I is much like the *Spirochaeta pallida*, particularly in its spiral form. Type II shows an irregularly curved spiral, while Type III is much broader than Type I or II, and its curves are much coarser and less regular.

What is the origin of our spiral bodies? If they were true spirochetes, they could be determined only by more minute examination, namely, by dark field illumination as living bodies and by Giemsa's staining of final objects. Our examinations, however, have not

yet given satisfactory results. Occasionally we have noticed brown-stained irregular spiral forms in the silver-stained preparation, but it cannot be said that the mere finding of spiral forms is an evidence of the presence of true spirochetes. The presence of the spiral bodies in question which were morphologically difficult to differentiate from true spirochetes, without being related to any definite disease, is a very important fact.

In 1912 Le Play, Sézary and Vallery-Radot¹ found spirochetes in the kidney. Their report is very interesting, as the spirochetes they found seem to resemble our spirochetes. Le Play examined the kidneys in question according to Belltali and Vorpino's method and found black-stained filament bodies in the casts and exudate of the excretory and secretory ducts in cases of tuberculosis, arteriosclerosis, and lead intoxication associated with acute or chronic nephritis. There were, however, absolutely no suspicious signs of any syphilitic changes in the history of the case, nor in the Wassermann reaction, nor at the necropsy. The filament bodies much resembled *Spirochaeta pallida* and were found mostly isolated or else in groups in the cortical substance, but they were not found at all in the interstitial tissue, glomeruli or blood vessels. They were named *Pseudotreponema*. They were very much like the *Spirochaeta pallida* found in the urine of syphilitic patients, as reported by Hirschberg, McLennan, Dreyer and Toepel, and Barth and Michant; also in syphilitic kidneys, as reported by Le Play and Sézary, and by Faroy. For this reason, Le Play said that attention must be paid to spiral bodies in the urine and the kidneys. Ours and Le Play's spirochetes very much resemble one another and cannot be found elsewhere. It is difficult to assert, therefore, that the spirochetes found in the urine or in the renal casts are the specific causative agents in definite diseases and also in other spirochetal diseases. By means of dark field illumination and Giemsa's staining method, we examined centrifugalized casts in the urine of several nephritic patients and experimental nephritic animals, but none of the observations brought any satisfactory results.

SUMMARY

1. By Levaditi's method we have found many spirochetes in the hyaline casts and hyaline substances in urinary tubules, without relation to any diseases. Further and more minute attention must therefore be paid to the study of spirochetes in the kidneys.
2. Our spirochetes are found not only in the casts, but also in the hyaline or granular substances located in the cortical substances, in urinary tubules, in Bowman's capsule, and in cysts. But they have not yet been found in the blood vessels, in the interstitial tissues, or in the cells.
3. Our spirochetes may be divided into three types.

1. Le Play, A.; Sézary, A., and Vallery-Radot, P.: Compt. rend. Soc. de biol., 1912, 73, 635.

Obligation to Care for the Child.—The war cloud dims our vision of the facts at home. But in war or peace, there is this constant struggle for a living and a life. Today it is the mother in her distress that needs help and care; tomorrow it is the infant new-born; the third day it is the talking and walking child. For, whenever the one or the other is found, the tale of inadequate service, of danger, of damage, of disease and death is nearly the same, varying a little in local color but never in substance.—Dr. Leslie Mackenzie, Report on Scotland to Carnegie United Kingdom Trust.

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF GONOCOCCIC ENDOCARDITIS

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The rare occurrence and the difficulty of establishing the diagnosis would seem to warrant the reporting of this case of gonorrheal endocarditis.

History.—Private F., aged 19, admitted to the medical service of the Post Hospital, Plattsburg Barracks, N. Y., Sept. 19, 1917, complained of frequency of urination accompanied by a sense of burning, dull pain in the lumbar region, painful erections, and a profuse, purulent urethral discharge. The patient gave a definite history of exposure seven days prior to admission, and stated that he did not report for the regulation venereal prophylactic treatment. The fourth day after exposure he noticed a swelling of the meatus urinarius, and experienced a stinging sensation on urination. The following day the pain grew worse, and milking of the penis revealed a drop of mucopurulent discharge. Subsequently the discharge became more profuse and purulent, and chordee developed, which established clinically the outward picture of acute gonorrhea. The previous medical history was negative.

Physical Examination.—There was a profuse, purulent urethral discharge. The penis was swollen and tender. The testicles were apparently normal. Examination of the heart, lungs and joints revealed no external evidence of the infection. Urinalysis revealed a large amount of albumin, and an abundance of leukocytes. A smear of the discharge stained by Gram's method showed many polymorphonuclears, several of which were crowded full, some even bursting, with definite gram-negative, biscuit-shaped diplococci. Very few extracellular organisms were observed. A planting of the discharge was made to a plate of 5 per cent. glucose-agar enriched with one part in ten of ascitic fluid; and a second planting was made to a plate of starch-agar prepared according to Vedder's formula.¹ The blood pressure was normal. A leukocytic count gave 13,800 leukocytes, with 74 per cent. polymorphonuclear neutrophils. A specimen of blood was taken for the gonococcic complement fixation test, which at a subsequent date was reported positive.

Clinical Progress.—The usual clinical course showed no interruptions, the discharge continuing for several days. Smears stained by Gram's method still showed the presence of gram-negative intracellular diplococci. The other symptoms gradually subsided, the leukocyte count and the temperature returning to normal. The patient was up and about the ward for two or three days when he began to complain of pain in the right ankle, with swelling and tenderness, which later became so severe that he was again put to bed. There was a slight rise of temperature, and the leukocyte count increased to 14,000. The symptoms grew rapidly worse; the periarticular tissues becoming swollen and edematous, and there were pain and tenderness, marked redness, and impairment of function. The intense redness and extreme sensitiveness of acute articular rheumatism, however, were not present. There were no sweats; the temperature ranged between 99 and 102 F., the pulse averaged 80 per minute, and the respirations were practically normal. Urinalysis at this time revealed gonorrheal shreds, a trace of albumin, a few white blood cells, hyaline casts, and squamous and round celled epitheliums. The clinical symptoms continued in the ankle three days and began to subside, only to reappear, however, with equal severity, a few days later in the right elbow. At no time was there any effusion in the joint, and after the disappearance of the pain and swelling, there remained no evidence of former involvement. The clinical picture of the condition at the elbow was similar in all

respects to the one at the ankle; and the migratory character of the disease was shown in the subsequent involvement of the right shoulder, right wrist and left knee. October 10, ten days after the patient had taken to his bed with arthritis, he had a slight chill which was followed by a sudden rise of temperature, weakness and dyspnea, and some precordial discomfort. Examination of the heart elicited a faint blowing systolic murmur at the apex. The pulse was arrhythmic, soft, compressible, and showed no dichrotism. A count of the white cells gave 17,000, with 78 per cent. polymorphonuclears. A smear from the urethra still showed a few gram-negative diplococci. The symptoms referable to the knee joint, though less severe, still persisted. The progress of the case showed slight fluctuations, but nothing eventful for a period of ten days. A comparison of the former cardiac findings with the present demonstrated a marked loss of muscle tonus, the booming quality of the first sound being replaced by a feeble, irregular cardiac pulsation. The characteristic variations of the murmur were well marked. At no time was the temperature above 103 F. Blood count revealed a polymorphonuclear leukocytosis. Blood culture was negative. The urine contained pus and an increased amount of albumin. During the next few days the patient improved slightly, but this proved to be only temporary, as he soon lapsed into his former state, the temperature increasing to 103.8 F., the respirations becoming shallow and increased in frequency, and the pulse rapid, irregular and easily compressible. The cardiac sounds grew more feeble and distant, and the murmur was at times inaudible. He grew progressively worse during the following forty-eight hours, expectorated frothy sputum, became orthopneic and profoundly toxic, and died.

Treatment.—At first remedial measures were directed toward the clearing up of the urethral discharge. Later the arthritis was combated by the use of polyvalent gonococcic vaccine (Army Medical School) beginning with 0.5 c.c. as an initial dose and increasing to 1 c.c. given at four day intervals for five doses. Later, on the theory of the non-specificity of proteins, triple typhoid was substituted. Hexamethylenamin and salicylates were administered in appropriate doses, and a course of hydrotherapy followed. Despite the recognized cardiac therapy, the termination of the case was inevitable.

Laboratory Findings.—After twenty-four hours' incubation at 37.5 C., the glucose-ascitic-agar, and starch-agar plates were examined and the most suggestive looking colonies picked and transferred to tubes of blood agar, and Vedder's starch medium. Similar colonies were picked and stained and found to contain biscuit-shaped gram-negative diplococci. The following day the tubes were examined, and those found to contain only the gonococcus-like organisms in pure culture were used as a stock culture from which to make subsequent study. The cultural characteristics exhibited by this organism, as it was carried through the various mediums, were apparently morphologically identical with the gonococcus. Necropsy being refused, a few cubic centimeters of the heart's blood were aspirated and plantings made to the mediums mentioned above. After twenty-four hours' incubation, the suggestive colonies that appeared on the surface of the mediums were carefully studied by carrying them through the various mediums, and were found to correspond identically with the organism isolated from the urethral discharge.

Return Cases of Diphtheria.—J. Langer recently analyzed in the *Jahrbuch für Kinderheilkunde* the experiences with 7,701 cases of diphtheria in recent years at the Graz and Prague hospitals. There were ninety-seven return cases, a total of 1.5 per cent. The children were kept in the hospital until the secretions of nose and throat gave negative findings on one or more examinations. The persisting carriers, however, should be isolated in a convalescent home and the throat and nose treated with pyocyanase, sodium sozoiodate, hydrogen dioxid, etc. This same treatment should be applied to the persons in the environment of a case, as in his experience, from 6 to 10 per cent. of the contacts harbored the bacilli. His article is summarized in the *Correspondenz-Blatt*

1. Vedder, E. B.: Jour. Infectious, Dis., 1915, 16, 385.

Military Medicine and Surgery

A ROENTGEN STUDY OF ONE THOUSAND CHESTS, AT CAMP DEVENS, MASS.

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During the six months from Oct. 12, 1917, to April 19, 1918, more than 1,000 chests have been examined roentgenologically in the roentgen-ray laboratory at Camp Devens, Mass. The findings in these cases have proved interesting enough to warrant summarization, and it is my purpose in this paper to give an account of the study. Some phases of the roentgen interpretation of pulmonary disorders here presented are not new, and the material presented is merely corroborative. Some of the phases, however, are practically new, and the ideas expressed are based on material previously not available. Where generalities seem to have been drawn without sufficient substantiation, I hope to establish and extend these conclusions by further and more detailed study.

The patients dealt with in this study are men between the ages of 21 and 30—officers and enlisted men of the Army. A few rare cases of officers above the age of 30 are included in this study. All these men had passed the preliminary examination of local physicians. They have been studied in our laboratory only on the request of medical officers in this camp either because of well defined lesions or because of suspected pulmonary disorder. Hence our statistics show a relatively small number of normal respiratory tracts.

In practically every case reported in this paper, the roentgen findings have been substantiated by the physical and clinical findings of examining surgeons. Daily consultation with the clinicians has assured me that the roentgen signs here described are definite and constant for the conditions to which they are ascribed. Doubtful cases have not been made a part of this discussion unless the uncertainty of interpretation has been distinctly pointed out.

Roentgenograms were made in every case here recorded, the roentgenoscope having been used for further study wherever necessary.

Pulmonary disorders have been found to occur as shown in Table 1. In this classification several cases

TABLE 1.—OCCURRENCE OF PULMONARY DISORDERS

	No.
Individuals examined	1,259
No disease found	405
Tuberculosis	368
Chronic bronchitis	49
Bronchopneumonia	61
Lobar pneumonia	258
Fibrous pleurisy	124
Interlobar pleurisy	3
Pleurisy with effusion	25
Hydropneumothorax	3
Empyema	7
Emphysema	2
Enlarged mediastinal glands	1

in which complications occurred are tabulated under each of the conditions found. Hence the total number of cases is found to be somewhat greater than the total number of individuals examined.

TUBERCULOSIS

Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. Success in demonstrating the tuberculous lesion depends on the

care in the technic and on the keenness of the interpreter.

The most definite signs of active pulmonary tuberculosis as seen on the roentgenogram are soft, fuzzy, flaky shadows in the areas occupied by the linear markings of the normal lungs. When these shadows are found at the periphery and are mottled as if broken up with shadows indicative of peribronchial thickening leading to them, we consider them characteristic of the acute, active tuberculous lesions. The soft shadows are interpreted as tubercles with areas of congestion about them, and the thickening of the trunks as lymphatics draining the infected area. Soft mottling in the apexes with peribronchial thickening leading to it we consider the most definite sign of active phthisis presented on the roentgenogram.

When, however, the shadows appear dense and are accompanied by nodular, well defined, clean cut peribronchial thickening which extends to the periphery, we consider them indicative of healed, or at least inactive, tuberculosis.

While these two extremes are readily detectable in the roentgenogram, it is often very difficult to interpret less marked cases. Often the shadows are appreciated only by well trained eyes, and much practice is necessary to give the examiner any degree of skill in the interpretation of tuberculosis in ill defined cases.

With regard to the relative frequency of occurrence of the tuberculous lesion, the lungs may conveniently be divided into three areas:

1. The upper region from the apex to the hilum is considered the tuberculous area. In this region by far the greatest number of infections are found. Ninety-three per cent. of the positive cases studied showed the lesion in this region; in 53 per cent. of these the lesion was in the right upper lobe; in 28 per cent. the lesion was found in the left upper lobe; in 11 per cent. there were lesions in both upper lobes.

2. The middle region from the hilum to the fifth rib in front is considered the intermediate region in which tuberculosis is occasionally found. Less than 10 per cent. of our positive cases showed tuberculosis in this region.

3. The lower region from the fifth rib to the diaphragm is considered the nontuberculous area where lesions are rarely found. Among all the 368 positive cases, only five showed shadows consistent with tuberculosis in the lower lobes. Two of these had lesions throughout all parts of both lungs; one had lesions in the upper, middle and lower lobes on the right side; one had lesions in the upper and lower lobes on both sides; one had a doubtful localized area of infection in the right lower lobe not verified by the clinicians.

Reference to Table 2 shows that more than half of the cases suspected of tuberculosis were found to be negative. In making an interpretation of normal lungs, it is appreciated that no lungs are absolutely free from some pathologic condition. The term is used to describe that condition on the roentgenogram consistent with shadows shown on plates made of individuals with no symptoms and with normal physical and physiologic signs. In some cases lesions were found in several regions of the lungs. For the sake of convenience in classification these are recorded separately in the table. For this reason the total number of instances recorded is greater than the actual number of cases.

I do not consider opacity in one of the apexes as compared with the other a significant factor in the

interpretation of pulmonary tuberculosis. This difference in opacity may be caused by a variation in penetrability on the two sides due to asymmetrical density of the sternomastoid muscles, to thickened pleura, or to a contracted apex.

Our study shows that hilum thickening cannot be considered a safe criterion on which to base a suspicion of pulmonary tuberculosis; for while an increase in the area and density of the hilum shadow may be very common in cases in which a definite pathologic condition is found, there are many cases which show marked thickening at the hilum with no signs of infection in the lungs. Seventy-nine of our cases showed marked density in both hila with no evidence of tuberculosis in the parenchyma of the lungs. This suggests the possibility that there is a good resistance to tuberculosis at the hilum and that these cases represent those in which the infection was inhibited at this place. The hilum resistance is emphasized by the fact that definite hilum tuberculosis was found in only four of the cases studied.

I am heartily in accord with the principle that pulmonary tuberculosis can be fairly and definitely diag-

the ascending trunks and in the apexes, there appear shadows identical with those that occur in pulmonary tuberculosis. These gradually disappear and are not found after several weeks. It is important not to make the mistake of interpreting these shadows as tuberculous lesions, and in order to guard against the possibility of such an error the examiner should know definitely whether or not there is a history of recent pneumonia.

LOBAR PNEUMONIA

The roentgenogram has proved to be an important factor in the diagnosis of lobar pneumonia and in following its development. It has been found to be of extreme importance in differential diagnosis and in the detection of effusion. Consequently this study materialized when it was learned that the patients could be transported to the roentgen-ray laboratory without suffering the slightest ill effects. Application of the utmost care in handling the patients has made it possible to roentgenograph them without causing them mental or physical indisposition. Attending surgeons reported in all cases that no patient ever was found to have shown any ill effects resulting from the moving necessary to make the roentgenograms. The patients were placed on operating trucks, drawn to the laboratory through closed corridors, roentgenographed on the trucks, and returned to their wards immediately, the entire process covering not more than ten minutes.

Two hundred and fifty-eight cases of lobar pneumonia have been studied, and these encourage some very definite generalities. The roentgen signs of lobar pneumonia are: (1) marked accentuation of linear shadows from the hila to the apexes, which we propose to call vascular congestion; (2) marked enlargement of the heart shadow; (3) typical shadow of the localized area of consolidation in the lungs, and (4) high diaphragm on the affected side.

1. The vascular congestion appears especially in the upper lobes as soft linear markings with distinct bifurcations, which are different in appearance from the thickened ascending trunks of bronchitis and the peribronchial thickening of tuberculosis in being thicker, smoother, showing more definite branching, and being always definitely bilateral.

These shadows are interpreted as due to the congestion of blood vessels along the bronchi. They have the characteristic appearance of congested blood vessels, and depict what may be conveniently called an acute congestion of the lungs. These shadows also represent a thickening of the lymphatic vessels in increased drainage. The vascular congestion was found in all the 258 cases examined, excepting four, one a very early case not studied further, one a case of the abortive type quickly resolving, and two peculiar cases which showed neither the thickened ascending shadows nor the enlarged heart but only the area of consolidation, nontoxic cases.

The markings in question appear early in incipient pneumonia, and disappear early in resolution. They persist occasionally in cases in which no consolidation appears. In such instances these shadows persisting in the upper lobes and extending into the apexes are apt to be confused with the shadows indicative of tuberculosis. Their persistence sometimes for months makes their interpretation all the more confusing. Clinical history and repeated roentgenograms are valuable in these cases. However, in the majority of cases the shadows indicative of vascular congestion disappear early in resolution.

TABLE 2.—LOCATION OF TUBERCULOUS LESIONS

	No.	Per Cent.
Cases examined for tuberculosis	773	.....
Practically normal lungs	326	.....
Hilum markedly thickened, but no signs of tuberculosis	79	.....
Total number of negative cases	405	.....
Total number of positive cases	368	.....
Tuberculosis, active, right upper lobe	121	31.9
Tuberculosis, inactive, right upper lobe	81	21.3
Tuberculosis, active, left upper lobe	70	18.5
Tuberculosis, inactive, left upper lobe	40	10.5
Tuberculosis, active, both upper lobes	32	8.4
Tuberculosis, inactive, both upper lobes	10	2.6
Tuberculosis, active, right upper and middle lobes ..	6	1.6
Tuberculosis, inactive, right upper and middle lobes.	3	.79
Tuberculosis, active, right middle lobe	4	1
Tuberculosis, inactive, right middle lobe	2	.52
Tuberculosis, active, right upper, middle and lower..	1	.26
Tuberculosis, active, both hila	2	.52
Tuberculosis, active, left hilum	3	.79
Tuberculosis, active, both lower lobes	1	.26
Tuberculosis, active, all parts of lungs	2	.52
Tuberculosis, doubtful, right lower lobe	1	.26
Tuberculosis in upper area	366	93.
Tuberculosis in middle area	23	6.
Tuberculosis in lower area	5	1.

nosed only with the combined consideration of clinical, physical and roentgen findings. There are instances, however, in which the roentgen signs are decisive even though physical signs are not found. Especially is this true in the cases of deep seated infections, and incipient tuberculosis in a part of the lungs other than the seat of the main invaded area. The fact that many tuberculous lesions are not found on physical examination, and that lesions are frequently larger in extent than determined by physical examination, would lead to the generalization that many cases of chronic fibroid tuberculosis give few or at least very indefinite signs on auscultation or percussion.

The fan-shaped thickening of the ascending trunks as an indication of the tuberculous lesion has not proved helpful in our interpretation of tuberculosis. The roentgen picture of tuberculous lesions varies so much that it is not safe to describe it in any very definite manner.

In examining roentgenograms of pneumonia patients made shortly after resolution, shadows are seen which appear strikingly similar to those found in pulmonary tuberculosis. I believe that these shadows are caused by sheets of fibrin that are deposited on the pleura at the time of infection. Moreover, when the lobar pneumonia is complicated with a streptococcus infection, on the postpneumonia roentgenograms, along

2. The heart is found to be enlarged both to the right and to the left. Only the right auricle, the left auricle and the left ventricle are distinguishable on the roentgenogram. Enlargement to the left is probably due to increase in size of the right ventricle overlapping the left ventricle, and the apical impulse is assumed to be that of the right ventricle rather than of the left ventricle, so that the enlargement to the left is due to the shadow cast by the right and left ventricles together.

The enlarged heart has been found in every case studied except two. These cases showed the area of consolidation in the lungs, but showed no enlargement of the heart and no vascular congestion, appearing to be cases in which there was only a slight degree of toxemia.

The heart enlarges early. The enlarged heart, with the vascular thickening, has been found in many of the cases before any signs of consolidation have appeared. It seems as though the toxins of the pneumococcus affect the myocardium definitely before localized manifestations in the lungs appear. Besides toxemia, the pulmonary consolidation and hyperpyrexia have been considered as causes of the enlarged heart. The early enlargement detected by the roentgenogram, however, seems to show that the toxemia is the most important factor in the enlargement of the heart.

It is possible that the enlarged heart occurs in other toxemias, though this has not yet been conclusively demonstrated. However, with vascular congestion in the upper lobes, this enlargement is a definite sign of beginning lobar pneumonia. This is clearly demonstrated in cases in which there are definite clinical signs of pneumonia, but in which no consolidation is found. In these cases the roentgen diagnosis is made in the two signs in question.

The cardiac enlargement persists for some time after the consolidation has cleared up and the patient has apparently recovered from the attack. This persistence varies with individuals. I am now making a study of the hearts of patients recuperating from pneumonia. The patients are examined at intervals of one week, and tracings of the heart shadow are made on glass with the roentgenoscope. These tracings, it is admitted, are not as accurate as the seven foot plates, but I believe that they are accurate enough for a study of the relative size at intervals of the same heart. Stature, size of chest, height and weight are factors considered in this study. It appears that the heart remains enlarged for several weeks (varying from four to eight weeks) after all evidence of definite involvement of the lungs has disappeared physically, clinically and roentgenographically. The patients are short of breath and show a rapid pulse with exertion as long as the heart is enlarged. In fact, this inconvenience to the patients when they were supposed to be fit for duty caused their return to the hospital and suggested this study. Clinically, these hearts give no evidence of valvular disease.

Weekly examinations of fifty such cases have been made extending over eight or ten weeks. It was found that in 50 per cent. of these cases the heart continued to enlarge slightly during the first, second and third weeks following discharge from the hospital, after which it gradually assumed its normal proportions. In the other 50 per cent. the heart was found to have decreased in size slightly each week until the normal size was reached, or to have remained unchanged in

size for several weeks, finally diminishing gradually to the normal size. The unexpected increase in size of the already enlarged heart during convalescence was probably due to the fact that a strain was put on the heart too soon; but it has been impossible to secure satisfactory data on this point. None of these men were assigned to active duties during this time, but it is possible that they participated in exercises to an extent sufficiently strenuous to embarrass the already weakened cardiac muscles. There is now being developed at this camp a series of graduated exercises for recuperating pneumonia patients, the purposes of which are to strengthen these weakened hearts and to determine more definitely when the men are actually fit for vigorous duty.

3. Consolidation in the lung shows as a definitely localized homogeneous patch varying in density from complete opacity to translucency. The consolidation may originate near the median line, in which event it may or may not extend to the periphery, or it may be found at the periphery not extending to the inner border of the lung.

The location of the consolidation in the 258 cases studied is summarized in Table 3. Of the 258 cases examined, thirty-one showed no consolidation in any part of the lungs, though the clinical symptoms were definite for lobar pneumonia, the crisis appearing early. No physical signs of consolidation were made out. In these cases the vascular thickening and the enlarged heart were found to be just as typical as in

TABLE 3.—LOCATION OF CONSOLIDATION

Area Involved	No.
Both lower lobes	5
Right lower lobe	86
Right upper lobe	17
Right middle lobe	8
Right upper and middle lobes	2
Right middle and lower lobes	5
Right upper, middle and lower lobes	2
Left lower lobe	93
Left upper lobe	6
Left upper and lower lobes	2
Root of left lung	1
No consolidation	31

the cases with definite consolidation. Several examinations at intervals of two days showed that no consolidation ever appeared. These findings are in accordance with the idea that the symptoms of pneumonia are dependent more on toxemia than on the extent of pulmonary involvement.

In several cases consolidation was shown roentgenographically before it was demonstrable by physical signs.

The extension of the consolidation from a small patch to a larger one and from one lobe to another was observed in several of our cases.

Several examinations of the same cases at intervals have led us to believe that the variation in amount of tissue involved in consolidation, and the change in location of the consolidated tissues, may be readily demonstrated roentgenographically.

During resolution, linear shadows are seen traversing the affected area and sometimes running beyond it. These are probably due to the thickening along the bronchi caused by some of the exudate, which has not absorbed, and has been transformed into dense, fibrous masses. These shadows may suggest the fibrosis of chronic tuberculosis. When they are found to have changed in position on several plates or when they finally clear up, it is safe to assume that no tuberculosis is indicated.

The question of cirrhosis of the lung in some of the cases of delayed resolution is now being studied in our laboratory. The evidence from cases thus far observed leads us to believe that cirrhosis of the lungs occurs in some cases.

4. The diaphragm on the affected side, as in other pulmonary disorders, is usually relatively higher than on the unaffected side. For some time the diaphragm on this side remains impaired in its excursion. In some cases after resolution the diaphragm appears irregular on the affected side, appearing to have a fixed point. Roentgenoscopically the diaphragm is fixed or else it has a limited excursion as compared with the nonpathologic side. In some cases, distinct bands of adhesions have been seen extending from the pleura to the diaphragm, limiting its motion.

That the elevation of the diaphragm cannot be used as a definite criterion for predicting the side in which consolidation is to occur has been clearly demonstrated by many of our cases in which the diaphragm was found to be relatively higher not on the affected side but on the unaffected side. The facts that in some of these cases the patients complained of pleurisy pain on the side opposite the consolidation, and that in three such cases the pneumonia was followed by a pleuritic effusion on the side opposite that in which consolidation occurred, encourage the suggestion that the high diaphragm on the side opposite the consolidation is an indication of pleurisy; but our statistics are too meager for a bold presentation of this position.

FLUID WITH LOBAR PNEUMONIA

In the presence of consolidation it is difficult to determine when fluid is present in sufficient amount to demand aspiration. The fluid does not appear the same on the roentgenogram as in pleurisy with effusion, when the patient is roentgenographed in the prone position. Instead of the typical S-shaped shadow found in simple pleurisy with effusion, the fluid in pneumonia seems to gravitate to the posterior part of the thorax, giving only a very faint shadow over the entire side, which may easily escape detection. This appears to be due to the fact that the portion of the lung solidified by the pneumonia makes compression of the lung impossible; and owing to the resistance offered by this mass, the fluid spreads out over the whole thorax. The difficulty thus presented has been obviated to some extent by making the roentgenogram with the patient in a semiupright position. The fluid then gravitates to the lower part of the chest and may be more readily seen. In case the fluid is purulent, as in empyema, reasonable time must be allowed for it to gravitate.

In our series of lobar pneumonia, pleuritic effusion occurred early in many cases, often by the second or third day. Thickened interlobar pleura is often seen and may be so dense as to suggest fluid between the lobes.

BRONCHOPNEUMONIA

It has been quite generally supposed that bronchopneumonia is a bilateral disease. Our study has shown that it is more commonly unilateral. This is shown by reference to Table 4.

Signs of vascular congestion in the upper lobes are not so marked and certainly not so constant as in lobar pneumonia.

The heart is sometimes slightly enlarged, but never to the extent found in lobar pneumonia, and often not at all.

The localized area of consolidation appears more as a mottling than as a homogeneous shadow as in lobar pneumonia. Figuratively, the picture of the infected area in bronchopneumonia seems to have been smeared on the plate with a worn-out brush, while in lobar pneumonia the area of consolidation seems to have been blown on the plate with an atomizer.

The pleura does not seem to be involved in bronchopneumonia nearly as much as in lobar; a thickened pleura is seldom seen.

TABLE 4.—LOCATION OF BRONCHOPNEUMONIA

	No.
Cases observed	61
Bronchopneumonia, both lower lobes	20
Bronchopneumonia, right lower lobe	27
Bronchopneumonia, left lower lobe	14

Several peculiar cases of bronchopneumonia were discovered in the course of this study. The patients, most of them officers, were not indisposed enough to take advantage of a ward bed, but were troubled with a persistent cough, weakness, and slight elevation of temperature. The roentgenograms revealed that these were typical cases of bronchopneumonia, the majority of which were localized in one or both of the lower lobes. Resolution in these cases was slow, the shadows persisting for several weeks.

SUMMARY

I. Pulmonary Tuberculosis:

1. Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. It is difficult to describe concisely the appearance of shadows that will enable the roentgenologist definitely to interpret active and inactive tuberculosis. One can only describe what in general is seen in well defined cases. The specialist instinctively learns to detect these shadows by individual methods.

2. The lungs may be divided into three regions with regard to the occurrence of pulmonary tuberculosis: the upper region, in which tuberculosis is commonly found; the middle region, in which tuberculosis is sometimes found, and the lower region, in which tuberculosis is rarely found.

3. Consultation with conscientious clinicians has led to the conclusion that many cases of chronic fibroid tuberculosis give very indefinite, if any, physical signs.

II. Lobar Pneumonia:

1. Lobar pneumonia and bronchopneumonia are easily distinguishable on the roentgenogram.

2. Lobar pneumonia gives the following roentgen signs:

(1). Vascular-lymphatic congestion in the upper lobes.

(2). Enlarged heart.

(3). Localized consolidation.

(4). High diaphragm.

3. Vascular-lymphatic thickening appears early and disappears early, though its occasional persistence may be confused with tuberculosis shadows.

4. Pneumococcemia shows definitely on the roentgenogram when there are symptoms of pneumonia without consolidation, suggesting that the seriousness of the attack depends more on the toxemia than on the extent of pulmonary involvement.

5. The heart is involved before definite signs of consolidation appear.

6. The cardiac enlargement persists for some time after all signs of involvement of the lungs have disappeared.

7. Consolidation may begin at the roots or at the periphery.

8. High diaphragm on the affected side is suggestive, but cannot be considered a constant sign.

III. Bronchopneumonia:

1. Bronchopneumonia is more commonly unilateral than bilateral.

2. The heart is usually not enlarged in bronchopneumonia.

3. Bronchopneumonia is often overlooked on physical examination, as the symptoms may be indefinite and noncharacteristic.

BACTERIOLOGIC STUDY OF THE PNEUMONIA OCCURRING AT CAMP PIKE, ARK.

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Pneumonia has been one of the important diseases encountered at the base hospital since the opening of Camp Pike. Table 1 represents the results of bacteriologic examinations of the sputums obtained from sixty patients admitted to the hospital during the months of February and March. The sputum was collected from the patients in sterile Petri plates and sent to the laboratory at once and plated on the surface of human blood agar plates without addition of glucose. The table shows the predominant organisms that developed on the plates and most of the other organisms found after forty-eight hours' incubation, along with the clinical types of the disease with which the bacteria were associated.

The importance of the bacteria predominating in these sputums was substantiated in a number of cases by bacteriologic examinations of the blood during life and of the lungs after death.

From the table it will be seen that pneumococcus pneumonias present but little out of the ordinary. It will be seen that two of the Type II cases were complicated by severe jaundice. Since these data were collected, a number of similar cases have been observed, and as in the two above, all were in colored persons, some of whom were known to have syphilis and one multiple gummas of the liver. The pneumococcus cases form 48 per cent. of the sixty cases in this series. Of these, 21 per cent. were Type I, 34 per cent. Type II and 45 per cent. Type IV. I have seen only one Type III case in the hospital.

In 46 per cent. of the cases, streptococci were the predominating organisms; of these, 46 per cent. were nonhemolytic. These organisms formed colonies similar to the hemolytic streptococci, but had no effect on blood, neither hemolysis nor green formation being observed. The organisms were like the hemolytic streptococci as to morphology, but had more tendency to diplococcus formation, and the chains formed were short. Growth in both was flocculent and collected in the bottom of the broth. In the cases coming to necropsy the pneumonia in which this type of organisms was found resembled the ordinary pneumococcus lobar pneumonia. This type of streptococcus was found in the sputum in two cases diagnosed as influenza, and in the pus from a gangrenous appendix, in greatly predominating numbers.

Fifty-four per cent. of the streptococci found were hemolytic. The lesions found at necropsy in these

TABLE 1.—RESULTS OF SPUTUM EXAMINATIONS					
Case No.	Predominating Organisms	Other Organisms	Sputum	Clinical Peculiarities	Complications
1	Hemolytic streptococcus IV	Nonhemolytic	Tenacious; bloody	Typical lobar crisis	
2		Few hemolytic; viridans	Colorless mucus	Typical lobar crisis	
3	Catarrhalis	Nonhemolytic; hemolytic	Colorless mucus	Whole right side	Effusion tuberculosis
4	IV	.....	Rusty	Typical crisis	
5	I	.....	Rusty	Typical crisis	
6	IV	Catarrhalis; hemolytic	.....	Typical	Cervical abscess
7	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Bronchopneumonia	
8	Diphtheroids	Hemolytic; catarrhalis	.....	Bronchitis; small area of pneumonia	
9	Leptothrix	Viridans; catarrhalis	.....	Postmeasles bronchopneumonia	Empyema
10	IV	.....	Purulent	Typical crisis	
11	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Small area of pneumonia; lysis	
12	Hemolytic	Viridans	.....	Small area of pneumonia	
13	II	.....	Rusty	Lobar; death	Jaundice
14	Nonhemolytic streptococcus	Hemolytic streptococcus	.....	Measles; bronchopneumonia	
15	Nonhemolytic streptococcus	Catarrhalis	.....	Postmumps bronchopneumonia	
16	I	Catarrhalis	Bloody; tenacious	Lobar; death	
17	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Lobar; lysis	
18	I	Catarrhalis	Mucopurulent; bloody	Lobar; crisis	
19	I	Phar-siccus	Mucopurulent; bloody	Lobar; crisis	
20	Nonhemolytic	Viridans	Bloody	Lobar; crisis	
21	Hemolytic streptococcus	Catarrhalis	Bloody	Lobar; crisis	
22	IV	Catarrhalis	Mucous	Broncho; lysis	
23	II	Catarrhalis	Rusty	Postoperative lobar	
24	IV	Nonhemolytic siccus	Colorless mucus	Lobar; death	Otitis M.; meningitis
25	II	Nonhemolytic streptococcus	Mucopurulent	Lobar; lysis	
26	Nonhemolytic	.....	Mucopurulent	Small area of pneumonia following mumps	
27	Hemolytic streptococcus	Staphylococci; catarrhalis	Colorless mucus	Bronchopneumonia	
28	Hemolytic streptococcus	IV; catarrhalis	.....	Lobar; delayed resolution	
29	Leptothrix	.....	.....	Lobar; crisis	
30	II	Staphylococci	Mucopurulent	Lobar complicating tuberculosis; death	Mumps
31	Nonhemolytic	Hemolytic streptococcus	Mucopurulent	Lobar	
32	Hemolytic streptococcus	Catarrhalis; viridans	.....	Followed tonsillitis; lobar; lysis	
33	Leptothrix	.....	.....	Postmumps bronchopneumonia	
34	Nonhemolytic streptococcus	Leptothrix; hemolytic; catarrhalis	Mucopurulent	Bronchopneumonia; death	Empyema
35	IV	.....	Mucopurulent	Lobar; crisis	
36	IV	Nonhemolytic streptococcus	Rusty	Lobar; crisis	
37	Nonhemolytic streptococcus	Leptothrix	Bloody mucus	Postmeasles lobar; lysis	
38	IV	.....	.....	Postmastoid lobar; death	
39	Leptothrix	Hemolytic streptococcus; catarrhalis	.....	Lobar; lysis	
40	II	Hemolytic streptococcus; staphylococcus	.....	Postotitis	Empyema
41	IV	Nonhemolytic; catarrhalis	Rusty	Postoperative lobar; lysis	
42	IV	.....	Mucopurulent	Lobar; crisis	
43	I	IV and hemolytic streptococcus	Rusty	Lobar; crisis	
44	II	Streptococcus; viridans	Rusty	Lobar; crisis	
45	Nonhemolytic streptococcus	Staphylococcus aureus	Mucopurulent	Lobar posttuberculosis; death	
46	Leptothrix	Hemolytic; catarrhalis	Mucopurulent	Lobar; delayed resolution	
47	Nonhemolytic streptococcus	Viridans	Mucopurulent	Lobar; crisis	
48	II	.....	Rusty	Lobar; death	Jaundice
49	Hemolytic streptococcus	Nonhemolytic streptococcus; catarrhalis	Mucopurulent	Posttonsillitis bronchopneumonia	Empyema

TABLE 1.—RESULTS OF SPUTUM EXAMINATIONS—Continued

Case No.	Predominating Organisms	Other Organisms	Sputum	Clinical Peculiarities	Complications
50	IV	Viridans	.....	Lobar; crisis	
51	II	.....	Rusty	Postoperative lobar; lysis	
52	Nonhemolytic streptococcus	.....	Rusty	Bronchopneumonia	
53	I	Staphylococcus aureus	.....	Lobar; crisis	
54	Nonhemolytic streptococcus	Staphylococcus	Mucopurulent	Lobar	Empyema
55	Nonhemolytic streptococcus	.....	.....	Lobar; lysis	
56	Hemolytic streptococcus	Viridans	.....	Posttonsillitis bronchopneumonia	
57	Hemolytic streptococcus	.....	.....	Lobar pneumonia; death	Pericarditis
58	II	Viridans; hemolytic streptococcus	.....	Postotitis lobar; crisis	
59	II	Nonhemolytic streptococcus	Mucopurulent	Bronchopneumonia; lobar pneumonia	Delayed resolution
60	Nonhemolytic streptococcus	Diphtheroids	Mucopurulent	Lobar; crisis	

Pneumococcus.....	48%	Streptococcus.....	46%
Type I.....	21%	Hemolytic.....	54%
Type II.....	34%	Nonhemolytic.....	46%
Type IV.....	45%	Leptothrix.....	6%

cases were of two kinds: 1. A pneumonia similar to lobar pneumonia due to pneumococci, but with a tendency to pus formation. In many cases this was not more marked than that sometimes observed in the pneumococcus cases in others. Abscesses with areas of necrosis varied in extent, sometimes amounting to gangrene of large portions of the lung. 2. Bronchopneumonia in which the lungs were studded with hard, shotlike nodules, which were extremely hard to the palpating fingers. Cut sections of such lung showed

TABLE 2.—FERMENTATION CHARACTERISTICS OF HEMOLYTIC AND NONHEMOLYTIC STREPTOCOCCI

Organisms	Effect on					
	Milk	Saline	Raffinose	Inulin	Mannite	Maltose
1. Nonhemolytic streptococcus from sputum in lobar pneumonia....	—	—	—	—	—	—
2. Nonhemolytic streptococcus from appendix	—	—	—	—	—	—
3. Nonhemolytic streptococcus from lobar pneumonia	—	—	—	—	—	—
4. Nonhemolytic streptococcus from lobar pneumonia	—	—	—	—	—	—
5. Nonhemolytic streptococcus isolated from "influenza".....	—	—	—	—	—	—
6. Hemolytic streptococcus isolated from influenza	Acid	—	—	—	—	Acid
7. Hemolytic streptococcus isolated from lobar pneumonia.....	Acid	—	—	—	—	—
8. Hemolytic streptococcus, bronchopneumonia	Acid	—	—	—	Acid	Acid
9. Hemolytic streptococcus, bronchopneumonia	Acid	Acid	—	—	Acid	Acid
10. Hemolytic streptococcus, bronchopneumonia	—	Acid	—	—	—	—
11. Hemolytic streptococcus, post-measles bronchopneumonia	Acid	—	—	—	—	Acid
12. Hemolytic streptococcus from mastoid	Acid	—	—	—	Acid	Acid
13. Hemolytic streptococcus from mastoid	Acid and coag.	Acid	—	—	Acid	Acid
14. Hemolytic streptococcus from mastoid	Acid	—	—	—	—	Acid

areas up to 1 cm. in diameter which were dark red and completely consolidated. This form was most commonly observed following measles. The areas in some instances coalesced to form areas, in cases amounting to a lobe. In twenty-five of a series of thirty cases of mastoiditis, streptococci indistinguishable from these were isolated. The remaining five were Type IV pneumococcus infections.

Both the types of streptococci were more frequently complicated by empyema than were the pneumococcus cases. In the hemolytic cases in two instances there was peritonitis.

The fermentation characteristics of the two types of streptococci are shown in Table 2.

Leptothrix organisms predominated on the plates in 6 per cent. of the cases. These were very minute colonies, barely visible to the naked eye, but extremely numerous. There was no effect on blood. The organisms were gram negative, and varied in length from organisms resembling influenza bacilli to long, slightly wavy organisms extending half way across the field. It was not possible to cultivate these organisms beyond one or two subcultures, and their importance is undetermined.

The series is interesting on account of the high percentage of streptococcus infections, particularly those due to nonhemolytic organisms, which were also found associated with cases diagnosed as influenza and in the pus from appendicitis.

PRIMARY AND DELAYED PRIMARY
SUTURE IN THE TREATMENT
OF WAR FRACTURES

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The treatment of fractures from battle casualties is for the most part the treatment of wounds of the soft parts, plus the added difficulties which the injuries to bony tissue involve.

To understand, therefore, the treatment of fractures, one must thoroughly appreciate the changes which have been made in the treatment of wounds of the soft parts.

American surgery is most fortunate in arriving on the scene when the principles of war surgery have been established. The biblical truths, as laid down by our French and English colleagues, have been founded on no uncertain grounds and have been enunciated in no uncertain terms.

These principles may be stated in this manner:

1. All battle wounds are to be considered as infected.
2. It is necessary to remove all projectiles, clothing and devitalized tissue as early as possible, at least before the twelfth hour after injury.
3. These wounds can then be considered as aseptic in character and a primary suture made, thus converting compound fractures into simple fractures, and appropriate treatment for these simple fractures thereupon instituted.

What a marvelous and astounding change is this in the application of surgical principles since that fatal day in August, 1914. One cannot but stand in awe and wonder at the results that have been achieved and one compares the past with the present: pus, contrasted with a clean lineal scar; continued pain caused by the packing of gauze and constant irrigation, with the peace of being left alone; the long and often painful processes in the restoration to function, with function restored almost voluntarily and swiftly; weeks or months of treatment, with recovery in a comparatively short time.

I say we are most fortunate as surgeons in coming into the war at such a period; the hard and cost

Lessons have been learned by the suffering of our allies. We shall be held responsible, and rightly so, if we do not appropriate and practice that which has been laid down for us by the work and at the expense of others.

How have these things come about? By the formation of a trust—a trust composed of the surgeon, the bacteriologist and the roentgenologist, all working harmoniously and constantly together.

Roentgenology.—Every man wounded in battle is roentgenographed immediately on entrance to the hospital, and, generally, while en route to the operating room. A definite description of the fracture is given, and, if a projectile is present, its exact location is made, generally by means of fluoroscopy. These localizations are generally indicated on the surface, by two markings, and the distance and direction from each marking is stated.

Bacteriology.—The bacteriologist determines for us the type of organisms present in the wound. Ninety per cent. of all these wounds are found to be infected by one or more organisms. Here we have both aerobes and anaerobes; the types most commonly found are the staphylococcus, the streptococcus, the pneumococcus, the colon group and the organisms producing gas gangrene. We have learned from these bacteriologic studies just what course we may pursue in our operative treatment, just what conditions will prevent a successful primary closure, when it will be necessary immediately to open a wound primarily closed, what the indications are for a secondary closure and how soon it may be done (Carrel), etc.

Surgery.—The surgeon in the first place must be a surgeon of the highest character, for he must perform aseptic surgery in a supposedly septic field or at least in a field which has the potentialities of sepsis; his dissections must be clean, his handling of tissues of the minimum, his knowledge of anatomic structures accurate.

I. PRIMARY SUTURES

The primary suture is the method of selection when this can be done. Experience has shown that primary suture may be successfully performed in from 80 to 95 per cent. of the cases. It is obvious that in certain cases primary suture cannot be done, owing to the inability to make a closure, because of the destruction of large amounts of tissue, including skin. But even here the primary suture at times may be accomplished by the aid of a skin flap.

Technic of Primary Suture.—The skin is disinfected with iodine, soap, water and a scrubbing or other methods. The skin edge, together with the tract made by the projectile, is removed. All projectiles and all devitalized tissue are removed. Complete hemostasis is performed. The skin edge is accurately approximated without tension.

Results of Primary Suture.—As has been said, primary suture may be done in from 80 to 95 per cent. of all battle casualties, if operation is performed within proper time. This is generally regarded as within the first twelve hours; but in face cases, the time limit for successful primary suture is slightly increased. According to Lemetre, from July, 1915, to February, 1918, he had performed 2,664 primary sutures with complete success in 2,549 cases, or 95 per cent., partial closure in eighty-three cases, or 3.1 per cent., and complete failure in thirty-two cases, or 1.2 per cent. The ordinary surgeon would consider these partial closures to be complete cures, for they were stitch

abscesses which granulated in a few days and did not affect the deep structures or interfere with the integrity of the wound.

Duval says that in periods of calm at the front, when the patients are received in proper time, 90 per cent. of the wounds can be closed by primary suture; but in times of stress only 30 per cent. may be sutured primarily, delayed primary suture being its substitute.

In cases in which primary suture is done, 95 per cent. are successful. According to Gross, of 759 wounds treated by primary suture, 88.8 per cent. were successful. Thus I might go on giving the results of others' work. So we see that in the hands of good surgeons at the front, when the wounds are received within from eight to twelve hours after the casualty, roughly speaking, from 80 to 95 per cent. of all such wounds, of whatever nature, soft parts or bone, can be treated successfully by primary suture, and, of these primary sutures, from 90 to 95 per cent. are successful.

Advantages of Primary Suture over Other Methods of Wound Treatment.—1. The mortality is greatly decreased, primarily because there is escape from the grave danger of secondary infection, so frequent when the wound is left open. In witness of this fact, the statistics of the hospitals of the interior in France in open wounds show a streptococcus infection of 80 per cent., whereas in fresh wounds from battle casualties there is only a 10 per cent. infection of this nature.

2. The patients suffer less, as they escape the necessity of all secondary and continuous dressings.

3. By primary suture the restoration of function is obtained more quickly and more completely, as there is no amount of scar tissue, or dense adhesions of muscles, tendons and joints, as is so frequently the case when wounds heal by granulation.

4. The period of hospitalization is therefore wonderfully decreased, which is of primary importance from a military point of view.

5. The amount of dressings necessary for the treatment of the wounds is likewise decreased in a marvelous degree, the importance of which cannot be overestimated in a war whose base of supplies is so many miles away.

6. In like proportion, compound, infected fractures are changed into aseptic, simple fractures, and may be treated as such.

It has been said that 10 per cent. of battle wounds, even when the wounded men have arrived at the hospital within the first twelve hours, cannot be primarily closed, mainly in these instances: cases in which the shock is so great that the patients cannot stand the operation within the first twelve hours; deep wounds in which the complete excision of all devitalized tissue is uncertain or impossible; wounds in which no roentgen apparatus being present, the projectile cannot be extracted, and wounds in which the loss of substance is so great that complete closure is impossible. It has been shown that from 5 to 10 per cent. of the primary sutures are not successful, and this is due mainly to the streptococcus.

In an evacuation hospital, all wounds that are seen within the proper time after injury, which are applicable to primary suture, are closed by this method. At the same time, cultures of the wounds are taken. The wounds that must be opened immediately on the bacteriologic report are those primarily infected with the virulent types of streptococci. A bacteriologic report of other organisms does not in the main disturb us.

We know that the mechanical sterilization by the operative procedure of primary suture, together with the action of the human tissue, take care of all other organisms, particularly when in pure culture. The virulent streptococci generally by themselves, and always when associated with other organisms, such as

TABLE 1.—PRIMARY SUTURES OF BONE FRACTURES
(LEMETRE)

	Total Cures	Failures	Partial Cures
1. Joints:			
Tibial torsk	15	..	..
Knee	22	1	..
Wrist	20	..	2
Elbow	22	..	3
Shoulder	12	..	1
2. Bones:			
Femur	24	..	2
Leg	64	2	5
Humerus	47	1	3
Form	26	..	2
Clavicle	3	..	..
Ulna	24	..	3
Tibia	2	..	..
Radius	29	..	2
Fibula	46	..	..
Hand	67	2	4
Foot	5	..	5
Skull	26	..	1
Skull and brain	15	1	3
Chest	7	..	..

the streptococcus, enterococcus, the gas gangrene group, etc., demand immediate opening of the primary suture.

II. DELAYED PRIMARY SUTURES

The delayed primary suture is the method of wound closure that has been adopted in all those cases in which primary suture would have been done, except for circumstances, generally of military character, that made it inadvisable. The technic of delayed primary suture is exactly that of primary suture, except that the skin is not closed, and a dry sterile dressing is placed over the wound. The skin edge is brought together from three to eleven days later.

A hospital at the front can generally in times of stress keep only 20 per cent. of its beds permanently filled. All patients with primary sutures should be kept at the place of operation for at least ten days, so that the wound may be watched and not subjected to the traumatism in transportation. Therefore, when patients must be removed immediately, within six or seven hours after operation, delayed primary suture takes the place of primary suture.

This method of procedure has been found eminently successful. Patients with delayed primary sutures are sent to the rear within six or seven hours after the initial operation, and the wounds are closed preferably on the second, third or fourth day. The percentage of cures in delayed primary sutures is between 80 and 87. This method allows the beds at the front to be continuously utilized, and adds to the rapidity of recovery over the former methods, according to the statistics of Duval. By delayed primary suture, 32 per cent. of the patients were returned to duty in three weeks, 30 per cent in one month, and 28 per cent. in two or more months.

III. FRACTURES

My particular object is to emphasize the necessity for the early treatment of bone injuries, by primary or delayed primary suture, for this is the keynote to the successful handling of war fractures. To change an infected compound fracture into an aseptic, simple fracture at the outset, is to do away with the greatest difficulties that are found in the treatment of war fractures. It is not my intention to take up the mechanical principle on which fractures, generally compound, of the various bones of the body are to

be treated. That is well set forth in the Splint Manual, authorized by the American Expeditionary Forces; but I wish to insist that, by the use of the principles of primary and delayed primary suture, the entire subject of the treatment of fractures has been changed; that one is no longer treating compound fractures with all the difficulties thereunto appertaining, but has the much simpler task of the treatment of a simple fracture.

The reader may interpose to say that the statistics I have given are those appertaining only to soft part wounds, and the infection of bones is another and far more difficult proposition. That is not the case; the figures given are taken from the injuries to bones as well as of the soft parts. Indeed, the infection of bones is generally secondary to the infection of soft parts. Therefore it follows that, if by primary or delayed primary suture this infection can be stopped or removed, the bone will not become infected.

In the statistics given by Lemetre (Table 1), in a series of 421 compound fractures of all bones, among which there are fifty-one compound fractures of the humerus and twenty-six of the femur, the most difficult of all war wounds to treat and the ones which formerly gave the highest mortality, there is a complete cure with a simple fracture of 91 per cent.; and, if we add the partial failures which do not affect the treatment of the fractures, we have 97 per cent. of cures, better than that for soft part wounds.

Again, according to Gross (Table 2), there were 213 infected compound fractures treated by primary suture. These were changed into aseptic simple fractures in 89 per cent. of the cases; and so I might quote other authorities whose statistics bear out these wonderful results.

TABLE 2.—PRIMARY SUTURES OF BONE FRACTURES
(GROSS)

	Total	Incomplete	Oblique	Comminuted
Skull	27	..	..	..
Inferior maxillary	9	5	..	4
Clavicle	4	1	..	3
Scapula	16	12	..	4
Clavicle and scapula	3	..	..	3
Ribs	9	..	1	8
Sternum	2	2	..	..
Vertebrae	6	6	..	..
Shoulder	7	1	..	6
Humerus	11	5	1	5
Elbow	8	3	..	5
Forearm { Both bones	..	..	..	4
Radius	11	..	..	3
Ulna	..	..	..	4
Carpus	4	..	..	4
Metacarpus	8	..	..	8
Ilium	11	11	..	..
Sacrum and coccyx	4	4	..	..
Femur	10	6	3	1
Knee	16	14	..	2
Patella	5	..	..	5
Leg { Both bones	3	..	..	3
Tibia	19	13	2	4
Fibula	6	..	1	5
Tarsus, Metatarsus	14	..	..	..

The rules of the game have, therefore, been laid out for use by the application of this scientific knowledge, by combination of the surgeon, the roentgenologist and the bacteriologist. As Médecin-Principal Duguet has said, "Thus the old formula which subordinates the surgical act to the preestablished sanitary organization finds itself reversed." Today, it is the sanitary organization in its entirety that conforms and adapts itself to the exigencies of modern surgical technic. All compound fractures must be operated on by the technic of primary or delayed primary suture within eight or ten hours of the casualty. Thus the problem is one of the treatment of the simple fracture.

The transportation of the wounded must be accomplished with this end in view. Hospitals of sufficient

ize must be located in the zone of the advance near enough to make this transportation possible.

Each hospital must be adequately staffed with surgeons of sufficient skill, with a bacteriologist and roentgenologist, in constant consultation for the proper carrying out of this technic.

INFLUENZAL SINUS DISEASE AND ITS RELATION TO EPIDEMIC INFLUENZA *

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A typical attack of influenza usually begins as a rhinitis and spreads from the nasal mucosa throughout the respiratory tract. As the chief symptoms are produced by the involvement of the bronchial tree, attention is naturally directed to the lungs and bronchi as the most important foci for the infection. However, in studying acute cases one is often impressed by the fact that the severity of the disease, best evidenced by the general prostration of the patient, is out of all proportion to the physical signs. Tracheobronchitis with abundant mucopurulent sputum, a particularly distressing and often spasmodic cough, and moist râles uniformly present in both lungs, almost exhaust the positive findings for the respiratory tract. It becomes difficult to understand why a vigorous, previously healthy young adult, should succumb to an infection which in many cases appears to be almost wholly confined to the tracheobronchial mucosae. It might even be questioned whether such an individual should die from a *primary* bronchitis and bronchopneumonia. In the opinion of many clinicians and pathologists, such a combination is rather rare.

Because of these considerations and because of a series of observations made on soldiers of the American Expeditionary Forces, it has seemed desirable to suggest that in addition to the infection of the respiratory tract per se, other lesions, almost uniformly neglected by writers on the subject and rarely noted by clinicians or pathologists, may prove to be very seriously important factors both in the clinical picture and in the often fatal outcome of the disease.

My attention was first directed to the serious nature of this so-called "influenzal purulent bronchitis," by a visit

in October, 1917, to the base hospital zone of the British Expeditionary Forces in France, at which time Captain Rolland of the Royal Army Medical Corps mentioned his observations in a series of cases of this disease, which had occurred in epidemic proportions and which was highly fatal. The influenza bacillus seemed without doubt to be the causal agent, though pneumococci and streptococci were often also isolated.

On the advent of cold, wet weather in the American army zone, severe attacks of bronchitis assumed almost the nature of an epidemic and showed a rather high percentage of fatal cases. On examination of these cases postmortem, one was at once struck by the pathologic syndrome presented, which strongly suggested infection by *B. influenzae*. This suspicion was subsequently confirmed by bacteriologic examination.¹ It is not my purpose at this time to discuss either the general pathologic or bacteriologic characters of

this series of cases. It is the involvement of the sinuses at the base of the skull that deserves especial consideration, and because of the importance of this complication, as well as its apparent frequency and the relatively small amount of attention devoted to the subject in medical literature, this separate communication is considered justifiable.

Infection of the accessory sinuses of the nose and skull have often been noted. As early as 1837, Petrequin² stated that frontal sinus involvement produced the headache so often present in the disease. Brochin,³ in 1884, distinguished the "cephalic" form of influenza by localizations in the nasal fossae, and the frontal and maxillary sinuses. Pfeiffer,⁴ however, in his classic descriptions of the etiology and pathology of influenza, does not mention the sinuses. In the same year (1892), Weichselbaum⁵ published the necropsy findings of a series of cases, in six of which he found inflammatory lesions in either the ethmoids or the antrum. In two of these cases the influenza bacillus was recovered from the exudate. Bull⁶ has also described sinus involvement as a part of the sequelae of influenza. Wassermann,⁷ in a fairly complete study of clinical cases and necropsy material, while confirming Pfeiffer's results, evidently did not encounter or missed the significance of any sinus complications. In a review of the entire subject of influenza, Schrötter⁸ also fails to note the relation of the sinuses to pulmonary types of the disease.

In the more recent literature there are occasional references to sinus influenza, notably by Kyle⁹ and Coates;¹⁰ but Hübschmann,¹¹ in a study of 110 cases, and Hammond, Rolland and Shore,¹² in an article based on seventy-one necropsies on patients showing purulent bronchitis, do not discuss at all the question of the sinuses. In short, sinus disease in epidemics of influenza is either totally disregarded or described as an accidental complication or sequela of the infection of the pulmonary tract.

When, therefore, our first fatal case of influenzal tracheobronchitis and bronchopneumonia showed, at postmortem examination, an empyema of both sphenoid cavities, and the pus from these revealed by both smears and cultures typical influenza bacilli, the condition was regarded as an interesting but unusual complication. However, as case after case coming to necropsy showed similar or comparable lesions, the circumstances warranted more careful and detailed study.

The conditions found may best be summarized from the abridged notes of the necropsy examinations.

CASE 1.—J. D., aged 22. Duration of illness, sixteen days.

Lungs: Typical purulent tracheobronchitis and bronchopneumonia.

Sinuses: Sphenoidal sinus completely filled with a thick mucopurulent exudate under some pressure. Mucosae markedly swollen and deeply congested. Posterior ethmoids

2. Petrequin: Gaz. méd. de Paris, cited by Brochin (Note 2).

3. Brochin: La grippe, Dictionnaire encyclopédique des sciences médicales, 1884.

4. Pfeiffer: Vorläufige Mitteilungen über den Erreger der Influenza, Deutsch. med. Wchnschr., 1892, No. 2, p. 28; Die Aetiologie der Influenza, Ztschr. f. Hyg. u. Infektionskr., 1892, 13.

5. Weichselbaum: Beitrag zur Aetiologie und pathologische Anatomie der Influenza, Wien. klin. Wchnschr., 1892, p. 459.

6. Bull: Multiple Sinus Disease Following Influenza, Med. Rec., New York, 1899, 56, 336.

7. Wassermann: Einige Beiträge zur Pathologie der Influenza, Deutsch. med. Wchnschr., 1900, No. 28.

8. Schrötter: In Kolle and Wassermann's Hand Book.

9. Kyle: Epidemic Nasal Sinus Disease, Jour. Laryngol., Rhinol. and Otol., 1917, 30, 366.

10. Coates: Etiology and Diagnosis of Diseases of the Accessory Sinuses Following Influenza.

11. Hübschmann: Ueber Influenza, München. med. Wchnschr., 1915, 62, 1073.

12. Hammond, Rolland and Shore: Purulent Bronchitis, Lancet, London, 1917, 2, 41.

* From the Central Medical Department Laboratory, A. E. F.
1. For the larger part of the bacteriologic results in these cases, I am indebted to the careful, thorough work of Lieut. J. G. Hopkins, R. C. His painstaking labors, carried out under the most trying conditions, deserve more than passing mention.

contained small amount of thin, yellowish fluid. Anterior ethmoids and frontals free.

Bacteria: Influenza bacilli recovered from sphenoidal sinus, lung and liver. Occasional gram-positive cocci in pairs and short chains also present.

CASE 2.—C. M., aged 23. Duration of illness, 23 days.

Lungs: Typical purulent tracheobronchitis and bronchopneumonia.

Sinuses: Left sphenoid filled by thick mucopurulent exudate under pressure. Both posterior ethmoids contained moderate amounts of pus. Mucosae swollen and reddened. Other sinuses free.

Bacteria: Cultures revealed *B. influenzae* in ethmoid, lung, bronchi and liver. Streptococcus also found in bronchus but not in ethmoid.

CASE 3.—M. C., aged 27. Duration of illness, twenty-six days.

Lungs: Purulent tracheobronchitis and bronchopneumonia. Mucosae swollen.

Sinuses: Both sphenoids and posterior ethmoids full of thick, mucopurulent exudate. Mucosae swollen. Anterior ethmoids and frontals apparently clear.

Bacteria: *B. influenzae* recovered in pure culture from the sphenoidal pus and the lung, and in mixed culture from bronchi, spleen, liver and bronchial lymph nodes.

CASE 4.—L. S., aged 23. Duration of illness, thirty-two days.

Lungs: Purulent tracheobronchitis and bronchopneumonia with fibrinopurulent pleuritis.

Sinuses: Sphenoidal, posterior ethmoidal and frontal sinuses filled with thick mucopurulent exudate. Mucosae swollen and reddened. Anterior ethmoids free but mucosae swollen.

Bacteria: Influenza bacilli from frontal, sphenoid, bronchus, lung and liver. Pneumococci also in sphenoid and lung. From bronchus, practically pure culture.

CASE 5.—M. H., aged 24. Duration of illness, twenty-nine days.

Lungs: Purulent tracheobronchitis, bronchopneumonia and fibrinopurulent pleuritis.

Sinuses: Mucosae of sphenoidal, ethmoidal and frontal sinuses swollen and reddened. In left sphenoid and both frontals were a few drops of mucopurulent exudate. Other surfaces were bathed by a mucoid fluid.

Bacteria: *B. influenzae* recovered from sphenoid, ethmoid, lung, bronchus and liver. Streptococci also found in sinuses.

CASE 6.—A. C., aged 22. Duration of illness, twenty-nine days.

Lungs: Purulent tracheobronchitis, bronchopneumonia and fibrinopurulent pleuritis.

Sinuses: Sphenoids contained a few drops of thin mucopurulent exudate. Other sinuses free. Middle ears and mastoids on both sides showed thick pus.

Bacteria: Influenza bacilli obtained from sphenoid, middle ear, lungs and bronchi.

CASE 7.—W. H., aged 22. Duration of illness, twenty-three days.

Lungs: Purulent tracheobronchitis with bronchopneumonia and fibrinous pleuritis.

Sinuses: Sphenoids, posterior ethmoids and right frontal contained abundant mucopurulent exudate, and mucosae were markedly swollen and congested. Middle ears on both sides showed similar condition.

Bacteria: *B. influenzae* found in sphenoid (associated with streptococci and pneumococci), bronchus, pleura and middle ears.

These cases have certain features in common which distinguish them on the clinical and the pathologic side. A purulent tracheobronchitis with patches of bronchopneumonia definitely identifies them as belonging to the "pulmonary type" of influenzal lesion. However, in each instance either one or several or all the sinuses were involved in what was usually a relatively severe inflammatory process. It should be further noted that the cases all occurred in young men, the ages ranging from 22 to 27 and averaging 23.

As is usual with influenza, the duration was comparatively long, averaging over three weeks (twenty-four days), and ranging from sixteen to thirty-two days.

In view of the foregoing facts, especially the long duration, the question now arises as to whether, after all, these sinus infections are not merely sequelae or unimportant complications of the principal lesion, which, it may be contended with much reason, is located in the pulmonary system. In the course of our necropsy experiences, considerable evidence accumulated having some bearing on this point.

The following cases illustrate the presence of the syndrome described above, but with the added difference that death was in all probability due to other and seemingly independent conditions:

CASE 8.—R. B., aged 18. Duration of illness, eighteen days. Death due to acute general miliary tuberculosis particularly involving lungs, spleen liver and brain, and arising from an older tuberculous lesion in a seminal vesicle.

Lungs: Acute purulent tracheobronchitis.

Sinuses: Sphenoids, especially the left, filled with thick, yellowish exudate, and lined by swollen reddened mucosae. Mucosae of ethmoids and frontals thickened and moist, but free from pus.

Bacteria: Influenza bacilli from sphenoids and bronchi.

CASE 9.—J. M., aged 24. Duration of illness, three days. Death due to epidemic cerebrospinal meningitis.

Lungs: Purulent tracheobronchitis, with bronchopneumonia and seropurulent pleuritis.

Sinuses: Mucosa of sphenoid swollen, but all sinuses free from demonstrable pus.

Bacteria: *B. influenzae* obtained in culture from sphenoid, lung and bronchus.

CASE 10.—G. T., aged 27. Duration of illness, thirty-nine days. Death due to scarlet fever. Complicating measles with terminal seropurulent peritonitis and pericarditis.

Lungs: Acute tracheobronchitis (not purulent), with acute serofibrinopurulent pleuritis.

Sinuses: Sphenoids, ethmoids and frontals contained considerable mucopurulent exudate, and mucosae were swollen. Middle ears both showed thick pus.

Bacteria: From the sinuses and middle ears, *B. influenzae* was obtained in cultures and smears. All the other lesion yielded hemolytic streptococci.

CASE 11.—F. P., aged 19. Duration of illness, fifty-three days. Death due to double empyema (pneumococcal).

Lungs: Mucopurulent tracheobronchitis.

Sinuses: Sphenoids filled with a mucopurulent exudate. Mucosae swollen but pale. Ethmoids and frontals contained a small amount of mucoid fluid.

Bacteria: Influenza bacilli obtained in mixed culture from sphenoid. No culture taken of the bronchus.

CASE 12.—F. B., aged 22. Duration of illness, eleven days. Death due to empyema and pericarditis complicated by pulmonary abscesses (all streptococcal).

Lungs: Purulent tracheobronchitis (pneumococcus, Type III).

Sinuses: Sphenoids showed swollen gelatinous mucosae, and contained a thin mucopurulent fluid. Remaining sinuses appeared normal.

Bacteria: Influenza bacilli obtained by culture from sphenoid.

CASE 13.—H. P., aged 18. Duration of illness, thirty-five days. Death due to double empyema (pneumococcal).

Lungs: Acute purulent bronchitis (no culture made).

Sinuses: Sphenoid sinus filled (under pressure) with thick mucopurulent exudate. Mucosae swollen but pale. Remaining sinuses free.

Bacteria: From sphenoid, *B. influenzae* obtained by culture and smears.

As has been indicated, in these six cases, death was in all probability due to some other than an influenzal infection. What the interrelation was between the various infecting organisms furnishes an interesting

speculation. That which concerns us at this time is the presence in all these cases of pathologic conditions in the sinuses in which the exudate harbored influenza bacilli that it is fair to presume were pathogenic. It must also be admitted that in some of the cases influenza organisms were possibly responsible for the conditions found in the bronchi and trachea; but certainly in these regions the pathologic processes were no further advanced than in the sinuses. It would not appear, at least, that the sinuses were necessarily secondarily or terminally invaded as compared with infection of the bronchial tree.

Further evidence is produced by two other cases in which sudden death was due to accidental causes:

CASE 14.—A. S., aged 22. Duration of life after accident, 40 minutes. Death due to bullet wound through chest, involving heart and lungs.

Lungs: Bronchi apparently normal.

Sinuses: Mucosae of sphenoids swollen; cavities contained mucoserous exudate.

Bacteria: *B. influenzae* isolated from sphenoid in pure culture.

CASE 15.—J. H., aged 30. Duration of life after accident, sixteen hours. Death due to fracture of skull and hemorrhage of brain.

Lungs: Bronchi apparently normal.

Sinuses: Left posterior ethmoid showed a few drops of thick mucopurulent exudate. Mucosae swollen and reddened. Other sinuses apparently free.

Bacteria: *B. influenzae* isolated in pure culture from this pus.

In both of these cases, with no macroscopic evidence of bronchial or tracheal involvement, definite inflammatory conditions associated with pure cultures of the influenza bacillus were found in the sinuses. Here, at least, the infection would appear to have been present in the sinuses before it became of any importance in the pulmonary tract. It might then have been a potential nidus for the future development of lung complications. Even granting that the sinus conditions were sequelae of a previous bronchitis from which the patients had recovered, the menace for recurrences and extensions would probably remain the same. After all, the question of whether the lungs or the sinuses were first affected is relatively immaterial compared to the importance of the facts themselves, namely, that the sinuses may be seriously involved in cases of influenzal bronchitis, and also that this infection of the sinuses may exist independently of any lung disease either as a consequence or a cause.

COMMENT

It would, of course, be unreasonable to assert that all cases of influenza are accompanied by sinus complications. While it is true that in only one of our cases of influenzal purulent tracheobronchitis coming to postmortem did we fail to find sinus disease also present, it is unfortunate that both in this case as well as in the others of the series the antrum of Highmore was not also investigated. However, the number of cases is altogether too small to justify any sweeping conclusions. They do serve most emphatically to emphasize the importance of the sinuses in the respiratory type of influenza.

This importance is interesting from two standpoints. First, from the standpoint of a local focus of infection, which not only constantly menaces the pulmonary system, only awaiting suitable conditions of exposure and lowered resistance for hostile invasion, but also furnishes continued sources of toxic absorption, not to mention the direct effect on the well being of the

patient from the presence of these local conditions. Second, and more important, is the bearing that these local infections have on prophylaxis and treatment. When their attention had been called to the possible constant presence of sinus disease in patients suffering from influenzal bronchitis, the attending physicians adopted local measures of treatment for these conditions, even when their presence could not be diagnosed with any degree of certainty. Local applications to the nasal passages of cocaine and epinephrin solutions often resulted in copious discharges of thick, mucopurulent exudate from the sinuses, with marked relief to the patient, such as amelioration of headache and pain in the eyes, as well as definite betterment of the conditions in the bronchi and trachea.

While the general proposition that young, otherwise healthy adults do not die from uncomplicated primary bronchitis or bronchopneumonia is by no means without exceptions, nevertheless, it is always extremely desirable in such cases to search most carefully for foci of infection other than the respiratory tract per se. The middle ears, serous membranes and even the blood stream may harbor the offending organisms, but in cases of influenza and possibly other respiratory diseases,¹³ the sinuses of the skull should always be investigated and their freedom from involvement assured before other than general therapeutic measures of relief are abandoned.

Inevitably in these days, the question of carriers is linked up with that of actual cases, and perhaps too little consideration has been given to sinus disease as furnishing chronic foci for the spread of epidemics.

The entire subject deserves further investigation, and whether or not my conclusions are found to be justified, in the study of larger groups of cases and by other workers, is a matter of minor importance. If more careful attention is directed toward what at times is an important feature of epidemic influenza, namely, sinus involvement, this communication will have fully accomplished its purpose.

SUMMARY

1. Epidemics of respiratory influenza (purulent tracheobronchitis) have been fairly severe in both the American and the British Expeditionary Forces.

2. In the investigation of cases, both clinically and at postmortem, little attention in the past has been given to the question of accompanying sinus disease.

3. Of eight fatal cases of purulent tracheobronchitis due to the influenza bacillus, all but one showed involvement of one or more of the sinuses at the base of the skull by inflammatory processes, probably, in all cases, directly due to the invasion of these sinuses by the influenza bacillus.

4. In six patients that died from some other apparently independent infection, the sinuses showed influenzal inflammations.

5. Of two patients dying from accidentally received injuries, both harbored in their sinuses lesions giving pure cultures of *B. influenzae*.

6. Appropriate treatment of the sinuses in patients suffering from influenza often served to relieve the symptoms and apparently to hasten convalescence.

7. Investigation of the sinuses during epidemics of influenza is strongly recommended and urged not only on therapeutic but also on prophylactic grounds.

13. As, for example, whooping cough, which is very closely related to influenza both in the characters of the causative organisms, as well as many of the clinical features of the disease. The spasmodic cough of some influenza patients is often difficult to distinguish from the "whoop" caused by the Bordet-Gengou bacillus.

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SATURDAY, MAY 25, 1918

THE TREATMENT OF AMEBIASIS

The recognition of the *Endameba histolytica* as the cause of that form of dysentery known as amebic dysentery, a disease endemic in many parts of the world and liable to occur in widespread, fatal epidemics, has been helpful in many ways. The identification of the parasite and its differentiation from other organisms at times inhabiting the alimentary tract of man has made the early accurate diagnosis of the infection more easy. It has also facilitated the problems of prophylaxis and therapy by furnishing dependable information respecting the specific form of life that must be combated.

The most familiar specific therapy of amebic dysentery in recent years involves the use of ipecac and emetin. Thus, according to the Handbook of Therapy:¹

Whether the amebae are on the surface of the mucous membrane, deeply embedded in the ulcers, or localized elsewhere in the body, they may be reached by properly administering ipecac and emetin. The amebae on the surface of the mucous membrane are not likely to be affected by emetin administered hypodermically. On the other hand, emetin given hypodermically becomes more quickly active on the deep seated organisms and the localized lesions. . . . Happy though the results of this combination may be in treating amebiasis, the fact should not be overlooked that emetin is an amebicide and has little to do with the healing of ulcerations. Every case of amebiasis should, after this treatment, be considered one of ulcerative colitis and so treated from a dietetic point of view. At the same time every effort should be made to enhance resistance by change of climate, tonics, etc., to obviate the distressing sequelae characteristic of the disease.

Dale and Dobell² of the Medical Research Committee in London have lately made a somewhat rigorous test of the action of substances that already have gained or are likely to gain a therapeutic reputation in amebic dysentery. These studies have brought evidence of an unmistakable discrepancy between the action of emetin, in particular, and likewise other substances in vitro and their curative effects in dysentery. The earlier assumption on which

the use of ipecac alkaloids was based attributed their favorable effect to a direct amebicidal action. Dale and Dobell found that emetin and the other alkaloids of ipecacuanha, as well as artificial derivatives, exhibited no characteristically high toxicity for the amebas, when compared with that of some other alkaloids. Methylpsychotrin, a natural alkaloid from ipecacuanha, which is more toxic for *Endameba histolytica* when tested in vitro, and much less toxic for mammals than emetin, appears to be entirely devoid of therapeutic action even when it is given in large doses.

There is clearly some other factor, Dale and Dobell conclude, in the cure of dysentery by emetin, than the alkaloid and the amebas; and that factor must be supplied by the host. The participation of the host in the process is believed to be further evidenced by their observation that emetin has no appreciable effect on the course of amebic dysentery in the cat, while it cures the disease in man, even when the same strain of amebas is present in the two hosts. It should be remembered that the *Endameba histolytica* is an obligate parasite which, unlike some other amebas that survive in the contents of the bowel, can live and multiply only by invading the tissues of its host. Perhaps, therefore, the effective drugs act by promoting some natural defensive reaction to invasion. In any event the theory of the mode of action of emetin in amebic dysentery needs reconsideration; and on its correct formulation rests in no small measure the possibility of selecting other suitable amebicides.

THE HOUSEFLY IN SPRING

Why flies are both a nuisance and a menace to health scarcely needs any longer to be explained. The smallest schoolboy has been taught to look on these little insects as enemies that must be conquered. Something more than flytraps and flypaper and screens are requisite for a successful campaign. We may continue to "swat the fly" with unabated vigor for years to come; but until the life habits and reproductive phenomena of this species are clearly understood so that scientifically founded plans for the conquest of the objectionable creatures can be put into operation, progress will scarcely be demonstrable. Sanitary and medical projects have need of the entomologist in this as in various other modern problems that bear on animal welfare or human health and comfort.

Of flies it is well known that they are attracted by most forms of food and putrid substances, and that they breed where food and mediums for the deposition of eggs are available. This is particularly the case in manure. It is also realized that the temperature plays an important part in the activities of the insects. They disappear from view in cold weather. Do they persist during the winter season? Can they winter over in protected or slightly heated locations, or is the appearance of the housefly in the spring connected

1. Handbook of Therapy, Ed. 4, Chicago, American Medical Association, 1915, p. 265.

2. Dale, H. H., and Dobell, C.: Experiments on the Therapeutics of Amebic Dysentery, Jour. Pharmacol. and Exper. Therap., 1917, 10, 399.

with other factors? A government entomologist¹ has supplied the answer to some of these queries, not by haphazard methods but by careful observations extended over several years in the vicinity of Washington. There is no evidence whatever to show that houseflies do or can persist as adults from November to April, either outdoors, in protected stables, or in attics or heated buildings. Temperatures of from 12 to 15 F. are quickly fatal, and there is every reason to believe that any temperature below freezing is fatal if continued long enough. In heated buildings their life is not prolonged beyond that of summer at like temperature, nor is there any suspension or retardation of sexual development or activity.

If adult houseflies appear, as they sometimes do most unexpectedly in isolated instances in midwinter, it is because they represent the result of continued breeding in warm places where food and mediums for deposition exist. Many of the late forms will find their way on mild days to heated buildings. Those that do not are quickly killed. The more successful flies, Hutchison¹ reminds us, are attracted, as in summer, to odors of food, and will congregate in kitchens, dining rooms, restaurants, bakeries, animal houses, and the like. If no food is at hand they will quickly perish. When food is available, they may continue to live through December and January and even into February, if not destroyed by fungus attacks. But there are neither experiments nor observations to show that they can continue throughout the winter until temperatures are again favorable for outdoor activity and egg laying. If flies find access in the autumn to heated buildings, where both food and mediums for deposition are available, such as animal houses or restaurants in which sufficient attention is not given to the disposal of garbage or kitchen wastes, they will continue breeding throughout the winter. In such cases the flies present in March and April are the offspring, not the survivors, of those that found their way to such places the preceding autumn. Thus, Hutchison adds, it is probable that this method of overwintering is much more widespread than is now realized, especially in cities, where there must be several foci from which flies escaping on warm days in March and April survive to produce the hordes that begin to appear late in May.

In the case of the larva and pupa stages, it must be admitted that the fly can overwinter where conditions are not too rigorous. The government entomologists are uncertain as to whether overwintering in these stages or by continued breeding is the more common or more successful. The chances are that few, at most, of the larvae present in manure in the autumn can survive until the following spring. These observations show clearly that the winter months in the colder climates afford a chance to make a good

beginning in the control of the fly nuisance in the following summer. It is our neglect of filth in which flies can breed that undoes the good which the fly-killing cold weather has bestowed without cost.

THE POMELO, OR GRAPEFRUIT

Grapefruit is a popular name for the edible fruit of *Citrus decumana*, now widely used in the dietary of American households. Although the designation pomelo has been adopted in scientific circles in this country, and the fruit is termed "pomelow" by the English of Ceylon and India, the now familiar expression grapefruit, selected in recognition of the fact that the fruit commonly occurs on the trees in large clusters somewhat resembling those of grapes, is likely to be retained. The name "shaddock," which was likewise employed by some, a few decades ago, is all but abandoned now.

Although even younger persons can recall when grapefruit was comparatively rare as a component of our regimen, it is not easy to realize that the first shipments from Florida were made subsequent to 1880. As late as 1885 the fruit was described as "more showy than useful," while it was incidentally noted that the juice is rather refreshing.¹ Despite the fact that literally thousands of carloads of grapefruit are annually shipped to market now in this country, only the scantiest information about a fruit found on so many American tables is actually available in easily accessible literature. It is helpful, therefore, to find that the United States Department of Agriculture has begun to fill the gap in our knowledge with some dependable information regarding the composition of the grapefruit.²

The edible portion — the pulp or juice — deserves first attention from the dietetic standpoint. It contains sucrose and reducing sugars in about equal proportions, the total reaching 30 gm., or approximately 1 ounce, in a large specimen of some varieties in which this part may weigh three quarters of a pound or more. Thus a diabetic indulging in half a grapefruit may readily ingest from a quarter to half an ounce of sugar in a product in which this may be unsuspected, owing to the sour taste. The latter is due, as in the case of other citrus fruits, to citric acid, the content varying from about 2 to 6 gm. per fruit, depending on the size, variety and stage of ripeness or storage. Whereas the sugars increase during storage, the acidity decreases.

The peel or rind of the grapefruit offers not a little of interest to the chemist. The essential oils are represented by limonene, citral, pinene and alcohols. Beside the pectin there is, further, a glucosid naringin which is synonymous with the "bitter principle" of

1. Hutchison, R. H.: Overwintering of the House Fly, Jour. Agricultural Research, 1918, **13**, 149.

1. Downing: Fruits and Fruit Trees in America, 1885, p. 579.
2. Zoller, H. F.: Some Constituents of the American Grapefruit (*Citrus Decumana*), Jour. Indust. and Engin. Chem., 1918, **10**, 364.

the fruit. Whether this compound, in particular, and other components have any pharmacologic potencies remains to be ascertained. Nevertheless, therapeutic efficacy has been ascribed to the pomelo by more than one writer. Evidently the bitterness has suggested the potency of quinin or a similar alkaloid; hence the assurance that "a cool, juicy pomelo before breakfast is one of the pleasantest and surest antidotes imaginable for malaria." It is stated that subtropical or tropical countries are prone to offer grapefruit or similar citrus fruits as a safeguard against malaria, and publications from these sources contain similar advice.

We may well enjoy the luscious grapefruit, content with its small modicum of nutriment and large share of pleasures of the palate. The juice fruits are not selected primarily for their supply of calories. They have other compensating virtues which put them in the class of acceptable dietary accessories. One need merely recall the antiscorbutic properties of the orange—and possibly of citrus fruits in general. The government expert has sounded the proper note of warning in these words:²

The dailies and periodicals of promoters in citrus fruit sections abound in attractive quackery on the beneficent medicinal properties of all citrus fruits, and especially grapefruit. This remedial property is being assigned to everything present in the fruits—the "alkaloids" said to be present, the citric acid, the potassium phosphate in the pulp, and the oils in the peel. If it is upon the oil present that we must depend for this elixir, then a tablespoonful of pure gum-turpentine will furnish the same amount of remedial as an entire crate of citrus fruit, providing we eat the peel and all. If it is due to the phosphoric acid as phosphate, as Dygert would have us believe, then a glass of cow's milk would be equivalent to a dozen grapefruit in this life-giving entity. If it is due to the alkaloids present in the citrus fruits, then they have no therapeutic value, for no alkaloid has been detected in any of the citrus fruits regularly marketed in this country, and it is not likely that an alkaloid exists in any of the citrus family.

ABSORPTION THROUGH THE VAGINA

It has long been established that the sound skin is practically impermeable for watery solutions of salts and other substances. For this reason, perhaps, it has become customary to think of other surfaces closely connected with the integument as being similarly impervious to soluble products that come into contact with them. Yet everyday experience in ophthalmologic practice bears witness to the permeability of the epithelial membranes of the eyes to the drugs used in dilating the pupil for purposes of examination of these organs. Furthermore, the history of toxicology shows clearly that another structure—the vagina—which resembles the skin in many respects, except for the absence of the horny surface as its outer layer of stratified epithelium, can also be the seat of active absorption. Nevertheless, as Macht¹ has pointed out

in an elaborate study of the vagina as a seat of absorption, the vagina is generally regarded as an organ incapable of absorbing pharmacologic agents. Witness to this widespread belief, he says, is the universal and indiscriminate employment by women of all kinds of medicaments—some known to be innocuous and others recognized otherwise as violent poisons—in the form of douches, tampons, suppositories, "uterine wafers," and the like.

The numbers of cases of serious intoxication due to the introduction of mercuric chlorid in solution into the vagina seems to be increasing. Clinical literature gives instances of various other harmful substances that have found their way into the organism through the vaginal membrane in sufficient amounts to give evidence of their absorption. Arsenic, zinc sulphate, iodoform, belladonna and phenol (carbolic acid) are included in the list. The excuse for these facts may perhaps be found in the still prevalent opinion that drugs applied to the vagina exert only a local effect, and cannot penetrate further into the system. Only on such a hypothesis could the almost indiscriminate employment of vaginal douches containing potent substances have been tolerated or acquiesced in, and local treatments with solutions of drugs complacently adopted by so many physicians in the past. When an untoward result has been observed, it has usually been attributed to an escape of fluid into the uterine cavity; but, according to Macht, a review of the literature reveals the fact that in many of the authentic cases described this explanation must now be abandoned in favor of absorption through the vagina.

The situation that prevails lends much significance to Macht's latest experiments in this field. From these it appears that all kinds of pharmacologic agents—alkaloids, inorganic salts, esters and antiseptics—can be absorbed with comparative ease through the vaginal walls. Macht points out that, from a therapeutic point of view, drugs such as opium or belladonna may be rationally administered for their constitutional effects through the vaginal route when suitable circumstances arise. But probably a greater emphasis needs to be placed at present on the danger that centers in the careless employment of poisonous substances that may find entrance to the organism in this hitherto unsuspected way. It is not unlikely that, in view of the widespread use of douches, etc., occasional chronic intoxications of unexplained origin may find their explanation in the absorption of the harmful substance through contact with the vagina.

War and the Sciences.—In spite of the fallacy of the German philosophers, they have, nevertheless, established in the German people action patterns of such surpassing strength that in the organized intelligence of the German people is our greatest menace. In fact, the present war is a contest of ideas rather than of men. In its broad sense it is the practical application of physics, chemistry and biology in a mass struggle for the existence of nations.—G. W. Crile, M.D., *Pennsylvania Medical Journal*.

1. Macht, D. I.: On the Absorption of Drugs and Poisons Through the Vagina, *Jour. Pharmacol. and Exper. Therap.*, 1918, **10**, 509.

Current Comment

ONE NON-ESSENTIAL INDUSTRY

The question as to what constitutes a non-essential industry in war time cannot be answered offhand. The complexities of modern business are such as to make it extremely difficult to determine just what industries should be suspended under the stress of war conditions without inflicting a greater economic injury than is justified by the possible benefits that might accrue. There is one business, however, that those who have given the problem any study would have to admit should be largely dispensed with during the war—and might properly be largely dispensed with at all times—and that is the manufacture of nostrums. Every physician and every druggist knows that there is not a “patent medicine” on the market today whose place is not better filled by official products that are found on the shelves of every druggist in the country. Every physician and every druggist knows that the “patent medicine” maker aims, not to furnish drug products that can be obtained in no other form, but to duplicate in infinite variety, with secret mixtures, the non-secret preparations already on the druggists’ shelves and, what is far worse, to simulate unnecessary self-drugging on the part of the public. It is true that, if the “patent medicine” industry were destroyed, druggists would for awhile suffer financial loss, not because they derive a large profit from “patent medicines,” but because the public, being deprived of the lying scare-heads of “patent medicine” advertisements, would buy fewer drugs of every kind. Certainly, however, this loss to some thousands of druggists would be an immeasurable gain to some millions of people. The exploiters of a widely heralded nostrum have bragged in their advertisements of the number of carloads of their mischievous alcoholic mixture that they have shipped at certain points. Does even the intelligent layman believe that under present conditions there is any excuse for taking up valuable shipping space with such worthless, if not dangerous, trash? And this is but one of scores. If there is one industry in the United States whose suspension at the present time is justified on the grounds of public health, greater efficiency and avoidance of waste, it is the nostrum industry.

THE MEDICAL DEPARTMENT AND THE GENERAL STAFF

The General Staff of the Army is the most important body connected with the prosecution of the war. One of the vital phases of the war is the physical condition—the health—of the soldier. It is an anachronism, therefore, that the Surgeon-General of the Army is not included in the General Staff. A recent issue of the Army and Navy Register reproduces a photograph of the Navy War Council in session; prominent among its members is the Surgeon-General of the Navy, Admiral Braisted. Somehow the Navy seems to set the pace for the Army in constructive legislation relative to medical administra-

tion; somehow the Medical Department of the Army seems to be regarded as of minor importance. Why, we do not know. Elsewhere in this issue we print the text of a bill recently introduced into the House of Representatives by Mr. Hicks to remedy the present condition. It is to be regretted that this bill includes anything more than this first section:

“That hereafter the Surgeon-General of the Army shall be a member of the General Staff Corps, and that the number of officers of the General Staff now authorized by law be increased accordingly.”

Certainly there can be no reasonable opposition to this particular part of the Hicks’ bill.

THE NEW YORK HEALTH DEPARTMENT

In referring to the reactionary forces in New York that seemed to be making a political football of that city’s Health Department, *THE JOURNAL* called attention to the fact that the efficient work of two of the bureaus of the New York Health Department had interfered with the malignant activities of certain interests. These were the Bureau of Public Health Education, headed by Dr. Charles F. Bolduan, and the Bureau of Food and Drugs, under the direction of Lucius P. Brown. Dr. Bolduan has persistently fought quackery and the nostrum menace and given the New York public many interesting facts regarding these insidious evils. The bureau headed by Mr. Brown had made it interesting for the sophisticators of foods and drugs. Since *THE JOURNAL* commented on the New York situation, Dr. Bolduan has been let out while Mr. Brown has been suspended! Significant, isn’t it?

METABOLISM IN GOUT

The fact that the treatment of gout is very unsatisfactory and that the disease is notably intractable furnishes an added stimulus to the study of its phenomena and their presumable causes. Lusk¹ has remarked, in discussing this baffling disease, that just as the whole trouble in diabetes turns on the ability of the organism to destroy sugar, so the symptoms manifested in gout are dependent on the deposit of acid urate of sodium in certain localities. But analogies may be misleading in science. In diabetes there is an undeniable upset in the metabolism of the carbohydrates, and at certain stages doubtless also a perversion in the transformations or oxidations of other foodstuffs, notably the fats. Are we to infer that gout is a disease of metabolism in a similar sense? This question has often been asked with respect to the behavior of the purin compounds, the precursors of uric acid in metabolism. One by one the props to the older structures of the theories of the gouty diathesis have been taken away by the disclosures of experimental investigation. Gout is not due to an increased formation of uric acid, as was once believed; nor is there any evidence that the accumulation of this substance is due to a diminished destruction. Gradually attention has been focused on a change in

1. Lusk, Graham: *Elements of the Science of Nutrition*, Philadelphia, 1917, p. 544.

the renal functions in gout.² But the question of some fundamental upset in metabolism always reasserts itself, despite the accumulated evidence that, aside from possibilities of the now denied altered metabolism of the purins, the general chemical exchanges in the body are the same in gout as in health.³ The latest investigation, a study of the heat production of gouty persons as calculated from their oxygen consumption, shows anew that the basal metabolism falls within normal limits. Purin-yielding foods produce no change in intermediary metabolism sufficient to be detected by the method of indirect calorimetry. These observations, made by Wentworth and McClure⁴ in the medical clinic of the Peter Bent Brigham Hospital, Boston, cannot exclude disturbances in "some minor phase of intermediary metabolism produced by nuclein-rich foods"; but if such exist they are surely too slight to affect the basal metabolism of persons subject to gout.

THE ACTUALITY OF COLD STORAGE IN THE FOOD SITUATION

The world war has taught us to revise our judgment on many subjects, notably in respect to foods and their distribution. Never before has this nation realized so clearly that the important staple perishable foods produced as articles of commerce must be preserved in the season of production and plenty, and carried over through the winter period by some suitable plan of conservation. Desiccation and canning have received a new impetus; old practices have been restored and new ones devised in the attempt to save and prevent the spoiling of what is perishable. The stigma has been removed from many products and procedures which in the immediate past have been obliged to contend with the prejudice of conservatism or the reaction against novelty. The cold storage process has thus succeeded in winning a better understanding for itself, so that refrigeration plants have come to occupy a recognized place in the food conservation plans. Part of the confusion about them lies in the misunderstanding of their proper uses. A cold storage warehouse "shall mean any place artificially or mechanically cooled to or below a temperature of 45 degrees above zero Fahrenheit, in which food products are placed and held for thirty days or more." The waste of fruits and vegetables cannot be prevented satisfactorily by application of cold storage, except in the case of a very few products, such as apples, pears and perhaps potatoes and onions. Nevertheless, the industry is not idle. Some conception of its capabilities is furnished by recently compiled data.⁵ The combined total cold storage and packing house capacity now available or immediately proposed is nearly 500,000,000 cubic feet. To cite a few conspicuous items, this includes more than 100 million pounds

of butter, nearly 800 million pounds of cheese, 7 million cases of eggs, 5 million barrels of apples, and more than 100 million pounds of poultry, without mention of the stores of meats of many varieties. In the case of meat, butter, lard, eggs, cheese and apples alone, the value of the products stored presumably far exceeds \$200,000,000.

POSSIBLE HEREDITY IN BRAIN CONVOLUTIONAL PATTERNS

The study of heredity has thrown a flood of light on the inheritance of peculiarities that characterize individuals and produce certain types of resemblances between relatives. Recurrences of form and stature, color and skin patterns, psychologic similarities and even chemical oddities of metabolism like cystinuria and alkaptonuria have been shown to fall within the schemes of explanation developed by students of genetics, and particularly as a result of experimental investigations of mendelian problems. Blue eyes and red hair and polydactylism have become amenable to interpretation in accord with established "laws of heredity." The internal organs have not yet been subjected to equally intensive research in the light of these newer generalizations. Recently, however, Sano¹ has directed attention to the possibility of hereditary resemblance in the study of the convolutional patterns of human brains, at the London County Asylums. The seeming intricacies of the convolutions and fissures of the cerebrum almost bar an adequate analysis of a problem thus complex. Nevertheless, a control of comparisons with nonrelative brains has enabled Sano to assert that the brains of relatives—brothers, parents and children—are more like one another than those of non-relatives. This appears to be particularly true when, as in negro or other races, the types are less mixed than is the case among most British subjects. What such studies of pattern in organs may lead to no one can conjecture at present.

THE BLOT ON THE ESCUTCHEON

A reminiscent article, prompted by the death of a "patent medicine" millionaire, recently appeared in a metropolitan paper. Generalizing on the ultimate distribution of the wealth made in the nostrum business the writer says:

The dispersal of many large fortunes accumulated in the making of pills and "cures" rarely attracts attention. The beneficiaries generally strive to hide the sources of their enrichment. A dozen cases might be mentioned of Philadelphia, Providence, Newport, and New York families whose money came from such sources, but whose members of this generation studiously avoid mention of the fact.

Well, one can hardly blame them!

1. Sano, F.: Morphological Investigations Upon the Convolutional Pattern of Relative Brains in Man, *Proc. Roy. Soc. Med.*, 1917, **10**, Sec. of Psychiatry, p. 21.

2. McClure, C. W.: The Renal Function in Gout, *Arch. Int. Med.*, November, 1917, p. 641. The Renal Function and Gout, editorial, *THE JOURNAL A. M. A.*, Jan. 5, 1918, p. 28.

3. Magnus-Levy, A.: *Berl. klin. Wchnschr.*, 1896, **33**, 416; *Ztschr. f. klin. Med.*, 1899, **36**, 353.

4. Wentworth, J. A., and McClure, C. W.: Studies on the Metabolism in Gout, *Arch. Int. Med.*, January, 1918, p. 84.

5. Horne, F. A.: Cold Storage—Its Capabilities and How to Best Utilize and Extend Them, *Am. Jour. Public Health*, 1918, **8**, 223.

Disease Prevention.—Surely our philanthropists should find as much pay in preventing misery as they do in relieving it. Preventive medicine is the watchword of the hour, and enlistment in the cause can come only through education.—M. J. Rosenau.

Association News

TWO IMPORTANT SPECIAL MEETINGS AT THE CHICAGO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Examination of Registrants—Rehabilitation of the Disabled Soldiers

The medical profession is particularly concerned with two points in the life of the soldier—one, when he enters the army; the other, when, physically disabled, he is no longer a fighting unit. A careful selection of recruits protects the government—which means the people—against admission to the Army of men not physically fit—men who probably would become a source of expense as long as they live. When the soldier is disabled it becomes the duty of the government to restore him as nearly as possible to perfect physical condition, and to do all that is possible to fit him to fill a position in life that will not make him dependent on others for support.

THE EXAMINATION OF RECRUITS

Two important special meetings in connection with the annual session of the American Medical Association next month will be devoted to these phases of the soldier's life. The first subject will be considered on Thursday afternoon and Friday, in meetings held at the Studebaker Theater. The importance of these meetings to physicians will be appreciated when it is realized that there are between 23,000 and 5,000 physicians connected with the examination of registrants.¹ The opening meeting will be addressed by a representative from the Provost Marshal-General's Office, by some one representing the local boards, the advisory boards, by a layman to present the public's view, and by an Army medical officer representing those concerned with the final examination of recruits. The aides to the governors of the various states will be present by order of the Provost Marshal-General. At 3:30 to 10 o'clock Friday morning a meeting of the state aids will be held. The rest of the day will be devoted to a conference of all physicians engaged in the examination of registrants on various problems connected with the work, and to an explanation of the new regulations which will be ready for distribution at that time.

RECONSTRUCTION AND REHABILITATION

The meeting on reconstruction and rehabilitation of the disabled soldiers, arranged for all day Thursday at the Auditorium Theater, as was announced week before last, will consider the various phases of this timely subject—the national program; the experience of foreign countries; the transportation from overseas; reconstruction of the special senses; clamoration of the industrial workers; vocational training—In fact, every aspect of the subject will be considered by special workers and by students of the subject. Both of these special sessions should be—and undoubtedly will be—largely attended.

THE CHICAGO SESSION

Meetings of the House of Delegates

The House of Delegates will hold its meetings during the coming annual session in the library at the headquarters of the Association, 535 North Dearborn Street. The first meeting will convene at 10 o'clock Monday morning, June 10, continuing in the afternoon. On Monday and on Tuesday, arrangements are made for the House to recess between 1:30 and 2 o'clock, when luncheon will be provided at the Hotel Virginia for the members of the House. On Monday evening the members of the House will be the guests of the Chicago Medical Society at the Hotel La Salle where a buffet supper will be served to be followed by a smoker.

1. There are 156 district boards, 4,643 local boards, and 1,320 medical advisory boards. It is estimated that there are 15,000 physicians connected with the local and district boards. This estimate includes not only the medical members, but also the medical consultants and medical assistants utilized by the medical men on the boards. The number of members of advisory boards is approximately 9,500.

Entertainment for Women Guests

Mrs. Albert J. Ochsner, chairman of the Committee on Women's Entertainment, announces the following entertainments for the wives of physicians and other women guests in attendance at the annual session:

TUESDAY AFTERNOON, JUNE 11, informal "at home" at the Chicago Woman's Club under the auspices of the president of the Woman's Club and the Committee on Women's Entertainment.

WEDNESDAY AFTERNOON, JUNE 12, a "tea" at the South Shore Club from 2 to 5 p. m. At this entertainment there will be an excellent musical program.

THURSDAY AFTERNOON, JUNE 13, reception at the Art Institute.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 17, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 869, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors, and 395 lieutenants.
MEDICAL RESERVE CORPS: 18,951, including 1,320 majors, 4,794 captains and 12,837 lieutenants. On active duty: 16,926, including 1,229 majors, 4,462 captains and 11,235 lieutenants.
MEDICAL CORPS, NATIONAL GUARD: 1,202, including 20 lieutenant-colonels, 244 majors, 151 captains and 787 lieutenants.
MEDICAL CORPS, NATIONAL ARMY: 125, including 3 brigadier-generals, 14 colonels, 100 lieutenant-colonels and 8 majors.
DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,275, of whom 1,518 are on active duty; DENTAL CORPS, N. G., 257; VETERINARY CORPS, 17; VETERINARY RESERVE CORPS, 1,443, of whom 733 are on active duty; VETERINARY CORPS, N. G., 40; VETERINARY CORPS, N. A., 496; SANITARY CORPS, 1,095, and AMBULANCE SERVICE, 162, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number				
	M.R.C.	M.C.N.G.	D.R.C.	D.C.N.G.	San.C.
Physical disability	659	52	13	8	7
Inaptitude	250	20	5	0	2
Other branches of service	499	70	26	8	61
Resigned	114	33	8	4	7
Domestic troubles	60	0	0	0	1
Needed by community	49	0	0	0	0
Deaths	71	4	3	0	1
Dismissed	8	2	1	0	0
Duty completed	2	0	0	0	0
No reason given	14	0	1	0	0
	1,726	181	57	20	79

General Hospital Bulletin

The initial copy of "The Bulletin of the U. S. Army General Hospital No. 2" of Fort McHenry, Md., has just been received. This bulletin is to be issued monthly and is published by, and primarily for the benefit of, the medical and administrative staffs of the hospital, for a three-fold purpose: 1. To present such items of interest as administration at the hospital, important army orders of a public nature, legislation and personal notes; 2. to report cases of especial interest; 3. to be a permanent historical record of one of the largest government general hospitals which is built on the spot which is the birthplace of the national anthem. It is also aimed through the medium of this bulletin to bring about a closer cooperation of the staff of officers.

Interchange of War Prisoners

The *Riforma Medica* relates that the surgeon-general of the Swiss army has finally succeeded in arranging for the interchange between Germany and France of prisoners over 48 years old who have been in captivity for at least eighteen months. The officers in this group are to be interned in Switzerland, and the others repatriated. The commission that selects these prisoners for exchange is composed of three Swiss physicians and three physicians of the nation holding the men prisoners. The incurable and the tuberculous are also listed for repatriation and injury from an accident while at work is accepted as the equivalent for a war injury. Holland, after a year of overcoming difficulties, is said to have about completed similar arrangements for British and Teuton prisoners. There are about 8,000 German

and the same number of British prisoners who will benefit by this interchange. In Italy the repatriating trains of the disabled arrive monthly. The last brought back to Italy 350 disabled soldiers and eighty officers. Besides this, there is also a weekly repatriating train of sick prisoners who are taken charge of by the Italian Red Cross as they cross the border.

Medical Students Exempted from the New Draft

Senate Joint Resolution No. 124 provides that medical students in bona fide attendance at recognized medical schools shall be exempt from draft under the Selective Service Law of May 18, 1917. The resolution has passed both houses of Congress and presumably will receive the approval of the President. Medical students, who have attained the age of 21 years since June 5, 1917, and on or before June 5, 1918, the day set for registration by proclamation of the President; will, like all other men of the same age period, be required to register; the time and manner of claiming exemption will be defined hereafter.

No medical student entering college after the approval of the resolution is entitled to exemption. Any student entitled to exemption loses that right as soon as he ceases to be a medical student in a recognized medical school, whether his status as a student is terminated by the interruption of his medical course or by graduation.

Students of dentistry are granted no exemption by the resolution.

A Bill to Increase the Efficiency of the Army Medical Service

A clear-cut statement of the principal needs of the Army Medical Service, and a succinct and well-defined plan to meet them, are embodied in a bill introduced into the House of Representatives on May 16, by Mr. Hicks. The bill, entitled A Bill providing that the Surgeon-General shall be a member of the General Staff Corps, and for other purposes, H. R. 12,141, was referred to the Committee on Military Affairs. It is as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter the Surgeon-General of the Army shall be a member of the General Staff Corps, and that the number of officers of the General Staff now authorized by law be increased accordingly.

SEC. 2. That the Secretary of War shall take such measures as will fix the responsibility for sanitary defects upon the proper commanding officers.

SEC. 3. That no permanent camp, cantonment, post, or station which is to be occupied by troops be established unless its selection has been duly considered and formally reported upon by the Medical Department.

SEC. 4. That when a state of war exists the transportation necessary to transport medical and hospital supplies of all kinds, and the sick and wounded of the Army, whether by land or water, shall be under the exclusive control of the Medical Corps.

SEC. 5. That hereafter the commissioned officers of the Medical Corps and of the Medical Reserve Corps of the United States Army on active duty shall be distributed in the several grades in the same ratios heretofore established by law in the Medical Corps of the United States Navy.

The Surgeon-General shall have authority to designate as "consultants" officers of either corps and relieve them as the interests of the service may require.

"WHY IS MY SOLDIER SICK"

Antivivisectionists' Misrepresentation Exposed

(Dr. Keen to the Secretary of War)

Hon. Newton D. Baker,
Secretary of War,

War Department, Washington, D. C.

My Dear Mr. Secretary:

In a four page pamphlet entitled "Why Is My Soldier Sick?" issued by the National Antivivisection Federation, incorporated, with headquarters at 456 Fourth Avenue, New York City, are published two resolutions passed by the New York Antivivisection Society at its annual meeting, Jan. 31, 1918, and forwarded to you officially. The second resolution reads as follows:

Be it further Resolved, That a copy of the foregoing resolution be forwarded to the Secretary of War as our official protest against the medical department's claim that serum inoculation is a necessary war

*measure and for that reason made compulsory, and as our protest against compulsory inoculation when the individual soldier conscientiously objects thereto; and we point to the provision of exemption now made by Great Britain, that power having been forced to rescind the rule of compulsion after the alarming effects of inoculation were disclosed.*¹

It has long been a matter of common knowledge and deeply regretted by the medical profession that Great Britain has never made antityphoid vaccination compulsory, as it fortunately is in our own Army.

In an article entitled "The Red Cross and the Antivivisectionists," a copy of which I am enclosing, I have shown by irrefutable facts how extraordinary the protection of the antityphoid vaccination has been in our Army and in the British army.

Although I knew that the statement in this resolution was an absolute falsehood, I preferred to have an authority which was beyond all question. Accordingly, on Saturday, April 27, I sent the following cable to Surgeon-General Goodwin, who occupies the same post in Great Britain that General Gorgas does in this country:

Surgeon General Goodwin, War Office, London:

Has antityphoid vaccination ever been compulsory in British Army?
KEEN.

To this on Monday, April 29, I received the following reply:

London, Prof. Keen, Philadelphia:

Antityphoid inoculation has never been compulsory in British Army.
GOODWIN.

You will observe, therefore, that this is a flat contradiction of the false assertion of the New York Antivivisection Society.

Nearly all of the British army has been voluntarily vaccinated against typhoid fever. Col. F. F. Russell in Surgeon-General Gorgas' office authorizes me to say that he understands that 99 per cent. of the British soldiers are vaccinated against typhoid fever. The reason for this is that they have seen how extraordinarily complete is the protection offered by the antityphoid inoculation. At this time the fate of the war depends largely on the health of our Army. It is in my opinion equivalent to disloyalty to deprive our soldiers of this protection and sacrifice their lives instead of the lives of a few rabbits, guinea-pigs, cats and dogs.

Yours very respectfully,

W. W. KEEN.

[NOTE.—

And the parson made it his text that week and he said likewise, That a lie which is half a truth is ever the blackest of lies, That a lie which is all a lie may be met and fought with, outright, But a lie which is part a truth is a harder matter to fight.

TENNYSON.]

TREATMENT OF WAR PRISONERS IN GERMANY AND AUSTRIA

A Russian Account

Dr. D. P. Nikolsky of Petrograd has been compiling data from the testimony of repatriated and escaped war prisoners in Germany and Austria, especially of physicians and nurses, and of commissions sent to inspect prisoners' camps. He is publishing his report in the *Russkiy Vrach*, and the first two instalments have been received. The dates of these issues are Aug. 12 and Nov. 25, 1917, pp. 468 and 562. He comments on the Germans' having revived the ancient barbarian custom of killing war prisoners or making slaves of them, and he quotes the minister of foreign affairs, Dohlbrenk's, endorsement of the deputy Wohlschmidt's suggestion to "starve the war prisoners in view of the scarcity of provisions for our own German nation." The policy, Nikolsky says, "is to feed them only enough to keep them from dying of starvation and give them warmth only enough to keep them from freezing." And even this was not always done. He states that everything was taken from the captives at once, heavy coats, jackets, and shoes as well as money, watches and identification amulets, crosses, etc. In exchange they were given old worn-out things, slippers or wooden shoes. All had to submit to this plundering, officers and physicians as well as privates. Dr. Selezneff complained to the commanding officer when his watch and chain were taken but the officer remarked to a younger officer, "He is lying."

1. Italics my own.

and told the physician that if he repeated this lie he would be given twenty-five stripes.

The prisoners were driven from the battlefield to the railroad without food, sometimes for seven or eight days. The inhabitants (Hungarians) heaped abuse on them, calling them "swine" and "dogs," throwing sticks and stones at them, striking them and kicking them, spitting in their faces and even tearing off the bandages from the wounded. Not only men but women took part in this abuse, and children, large and small. There were instances when the wounded or exhausted fell and the guards bayoneted them and threw them into the ditch. A party of prisoners taken at Brezin did not get any food for six days. Two of the captives slipped into a field to pick up partly rotten potatoes, but the convoy shot one and bayoneted the other. In some places they were offered bread and milk by Slavic or Polish residents, but the guards prevented their taking them or took the food away from the "Russian pigs." In some cases they had no food for nine days except discarded potatoes in the fields. Prisoners taken at the Mazurian lakes were given nothing to eat for seven days. When the prisoners reached the railroad station they were given alleged coffee, without sugar or milk, or a vegetable soup. Then they were herded in cattle cars, eighty or ninety men to a car in Germany, sixty or seventy to the smaller Austrian cars. They were not allowed to get out of the cars to attend to the calls of nature, and they had to make shift by using their caps, cloth torn from their shirts, etc., throwing them out of the car through the ventilating holes under the roof. "Some succeeded in dying in the car," one of the escaped prisoners tells, "but the corpses were not taken out. Coffee and bread in small amounts were given after two or three days of this. When they stopped at a station, women in nurses' uniforms had provisions for the guards but none for the captives. Dr. Kaluisky relates that when his train reached Naisse not even the wounded or the physicians were given anything to eat, but the women spread a feast for the convoy directly in front of the car with the wounded. Appeals for drinking water were unavailing. When some one brought a jug of water to the car, the guard pushed him away and poured out the water, saying "Nothing for the Russian swine." Such instances were common. Nikolsky quotes from a Russian paper Colonel Laizivsky's story of the nurse spitting into a glass of water and flinging it into the face of a prisoner who had asked for water for a wounded comrade.

In the camp at Dunaserdagen the prisoners tore down the only building in the camp, the privy, and used the boards to strengthen the walls of their dugouts. But for this, the commanding officer had twenty of the prisoners shot and others bayoneted. As sickness became rife, shelters were built for the prisoners, long open sheds without walls. Finally walls were added, but, as one prisoner relates, "a sparrow could have flown through the cracks." Few had any stoves, and when there was a stove there was not enough fuel to heat it. Frozen feet and hands were common. Some of the Austrian barracks were of the actual prison type, with barred windows, no light or ventilation, and primitive arrangements in the building for latrines. In some of the camps, on the other hand, the latrines were at a long distance from the barrack and the prisoners were allowed to go to them only in platoons of ten under a guard convoy. At night, a platoon could be made up of five. Dr. Feinberg says that the latrine arrangements impressed him as the most humiliating of all his experiences. The provisions for officers and physicians were far from being any better than for the other prisoners, but their living quarters were separate.

The conditions as to the food at a number of different German and Austrian camps are described in detail. The portions were so inadequate that the men were weak from semistarvation and the guards mocked and jeered at them. Sometimes they were offered an extra portion, and when the men flocked with their dishes, the guards set the dogs on them and laughed as the dogs bit them. At the Altengrabow camp it is said that the vegetables for the soup, boiled without peeling, were not cleared of dirt and manure. The physicians had to stand in line with the other prisoners to get their vegetable soup. A rare herring and potatoes dinner, but Dr. Feinberg relates that he finally secured a larger dish, and the physicians took turns, one getting the food for them all and bringing it to their quarters to eat.

Nikolsky is convinced that it is the deliberate policy of the Germans to undermine the health of the war prisoners so that when they return home they will be unfit not only for further military service but unfit even for self-support as citizens. They are set at tasks that tax the strength of the most robust,

such as draining the swamps in northern Prussia and Schleswig, and doing caisson and diver work in building breakwaters in the Baltic.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 10, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):

		Last Week
All Troops	1,335.5	1,109.7
National Guard Camps	917.3	994.
National Army Camps	1,659.5	1,222.4
Regular Army	1,148.2	1,054.1

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	40.8	39.1
National Guard Camps	37.7	35.6
National Army Camps	46.7	43.8
Regular Army	37.	37.4

3. ANNUAL DEATH RATE 1,000 (disease only):

All Troops	5.3	6.3
National Guard Camps	2.8	3.6
National Army Camps	6.	6.3
Regular Army	5.9	8.19

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 10, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Wadsworth.....	1	..	..	37	..	1	..	..	0	1,083.3	48.8
Haneock.....	..	..	..	22	..	1	..	..	0	515.2	35.8
McClellan.....	2	..	3	29	19	..	1	..	2	582.4	29.2
Sevier.....	1	..	2	28	16	..	2	..	4	293.3	29.9
Wheeler.....	2	2	2	22	3	..	..	..	4	987.6	43.7
Logan.....	8	2	..	31	20	8	1	6	1	2,105.7	68.7
Cody.....	9	..	..	3	..	..	..	..	0	449.3	23.6
Doniphan.....	..	..	..	..	..	..	..	..	..	..	..
Bowie.....	3	..	1	41	41	1	..	..	12	1,254.1	38.6
Sheridan.....	..	..	..	21	14	..	..	..	0	462.4	28.0
Shelby.....	1	6	1	13	..	1	..	..	2	664.5	41.7
Beauregard.....	9	..	13	25	3	..	..	..	2	1,935.3	60.0
Kearny.....	8	..	1	5	..	3	1	1	2	1,162.9	35.5
Devens.....	15	..	..	686	3	18	1	2	1	1,868.3	42.8
Upton.....	9	..	..	231	16	5	..	6	4	1,308.4	41.7
Dix.....	1	..	..	175	3	25	..	39	1	1,309.2	31.6
Meade.....	10	..	..	124	4	6	2	3	4	1,070.7	30.9
Lee.....	4	..	1	202	10	26	2	..	1	977.5	33.7
Jackson.....	23	..	2	236	5	20	1	..	1	2,771.2	66.7
Gordon.....	56	..	2	85	85	88	5	2	7	2,207.8	56.4
Sherman.....	9	..	..	153	6	12	..	10	3	1,252.3	39.7
Taylor.....	17	..	..	42	2	19	..	2	3	2,115.1	69.7
Custer.....	38	..	..	364	3	9	..	9	8	1,621.2	31.8
Grant.....	8	..	..	45	..	12	..	2	3	764.9	29.1
Pike.....	25	..	4	61	9	22	2	..	2	2,340.2	66.3
Dodge.....	46	..	..	97	..	36	..	6	17	1,885.3	79.5
Funston.....	55	..	..	38	12	13	3	4	9	1,305.1	49.4
Travis.....	16	..	4	164	..	5	..	..	2	3,041.5	55.1
Lewis.....	9	..	1	252	4	9	1	16	3	1,466.5	37.3
Northeastern Dept.....	..	..	..	9	..	2	..	4	0	837.0	30.3
Eastern Dept.....	3	..	..	31	10	3	..	1	5	988.6	29.6
Southeastern Dept.....	1	..	4	56	10	6	1	..	4	1,058.8	31.7
Central Dept.....	8	..	..	12	9	8	..	9	1	1,188.3	44.0
Southern Dept.....	10	..	1	96	31	7	..	16	14	1,220.2	41.4
Western Dept.....	2	2	2	18	11	10	..	5	1	854.4	24.4
Aviation S. C.....	23	5	5	132	..	26	2	20	15	1,158.1	32.5
Camp Greene.....	1	..	1	19	19	4	..	..	0	570.4	18.8
Camp Fremont.....	..	1	1	12	5	14	..	..	0	866.1	36.7
El Paso.....	..	..	..	6	6	..	..	1	0	794.7	4.6
Columbus Bks.....	..	..	..	11	..	..	..	..	0	796.5	23.2
Jefferson Bks.....	7	..	..	44	4	3	..	4	3	1,933.0	60.5
Fort Logan.....	2	..	..	3	2	4	..	2	1	1,357.9	78.9
Fort McDowell.....	..	..	1	41	..	..	..	..	0	2,157.1	58.5
Fort Slooem.....	1	..	..	33	..	1	..	..	2	1,495.0	38.4
Fort Thomas.....	..	..	..	8	..	8	..	..	1	1,256.7	29.5
D. B. Aleatraz.....	..	..	..	..	..	..	..	..	0	330.1	6.3
D. B. Fort Leavenworth.....	..	..	..	2	..	..	..	..	0	1,438.3	45.9
A. A. Humphreys.....	8	..	..	25	..	7	..	..	0	563.5	9.2
J. E. Johnston.....	10	..	2	42	25	13	3	6	1	1,355.5	37.3
Hoboken, N. J.....	16	..	1	245	17	13	3	10	8	1,070.4	49.9
Camp Stuart.....	13	1	3	107	16	17	3	1	5	1,605.8	55.8
West Point, N. Y.....	..	..	..	..	..	..	..	..	0	609.1	6.2
Edgewood-Aberdeen.....	..	..	..	..	..	..	..	1	1	487.7	17.3
Provisional Depot for Corps and Army Troops.....	3	..	1	45	4	4	..	1	0	1,404.2	47.1
Camp Holabird.....	..	..	..	2	..	..	..	..	0	446.7	3.2
Camp Raritan.....	..	..	..	..	..	..	..	..	0	493.7	26.3
Springfield Arm.....	1	..	..	..	..	1	..	..	0	1,599.9	35.9
Natl. Guard Depts.....	..	..	..	14	7	3	1	..	0	..	..
Natl. Army Depts.....	10	..	1	316	53	34	1	11	5	..	..
MaeArthur.....	..	..	..	..	..	1	..	..	1	810.1	50.2
Doniphan.....	5	..	..	19	..	2	1	5	1	3,838.1	97.6
Total.....	504	19	60	4,580	487	531	37	205	167	1,335.5	40.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 10, 1918	Regulars in U. S., Week Ending May 10, 1918	National Guard, All Camps, Week Ending May 10, 1918	National Army, All Camps, Week Ending May 10, 1918	Expedi- tionary Forces, Week Ending May 2, 1918
Pneumonia.....	20.0	13.8	8.3	31.2	23.5
Dysentery.....	0.7	1.1	2.1	0.0	0.7
Malaria.....	2.4	2.6	4.9	1.3	1.2
Venereal.....	182.5	123.3	59.1	270.9	35.1
Paratyphoid.....	0.2	0.6	0.0	0.0	0.0
Typhoid.....	0.1	0.3	0.0	0.0	0.2
Measles.....	21.1	18.6	3.2	29.8	8.5
Meningitis.....	1.4	1.57	1.0	1.5	2.4
Scarlet fever.....	8.1	10.4	1.5	9.2	8.3

NEWS OF THE CANTONMENTS

Camp Zachary Taylor, Lincoln Division (Eighty-Fourth)
Louisville, Ky.

MAY 20, 1918.

MEDICAL EXAMINATIONS FOR OVERSEAS DUTY

In keeping with the plans of the War Department a board of medical officers is conducting physical examinations of soldiers for oversea duty with the idea of separating those who are fit and strong enough for foreign service from those that are just able to stay in this country for home service.

The first results of these medical boards has just been announced. Those men who have been found physically unfit for oversea service have been carefully examined by seven different boards, and finally by the general reviewing board. The order announcing the list also transfers all of the men to duty with the 159th Depot Brigade, which in army circles is considered an organization that will remain at the camp as a replacement unit for the duration of the war.

REFUSAL TO SUBMIT TO SURGERY

Two soldiers who faced a court martial at the camp for refusing to submit to a surgical operation have changed their minds and have undergone the operations and are doing nicely, according to medical officers. The two soldiers had refused to submit to the operation after a board of medical officers had decided that both should undergo the operations to better fit them for military service.

The Judge-Advocate of the Army recently ruled that where a soldier refused to take medical treatment or submit to an operation after a board had decided that it was necessary, he was subject to trial by court martial. The matter has been watched closely at the camp, and staff officers declare that whenever a soldier in the future refuses either medical treatment or operation, after all military regulations are complied with, he will be tried by a general court martial.

FUNERAL EXPENSE

Recent orders from Washington state that if a soldier dies in the military service the United States shall, on written application, pay the reasonable funeral expenses, including the expense of burial and the return of the body of the deceased to his home under the condition that the sum does not exceed \$100.

TRAINING IN CONVALESCENT HOSPITAL

The infirmary will be under the direct jurisdiction of Lieut.-Col. Will L. Pyles, commanding officer of the hospital, but Lieut. Sites of the One Hundred and Fifty-Ninth Depot Brigade has been designated as the officer in charge of the military instructions of the patients. The idea is to prevent as far as possible, loss of time in army training. Electric buzzers are being installed so that the patients may be taught telegraphy. They will be instructed in wigwag and semaphore signaling, receive lectures on military subjects, and those whose conditions will permit will be drilled.

The patients will be classified into four groups. The first group will consist of the resting cases. They will walk to the mess hall for meals and receive lectures. The second group will be made up of those able to take light exercise. They will go out on short walks, accompanied by medical officers. The third group will include those able to drill. The drill periods will be of short duration, probably a half hour at a time.

The fourth group will be known as the reconstruction class. Men coming into the Army through the selective draft who are found to have slight physical defects will be assigned to this section with a view of building them up so that they

will be eligible for general military service. Special physical exercise will be prescribed for each individual case to meet the needs. As an illustration, a man having foot trouble will be given exercise to strengthen his feet, and a man having slight heart weakness will be given a different exercise tending to improve the heart muscles.

This system was tried out at other camps and found to be beneficial. Many recruits were reclaimed for the Army that otherwise would have been lost to the fighting forces. Good results are expected here.

PROMOTIONS

The following officers have been recommended for promotion as lieutenant-colonels: WALTER BENSEL, WEBSTER CALVIN, New York City; DAVID B. DOWNING, Detroit, Mich.; CHANNING FROTHINGHAM, Boston, Mass.; HERBERT I. HARRIS, Fort Constitution, N. H.; RUSSELL R. JONES, Pittsburgh, Pa.; STEWART R. ROBERTS, Atlanta, Ga.; CHARLES H. TAIT, Philadelphia, Pa. RAYMOND C. TURCK, Jacksonville, Fla.

Officers of the Medical Reserve Corps Recommended for Promotion as Majors, Since March 1, 1918

HENRY ABRAHM, San Francisco, Calif.; GEORGE CUMMINGS ALBEE, South Orange, N. J.; JAMES S. ALLEN, Geneva, N. Y. ROBERT A. ALLEN, Tacoma, Wash.; CURTIS ATKINSON, Fort Collins, Colo.; WILLIAM HUPP BALDWIN, Memphis, Tenn. FRANK MILAN BARNS, Harrison, Neb.; RICHARD BEW, Atlantic City, N. J.; GILBERT W. BREHM, Columbus, Ohio; BENJAMIN HENTON BROWN, Muskogee, Okla.; THOMAS A. BURCHAM, Des Moines, Ia.; BURTON CHANCE, Philadelphia, Pa.; WALDEMAR A. CHRISTENSEN, Douglas, Ariz.; ELBERT CLARK, Chicago, Ill. WILLIAM A. CLARK, Trenton, N. J.; CLARENDON J. COMBS Oshkosh, Wis.; CLINTON W. D'ALEMBERT, Pensacola, Fla. THOMAS C. DAVISON, Atlanta, Ga.; FRANK DEACON, Chicago Ill.; WALTER A. DOMER, Wabash, Ind.; LUCIUS FRANCIS DONO HOE, Bayonne, N. J.; FRANCIS J. EISEMAN, SUMNER EVERING HAM, New York City; ALBERT MARTIN FARRELL, Two Rivers Wis.; JAMES G. GLYNN, Fort Crockett, Tex.; GEORGE S. FODEN, Detroit, Mich.; ALBERT P. FRANCINE, Philadelphia, Pa.; JOSEPH C. FRIEDMAN, Chicago, Ill.; EMERY C. GAFFNEY, Lincoln, Ill. GEORGE WARREN GARDNER, Providence, R. I.; FRANK WILLIAM GEORGE, Worcester, Mass.; ALEXANDER LIDDELL GIL LARS, Pottsville, Pa.; DANIEL J. GLOMSET, Des Moines.; HARRY SEARLS GRADLE, Chicago, Ill.; ALLEN HAMILTON, Fort Wayne Ind.; EDWARD L. HANES, Rochester, N. Y.; THEODORE H HARRELL, Gonzales, Tex.; ARTHUR HARTLEY, Philadelphia, Pa. WILLIAM BROWN HEAGERTY, Mazeppa, Minn.; WILLIAM H HENGSTLER, Minneapolis, Minn.; HENRY WILLIAMSON HOAG LAND, Fort Douglas, Utah; CHARLES W. HUGHES, Winneconne Wis.; WILLIAM E. KNEWSTEP, Hampton, Va.; JACOB CARI KRAFFT, Chicago, Ill.; HAROLD L. LAMB, Sauk Center, Minn. SAMUEL LEOPOLD, Philadelphia, Pa.; JESSE D. LIPPINCOTT Newark, N. J.; EDGAR WEBB LOOMIS, Dallas, Tex.; EZRA H MATHEWSON, Dallas, Tex.; JESSE G. MAXON, Harvard, Ill. GILPIN M. MCCAIN, New York City; BEN H. METCALF, Winthrop, Mass.; PHILIP H. MOORE, Philadelphia, Pa.; FRANK L MORSE, Somerville, Mass.; GEORGE STEWART MURPHY, Amarillo, Texas; THOMAS F. NEIL, East Moline, Ill.; EDMUND B OWENS, Dixon, Ill.; SIDNEY E. D. PINNIGER, Tracy, Calif.; MORRIS L. POTTS, Trenton, N. J.; JOHN ALBERT RHIEL, Malvern, Ohio; EDWARD SHERRARD RIMER, Staten Island, N. Y.; LEWIS J. ROSENTHAL, Baltimore, Md.; RALPH TAYLOR SHIPLEY Carrollton, Ohio; DON HARRY SILSBY, St. Johns, Mich.; ALONZO DEM SNYDER, Corning, Calif.; ALVINE ZENAS STONER, Cumberland Valley, Pa.; ORVEL ADDISON SUTTLE, Mt. Vernon, Ill. HENRY H. THOMPSON, Philipsburg, Pa.; CHARLES M. WILLIAMS, New York City; NORMAN E. WILLIAMSON, Stockton Calif.; HENRY O. WYNEKEN, San Antonio, Texas.

Officers of the Medical Reserve Corps Recommended for Promotion as Captains, Since March 1, 1918

LEROY C. ABBOTT, New York City; GERALD R. ALLABEN Rockford, Ill.; LYTTON GRAY AMENT, Victoria, Tex.; SERGE ANDROP, Richey, Mont.; NICHOLAS I. ARDAN, Bristol, Tenn. DAVID E. ARNOLD, Kerman, Calif.; FREDERICK L. BAKER Arglen, N. J.; WILLIAM MATHEWS BANE, Denver, Colo.; CLARENCE EARL BARCUS, Indianapolis, Ind.; FRANCIS OLIVER BARRETT, El Paso, Tex.; CORNELIUS BERNARD BARRY, Woolsocket, R. I.; LINDSAY WILSON BASKETT, Big Timber, Mont. CHARLES M. BAUMAN, St. Louis, Mo.; CLYDE McK. BECK Memphis, Tenn.; MONTE L. BELOT, Clyde, Kansas; HUGH KING BERKLEY, San Francisco, Calif.; IVAN LESTER BIGGS, Custar, Ohio; BENJAMIN W. BLACK, Grantsville, Utah; LAWRENCE I BOLAND, Stone, Ky.; FRANK O. BRIGHAM, Stanley, N. D. JOSEPH R. BROWN, San Francisco, Calif.; OSMER L. CALLAHAN Mount Dora, Fla.; JOHN R. CALAWAY, Mesalero, N. M.; ANDREW C. CAMERON, Birmingham, Ala.; WILLIS W. CAREY, Fort Wayne Ind.; BURNS S. CHAFFEE, Pittsburgh, Pa.; CHARLES FREDERIC CHILDS, New Boston, Ill.; HARRY A. CLARK, Boston, Mass. WM. ARTHUR CLARK, Chicago, Ill.; EDGAR CLINE, Auburn, Neb. GUY RUPERT COFFIN, Monticello, Ind.; JOSEPH F. COOK, Louisville, Ky.; ROBERT PAGE COOKE, Front Royal, Va.; FREDERIC STURGIS COOPER, Lakewood, Ohio; ARIS W. COX, Helena, Ark. HAROLD BAILEY COX, Morristown, Ind.; LAFAYETTE T. COX Napoleon, Ind.; CHARLES C. CRAMPTON, Delphi, Ind.; JOHN WEBSTER CRESSLER, Wilkes-Barre, Pa.; WILLIAM F. CUNNINGHAM, Seattle, Wash.; THOMAS LYLES DAVIS, Augusta, Ga. HORACE B. DEAN, Audubon, N. J.; JOHN H. DOANE, Mansfield, Pa.; RICHARD PATRICK DOODY, Cohoes, N. Y.; WILLIAM DOW, Brooksbury, Ind.; DUMONT DWIRE, Pomona, Calif.; JOHN ROSE DYSON, Hazleton, Pa.; CHARLES E. EATON, Seattle, Wash. AMBROSE EARL EDGERTON, Tucson, Ariz.; AUGUSTUS A EGGERS, Pittsburgh, Pa.; EDWARD PERCY EGLES, New York City. LEE J. ERNSTBERGER, Louisville, Ky.; HUMPHREY NEWTON ERVIN, Dayton, Ky.; EDWARD P. ESSERTIER, Hackensack, N. J. WILLIAM L. ESTES, South Bethlehem, Pa.; HENRY ANDREW FISHER, Brooklyn, N. Y.; SCOTT ROMAIN FISHER, Syracuse

J. Y.; ARTHUR JOHN FLETCHER, Connerville, Ind.; LINDSAY FLETCHER, St. Louis, Mo.; CORTLAND W. W. ELKIN, Pittsburgh, Pa.; WALTER LEON ELLIS, Calexico, Calif.; OLIVER R. FORE, Flora, Miss.; FORREST F. FOWLER Round Rock, Tex.; JOHN H. FRANKLIN, Guadalupe, Calif.; WILLIAM FRIEDBERGER, Stockton, Calif.; EDMOND B. B. FULLIAM, Muscatine, Ia.; EDWIN C. FUNSCH, St. Louis, Mo.; JULIAN E. GAMMON, Jacksonville, Fla.; JOSEPH LOUIS GARRIES, Trenton, N. J.; CHARLES GARR, New Orleans, La.; WILHELM A. GARTNER, Troy, Kan.; WILLIAM GINSBERG, Omemo, N. Dak.; CARL GOEHRING, Pittsburgh, Pa.; WILLIAM MITCHELL GOFF, Marysville, Ohio; THOS. VINCENT GOLDEN, Creston, Ia.; FRANK NEWTON GORDON, St. Louis, Mo.; EDWIN JAMES GREER, Pontiac, Mich.; LYNN T. HALL, Omaha, Neb.; ROY WALLACE HAMMACK, Los Angeles, Calif.; ROBERT R. HAMPTON, Salt Lake City, Utah; CHARLES CARLETON HARBAUGH, Sedro-Wooley, Wash.; KNUD HARTNACK, Downers Grove, Ill.; FRED E. HARVEY, Minneapolis, Minn.; LEWIS S. HARVEY, Dunlap, Kan.; AUSTIN L. HAUSOHNER, Wilkes-Barre, Pa.; GEORGE G. HAWKINS, Ione, Calif.; NELSON J. HAWLEY, St. Louis, Mo.; CHARLES M. HENSLEY, Topeka, Kan.; JACOB MEYERS HEYDE, Londonville, Ohio; GARLAND W. HILL, Springfield, Ky.; FRANK B. HILLER, Pinckneyville, Ill.; FRANK N. HOFFMEIER, Hagerstown, Md.; WALTER B. OLTON, Ithaca, N. Y.; CLIFFORD L. HOOPER, Lewellen, Neb.; WM. S. HORN, Fort Worth, Tex.; HOWARD HENRY HOWLETT, Silver Springs, Md.; AUGUST B. HROMADKA, Sawtelle, Calif.; VINCENT J. IRWIN, Jr., Granby, Conn.; JAMES THOMAS JETER, Antuck, S. C.; BEVERLY N. JONES, Walnut Cove, N. C.; WM. A. JOSEPH, Hancock, Wis.; CARLETON GALE KELSEY, Hinkley, Minn.; ROBERT KNIGHT, Seneca Falls, N. Y.; HARRY KNOTT, Plymouth, Ind.; JULIUS C. KRAMER, Elyria, Ohio; RALPH H. UHNS, Chicago, Ill.; WALTER EMERY LANG, Allentown, Pa.; HENRY M. LARSON, New York City; PERCIVAL G. LASCHE, Richland Center, Wis.; PHILIP LEWIN, Chicago, Ill.; LAUREN INDENBERGER, Cincinnati, Ohio; A. L. LINQUIST, Omaha, Neb.; EON STANLEY LIPPINCOTT, Brunswick, Me.; LOUIS VYASA AMES LOPEZ, New Orleans, La.; CHESTER L. MAGEE, Los Angeles, Calif.; SAMUEL McALISTER MAUNEY, Earl, Ark.; HARVEY E. MCCARTHY, Kansas City, Mo.; LEON VICTOR McVAY, Salitpa, Ala.; GEORGE HENRY MILLER, Bryn Mawr, Pa.; SCAR LEE MILLER, Atlanta, Ga.; WILLIAM PATTON MILLER, Oakland, Calif.; JAMES H. MITCHELL, Jr., Cohoes, N. Y.; ALTON I. MITCHELL, Wichita, Kan.; ROBERT BRUCE MONTOMERY, Lemon Cove, Calif.; RAYMOND J. MULLIN, Newark, N. J.; LOUIS H. NAHUM, New York City; DEWITT B. NETTLETON, Sewickley, Pa.; WILLIAM HENRY NIX, Indiana, Pa.; WILEY H. NORTON, Washington, D. C.; ORVIL O'NEAL, Shattac, Ill.; GEORGE GUTTMAN ORNSTEIN, Port Chester, N. Y.; HUBLEY OWEN, Philadelphia, Pa.; DAVID D. PAULUS, Random Lake, Wis.; CHARLES E. PINCKNEY, Greta, Neb.; ROBERT TILFORD RITTE, Louisville, Ky.; HARRY PLOTZ, Brooklyn, N. Y.; ARMSTRONG COOPER PRATT, Gallup, N. M.; WILLIAM D. RALPH, Riverside, Calif.; JAMES E. RAWLINGS, Fredericksburg, Va.; HARLES B. REED, Washington, D. C.; GEORGE BALLANTYNE EITZ, Brooklyn, N. Y.; THOMAS JAMES RIACH, Kankakee, Ill.; LEWIS B. ROBINSON, New York City; ADDISON M. ROTHROCK, Reading, Pa.; ROYAL A. SCHAFF, New York City; HENRI SCHMID, Coraopolis, Pa.; GEORGE FRED SCHMIDT, Pipestone, Minn.; GROVER C. SCHWARTZ, Perkasio, Pa.; WILLIAM MARIN SCRUGGS, Rutherfordton, N. C.; AUSTIN HENRY SEEDS, Columbus, Ohio; WALTER LEO SMALL, Kansas City, Mo.; DANIEL LARKE W. SMITH, Baltimore, Md.; HENRY G. SMITH, Cedar Grove, N. J.; CLYDE K. STARTZMAN, Bellefontaine, Ohio; JAMES FEINBERG, Los Angeles, Calif.; JOHN A. STEWART, Portland, Me.; TIMOTHY F. X. SULLIVAN, New York City; FRANCIS J. ALBOT, Niagara Falls, N. Y.; JACKSON TEMPLE, Santa Rosa, Calif.; JOHN WESLEY TIPPIE, Cleveland, Ohio; ELTON L. TITUS, Indianapolis, Ind.; ARTHUR MAURICE TWEEDIE, Los Angeles, Calif.; GEORGE P. TYLER, Jr., Riplev, Ohio; JOSEPH M. ULRICH, Akron, Ohio; MATTHIAS A. WAGNER, Lima, Ohio; ALFRED UGUSTA WALKER, Birmingham, Ala.; CLYDE EMIL WATSON,ampa, Idaho; CHARLES C. WATT, Jr., Philadelphia, Pa.; LEWIS ILL WEED, Baltimore, Md.; ARTHUR WILLIAM WERMUTH, Chicago, Ill.; FRANK ROBERT WHELOCK, Scranton, Pa.; IRVING HENRY WILLETT, Garv, Ind.; HARRY JOSIAH WILEY, Porterville, Calif.; PAUL RAYMOND WILLIAMS, Cape Girardeau, Mo.; LAUDE WILSON, Greenville, Kv.; FRED DEG. WILSON, Downsville, N. Y.; HOMER SMITH WILSON, Grove City, Pa.; CHARLES EFFERSON WOODS, New York City; JAMES N. WORCESTER, New York City; EDWARD M. YOUNG, Sheridan, Ind.; WILLIAM YOUNG, Orono, Maine; ABRAHAM ZINGHER, New York City.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Dix, Wrightstown, N. J., Williamsbridge, N. Y., and Hoboken, N. J., for conference, and on completion to his proper station, Lieut.-Col. PEARCE BAILEY.
To Camp Las Casas, San Juan, Porto Rico, as camp surgeon, from Washington, Lieut.-Col. WILLIAM F. LIPPITT.
To Charlotte, N. C., and Anniston, Ala., for duty, and on completion to his proper station, Col. ROBERT E. NOBLE.
To Fort Bayard, N. M., as commanding officer of the U. S. Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM.
To Fort Oglethorpe as commandant of Medical Officers' Training Camp, from Washington, D. C., Col. EDWARD L. MUNSON. For inspection, and on completion to Washington, D. C., for consultation, and on completion to his proper station, from Fort Leavenworth, Lieut.-Col. CHARLES F. CRAIG.
To New York City for duty, and on completion to his proper station, Lieut. REUBEN B. MILLER. Cornell Medical College for instruction in military roentgenology, from Camp McClellan, Major ALBERT B. AVIS.
To Philadelphia, Pa., New York City, New Haven, Conn., Otisville, N. Y., and Long Beach, N. J., for duty, and on completion to his proper stations, Lieut.-Cols. JOHN A. HORNSBY, FLOYD KRAMER.
To Washington, D. C., for consultation, and on completion to his proper station, Lieut.-Col. WILLIAM H. SMITH. For duty in the Surgeon-General's Office, Lieut.-Col. WILLIAM J. L. LYSTER.

To Whipple Barracks, Ariz., for duty, from Fort Bayard, Major CARL E. HOLMBERG.
The following order has been revoked: *To Whipple Barracks, Ariz., for duty, Major WILLIAM F. CARPENTER.*

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson, Lieut. ROBERT GOLDTHWAITE, Montgomery.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. ROBERT E. HARWOOD, Gainesville.
To Camp Sevier, Greenville, S. C., base hospital, Lieut. JEROME MEYER, Birmingham.
To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. ARTHUR JOHNSON, Clayton.
To Charlottesville, Va., University of Virginia, for duty, from Camp Sheridan, Lieut. SAMUEL B. NICHOLSEN, Gadsden.
To Fort Oglethorpe for instruction, Lieut. PHILIP M. KYSER, Birmingham.
To Newport News, Va., for duty, Capt. JAMES B. LAUGHLIN, Huntsville.

Arizona

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Bowie, Lieut. GEORGE W. PURCELL, Tucson.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Camp Devens, Capt. FEASTER LAG. PROCTOR, Little Rock.
To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Pike, Lieut. ALVIN W. STRAUSS, Little Rock.
To Camp Gordon, Atlanta, Ga., for duty, Lieut. CHARLES K. TOWNSEND, Arkadelphia.

California

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. GEORGE P. HALL, Sunnyvale.
To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Riley, Lieut. JOHN T. KERGAN, Oakland.
To Camp Travis, Fort Sam Houston, Tex., base hospital, Capt. STEPHEN Y. VANMETER, Los Angeles.
To Fort Leavenworth, Kan., for duty, from San Francisco, Major HARRY R. OLIVER, San Francisco.
To Alcatraz, Calif., for duty, Lieut. GAIL FEHRESEN, Inglewood.
To Camp Fremont, Palo Alto, Calif., base hospital, Capt. GEORGE W. ENSLEY, Whittier.
To Camp Grant, Rockford, Ill., for observation and treatment, Capt. FRED F. SPRAGUE, Los Banos.
To Camp Lewis, American Lake, Wash., for duty, Lieuts. HOWARD C. CRUM, Hayward; ASA G. WOODWARD, Los Angeles; CLAUDE C. LEAVERTON, RAY W. ROSSON, San Francisco.
To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. LAMBERT B. COBLENTZ, Maria; ALLEN H. VANCE, Sausalito.
To San Francisco, Calif., for instruction, and on completion to Camp Cody, Deming, N. M., base hospital, Capt. LEVI L. HIGGIN, Pasadena. On completion to Camp Kearny, Linda Vista, Calif., base hospital, Lieut. WALTER D. BISHOP, Sawtelle. On completion to Camp Lewis, American Lake, Wash., base hospital, Lieut. JULIUS B. HAMILTON, Los Angeles. On completion to his proper station from Camp Kearny, Capt. RALPH HAGAN, Los Angeles; Lieut. JOHN H. BREYER, Pasadena.
To Starkville, Miss., to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. RALPH M. SMITH, San Bernardino.

Colorado

To Camp Lewis, American Lake, Wash., for duty, Capt. FRANK L. DENNIS, Colorado Springs.
To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN F. HOWARD, Golden.
To Fort Logan, Colo., for duty, Capt. CHARLES N. FISCHER, Walden.
To Fort Riley for instruction, Lieut. WILLIAM H. HALLEY, Denver; from Camp Doniphan, Lieut. ELWYN R. CLARKE, Fort Morgan.

Connecticut

To Camp Gordon, Atlanta, Ga., for duty, Lieut. BARTHOLOMEW C. PASUTH, Bridgeport.
To Camp Jackson, Columbia, S. C., with the board examining the command for nervous and mental diseases, Lieut. STANLEY B. WELD, Hartford.
To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Capt. JOHN A. KEYTON, Norwich.
To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Lieut. WILLIAM S. BARNES, New Haven.
To Fort Oglethorpe for instruction, Capt. WILLIAM P. BURKE, New Haven.
To New Haven, Conn., for duty, Lieut. MARCUS C. BECK, Bridgeport.
The following order has been revoked: *To Fort Adams, R. I., for duty, Lieut. HOWARD D. MOORE, Danbury.*

District of Columbia

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. HARRY A. BISHOP, Washington.
To Newport News and Camp Lee, Petersburg, Va.; Camp Jackson, Columbia, S. C.; Camp Joseph E. Johnston, Jacksonville, Fla.; Camp Hancock, Augusta; Camp Wheeler, Macon, and Camp Gordon, Atlanta, Ga.; Camp McClellan, Annapolis, and Camp Sheridan, Montgomery, Ala.; Camp Shelby, Hattiesburg, Miss.; Camp Beauregard, Alexandria, La.; Camp Logan, Houston; Camp Travis, Fort Sam Houston; Camp MacArthur, Waco, and Camp Bowie, Fort Worth, Texas; Camp Funston, Fort Riley, Kan.; Scott Field, Belleville, Ill.; Camp Zachary Taylor, Louisville, Ky.; Wilbur Wright Field, Dayton, and Camp Sherman, Chillicothe, Ohio, for duty, and on completion to his proper station, Major FIELDING H. GARRISON, Washington.

Florida

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Capt. EDWARD C. BIRGE, Jacksonville.
To Camp Joseph E. Johnston, Jacksonville, Fla., Lieut. DAVID N. McQUEEN, Punta Gorda.
To Fort Oglethorpe for instruction, Lieut. ROY R. NIBLACK, New Smyrna.

Georgia

To Americus, Ga., for duty, from Atlanta, Major WILLIAM A. JACKSON, Atlanta.
To Camp Glen Burnie, Md., and Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to his proper station, from Camp Meade, Lieut. RALPH E. HAMILTON, Douglasville.
To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ETHRIDGE J. HALL, Adel; EDWIN R. ANTHONY, Jr., Griffin.
To Camp Hancock, Augusta, Ga., base hospital, from duty as medical aide to the Governor of Georgia, Major WILLIAM C. LYLE, Augusta.
To Camp Pike, Little Rock, Ark., base hospital, Capt. MILLER B. HUTCHINS, Atlanta.
To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. SAMUEL LICH-
TENSTEIN, Augusta.

Idaho

To Camp Glen Burnie, Md., and Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to his proper station, from Camp Meade, Capt. CLYDE E. WATSON, Nampa.
To Camp Pike, Little Rock, Ark., with the board examining the troops for cardio-vascular diseases, from Fort Riley, Lieut. MAURICE H. TALLMAN, Boise.
To Fort Riley for instruction, Lieut. RALPH FALK, Boise.

Illinois

To Camp Bowie, Fort Worth, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Capt. CHARLES H. POWELL, Old Ripley.
To Camp Custer, Battle Creek, Mich., for duty, Lieuts. OLIVER J. FLINT, Princeton; JAMES F. JENNINGS, Scotland.
To Camp Dodge, Des Moines, Ia., for duty, Major CHARLES D. WILKINS, Chicago; Capt. GEORGE L. A. DALE, WILLIAM K. MURRAY, Chicago; from Fort Riley, Lieut. BYFORD R. WEBB, West Frankfort.
To Camp Glen Burnie, Md., and Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to his proper station, from Camp Meade, Lieut. JOHN F. GRANT, Chicago.
To Camp Gordon, Atlanta, Ga., for duty, Capt. JOHN M. AXELSON, Lieut. GUSTAVE W. LAWSON, Chicago. For temporary duty, from Atlanta, Lieut. OTTO J. SCHOTT, Chicago.
To Camp Grant, Rockford, Ill., for duty, from Jefferson Barracks, Lieut. GUY E. KROLICK, Chicago.
To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. GRANT J. GRAY, Chicago; Lieut. ARTHUR S. CAMPBELL, Oak Forest.
To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Riley, Capt. WILLIAM D. NAPHEYS, Jr., Chicago; from Newport News, Lieut. GEORGE S. MATHERS, Chicago.
To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, Capt. WILLIAM H. BURMEISTER, Chicago.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CLAYTON J. HYSLOP, Chicago.
To Fort Riley, base hospital, Capt. JOHN C. LINDSAY, Chicago. For instruction, Capt. OLIVER M. HOLLIDAY, Melrose Park; Lieuts. VINCENT GINO, FRANCIS B. McNORTNEY, JOSEPH MOLES, JOHN H. MOORE, CHARLES E. WHITEHEAD, Chicago; RICHARD F. GREENING, Park Ridge; OFARD F. MAY, Towanda.
To Fort Sheridan, Ill., for duty, Capt. EMANUEL J. SENN, Chicago; WILLIAM F. SCOTT, Maywood; CHARLES W. HUNTER, Oneida; FRANK N. WELLS, Pittsfield; Lieuts. IRA B. ROBERTSON, HENRY J. WAY, Chicago; WILLIAM B. HARRINGTON, La Salle; CHARLES E. RISELING, Murphysboro; WILLIS F. HARVEY, Rushville.
To Rochester, N. Y., for duty, and on completion to his proper station, Major HARRY E. MOCK, Chicago.
To New York City, Bellevue Hospital, for instruction, and on completion to Colonia, N. J., for temporary duty, from New York City, Lieut. CHESTER W. TROWBRIDGE, Oak Park. Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. CHARLES FORD, Waggoner; Lieuts. PETER G. KITTERMAN, LUTHER L. TURNER, Chicago.
To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. HARRY L. KAMPEN, Monmouth.
To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Capt. CLARENCE W. GEYER, Aurora.
The following orders have been revoked: To Chicago, Ill., University of Chicago, Lewis Institute, and Harrison Technical High School, to make physical examinations and give medical attention to the drafted men enrolled at these institutions, and on completion to his proper station, Lieut. JACOB A. GOODMAN, Chicago. To Fort Riley for instruction, Lieut. JAMES N. BUCHANAN, Chicago.

Indiana

To Camp Dodge, Des Moines, Iowa, for duty, Capt. GEORGE W. TWOMEY, Elkhart; Lieut. REVEL F. BANISTER, Washington.
To Camp Lee, Petersburg, Va., for duty, Lieut. EDWIN E. KIME, Indianapolis.
To Fort Oglethorpe for instruction, Capt. LINLEY M. REAGAN, Tipton; Lieuts. CARLTON L. ROWELL, Valparaiso; from Camp Devens, Lieut. THOMAS P. GOVAN, Richmond; from Camp Sherman, Lieuts. HARVEY K. STORK, Huntingburg; LEO A. SALB, Jasper.
To Washington, D. C., for temporary duty, Capt. JOHN R. NEWCOMB, Indianapolis.
The following order has been revoked: To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Custer, Lieut. JOHN G. GLACKMAN, Hatfield.

Iowa

To Camp Dodge, Des Moines, Ia., base hospital, Capt. ARTHUR H. McCREIGHT, Fort Dodge. For duty, Lieut. MALCOLM S. CAMPBELL, Malvern.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Logan, Lieut. RAYMOND H. MUNFORD, Dodge City.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. COLIN C. THOMAS, Monticello; WILLIAM N. GORDON, Rowan.
To Fort Riley for instruction, Lieut. JOHN T. HANNA, Kellogg.
To Long Island, City, L. I., N. Y., for duty, from Camp Wheeler, Lieut. JOHN D. HEXOM, Decorah.
To New Orleans, La., Tulane University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. DAN L. MAHONEY, Dubuque.
Tuscaloosa, Ala., University of Alabama, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Oglethorpe, Lieut. GEORGE H. STEELE, Belmond.
The following order has been revoked: To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. MARCUS C. TERRY, Jr., Brighton.

Kansas

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Lieut. HUGH L. CHARLES, Atchison.
To Fort Riley, base hospital, Capt. WILLIAM G. MANESS, Preston. For instruction, Lieut. CARL C. CULVER, Burlington.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Hoboken, Lieut. JAMES A. H. WEBB, Stafford.
The following order has been revoked: To Rockefeller Institute for instruction and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. NOBLE E. MELENCAMP, Dodge City.

Kentucky

To Camp Gordon, Atlanta, Ga., for duty, Capt. LLEWELLYN P. SPEARS, Louisville.
To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOHN W. MOSS, Louisville.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. PERRY W. BUSHONG, Edmonton.
To Camp Shelby, Hattiesburg, Miss., base hospital, from Camp Wadsworth, Lieut. CARL C. HOWARD, Glasgow.
To Camp Sheridan, Montgomery, Ala., for duty, Capt. HERBERT S. CHASE, Junction City.
To Camp Crane, Allentown, Pa., base hospital, Lieut. ROBERT SORY, Madison.
To Camp Gordon, Atlanta, Ga., for duty, Lieuts. WILLIAM B. NEGLEY, Henderson; JOHN W. DYER, Louisville; SMITH A. BLACKSMITH, Versailles.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. SAMUEL B. PULLIAM, Paducah.
To Camp Lee, Petersburg, Va., for duty, Lieut. EDWARD L. INMAN, Williamsburg.
To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. RICHARD F. DUNCAN, Tompkinsville; from Camp Dodge, Capt. STEPHEN C. McCOY, Louisville.
To Fort Oglethorpe for instruction, Capt. JOHN L. STILLINGS, Green Mount.
To report by wire to the commanding general, Central Dept., for assignment to duty, Capt. GEORGE M. SHAUNTY, Louisville.
To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. STONEWALL J. SMOCK, Glasgow.

Louisiana

To Army Medical School for instruction, from Camp Jackson, Capt. RALPH HOPKINS, New Orleans.
To Austin, Tex., University of Texas, to make physical examination and give medical attention to the drafted men to be enrolled at this institution, from Fort Sam Houston, Lieut. WALTER P. LAMBETH, Allendale.
To Camp Shelby, Hattiesburg, Miss., as a member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieuts. HENRY C. LOCHTE, New Orleans; EWEL A. KLEINPETER, Thibodaux.
To Chicago, Ill., for duty, and on completion to Washington, D. C., Major ISADORE DYER, New Orleans.
To Fort Oglethorpe for instruction, Lieuts. DAWSON T. MARTIN, Acy; JOHN P. FRAZER, DeRidder; JAMES W. KIRBY, HENRY W. REEVES, New Orleans.
To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. WILTZ McP. LEDBETTER, Shreveport.
To Washington, D. C., for consultation, and on completion to Camp Beauregard, Alexandria, La., base hospital, Major JOSEPH DANNA, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, Capt. FRED WHEET, Rumford.
To Camp Sevier, Greenville, S. C., for duty, Capt. ALBA WALKER, Houlton. As a member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES B. SYLVESTER, Harrison. Base hospital, Lieut. JAMES W. STURTEVANT, Dixfield.
To Fort Oglethorpe for instruction, Lieut. WILLIAM E. EMERSON, Bangor.
To New Haven, Conn., as instructor, from Fort Oglethorpe, Major NELSON E. NICHOLS, Portland.
To Williamsbridge, N. Y., for duty, from Fort Slocum, Lieut. ARTHUR C. WRIGHT, Augusta.

Maryland

To Camp Crane, Allentown, Pa., base hospital, from Camp Jackson, Major ANDREW J. N. REIK, Baltimore.
To Camp Lee, Petersburg, Va., for duty, Capt. WILLIAM SCOTT, South Baltimore.
To Fort Oglethorpe for instruction, Lieut. MOSES L. LICHTENBERG, Baltimore.
To Waynesville, N. C., for temporary duty, from Edgewood, Lieut. MOSES R. KAHN, Baltimore.

Massachusetts

To Camp Devens, Ayer, Mass., base hospital, Majors SAMUEL MIXTER, JOHN J. THOMAS, Boston; from Boston, Capt. CO NELIUS McGILLICUDDY, Boston; Lieuts. WILLIAM K. TURNER, New Bedford; WILLIAM J. HARKINS, Quincy. For duty, from duty as a contract surgeon, Capt. HORACE K. BOUTWELL, Brookline. To examine the command for nervous and mental diseases, Lieut. EARLE H. MACMICHAEL, Malden.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp MacArthur, Major CHARLES DUDLEY, Kingston.
To Aberdeen, Md., for duty, from Dansville, Major ARTHUR H. ROSBIE, Boston.
To Army Medical School for orthopedic instruction, and on completion to his proper station, from Boston, Capt. MARK H. ROGERS, Boston.
To Camp Gordon, Atlanta, Ga., for duty, Lieut. HENRY ZIMMERMAN, Springfield.
To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOSEPH J. COSGROVE, Westfield.
To Camp Meade, Annapolis Junction, Md., for instruction in duties of division psychiatrist, Major GEORGE E. McPIERSON, Medfield.
To Camp Sevier, Greenville, S. C., for duty, Capt. DANIEL C. REENE, Newton Centre; CHARLES W. ROBERTSON, North Dena.
To Fort Oglethorpe, base hospital, from Camp Dix, Lieut. DANIEL FENNELLY, Fall River. For instruction, Capt. BERNARD RABISOVITZ, Springfield; Lieuts. PAUL W. EMERSON, Boston; WALTER C. FRIDAY, Maben.
To Fort Slocum, N. Y., for duty, from Camp Dix, Capt. ALFRED CHRONQUEST, Hathorne.
To Newport News, Va., for duty, from Fort Sam Houston, Lieut. HARLES B. SPRUIT, Boston.
To Saybrook, Conn., for duty, from Fort H. G. Wright, Capt. ARTHUR P. PERRY, Boston.
To Walter Reed General Hospital, Takoma Park, D. C., for conference, and on completion to his proper station, Major KENDALL MERSON, Worcester.
To Washington, D. C., for temporary duty in the Surgeon-General's Office, Lieut. McIVER WOODY, Boston.

Michigan

To Camp Custer, Battle Creek, Mich., base hospital, Capt. HARRY TAYLOR, Mt. Clemens; GEORGE W. MacKINNON, Oxford. For duty, Capt. WALTER R. T. SHARPE, Romeo.
To Camp Dodge, Des Moines, Ia., for duty, Capt. JAMES W. McEWAN, Detroit; Lieut. FREDERICK C. MAYNE, Charlevoix.
To Camp Grant, Rockford, Ill., base hospital, Major MAX BALLIN, Detroit.
To Camp Sevier, Greenville, S. C., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. HAROLD A. BECK, Detroit.
To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN J. MILLER, Berlin.
To Fort Oglethorpe for duty, from Camp Lee, Capt. HUGH McD. EEBE, Ann Arbor. For instruction, Capt. JOHN P. BLAND, Adrian; Lieuts. LLOYD G. CAMPBELL, Birmingham; ALONZO B. PERSLEY, CLARENCE STEFANSKI, Detroit; WALTER VAN DE ERVE, Norway.
To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Sheridan, Capt. FRANK KINSEY, Grand Rapids.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. ZENO L. KAMINSKI, Detroit. Neurological Institute, for instruction, and on completion to his proper station, from Camp Custer, Major ROY B. CANFIELD, Ann Arbor.
To report by wire to the commanding general, Central Department, or assignment to duty, Capt. WYNNE C. GARVIN, Millington.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Grant, Lieut. EMIL V. MAYER, Detroit.

Minnesota

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. MacSEHAM, Minneapolis.
To Camp Lewis, American Lake, Wash., for duty, Capt. HARRY JONES, Minneapolis; Lieuts. SIMON O. WALKOWIAK, Duluth; WILLIAM H. CONNER, Finlayson; GERHARD F. HARTWIG, Young America.
To Fort Oglethorpe for instruction, Lieut. GEORGE V. LYNCH, Paul.
To Fort Riley, base hospital, from Camp Grant, Lieuts. WILLIAM WINNE, Rochester; WILLIAM A. MEIERDING, Springfield.
To Fort Snelling, Minn., for duty, from Camp Shelby, Capt. GEORGE H. NORRIS, Annandale.
To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Grant, Lieut. IRVING G. WILTROUT, Minneapolis.
To Washington, D. C., for duty in the Surgeon-General's Office, Major CHARLES G. MAYO, Rochester.

Mississippi

To Fort Sam Houston, Tex., for duty, Capt. JOHN E. DAVIS, Columbus; Lieut. WALTER C. ROYALS, Meridian.

Missouri

To Army Medical School for duty, Lieut. EUGENE B. MUNIER, Adleyville. For instruction, Lieut. HOWARD S. MAUPIN, Melbina.
To Camp Bowie, Fort Worth, Tex., as member of a board examining command for tuberculosis, from Fort Riley, Lieut. ARTHUR W. JESSEL, St. Louis.
To Camp Custer, Battle Creek, Mich., base hospital, from St. Louis, Lieut. GEORGE M. MYERS, St. Louis. For duty, Lieut. DEWILTON BERMAN, St. Louis.
To Camp Dodge, Des Moines, Ia., for duty, Lieut. HARRY BRAUN, Independence.
To Camp Gordon, Atlanta, Ga., for duty, Lieut. MAURICE J. DUNSWAY, St. Louis.
To Camp Kearny, Linda Vista, Calif., base hospital, Capt. LOUIS KEMPF, St. Louis.
To Camp Sevier, Greenville, S. C., base hospital, Lieut. JULIUS A. OSSEN, St. Louis.
To Fort Riley, base hospital, Capt. JOHN H. GEORGE, Leeds; Lieut. JOSEPH Z. GLENN, St. Louis.
To Millington, Tenn., Park Field, for inspection, and on completion to Lonoke, Ark., from Lonoke, Capt. DON R. JOSEPH, St. Louis.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Colonia, N. J., for temporary duty, Lieut. VICTOR CADWELL, Poplar Bluff. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Capt. WM. T. ELAN, Joseph.

Montana

To Camp Lewis, American Lake, Wash., base hospital, Capt. DONALD A. McCLENNAN, Cascade; JOHN T. FOLEY, Lewistown. For duty, Lieut. WENDELL COTTON, Forsyth.
To Chicago, Ill., University of Chicago, Lewis Institute and Harrison Technical High School, to make physical examinations and give medical attention to the drafted men enrolled at these institutions, and on completion to his proper station, from Camp Dodge, Lieut. MARK T. VORNHOLT, Glasgow.
To Fort Riley for instruction, Lieut. CHRIS E. EMERY, Butte.
To San Francisco, Calif., for instruction, and on completion to Camp Lewis, American Lake, Wash., base hospital, Capt. MAX A. DORLAND, Anaconda.
The following order has been revoked: To Jefferson Barracks, Mo., for temporary duty, and on completion to his proper station, from Camp Doniphan, Lieut. JOHN J. TOBINSKI, Missoula.

Nebraska

To Burlington, Vt., University of Vermont, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Camp Dix, Capt. WILLIAM J. PINKERTON, Bostwick.
To Camp Pike, Little Rock, Ark., for duty, from Camp Dodge, Lieuts. FRANCIS M. SWARTWOOD, Bethany; HAL D. WILMETH, Lincoln; ARTHUR M. SONNELAND, Norfolk.
To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. WILLIAM N. ANDERSON, Omaha; Lieut. TORRENCE C. MOYER, Lincoln.
To Fort Riley, base hospital, Capt. WILLIAM EVANS, Columbus. For instruction, Capt. JAMES S. TAYLOR, Fairbury. For temporary duty, Lieut. HARVEY B. STAPLETON, Omaha.
To Fort Sam Houston, Tex., for duty, Lieuts. JOHN T. REES, Fort McDermitt; EDWARD A. VAN VLEET, Omaha; WILLIAM S. DINSMORE, Pierce.
To report by wire to the commanding general, Central Dept. for assignment to duty, Capt. FRANK C. GENUNG, Wausa.

Nevada

To Camp Fremont, Palo Alto, Calif., base hospital, from San Francisco, Capt. BENJAMIN F. CUNNINGHAM, Reno.

New Jersey

To Camp Dix, Wrightstown, N. J., for duty, Lieut. CHARLES BROWNE, Princeton.
To Camp Gordon, Atlanta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. SAMUEL BLAUGRUND, Trenton.
To Camp Grant, Rockford, Ill., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. LEO V. ROSENTHAL, Trenton.
To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. GRANT THORNBURN, Newark.
To Camp Lee, Petersburg, Va., for duty, Lieuts. SAMUEL S. FERN, Elizabeth; ELMER M. MOUNT, Jersey City.
To Camp Wadsworth, Spartanburg, S. C., with the board examining the troops for cardiovascular diseases, Lieut. JAMES D. TRASK, Jr., Highlands.
To Fort Oglethorpe for instruction, Capt. WILLIAM H. SLOCUM, Long Branch; Lieut. HARVEY W. HARTMAN, Mayport.
To Rockefeller Institute for instruction in treatment of infected wounds, and on completion to Camp Greene, Charlotte, N. C., base hospital, from New York City, Lieut. LEONARD M. KALAHER, Jersey City.
The following order has been revoked: To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HENRY KLAUS, West Hoboken.

New Mexico

To San Francisco, Calif., for instruction, and on completion to his proper station, from Camp Cody, Capt. OLIVER J. WESTLAKE, Silver City. On completion to Camp Lewis, American Lake, Wash., base hospital, Lieut. LAMENT A. HUBBARD, Van Houten.

New York

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Capt. HERMAN L. RAYMOND, Collins; WILLIAM R. WOODBURY, Rochester.
To Williamsbridge, N. Y., for duty, from Surgeon-General's Office, Major SIGMUND POLLITZER, New York. For observation and treatment, Capt. WALTER W. OSGOOD, Jordan. For temporary duty, Lieut. CLARENCE P. THOMAS, New York.
To Camp Beauregard, Alexandria, La., base hospital, from Walter Reed General Hospital, Major THOMAS W. HASTINGS, New York.
To Camp Dix, Wrightstown, N. J., base hospital, from Washington, Major SIDNEY R. BURNAP, New York; from Camp Sevier, Capt. GREGORY J. COSTIGAN, New York; from Camp Upton, Lieut. GEORGE W. SCHENCK, New York.
To Akron, Ohio, University of Akron, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, Lieut. CHARLES GOTTLIEB, New York.
To Army Medical School for instructions, Lieut. EUGENE D. QUINLAN, Allegany.
To Camp A. A. Humphreys, Accotink, Va., to examine the command for tuberculosis, from Fort Oglethorpe, Capt. EDWARD P. EGLES, New York.
To Camp Devens, Ayer, Mass., for duty, from New York, Major LEWIS T. GRIFFITH, New York. Base hospital, Major CHARLES H. YOUNG, Lieut. HERMAN SMITH, New York.
To Camp Dix, Wrightstown, N. J., base hospital, from Williamsbridge, Capt. EDMOND J. BARNES, New York.
To Camp Gordon, Atlanta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. LAURENCE B. BOYLAN, Woodhaven. For duty, Lieut. MOSES LOBSENZ, New York.
To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, Lieut. ELIAS GAMRIN, New York.
To Camp Lee, Petersburg, Va., for duty, Capt. NELSON W. JANNEY, New York; Lieuts. LESTER E. SANFORD, Albany; ABRAHAM SHORR, Brooklyn; RAY WOODWARD, Lackawanna.
To Camp Pike, Little Rock, Ark., base hospital, Capt. NELSON W. JANNEY, New York; Lieut. HUDSON J. WILSON, Ithaca; from

Army Medical School, Lieut. EPHRAIM M. BLUESTONE, New York.
To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. HENRY M. SPOFFORD, Batavia. Base hospital, from Camp Hancock, Lieut. WALTER G. H. POTTS, New York. For duty, Lieuts. MORRIS WEISSBERG, Brooklyn; MICHAEL F. SULLIVAN, Pyrites; JOHN C. DESLOCH, Rochester.

To Camp Upton, L. I., N. Y., base hospital, Capt. FREDERICK M. BARNEY, Dolgeville.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. JOSEPH P. O'BRIEN, Albany; BRUNE S. HOROWICZ, MILTON SCHAE, New York.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. THOMAS M. MARKS, New York.

To Edgewood, Md., base hospital, Capt. FREDERICK W. FILINGER, Buffalo.

To Fort McHenry, Md., base hospital, Lieuts. RALPH N. ARNOLD, Blackwell's Island; ADOLPH S. KRAMER, Brooklyn.

To Fort Oglethorpe for duty, Major THOMAS J. HARRIS, Lieut. JOHN L. KANTOR, New York. For instruction, Lieuts. HARRY J. HANDELMAN, Bronx; URBAN A. FISCHER, Buffalo; GEORGE J. HOGGEN, Rye; from Camp Upton, Lieut. ABRAHAM L. MARGOLIES, New York.

To Fort Sill, Okla., as a medical member of the examining board and recruiting officer, from Camp Kelly, Lieut. LAWRENCE D. CREMIN, Ossining.

To Hoboken, N. J., for duty, from Rockefeller Institute, Lieut. MORRIS MASLON, Glen Falls.

To New Haven, Conn., as instructor, from Fort Oglethorpe, Capt. JAMES W. PRICE, Saranac Lake.

To New York City, Neurological Institute, for instruction, from Army Medical School, Capt. ARTHUR F. HOLDING, New York. New York University to make physical examinations, and give medical attention to the drafted men enrolled at this institution, and on completion to the inactive list, Lieut. GEORGE KORNFIELD, Brooklyn.

To Plattsburg Barracks, N. Y., for duty, Capt. VARNEY B. HAMLIN, Clinton; JAMES F. GILLETTE, New York; Lieuts. WILLIAM J. ROSS, Clavton; MYRON E. FISHER, Delavan; WILLARD C. THOMPSON, Plattsburg; DANIEL A. EISELINE, Shortsville.

To report by wire to the commanding general, Eastern Department, for assignment to duty, Capt. EDWARD L. AYMS, New York.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Bellevue Hospital, for further instruction, and on completion to Camp Meade, Annapolis Junction, Md., base hospital, Capt. WILLIAM S. SMITH, Brooklyn. On completion to Camp Dix, Wrightstown, N. J., base hospital, Lieut. ROYALE H. FOWLER, Brooklyn. On completion to Camp Grant, Rockford, Ill., base hospital, Lieut. BURTON E. LOVESEY, New York. On completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. HERBERT M. VANN, Brooklyn. On completion to Fort Oglethorpe, Lieut. JOSEPH TENOPYR, Brooklyn. For instruction in laboratory work and on completion to Army Medical School, for duty, Lieut. WILLIAM C. STADIE, New York.

To Washington, D. C., for consultation, and on completion to his proper station, from New York City, Lieut. HENRY W. HAYNES, New York.

The following orders have been revoked: *To Camp Dix, Wrightstown, N. J., for duty, from Camp Upton, Lieut. GEORGE W. SCHENCK, New York. To Camp Lee, Petersburg, Va., base hospital, from New York, Lieut. HERMAN B. PHILIPS, New York. To College Station, Tex., from Houston, Capt. GEORGE W. BEEBE, Johnsville.*

North Carolina

To Camp Lee, Petersburg, Va., for duty, Lieut. MAX C. KING, Franklinton.

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. CHARLES S. JORDAN, Asheville.

To Sheffield, Ala., for duty, Lieut. JOHN M. BARNHARDT, Mt. Pleasant.

Ohio

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. RAYMOND E. GASTON, Cincinnati.

To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Capt. JOHN H. HARVEY, Toledo; from Camp Dix, Lieut. HAROLD O. RUH, Cleveland.

To Camp Dodge, Des Moines, Iowa; Camp Grant, Rockford, Ill., and Camp Zachary Taylor, Louisville, Ky., for conference, and on completion to his proper station, from Fort Riley, Major WILLARD J. STONE, Toledo.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Lieut. CHARLES F. MORRIS, Youngstown.

To Camp Custer, Battle Creek, Mich., for duty, Capt. ORR A. DICKSON, Jefferson.

To Camp Dodge, Des Moines, Ia., for duty, Capt. OLIVER H. PINNEY, Cincinnati.

To Camp Lee, Petersburg, Va., for duty, Lieut. GEORGE A. ROWLAND, Delaware.

To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. CARL MULKY, Warrensville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. JAMES T. MERWIN, Athens.

To Chicago, Ill., for orthopedic instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

To Fort Oglethorpe for instruction, Capt. SMITH E. McADOO, Akron; HIRAM P. H. ROBINSON, Medina, Lieuts. RALPH T. SAUNDERS, Findlay; MELVILLE F. WALKER, Cincinnati.

To Fort Riley, evacuation hospital, from Fort McPherson, Major JOSEPH L. RANSCHOFF, Cincinnati.

To New York City, Cornell Medical College, for instruction in military roentgenology, Capt. JOHN D. OSMOND, Cleveland.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. WARREN B. KEATOR, Findlay.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Hoboken, N. J., for temporary duty, Capt. JOHN J. SILBAUGH, Lancaster.

The following order has been revoked: *To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Capt. JOHN H. HARVEY, Toledo.*

Oklahoma

To Del Rio, Tex., for duty, from Fort Sam Houston, Major JULIUS A. MULLER, Snyder.

To Fort Oglethorpe for instruction, Lieut. WALTER H. DERSCH, Oklahoma City.

To Fort Riley for instruction, Lieut. ARLANDER S. GRAYDON, Idobee.

To Fort Sam Houston, Tex., for duty, Lieut. ROBERT E. L. THACKER, Lexington.

To Tulsa, Okla., to examine the applicants for appointment in the Medical Reserve Corps of the Army and on completion to the inactive list, Lieut. LLOYD M. SACKETT, Oklahoma City.

The following order has been revoked: *To Jefferson Barracks, Mo for temporary duty, and on completion to his proper station, from Camp Doniphan, Lieut. CLYDE F. LOY, Shawnee.*

Oregon

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieuts. EMILE C. JOSEPH, Corvallis; GLENN E. PRIME, Falls City; HARRY E. SHOOT, Portland.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. JACOB PRINZING, Ontario; WILLIAM B. HAMILTON, LEON E. STORY, Portland.

To Fort Riley for instruction, Capt. BENJAMIN F. SCAIEFF, Eugene.

To San Francisco, Calif., for instruction and on completion to Camp Kearny, Linda Vista, Calif., base hospital, Lieut. ROSCOE W. CAHILL, Portland.

Pennsylvania

To Camp Lee, Petersburg, Va., base hospital, Lieut. EDWIN I. LONGAKER, Philadelphia; from New York City, Major EWING W. DAY, Pittsburgh.

To Fox Hills, N. Y., for duty, Capt. FRANK B. GUMMEY, Philadelphia.

To Hoboken, N. J., base hospital, Lieut. HENRY WILDERMAN, Philadelphia. For temporary duty, Lieut. CLAIR F. VALE, Philadelphia.

To Jeffersonville, Ind., for duty, from Camp Gordon, Lieut. LEO FELDERMAN, Philadelphia.

To Army Medical School for instructions, Lieut. GILBERT I. DAILEY, Harrisburg.

To Camp Beauregard, Alexandria, La., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. ALFRED A. FERRY, Philadelphia.

To Camp Crane, Allentown, Pa., base hospital, Lieut. JOHN I. DAVIES, Philadelphia. For duty, Lieut. NORTIMER W. BLAIR, Philadelphia.

To Camp Glen Burnie, Md., and Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to his proper station, from Camp Meade, Lieuts. RALPH L. ENGLE, ABRAHAM TRASOFF, Philadelphia.

To Camp Gordon, Atlanta, Ga., for orthopedic instruction, from Fort Oglethorpe, Lieut. WILLIAM G. ELY, Philadelphia.

To Camp Grant, Rockford, Ill., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. HUGO N. SARCHIE, Pittsburgh. Base hospital, from New York City, Lieut. THOMAS I. McMILLAN, Philadelphia.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. THOMAS L. COLEY, Philadelphia.

To Camp Lee, Petersburg, Va., for duty, Lieuts. JOHN W. MA Mullen, Harrisburg; JACOB M. CAHAN, Philadelphia; ROBERT McG. HURSH, Steelton.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Capt. JAMES A. BUCHANAN, Strickersville; Lieut. LAWRENCE L. BLACKBURN, Philadelphia.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. EVERETT HALE TOMB, Indiana.

To Camp Sevier, Greenville, S. C., for duty, Lieut. JOHN TURNER, III., Philadelphia.

To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. WILLIAM RUOFF, Philadelphia.

To College Station, Pa., Penn State College, to make physical examinations and give medical attention to the drafted men to be enrolled in this institution, Lieut. WILLIAM N. WATSON, Merion.

To Fort Oglethorpe for instruction, Capt. HARRY A. SPANGLE, Carlisle; Lieuts. SAMUEL W. REEVES, Fawn Grove; EDWIN BROPHY, Meadville; NATHAN B. KUPFER, Philadelphia; MAX TISCHLER, Wilkes-Barre.

To Hoboken, N. J., for duty, from Aberdeen, Capt. JAMES L. JUNCOS, Connellsville.

To Lakewood, N. J., for duty, from Camp Meade, Lieut. CLARENCE A. PATTEN, Philadelphia.

To Mincola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Camp Taliaferro, Lieut. GEORGE S. CUNNINGHAM, Pittsburgh.

To New Haven, Conn., for duty, from Fort Oglethorpe, Lieut. FRANK P. D. RECKFORD, Harrisburg.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Slocum, Capt. JAMES WARD, Lucerne.

To Philadelphia, Pa., to examine applicants for appointment to Medical Reserve Corps of the Army, Lieut. JOHN W. WEST, Philadelphia.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. STANLEY REIMANN, Philadelphia.

To Tuskegee, Ala., Normal Institute, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Oglethorpe, Lieut. PIUS A. NOLL, Glen Rock.

The following orders have been revoked: *To Jeffersonville, Ind., for duty, from Camp Gordon, Lieut. LEON FELDERMAN, Philadelphia. To New York City, New York University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion to his proper station, from Madison Barracks, Capt. SYDNEY K. FENOLLOS, Pittsburgh.*

Porto Rico

To San Juan, Porto Rico, for duty, Capt. LEVIS C. BABCOCK, San Juan; Lieuts. MANUEL C. DUENO, Anasco; JAIME RIVERA, Caguas; JUAN G. BAJANDAS, Maunabo; JOSE A. LOYAN, Penuelas; JOSE B. GOTAY, Ponce; JOSE F. TRILLA, Trujillo; JAMES S. M. PRESSLY, Viequez; ANTONIO ARBONA, Villalba; MIGUEL A. MARIANI, Yauco.

South Carolina

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HAWKINS W. CORBETT, Mayesville.
To Camp Sevier, Greenville, S. C., for duty, Capt. EDWARD G. L. ADAMS, Columbia.
To Fort McPherson, Ga., for duty, from Army Medical School, Lieut. GEORGE F. KLUGH, Cross Hill.
To Fort Oglethorpe for instruction, from duty as a private, Lieut. JOSEPH F. GUESS, Charleston.

South Dakota

To Fort Riley for instruction, Lieut. OSCAR W. TULISALO, Belle Fourche.
To report by wire to the commanding general, Central Department, for assignment to duty, Capt. CHARLES S. LANGLEY, Lake Andez.

Tennessee

To Camp Custer, Battle Creek, Mich., base hospital, Capt. WALTER S. DOTSON, Lebanon.
To Camp Gordon, Atlanta, Ga., for duty, Capt. WILLIAM P. STCHLEY, Knoxville; from Army Medical School, WILLIAM N. SACKY, Gallatin.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOHN E. HALL, Nashville.
To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN O. WOODS, Newport.
To Fort Oglethorpe for instruction, Capt. DAVID R. NEIL, Nashville; Lieuts. ALFRED V. KEEBLER, Bristol; JOHN H. REVINGTON, Chattanooga.
To Fort Sam Houston, Texas, for duty, Lieut. BOONE E. NOBLIT, Fayetteville.
To Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Capt. LOUIS LEVY, Memphis.
To Hoboken, N. J., base hospital, from New York City, Lieut. THOS. D. MENEES, Nashville.
To New York City, Neurological Institute, for instruction, Lieut. APHAEL E. SEMMES, Memphis.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton, L. I., N. Y.*, base hospital, Capt. HARRISON H. SHOULDERS, Nashville.

Texas

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. CHARLES E. SCULL, San Antonio.
To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieuts. LOUIS A. EDMUNDSON, Bethel; GLENN BARTLETT, Kingsville.
To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Capt. LOUIS E. DEVENDORF, Taft.
To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. EDWARD B. JONES, Jacksonville.
To Boulder, Colo., University of Colorado, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. DAVID C. WILLIAMS, Post.
To Camp Bowie, Fort Worth, Texas, as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. CHARLES R. OWEN, Carlsbad.
To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILLIAM J. RAMSEY, Houston.
To Camp Doniphan, Fort Sill, Okla., for duty, Capt. WILLIAM D. URRAN, Waco.
To Camp Logan, Houston, Texas, for duty, Capt. FRANK G. PARKHILL, Houston.
To Camp MacArthur, Waco, Texas, for duty, Lieut. CHARLES W. ASTNER, Terrell.
To Fort Oglethorpe for instruction, Lieuts. THOMAS B. BOND, Fort Worth; JOSEPH E. McDONALD, San Antonio; GROVER C. FOX, Bell.
To Fort Riley for instruction, Major FREDERICK J. COMBE, San Antonio.
To Fort Sam Houston, Texas, for duty, Lieuts. JOSEPH E. JONES, Cyce; GEORGE S. BEATY, Guadalupe; CLARENCE R. MYRICK, Valde.
To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. FRED H. HODDE, Burton; from Campaker, Lieut. ALBERT A. JACKSON, Mexia.
To the inactive list, Major WALLACE RALSTON, Houston.

Utah

The following order has been revoked: *To Boston, Mass.*, Harvard Medical School, for instruction, from Fort Riley, Lieut. CHARLES E. RAIN, Salt Lake City.

Vermont

To Army Medical School for instruction, Lieut. SIDNEY MITCHELL, Jr., Richmond.
To Camp Sevier, Greenville, S. C., for duty, Capt. GEORGE H. EWTON, Cambridge.
To Fort Oglethorpe for instruction, Major HARRY T. SUMMERS-ILL, Bennington.

Virginia

To Army Medical School for instructions, Lieut. JOSEPH J. LIGON, Lynchburg.
To Camp Gordon, Atlanta, Ga., for duty, Lieut. SETH B. PERRY, Newport; from Army Medical School, Lieut. HARTWELL G. STONE-AM, Waverly.
To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Major ALLEN J. BLACK, Hollis.
To Fort Oglethorpe for instruction, Lieut. ROSCOE F. THORNHILL, Slate Mills, Va.
To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. CORNELIUS B. COURTNEY, Fairfax.
To Saltville, Va., for duty, Capt. CHARLES F. UPDIKE, Brownstown.
The following order has been revoked: *To Camp Lee*, Petersburg, Va., from Camp Pike, Lieut. JOHN O. BOYD, Roanoke.

Washington

To Camp Bowie, Fort Worth, Texas, as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. JAMES B. OUCHE, Twisp.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. ERNEST L. BICKFORD, Seattle.
To Camp Lewis, American Lake, Wash., for duty, Lieuts. VICTOR PIRO, Cle Elum; WILLIAM W. BRAND, Rosalia.
To Fort Riley for instruction, Capt. CLINE F. DAVIDSON, HARRY II. HEWITT, Seattle.
To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. LAWRENCE HOPKINSON, Aberdeen; CHARLES E. MONTGOMERY, Walla Walla.
To San Francisco, Calif., for instruction, and on completion *to Camp Cody*, Deming, N. M., base hospital, Capt. RICHARD T. BURKE, North Bend. On completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. BURTON E. FLEMING, McCleary.

West Virginia

To Army Medical School for instructions, Lieut. JOHN E. MILLER, Widen.
To Camp Gordon, Atlanta, Ga., for duty, Capt. CHARLES A. CLEM-MER, Weirton.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort McPherson, Lieut. WILLIAM P. LEWIS, Beckley.
To Camp Lee, Petersburg, Va., for duty, Capt. JULIAN W. ASHBY, Carbon.
To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES W. WIEHE, Wheeling.
To Fort Oglethorpe for instruction, Lieut. VICTOR L. GLOVER, Inwood.
To Hoboken, N. J., for duty, from Fort McPherson, Lieut. WATSON S. ROWAN, Omar.

Wisconsin

To Camp Beauregard, Alexandria, La., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. ANFIN EDGAHL, Menominee.
To Camp Dodge, Des Moines, Iowa, base hospital, Capt. ARTHUR F. LYON-CAMPBELL, Florence.
To Camp Lee, Petersburg, Va., for duty, Lieut. RUDOLPH C. PFEIL, Milwaukee.
To Camp Pike, Little Rock, Ark., for duty, Lieut. RICHARD A. DREYER, Wheeler.
To Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, from West Point, N. Y., Lieut. ARTHUR D. SMITH, Gilmanton.
To Cape May, N. J., base hospital, from Camp Pike, Capt. J. GURNEY TAYLOR, Milwaukee.
To College Station, Texas, for duty, from Houston, Capt. HUBERT S. STEENBERG, Milwaukee.
To Fort Riley for instruction, Capt. ARTHUR H. WINTER, Tomah; SYLVESTER R. HUTCHINS, Whitehall.
To Jefferson Barracks, Mo., for temporary duty, and on completion *to his proper station*, from Camp Pike, Lieut. FRANK H. RUSSELL, Neenah.
To Fort Myer, Ga., for duty, Lieut. CLARENCE N. SONNENBURG, Sheboygan.
To report by wire to the commanding general, Central Department, for assignment to duty, Capt. JOHN R. EASTMAN, Kenosha.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

New Officers Elected.—At the forty-seventh annual meeting of the medical society of the state of California, at Del Monte, April 15 to 17, the following officers were elected: president, Dr. Cornelius Van Zwaluwenburg, Riverside; vice presidents, Drs. John H. Graves, San Francisco, and Ferdinand Stabel, Redding; secretary, Dr. Saxton Temple Pope, San Francisco, and delegates to the American Medical Association, Drs. George H. Kress, Los Angeles, Oliver D. Hamlin, Oakland, and Victor G. Vecki, San Francisco. Santa Barbara was selected as the next place of meeting. The association adopted resolutions remitting the dues of members in the military service, and adopted plans for calling on all members of suitable age and otherwise available to tender their services to the government.

Personal.—Capt. Walter O. Howell, San Francisco, on duty at Camp Fremont, fell from a horse, May 23, fracturing his left femur near the hip joint.—Dr. Lewis Michelsen, San Francisco, has been appointed by the San Francisco Board of Health director of the branch office in the Underwood Building, succeeding Dr. Harry G. Irvine.—Dr. Walter Lindley, Los Angeles, who was operated on recently in the California Hospital, is reported convalescent.—Dr. Alfred Guido Rudolph Schlosser, Hollywood, has petitioned the Los Angeles Superior Court to legally change his surname to Castles.—Dr. Howard C. Naffziger has been placed in charge of the division of brain surgery in the Central Reconstruction Hospital, Fort McHenry, Md.—Dr. John W. Hanner has been appointed health officer of Sacramento, succeeding Dr. Gustavus C. Simmons, resigned.—Because of alleged disloyal utterances the New England Society, Oak-

land, at a recent meeting is said to have voted unanimously for the expulsion of Dr. Heinrich E. Franck from the organization.

COLORADO

Personal.—Dr. J. L. Tadlock, Palisades, has been appointed coroner of Mesa County, succeeding Dr. Arthur G. Taylor, who has entered the military service.—Dr. Edward W. Lazell, Denver, has returned after several months of service in French hospitals.

Licenses Revoked.—At its January meeting, the Colorado State Board of Medical Examiners revoked the license of Dr. Robert Ritchie Walker of Canon City, on the ground that he had been convicted of a crime involving moral turpitude. At its April, 1918, meeting, the board also revoked the license of Dr. Allen R. Ransom of Denver, on the following grounds: For the last seven months of 1917 he had been practicing in Colorado without a license; he had, during the same time, been in the employ of one E. J. Kelliham, who was not licensed to practice medicine in Colorado, and he had practiced as the partner of E. J. Kelliham, with whom he had entered into an agreement promising to divide fees which had been obtained for professional services.

CONNECTICUT

Personal.—After forty years of service, Dr. Charles E. Stanley has resigned as a member of the staff of the Connecticut State Hospital, Middletown, and his resignation is to take effect July 15.—Dr. Thomas F. Keating, Manchester, has recently returned from China where he has been engaged in government sanitary work.

New Home for Society.—The New Haven Medical Society has secured an option on the Townsend property, New Haven, and is raising a fund of \$55,000 for the purchase of the property. The house will be used for general headquarters, meetings, and social gatherings, and will contain the library and reading room of the organization. In the near future it is proposed to erect a brick addition to the building as an assembly room.

New State Officers.—At the one hundred and twenty-sixth annual meeting of the Connecticut State Medical Society held in Hartford, May 15 and 16, under the presidency of Dr. Edward K. Root, Hartford, the following officers were elected: president, Dr. Charles J. Bartlett, New Haven; vice presidents, Drs. Frank E. Guild, Windham; James H. Kingman, Middletown; secretary, Dr. John E. Lane, New Haven; treasurer, Dr. Phineas H. Ingalls, Hartford; delegates to the American Medical Association, Drs. D. Chester Brown, Danbury, and John E. Lane, New Haven, and alternates, Drs. Max Mailhouse, New Haven, and Robert L. Rowley, Hartford.

DELAWARE

Honor Veteran Physician.—About fifty physicians of Wilmington gave a complimentary dinner to Dr. Henry J. Stubbs at the Hotel Dupont, April 25, to commemorate his completion of fifty years of active practice.

Personal.—Dr. T. H. Davis, superintendent of the Ferris Industrial School has sent in his resignation, to take effect June 1, and will practice in Wilmington.—Drs. Robert Ellegood and Michael Ostro have been appointed members of the board of health of Wilmington.

State Board Election.—At the annual meeting of the state board of health, held in Wilmington, the following officers were reelected: president, Dr. William P. Orr, Lewes; secretary and registrar, Dr. Abram E. Frantz, Wilmington, and pathologist, Herbert J. Watson, Wilmington.

DISTRICT OF COLUMBIA

"Podiatrists" to Be Licensed in the District of Columbia.—Podiatrists, commonly known as chiropodists and sometimes vulgarly called "corn doctors," can no longer practice their calling in the District of Columbia unrestricted. Congress has just enacted a law forbidding the practice of podiatry in the district except by persons who have passed such examinations concerning their fitness as the health officer of the district may prescribe. The health officer must conduct the required examinations. The law does not prevent licensed physicians from practicing "podiatry," nor podiatrists who have been practicing in the district for not less than one year at the time of the approval of the law. By the law, podiatry is defined as the surgical, medical, or mechanical treatment of any ailment of the human foot, except the

amputation of the foot or any of the toes; but the podiatrist may not lawfully use other than local anesthetics.

Medical Society Creates a War Committee.—By resolution adopted May 15, the Medical Society of the District of Columbia constituted its executive committee a war committee. The committee was authorized to send to each active member of the society a questionnaire designed to elicit such information as may be necessary to determine which of the members should perform military service and which should remain at home to care for the civil population. The resolution impresses on the entire membership of the society the duty of responding promptly to the questionnaire, and on those members who may be selected by the war committee for military service, the importance of early applications by them for commissions in the medical service of the Army or the Navy. The entire organization of the society, and its personnel, were by the resolution offered to the American Medical Association to help in the campaign the association has undertaken at the request of the Surgeon-General of the Army and Navy to obtain adequate complements of medical officers for both services.

FLORIDA

Personal.—Horatio M. Parker has been appointed bacteriologist and chemist for the Jacksonville Board of Health.—Stewart G. Thompson, formerly of Kansas City, has taken up his duties as vital statistician of the state board of health.—Dr. Lawrence T. Galphin, Fernandino, has been appointed district health officer of the second district of the state board of health, succeeding Dr. Joseph E. Taylor resigned.

State Meeting.—At the meeting of the state medical society at Tampa, May 16, the following officers were elected: president, Dr. Frederick J. Walter of Daytona; vice presidents, Drs. William P. Adamson, Tampa; H. Mason Smith, Chatta hoochee; acting secretary, to serve during the absence of Dr. Graham E. Henson, Jacksonville, who is serving with the United States forces, Dr. W. H. Coffee, Winter Haven; treasurer and editor of the *Florida State Medical Journal*, Dr. William R. Warren, and delegate to the American Medical Association, Dr. John S. Helms, Tampa. Miami was selected as the next place of meeting.

IDAHO

Personal.—Dr. Susan E. Bruce, city health officer of Lewiston, has been reappointed a member of the state medical board.—Dr. Walter F. Pike, superintendent of the Blackford State Hospital, has resigned.

ILLINOIS

Service Flag Unfurled.—The Auxplaines Medical Society at its annual meeting, April 4, in Oak Park, unfurled a service flag with thirty-one stars.

Tablet to Commemorate First Medical College.—Acting on the advice of the Illinois centennial commission, Morgan County has erected a marker on the site of the first medical college in Illinois.

Personal.—Dr. Charles W. Miller, Peoria, has been appointed special medical health officer for the Camp Herrin military zone which embraces the city of Peoria and adjoining townships.—At its annual meeting, May 5, the Illinois Public Health and Welfare Association elected Dr. John A. Robison, Chicago, president, and Drs. Wilbur H. Gilmore, Mount Vernon, and H. Nelson Heflin, Kewanee, vice presidents.

Chicago

Pathologist Wins Prize.—Harry Lee Huber, former pathologist in the University of Chicago, was awarded the Ricketts Prize, May 2, on account of his research work to determine new methods of treating tuberculosis. The prize consists of the income of \$5,000 and is given in memory of the late Dr. Howard Taylor Ricketts.

College of Medicine of University of Illinois Adopts Quarter System.—The University of Illinois, College of Medicine, announces that beginning with June 3, it will operate on the quadrimester system. In this system there will be three terms of four months each calendar year. The course will be so arranged that it will be possible for a student to enter the school at the beginning of any one of the three terms.

Personal.—Rollo K. Packard, for the last seven years superintendent of Washington Park Hospital, was given a banquet

by fifty-seven of his associates, April 29.—Dr. Homer V. Halbert has been elected president of the Empire State Society of Chicago.—Dr. William H. Burmeister, coroner's physician, has resigned to enter the military service.—Major Kellogg Speed, M. R. C., has been transferred from service with Base Hospital No. 12 to service with the 42d Division of the American expeditionary forces.

IOWA

Personal.—Dr. Walter A. Matthey, Davenport, was operated on at the Augustana Hospital, Chicago, for disease of the gallbladder.—Dr. Eli Grimes has assumed charge of the Des Moines Tuberculosis and Free Public Health Nursing Association.—Dr. Jay Crowley, Rock Rapids, is reported ill with scarlet fever.

New Officers.—At the meeting of the State Society of Iowa Medical Women, held at Fort Dodge, May 7, the following officers were elected: president, Dr. Jeanette F. Throckmorton, Chariton; vice presidents, Drs. Josephine M. W. Rust and Sarah A. Kime, Fort Dodge, and Rosa E. Lowder, Maquoketa; secretary, Dr. Nelle S. Noble, Des Moines, and treasurer, Dr. Jessie B. Hudson, Carroll.

LOUISIANA

Officers Elected.—At the thirty-ninth annual meeting of the Louisiana State Medical Society, held at New Orleans, April 16, 17 and 18, the following officers were elected: president, Dr. Wilkes H. Knolle, New Orleans; vice presidents, Drs. G. M. G. Stafford, Alexandria; Amedee Granger, New Orleans, and Albert E. Fossier, New Orleans, and secretary-treasurer, Dr. Paul T. Talbot, New Orleans. The following were elected as councilors of the respective districts: Drs. Paul J. Gelpi, New Orleans; Beverly W. Smith, Franklin; Joseph E. Knighton, Shreveport; Jesse L. Adams, Monroe; James J. Robert, Baton Rouge; E. M. Ellis, Browley, and Eugene L. Henry, Lecompte.

MARYLAND

Physician Convicted.—Dr. Chauncey T. Scudder, proprietor of a sanatorium at Arlington, is said to have been found guilty of furnishing morphin to an addict in violation of the federal law and to have been sentenced to imprisonment for three months.

Antituberculosis Association Meeting.—At the meeting of the state War-Time Tuberculosis Conference held in Baltimore, April 18, Dr. Henry Barton Jacobs, Baltimore, was elected president, Dr. C. Hampson Jones, vice president, and Drs. John S. Fulton, William T. Howard, Martin F. Sloan, William S. Thayer, Thomas Fell, J. Hall Pleasant, Roland Park, and Allen K. Krause were elected members of the executive committee.

Personal.—Dr. William N. Gassaway of Ellicott City has been appointed chief health officer of Howard County.—Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, who has been working in the office of the Surgeon-General of the Army in Washington for the past ten months, has been commissioned a colonel in the medical corps.—An informal reception was given, May 14, in the chapel of Brown Memorial Church to Dr. Mildred Jenks, who will sail this summer for Canton, China. Dr. Jenks goes out as the representative of the Women's Missionary Society of Brown Memorial Church and will be resident physician at the David Gregg Hospital for Women and Children in Canton.—Dr. Stanley Mitchell has been appointed medical superintendent of the Franklin Square Hospital, succeeding Dr. W. Todd Furnehough, resigned to become chief surgeon of the Dupont Mills, Parrin, N. J.

MASSACHUSETTS

Free School on Public Health.—A free school on public health with sessions, May 28, 29, 30 and 31, has been arranged for by the committee on public health of the Massachusetts Medical Society in cooperation with the state and federal public health organizations. Among the subjects for discussion are water and sewage, public health laboratory, public health reports, specific diseases, industrial hygiene, child welfare and public health administration. On the evening of May 30 in Boston, Dr. W. W. Peters will lecture on "Public Health Education in China." Some of the best known men in public health work will address the various sessions.

Personal.—Dr. Richard C. Cabot, Boston, now in France as a member of Base Hospital Unit No. 6, has been made a full professor in Harvard University.—Dr. Edwin A. Locke

has been appointed assistant professor of medicine in Harvard Medical School.—Dr. Algernon Coolidge has been appointed acting dean of the Harvard Graduate School of Medicine, succeeding Dr. Alexander S. Begg, Boston, now on duty with the U. S. Army.—Drs. Kallman M. Davidson, Albert Ehrenfried and Harry Linenthal, Boston, and Louis M. Friedman, New York, have been appointed the executive committee of the reorganized medical board of the Beth Israel Hospital, Boston.—Dr. Louis Lazarus, Worcester, was seriously injured in an automobile accident, April 21.

Secretaries for Physicians.—Following an inquiry among physicians as to the desirability of establishing a course for the special training of secretaries for physicians, Simmons College adopted a course of training for that purpose and in June the first class will complete the course. The course includes technical secretarial work, such as stenography, typewriting, filing, cataloguing and bookkeeping, and in addition, familiarity with the medical vocabulary, some language training and abstracting, courses in general chemistry, bacteriology and applied routine medical laboratory work. It is believed that these secretarial technicians will prove useful to hospitals, clinics and specialists who may have certain routine laboratory work, such as urine and blood analysis, culturing, and microscopic examination of pathologic specimens.

Meeting of Examining Physicians.—At the meeting of the Massachusetts Society of Examining Physicians at Lynn, April 26, the society voted to oppose the bill in the state senate which proposes to give the reeducation and rehabilitation of injured industrial workers to the state board of education. It was the sense of the society that such power should be conferred on the industrial accident board. The society elected the following officers: president, Dr. Frank E. Schubmehl, Lynn; vice presidents, Drs. Herbert H. Howard, Boston; Charles S. Benson, Haverhill; John E. McCartin, Boston; secretary, Dr. James H. Stevens; treasurer, Dr. John S. Phelps, and councilors, Drs. Frederick J. Cotton, Boston; Jonathan F. Edgerly, Lincoln; William P. Coues, Boston; Francis J. Hanley, Whitman, and Robert C. Gwin, Boston.

MINNESOTA

Ohage Resigns.—Dr. Justus Ohage, health officer of St. Paul for twelve years, resigned, April 19, after a hearing in the mayor's office, in which he refuted charges of disloyalty that had been brought against him.

MISSOURI

Conference on Military Medicine.—Under the auspices of the St. Louis Medical Society, the medical officers at Jefferson Barracks and the deans of the Washington and St. Louis Universities, a clinical conference on military medicine will be held in St. Louis, June 5, 6 and 7, with headquarters at the building of the St. Louis Medical Society, 3525 Pine Street. On the first day, the members will be escorted to Jefferson Barracks, where the surgeons will arrange for a general inspection of the post, drills, demonstrations at the examination barracks, and lectures on sanitation and infectious diseases. On the following days, clinical programs and lectures have been arranged at the Washington and St. Louis universities and at various city institutions. The object of the meeting is the immediate enrolment of physicians in the Medical Reserve Corps of the Army. Those expecting to attend are requested, at the earliest possible date, to notify the president of the St. Louis Medical Society, 3523 Pine Street, St. Louis.

NEW YORK

For Protection of Watershed.—Governor Whitman has signed the bill passed in the legislature for the protection of the Croton watershed from which the water supply of New York City is derived. This bill aims to prevent pollution of the watershed by state institutions which are to be established in the water collecting area. The sites for the New York State Training School for Boys and the Mohansic State Hospital, Yorktown, will be located elsewhere.

New York City

New Traffic Rule for Physicians.—The first of several new traffic rules which Deputy Commissioner John A. Harris is planning to put into effect this month became operative, May 15. This ordinance authorizes the issuing of special cards to physicians, which will permit their motor cars to stand in crowded streets when on urgent medical calls.

Personal.—Dr. Antoine Depage has embarked for this country and expects to arrive at an American port within a few days.—Dr. Alexis Carrel of the Rockefeller Institute has been promoted by the French government to the rank of commander of the legion of honor.—Dr. Benjamin T. Terry has resigned his position as director of the Brooklyn Laboratories of Pathology.

Army Takes Sea-View Hospital.—An agreement was reached, March 15, between Health Commissioner Royal S. Copeland, Mayor Hylan and Lieut.-Cols. Hornsby and Kramer, under which the army will take over Sea-View Hospital, which has been conducted as a home for tuberculosis patients. The government will take possession as soon as the patients can be removed to the city's hospital at Otisville, N. Y., where the Army has agreed to erect additional buildings for the city.

Commissioner Copeland Confers with Federal Health Officials—A conference was held, May 15, between Dr. Royal S. Copeland, the new health commissioner of New York, and Surg.-Gen. Rupert Blue of the Public Health Service, Acting Surg.-Gen. Col. James W. Furbush of the Army, and Surg.-Gen. William C. Braisted of the Navy, as a result of which the health department has announced its intention of giving its full cooperation to the national health service. The federal authorities have been assured that there will be no lowering of the standards of health conservation in New York. It was distinctly stated by Dr. Copeland that the policy of disorganization, retrenchment and the substitution of talent of lesser efficiency would not be permitted to continue.—Commissioner Copeland has announced the appointment of Dr. S. Dana Hubbard of the department of epidemiology, to take charge of the bureau of public health education temporarily, after May 15, when Dr. Charles F. Bolduan's resignation goes into effect. He has also appointed a committee consisting of Dr. Louis I. Harris, head of the bureau of preventable diseases; Dr. Alonzo Blauvelt, assistant sanitary superintendent, and Dr. B. Franklin Knause, Brooklyn, deputy health commissioner, to investigate and report on the handling of industrial sanitation in the health department itself.

NORTH CAROLINA

Personal.—Dr. Albert Houck, for ten years assistant physician to the Morganton State Hospital, has resigned. The cause of his resignation is said to be his pro-German sympathies and utterances.

Hospital has New Home.—The Presbyterian Hospital, Charlotte, has moved from its old buildings in the business portion of the city to its new home which is located in a 20-acre oak grove. The hospital has seventy private rooms and is thoroughly equipped.

OHIO

Training for Speech Correction.—It is announced that, during the next year, Cleveland will spend \$10,000 to install in its public school system instruction in the correction of defects in speech.

Licenses Revoked.—At a meeting held April 2, the Ohio State Medical Board revoked the licenses of Drs. Robert Austin Browne and Frank Llewellyn Bowsher, both of Akron, for extravagantly worded and dishonest newspaper advertising. May 6, for a similar reason, the board also revoked the license of Dr. Franklin Stuart Temple, formerly of Toledo. Dr. Browne had advertised "quick results" for "weak, worn-out men," Dr. Bowsher had advertised himself as "Akron's reliable specialist," and Dr. Temple was proclaiming himself as a magnetic healer and had conducted a public clinic in the opera house at Lorain. Action was taken under the law which makes it illegal for a licensed practitioner to issue advertisements intended, or having a tendency, to deceive and defraud the public.

PENNSYLVANIA

Personal.—Dr. Samuel H. Ensminger, York, who has been ill in Philadelphia with an infection of the arm, has returned convalescent.—Dr. Thomas A. Taylor, Pomeroy, who has been seriously ill, has recovered.—Dr. John A. Fell has been reappointed a member of the Doylestown Board of Health for the twenty-fifth consecutive term.—Dr. Jane R. Baker, West Chester, has been appointed a trustee of the state hospital for chronic insane, Wernersville.—Dr. George W. Neff, Masontown, has been elected president of the board of trustees of the Cottage State Hospital.—Dr. Edwin S. Dorworth, Bellefonte, recently suffered a slight cerebral hemorrhage.

Philadelphia

Obstetric Society Meeting.—The fiftieth anniversary of the Philadelphia County Obstetrical Society was celebrated, May 17. The progress of obstetrics was reviewed and the men eminent in this domain of medicine were pointed out. Photographs of the prominent pioneers of obstetrics and gynecology were shown and their achievements were outlined by various speakers. Addresses were made by Drs. Barton Cooke Hirst, president of the society; Edward E. Montgomery, C. E. Githens, George M. Boyd, Richard C. Norris, B. F. Bear and Edward A. Schumann. Among the guests at the anniversary meeting were several members of the American Gynecological Society, which held its annual meeting also in this city, May 16, 17 and 18, inclusive. Dr. George W. Kosmak, New York, editor of the *American Journal of Obstetrics*, reviewed in abstract the early publications of the obstetric society as published in the *Journal*.

CANADA

Decoration for Medical Officer.—Col. Harvey G. Young, St. Mary's, was recently granted the D. S. O. for establishing an advanced post under a heavy barrage fire and successfully evacuating more than 400 wounded men.

Ten Gallons of Liquor Allowed to Physicians.—By a recent amendment to the Ontario temperance act, it is provided that a physician may keep 10 gallons of liquor in his private house, office or dispensary, despite anything to the contrary which may appear in the act.

New Officers.—At the annual meeting of the Niagara District Medical Association held in Niagara Falls, April 29, Dr. William K. Colbeck, Welland, Ont., was elected president; Dr. Charles E. Duggan, St. Davids, Ont., vice president, and Dr. Harry D. Cowper, Welland, Ont., secretary-treasurer.

Health Bulletin Withdrawn.—The Toronto Academy of Medicine, at its last meeting adopted a resolution expressing regret at the withdrawal of the *Health Bulletin*, issued by the department of health of the city of Toronto and expressing its appreciation of the value of the *Bulletin* to the citizens of Toronto.

Medical Officers for Military Districts.—The medical orders for the Toronto military district have been compiled and approved by Col. H. C. Bickford. The orders furnish complete instruction to the military surgeons and explicit rules relative to soldiers sick while on pass or furlough. Lieut.-Col. Edward S. Ryerson, Toronto, is director of military service; Lieut.-Col. Charles Carter, Hamilton, Ont., is in command of the hospitals; Major G. S. Fowlkes is in charge of the administration of medical service; Capt. S. J. H. Maywood is in charge of medical practice, and Lieut.-Col. John W. S. McCullough is in charge of sanitary work.

Hospital News.—A hospital is to be built in Halifax, N. S., for the American Red Cross. It will be for soldiers and sailors of the United States who may become ill in that port or who may be brought there needing treatment. It will be situated near the Nova Scotia Hospital.—The St. Thomas (Ontario) Medical Association have asked the board of governors of the Amasa Wood Hospital of that city to take the institution out of the hands of the city council, place it in trust, and have its capacity increased.—The board of governors of Notre Dame Hospital, Montreal, intend to build a million-dollar hospital. Construction will be begun before the end of the war.—The Montreal Presbyterian College and the David Morrice Convocation Hall in connection therewith have been handed over to the military for the purposes of a hospital for returned soldiers.

Personal.—Major Kenneth McCormack, C. A. M. C., has had conferred on him the D. S. O.—Capt. Dimrock Stanley Cassidy, R. A. M. C., Winnipeg, is the recipient of the Military Cross.—Lieut.-Col. Robert M. Simpson, Winnipeg, assistant director of medicals, after returning to France, has been gazetted colonel.—Major John E. Coulter, M.D., has been made president of a traveling medical board in England.—Capt. Freer Richardson, of the Canadian Medical Service, London, England, who was in Bagdad in charge of the army hospital, has been transferred to Mesopotamia.—Capt. D. M. Warren resigned recently from the R. A. M. C. and has been granted a commission in the C. A. M. C., and appointed to the King's Red Cross Hospital, Bushey Park, England.—Capt. Donald G. McKay, C. A. M. C., Bradford, Ont., who was gassed while serving in the trenches, has returned to Canada.—Capt. Cleveland Roy Wilson, Toronto, on the staff of the hospital for sick children, is on his way to the front.—Majors J. Cameron Wilson, London, Ont.; G. C.

alle and John G. Hunt, Fort William, are returning to Canada. Major Hunt has served with the Russian army in Russia and Roumania.—Surg.-Gen. Henry M. Featherstone, of the Anzacs, is visiting in Ontario, on a tour of the military hospitals, to gain information on the best methods of handling the returned soldier problem so as to apply them in Australia.

GENERAL

Climatologists Meet.—The thirty-fifth annual meeting of the American Climatological and Clinical Association will be held in Boston, June 5 and 6, under the presidency of Capt. Elliott, C. A. M. C., Toronto, Ont. The session of the association will be held at the Boston Medical Library, the evening of June 5.

Coming Meetings.—The American Public Health Association will hold its next meeting in Chicago, from October 14 to 17, inclusive. The principal topic of the meeting will be "The Health of the Civil Population in War Time."—The National Tuberculosis Association, under its new name, will meet in Boston, June 6, 7 and 8. The headquarters will be at the Copley-Plaza Hotel.

More Nurses for the Navy.—The Committee on Public Information, division on woman's war work, issues the following: The Nursing Corps of the United States Navy is cooperating with the Red Cross in its drive to increase the enrollment of nurses. Secretary Daniels appeals to the women of the country to aid this branch of national defense by offering their services and taking advantage of the facilities for training offered during the summer by the Vassar Training School for Nurses.

Teaching Fellowships Available.—It is announced that a number of teaching fellowships in pediatrics are open to students in the University of Minnesota Graduate School, each with a stipend of \$500 for the first year is attached, the amount being increased later. Men above the draft age will not be taken, and a splendid opportunity is afforded to men who wish to make a specialty of pediatrics. Further information about these fellowships may be obtained from Dr. Julius P. Edgwick, head of the department of pediatrics, University of Minnesota.

Conference of Public Health Officials to Be Held in Washington.—The annual joint conference of the United States Public Health Service with state and territorial health officers, will be held in Washington, June 3 and 4. The sanitation of extracantonment areas will be one of the chief subjects on the program. Reports will be made as to the success of the cooperative arrangement developed during the past year for preventing the interchange of disease between civil and military populations. Among the subjects to be discussed are the relation to public health of industrial hygiene and sanitation, especially in war industries; the care of the health of tuberculous soldiers on their return to civil life; the use of records of drafted men for public health purposes; effects on the public health of the forthcoming shortage in the medical profession. Among the subjects not so closely related to the war are: the securing of better morbidity reports, and the question of pure water supplies for railroads. There will be reports of standing committees with regard to many of the subjects outlined above and in regard to the sanitation of public conveyances, rural sanitation, and increasing the efficiency of the conferences. The sessions will constitute the sixteenth annual conference of state and territorial health authorities with the United States Public Health Service.

FOREIGN

Asylum for Orphans of Physicians in Spain.—About a year ago the authorities in Spain decreed the foundation of an orphan asylum for orphans of physicians. The plan included the compulsory organization of the profession throughout the country into district *colegios medicos*, and also the use of a stamp to be affixed to all medical certificates, death notices and similar papers to be made out by physicians. The expense of the stamps is to be borne by the patient or his family, except in the case of paupers, for whom special provisions are made. The orphan asylum is to be known officially as the Colegio de huerfanos de la clase medica, or the Colegio del Principe de Asturias. The building for the purpose is already completed.

Physicians in the Spanish Parliament.—The *Siglo Medico* expresses regret that so few physicians seek to be nominated to the lower house. With a little effort, the profession could have a strong representation in the Chamber of Deputies,

and could influence public health legislation. In the senate, the profession is well represented as there are a number of physicians who are life members, and the ex-ministers are ex-officio members, while the universities are entitled to elect a representative to the senate, and also the Real Academia de Medicina. The latter has recently selected Dr. L. O. Morejon for this position, and the Universidad Central has elected Dr. A. Espina, one of the editors of the *Revista de Medicina y Cir. Practicas*.

CORRECTION

Chicago News.—Last week, it was stated that Dr. Haim I. Davis had been appointed assistant physician of the county psychopathic and detention hospital. This should have been attending physician.

LONDON LETTER

LONDON, April 30, 1918.

Saving the Wounded in the Retreat

During the German advance in the present offensive, the evacuation of the dressing and clearing stations was a difficult task. They were situated as far forward as Ham, Cagny and Noyon in the Fifth Army area, and at Tincourt, Ytres, Grevillers, and Achiet-le-Grand in the Third Army area. That at Ham fell back to Villers-Carbonnel, but was able to stay there only one day, for already Villers-Carbonnel was under shell fire, and it was obliged to take to the road again to Amiens, and thence again to fall farther back. The hospitals at Cagny and Noyon, owing to the interruption of the railway and roads, could not fall back in the army area, and had to go southward into French territory to the region of Compiègne. By the evening of the first day the hospitals at Tincourt and Ytres were on the move. That at Grevillers was evacuated on the second day. At Achiet-le-Grand, where two hospitals were located on the night of the 21st, shells began falling, and in one night eight orderlies were killed and the operating theater was destroyed. The hospitals fell back to Puchevillers, only to be bombed there that night. By the second day, therefore, all the clearing stations were back, or moving, to the second line positions, namely, beside those in the French area, at Roye, Maricourt, Edgehill (near Dernancourt) and Aveluy. None of these places, however, afforded more than a temporary resting place, and again journeys had to be resumed to a series of positions farther back. Every patient from every station was got away. The narrowest escape from losing patients was at Roye, where the hospital stayed on till March 26, and then had to go in a hurry, leaving seventy patients behind, with an officer and twelve orderlies to look after them. Some motor ambulances were met, and urged to go back and make a final effort to get the patients off. They did so, and as the last ambulance left with the last batch of patients it was fired on by the advancing Germans with their rifles. The method of evacuation was, as far as time permitted, extremely orderly and thorough, so that as little as possible was left to the enemy. All stations had nursing sisters on their staffs, and one sister was killed and one wounded. The regular procedure was, however, for the nurses to be moved first on an ambulance or lorry. Then every patient who could walk had to take the road on foot. The severely wounded were loaded on ambulances, and the staff then turned to the work of destruction or salvage before following. The huts in most cases were destroyed, the tents either taken away or burned. All medical stores and appliances, roentgen-ray apparatus, etc., were saved; only some heavy things, such as sterilizing plants, being impossible to move, as well as iron beds and in some cases bedding were left. All surgical instruments were, it is believed, saved, the medical officers in several instances having to put them on wheeled stretchers and trundle them along the roads at night. Some were so worn out with the ceaseless care of wounded and marching that they swayed about the road like drunken men. A clearing station is practically a hospital with from 1,000 to 1,500 beds, and therefore impossible to remove in a few hours; but an organization has been perfected by which a portion constituting a complete unit of 200 beds, with patients, staff and appliances, can be moved immediately on a very small number of lorries. Ahead of the general exodus went this selected portion, which was established and already at work on a new site before the later detachments arrived. So there was a minimum disarrangement in the care of the wounded, and at the end, when all the hospitals finally reached the rearmost positions, the wounded appeared not to have suffered at all, but would have been regarded as good cases, measured by the standard of ordinary batches as they come from the battlefield.

The Treatment of Shell Shock

The large number of men discharged from the army because of shell shock presents a new problem. They have been treated in a long series of military hospitals, where every effort has failed, and finally they have been sent out into the world physically sound but mentally broken down, incapable of work and unfit even to go home to their families. Like many other new problems presented by the war, experience and energy have solved this one. Special hospitals have been established for the treatment of such men with excellent results. The patient is first put to bed in a room alone and the physician brings mental influence to bear on him, for drugs are of little use. He is encouraged to regain his lost will power. The next step is to put him in a room with suitable companions and rouse his interest in things outside himself. At first he is very unsociable because he has lost self confidence; but sooner or later he begins to mix with his fellows and then plays billiards, cards, or other games. In the gymnasium, systematic exercises are then performed under an instructor. Various forms of work, of which carpentry and bootmaking are the most popular, are next undertaken. At first the patients work only an hour in the day, then two, and so on until six hours are attained. Other trades taught are engineering, electric light work, motor construction, and intensive gardening. Two thirds of the patients return to their former work, and one fourth are made useful workers in some other line. Thus complete recovery takes place in eleven out of twelve cases.

Prosecution for Quackery Under the Venereal Diseases Act

For the first time in England, unqualified persons have been prosecuted for quackery. Until the passage recently of the act for the prevention and treatment of venereal diseases, any quack or nostrum vender was at liberty to advertise his claims to treat any disease with impunity. But when the government decided to go to the expense of providing free treatment for venereal diseases, it also decided not to tolerate the competition of quacks, and made it illegal for unqualified persons to profess to treat them, though they still have full play as regards other diseases. James Walker, Harry Key and Fred Waite were convicted before two justices for advertising in a public urinal to treat venereal diseases. A handbill to this effect in the name of the "Curtis Medical Laboratory" of Hill Street, Birmingham, was found affixed to the wall. Waite, who described himself as manager of the company, had his attention drawn to the bill by a police officer. He said that "those things were in the hands of the advertising agents and they had it in their power to carry everything out"; but he declined to give their names. The defendants were convicted, and fines of \$250 were imposed. An appeal against the conviction was made and the case came before three judges. The lawyers for the defense contended that there was no evidence that any of the three had committed the offense. The appeal was dismissed.

A Sexual Offenses Bill

Lord Beauchamp has introduced into the House of Lords a sexual offenses bill which makes it an offense punishable by two years' imprisonment for any person suffering from venereal disease in a communicable form to have, to solicit or to invite intercourse with another person, or wilfully to communicate such disease to another person, provided that no one shall be convicted who proves reasonable grounds for believing that he or she was free from communicable disease at the time. To ascertain whether any person, convicted of any offense, which under this clause would be caused or aggravated by the existence of communicable venereal disease, is in fact so suffering, the court may order the offender to submit to medical examination. If the offender is a female she can elect to be examined by a woman physician. False accusations are punishable by heavy fines or imprisonment. Clause 2 forbids prostitutes and night walkers to loiter in thoroughfares for prostitution or solicitation. Clause 3 stiffens the penalties against brothel keepers and the like. Clause 4 imposes a fine for allowing premises used for public entertainment to be the habitual resort, for whatever purpose, of reputed prostitutes. Another clause forbids the display or transmission of any picture or printed or written matter of an indecent or obscene nature, including any advertisement which relates to venereal disease, nervous debility, or other complaint arising out of or relating to sexual intercourse, or which suggests directly or indirectly, either the taking of anything for the purpose of procuring abortion or the use of any premises for an immoral purpose.

PARIS LETTER

PARIS, April 18, 1918.

Special Commission for Surveillance of Outcome of Nervous and Mental Disease in Soldiers

Conforming to the plan adopted December, 1917, at the reunion of the chiefs of the centers of neurology and psychiatry and by the Société de neurologie, the undersecretary of state for the Service de Santé militaire has decided on the creation of a special commission for supervision of the results of treatment of nervous and mental disease in soldiers. This commission is charged with the technical control of the neurology and psychiatry centers, and also the solution of medicolegal questions in debatable and rebellious neurologic or psychiatric cases (convalescence, temporary or permanent invaliding, military sanctions, etc.). The committee is called to function principally for cases treated in the special centers for functional reeducation and exceptionally for other cases which will be submitted by the undersecretary of state for the Service de Santé militaire. As a rule, the commission will examine on the spot the cases referred to them. The commission is composed of Drs. Achille Souques, médecin des hôpitaux de Paris, Ernest Dupré, professeur agrégé à la Faculté de médecine de Paris, et médecin des hôpitaux, Henri Claude, professeur agrégé à la Faculté de médecine de Paris et médecin des hôpitaux, and Dr. Froment.

Assignment to Their Home Cities of Physicians in Army Service

As a general rule, mobilized physicians should not be assigned to their home cities. This is merely a matter of justice; it would be unjust if these doctors in military service were stationed in their home town and allowed to continue with their civil practice. This would be greatly to the disadvantage of colleagues mobilized elsewhere. An exception to this rule was, however, made recently in favor of the doctors of the classes of 1887 and 1888 (i. e., those 50 and 51 years of age). However, inasmuch as this privilege has given rise to abuses, the undersecretary of state for the Service de Santé militaire has decided that in order to avoid future abuses: 1. No doctor is to come back to his own city, unless there is a vacancy in his grade. 2. Each assignment shall involve the departure of one physician from the place; no service shall be created, no service shall be divided for the purpose of creating a new post, except when new necessity arises for doing so. 3. Each doctor designated for the civil population of his home town shall be given an unlimited furlough, without pay, unless at the same time he should happen to be in charge of a sanitary formation service or of a *corps de troupe*.

Remuneration for Interns

In conformity with a report made by M. Henri Rousselle, member of the city council, the municipal council of Paris has decided that beginning with January, 1918, and ending with the war, the pay of hospital interns and pharmacists shall be increased by 1,000 francs (\$200).

Prize Awarded by the Paris Faculty of Medicine

The council of the Faculté de médecine has decided to award the Chateauvillard prize for 1918 to Dr. E. Velter, the author of a work on war surgery, "Penetrating Wounds of the Head by War Projectiles." Dr. Velter is a former intern of the hospitals of Paris, chief of the laboratory of clinical ophthalmology of the Faculty. This article had already received the Godard prize for 1917 of the Academy of Medicine.

Evening Consultations for Venereal Disease

The municipal council of Paris has decided to institute at l'hôpital Saint Louis a service for evening consultations for venereal diseases. A sum of 20,730 francs has been appropriated for the installation and maintenance of this service for 1918.

Thermometer for the Blind

Many kinds of apparatus may be had which enable the blind to do with their fingers what those who can see do with their eyes. To date, no "digital" thermometer, that can be read with the fingers, has been invented. A number of blind men have entered on the practice of professions in whose pursuit it is necessary to know the exact temperature record. Therefore, the Association Valentin Haüy pour le Bien des aveugles (9, rue Duroc, Paris) has offered a prize of 1,000 francs for the best apparatus which will enable the blind to read temperatures.

Deaths

Capt. Richard Lawrence Jett, M. R. C., U. S. Army, Cleveland; Jefferson Medical College, Philadelphia, 1907; aged 32; formerly a member of the Ohio State Medical Association; a member of the medical staff of the Babies Dispensary and Hospital, Cleveland, was killed in action, April 13. In 1905, he became a member of the British field hospital for Serbia, where he was commended for his bravery during the Serbian retreat, and commissioned captain in the Serbian army; later when the war broke out between America and Germany, he returned to this country and was commissioned a captain in the Medical Reserve Corps, becoming attached to the British expeditionary forces in France; later he was appointed a medical officer of the battalion and had just been cited for three decorations in connection with his work in Serbia.

Isaac Adler, New York City; University of Heidelberg, Germany, 1871; aged 68; formerly a Fellow of the American Medical Association; a member of the Association of American Physicians, the American Gastro-Enterological Association, the New York Neurologic Society, the American Association of Pathology and Bacteriology, the New York Pathologic Society, the American Society of Clinical Investigation and the New York Academy of Medicine; professor of clinical pathology at the New York Polyclinic Medical School; consulting physician to the Polyclinic, German, Beth Israel and People's hospitals, and to the Montefiore Home; died at his home, May 4.

Benjamin M. Worsham, El Paso, Texas; University of Louisville Medical Department, 1886; aged 55; a Fellow of the American Medical Association; a member of the El Paso Civil Service Commission; assistant superintendent of the State Lunatic Asylum, Austin; superintendent of the Southwestern Insane Asylum, San Antonio; superintendent and later supervisor of construction of the State Epileptic Colony, at Abilene; died suddenly at his home, May 2, from heart disease.

Capt. Henry Clement Welker, M. R. C., U. S. Army, Norristown, Pa.; University of Pennsylvania, Medical Department, Philadelphia, 1906; aged 38; formerly a Fellow of the American Medical Association; formerly director of the roentgen-ray laboratory at the Episcopal Hospital, Philadelphia; on duty with Base Hospital Unit 34, of the Episcopal Hospital; was brought home, ill, from France, to Washington, D. C., and died at the Government General Hospital, May 1.

Capt. Richard C. Hill, M. R. C., U. S. Army, Irondale, Wash.; Cincinnati College of Medicine and Surgery, Cincinnati, 1892; Medical Faculty of McGill University, Montreal, 1906; aged 50; a member of the Royal College of Surgeons, England, in 1906; a member of the Washington State Medical Association; died, April 18, following an operation.

Major Thomas Connally Cowan, C. A. M. C., London, Ont.; Trinity Medical College, 1883; University of Toronto Medical Department, 1892; formerly president of the medical board of the London mobilization center; he was active in military work and former commanding officer of the 15th Field Ambulance; died at his home, May 5.

Capt. Albert Leslie Grubb, M. R. C., U. S. Army, Berkeley Springs, W. Va.; Barnes Medical College, St. Louis, 1903; aged 37; a Fellow of the American Medical Association; died,

March 30, from acute dilatation of the heart, while aboard an Atlantic liner, en route to France, with a contingent of American soldiers.

Walter E. Reily, Fulton, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1896; aged 47; a member of the Missouri Institute of Homeopathy, American Institute of Homeopathy; a member of the American College of Surgeons; died at his home, about May 2, from pneumonia.

Henry Merryman Wilson, Baltimore; University of Maryland, Baltimore, 1850; aged 89; a Fellow of the American Medical Association; formerly served as president and secretary of the Medical and Chirurgical Faculty of Maryland; died at his home, May 8, from senile debility.

Lieut. John Raymond Wood, M. R. C., U. S. Army, Hallock, Minn.; Hahnemann Medical College and Hospital, Chicago, 1911; aged 30; a Fellow of the American Medical Association; died, February 3, from pneumonia, at the base hospital, Fort Sam Houston, Texas, where he had been on duty.

Henry Normanton Chapman, St. Louis; Missouri Medical College, St. Louis, 1893; aged 51; a Fellow of the American Medical Association; a member of the St. Louis Pediatric Society; formerly a member of the St. Louis Board of Health; died at his home, April 25, from heart disease.

Simen Menno Yutzy, Ann Arbor, Mich.; University of Michigan School of Medicine, Ann Arbor, 1891; aged 61; instructor in osteology and demonstrator of anatomy in the University of Michigan; a specialist in diseases of the ear, nose and throat; died at his home, May 3.

Gustav Adolph Heidner, West Bend, Wis.; Rush Medical College, Chicago, 1888; aged 54; a member of the State Medical Society of Wisconsin; a charter member of the Wisconsin Surgical Society; founder of the Heidner Hospital, West Bend; died at Long Beach, Calif., May 3.

Addison Fitzhugh Sanders, Cincinnati; Miami Medical College, Cincinnati, 1898; aged 52; a Fellow of the American Medical Association; a member of the American Academy of Ophthalmology and Oto-Laryngology; was instantly killed, May 5, by being struck by an automobile.

Thomas Hollingsworth Andrews, Philadelphia; Jefferson Medical College, Philadelphia, 1864; aged 74; a veteran of the Civil War; surgeon to the outpatient department of the Pennsylvania and Howard hospitals, Philadelphia; died at his home, May 8.

William O. Ensign, Rutland, Ill.; Wooster Medical College, Cleveland, 1869; aged 76; a Fellow of the American Medical Association; a member of the American Association of Railway Surgeons; a veteran of the Civil War; died at his home, May 8.

Rowland A. Postle, Ashville, Ohio; Medical College of Ohio, University of Cincinnati, 1884; aged 59; formerly a Fellow of the American Medical Association; died at the Hawkes Hospital, Columbus, Ohio, April 30, following an operation.

Charles Ogden Cartwright, Sacramento, Calif.; University of Michigan Medical School, Ann Arbor, 1889; aged 58; a member of the Medical Society of the State of California; died at the Krull Hospital, Sacramento, May 2, from paralysis.

David Gilbert Yates, New York City; New York University Medical Department, 1898; aged 47; a Fellow of the American Medical Association; a member of the American



Died in the Service
IN FRANCE

CAPT. RICHARD L. JETT, M. R. C.,
U. S. ARMY, 1886-1918



Died in the Service
IN FRANCE

LIEUT. JOHN D. ARNETT, M. R. C.,
U. S. ARMY, 1889-1918

(See The Journal, May 18, p. 1484)

Laryngological, Rhinological and Otological Society; a member of the New York Academy of Medicine; died at his home, May 9.

William Lewis Brosius, Gallatin, Mo.; Missouri Medical College, 1890; aged 64; a Fellow of the American Medical Association; a member of the American Roentgen Ray Society; formerly health officer of Daviess County; died in his office, April 18, from neuralgia of the heart.

George W. Bliss, Valley Springs, S. D.; Hamlin University, Medical Department, Minneapolis, 1895; aged 49; a Fellow of the American Medical Association; for many years president of the school board; died at the Luverne Hospital, Luverne, Minn., April 29, from pneumonia.

Major John Henry Ratz, Preston, Ont.; University of Toronto, Faculty of Medicine, 1895; aged 48; was chief of the medical staff of the board of pension commissioners; formerly with Canadian Expeditionary Forces; died at his home, February 11, from myocarditis.

William Henry Manser, Burden, Kan.; Medical College of Ohio, University of Cincinnati, 1884; Kansas City Medical College, Kansas City, Mo., 1889; aged 59; a Fellow of the American Medical Association; died in St. Mary's Hospital, Winifred, Kan., April 23.

James Rundlet May, Portsmouth, N. H.; Jefferson Medical College, Philadelphia, 1866; aged 76; a retired officer of the United States Navy; he formerly served on the pension board and the school board of Portsmouth; died at his home, April 22.

Charles William Groetsch, New Orleans; Tulane University, Medical Department, 1903; aged 41; formerly a member of the city board of health, and assistant coroner for the parish of Orleans; died in the Touro Infirmary, New Orleans, May 7.

William James Hennessy, Palmyra, N. Y.; Syracuse University, Medical College, 1881; aged 61; a Fellow of the American Medical Association; health officer of Wayne County; died in the Lyons Hospital, Lyons, N. Y., April 27.

John Alexander Vincent, Springfield, Ill.; Eclectic Medical Institute, Cincinnati, 1868; aged 87; once mayor of Springfield; formerly a member of the Illinois General Assembly and of the state board of health; died at his home, May 16.

Reuben Wilson Walters, Chagrin Falls, Ohio; Cleveland Homeopathic Hospital College, 1873; Western Reserve University, Medical Department, 1867; aged 79; a veteran of the Civil War; died at his home, April 19, from pneumonia.

Major John Hastings Bell, M. R. C., U. S. Army, Arkadelphia, Ark.; Beaumont Hospital Medical College, St. Louis, 1892; aged 47; a Fellow of the American Medical Association; died at Fort Sill, Okla., March 4, from erysipelas.

John Chase, Denver; University of Michigan, Medical Department, Ann Arbor, 1881; aged 61; professor of ophthalmology and otology in the University of Colorado School of Medicine; died at his home, May 3, from pneumonia.

George Albert Williams, Brooklyn; New York University, Medical Department, New York City, 1879; aged 63; founder and director of the Bushwick Hospital, Brooklyn; died in that institution, May 11, from pneumonia.

Archibald Campbell, Flushing, N. Y.; Columbia University, College of Physicians and Surgeons, 1871; aged 76; formerly physician at Sanford Hall, Private Asylum, Flushing, N. Y.; died at the home of his brother, May 8.

Henry Dodge Nichols, Douglas, Ariz.; Miami Medical College, Cincinnati, 1897; University of Pennsylvania, Philadelphia, 1898; aged 46; died at the Calumet Hospital, Douglas, April 17, from pneumonia.

Benjamin Prince Earle, Charleston, Ky.; Hospital College of Medical Central University, Louisville, 1889; aged 71; a member of the Indiana State Medical Association; died at his home, May 1, from pneumonia.

Arthur J. Morris, Bloomington, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 63; a member of the Illinois State Medical Society; died in the Kelso Hospital, Bloomington, April 23.

Thomas Jefferson Patterson, Visalia, Calif.; University of California Medical School, 1882; aged 62; a member of the Medical Society of the State of California; died at his home, April 23, from heart disease.

John Andrew Freeman, Crestwood, Ky.; Louisville, Ky., Medical College, 1871; aged 66; a Fellow of the American Medical Association; died at St. Joseph's Infirmary, Louisville, April 26, from uremia.

Samuel D. Allen, Oak Harbor, Ohio; Homeopathic Hospital College, Cleveland, 1885; aged 65; a member of the Ohio State Medical Society; died, March 4, from cardiovascular renal disease.

Richard Llewellyn Stoddard, Rochester, N. Y.; Albany Medical College, 1895; aged 48; formerly a Fellow of the American Medical Association; died in the Lee Hospital, Rochester, April 29.

John A. Stevens, Clinton, N. C.; Jefferson Medical College, Philadelphia, 1883; aged 58; a member of the Medical Society of the State of North Carolina; died at his home, February 12, from nephritis.

Abram S. Wilson, Bristol, Pa.; Jefferson Medical College, 1881; aged 67; a member of the Medical Society of the State of Pennsylvania; died at his home, about April 22, from cerebral hemorrhage.

William P. McNally, Bangor, Me.; McGill University, faculty of medicine, Montreal, 1897; aged 52; a Fellow of the American Medical Association; died at his home, May 1, from pneumonia.

David Rosser, North Yakima, Wash.; Miami Medical College, Cincinnati, 1875; a member of the Washington State Medical Association; died at his home, April 23, aged 71, from paralysis.

Adelbert Dalton Atwood, Brooklyn; University of Buffalo, 1869; aged 68; formerly connected with the Brooklyn Board of Health Service; died at his home, April 28, from cardiac asthma.

James Addison Meriwether, Holcombs Rock, Va.; New York University, New York City, 1882; aged 65; a member of the Medical Society of Virginia; died at his home, April 30.

Lucius A. Walton, St. Louis; Washington University, Medical School, St. Louis, 1863; aged 77; a veteran of the Civil War; died at his home, April 28, from pneumonia.

Philip Pendleton May, Trevilians, Va.; Medical College of Virginia, Richmond, 1869; aged 73; a veteran of the Civil War; died at his home, April 29, from paralysis.

Mason Elias Henry, Pine Bluff, Ark.; Vanderbilt University, Medical Department, Nashville, 1912; aged 32; died at the home of his sister, Pine Bluff, La., April 26.

Henry Montgomery, Ypsilanti, Mich.; Michigan College of Medicine and Surgery, Detroit, 1904; aged 50; died at his home, March 2, from aortic insufficiency.

Uriah R. Shaeffer, Hummelstown, Pa.; Jefferson Medical College, 1879; a member of the Medical Society of the State of Pennsylvania; died at his home, April 25.

James R. Hall, Carnesville, Ga.; Atlanta Ga., Medical College, 1892; aged 51; a member of the Medical Association of Georgia; died at his home, April 25.

Charles S. Phillips, Reading, Pa.; Medical-Chirurgical College of Philadelphia, 1895; aged 72; died at his home, April 29, from cerebral hemorrhage.

John W. Carmichael, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1886; aged 68; died at his home, May 2, from paralysis.

Thomas Alexander Brandon, Watford, Ont.; University of Toronto, Ont., faculty of medicine, 1911; aged 32; died at his home, April 27, from pneumonia.

Daniel Liberty Collom, Meadville, Pa.; Jefferson Medical College, 1876; aged 67; formerly a member of the city health board; died at his home, April 28.

Timothy Rose Grow, Lynn, Mass.; Hahnemann Medical College and Hospital, Chicago, 1877; aged 77; died at his home, April 22, from pneumonia.

William O. Bunnell, Wilkes-Barre, Pa.; Eclectic Medical Institute, Cincinnati, 1894; aged 50; died at his home, about April 20, from pneumonia.

George R. Baalith, Pittsburgh; Baltimore Medical College, 1906; aged 40; a Fellow of the American Medical Association; died at his home, March 4.

George Kent Colville, Pleasantville, Ohio; Ohio Medical University, Columbus, 1902; aged 51; died at the Grant Hospital, Columbus, April 23.

Elijah H. Gregg, Muncie, Ind.; American Eclectic Medical College, Cincinnati, 1887; aged 57; died at his home, April 26, from pneumonia.

Thomas Kennedy, Bermudian, Pa.; College of Physicians and Surgeons, Keokuk, 1874; aged 79; died at his home, April 29, from paralysis.

Lawrence Bryant Hathaway, Reinbeck, Iowa; Rush Medical College, Chicago, 1878; aged 64; died at his home, about March 17, from diabetes.

Elmore T. Applegate, Union City, Tenn.; Vanderbilt University, Nashville, 1883; died in Jonesboro, Tenn., April 19, from blood poisoning.

Arthur Joyal, Montreal, Que.; Laval University, Medical Department, 1883; aged 58; died at his home, February 6, from heart disease.

Andrew Allen Brown, Bangor, Me.; Bowdoin Medical School, Portland, Me., 1901; aged 42; died in Avondale, Ariz., about April 29.

John Paul Jackson, Norfolk, Va.; Southern Homeopathic Medical College and Hospital, Baltimore, 1895; died at his home, April 29.

Eli M. Downs, Columbus, Ohio; Starling Medical College, 1864; aged 80; died at his home, April 28, from cerebral hemorrhage.

Frederick Henry Parker, Auburn, N. Y.; New York University, Medical Department, 1881; aged 62; died at his home, recently.

David C. Fay, Ostrander, Ohio; Medical College of Ohio, University of Cincinnati, 1867; aged 74; died at his home, April 20.

John Wesley Shepard, Leoti, Kan.; Medical-Chirurgical College of Kansas City, 1904; died in a local hospital, April 25.

John A. Brown, Columbus, Miss. (license, Mississippi, years of practice); aged 80; died at the Columbus Hospital, April 25.

John Elmore Curtis, Waldron, Ind.; Kentucky School of Medicine, Louisville, 1888; died at a hospital in Indianapolis, April 28.

Simon H. Gump, Bedford, Pa.; University of Pennsylvania, Philadelphia, 1870; aged 71; died at his home, April 27.

Marriages

MAJOR GILES BURNSTON COOK, M. R. C., U. S. Army, Richmond, Va., on duty at Camp McClellan, Anniston, Ala., to Miss Olive Smith, at Washington, D. C., April 30.

LIEUT. ROBERT DOUGLAS SPENCER, M. R. C., U. S. Army, Philadelphia, to Miss Julia C. Butler of Hazelton, Pa., at Elizabeth, N. J., May 2.

HUNTER REECE MANN of Mardela Springs, Md., to Miss Constance Agnes Vandergrift of Charleston, W. Va., in Baltimore, April 28.

LIEUT. WALTER MAGRUDER LEONARD, M. R. C., U. S. Army, to Miss Ruth A. Ralston, R.N., both of Fostorio, Ohio, April 17.

LIEUT. JOHN EDWARD RUETH, M. R. C., U. S. Army, Sun Prairie, Wis., to Miss Beatrice Miars of Milwaukee, May 7.

WILLIAM KRAUSS of Memphis, Tenn., to Miss Margaret V. Curdy, formerly of Philadelphia, at Memphis, April 13.

CAPT. CLIFTON RODGERS DUDLEY, M. R. C., U. S. Army, to Miss Margaret Gleason, both of St. Louis, May 1.

BRICE WORTHINGTON GOLDBOROUGH to Miss Margaret Craig Bayly, both of Cambridge, Md., May 8.

GEORGE WASHINGTON GUERINOT to Miss Ursula M. O'Grady, both of Rochester, N. Y., April 10.

CHARLES FRANCIS KING of McKeesport, Pa., to Miss Corinn Smith of Philadelphia, May 8.

MAX TISCHLER, to Miss Helen Micholosky, both of Wilkes-Barre, Pa., April 30.

VICTORIA McLAREN MOORE to Lewis Earle Barnes, both of Chicago, May 13.

ARLEY GLENN EVERHART to Miss Emma J. Radtke, both of Chicago, May 11.

JOHN W. FAUST to Mrs. Zora Ray, both of Searcy, Ark., about April 23.

PAUL H. RUPP to Miss Clarice Engh, both of Milwaukee, April 18.

HERMAN HORN, to Miss Lillian Kanen, both of New York, April 28.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE DR. CHASE COMPANY

A Fraud Order Closes the Mails to a Nostrum Concern

For many years one Kossuth E. Hafer of Philadelphia has been defrauding the sick by selling alleged cures for paralysis, locomotor ataxia, kidney disease and numerous other conditions. Hafer conducted his business under the trade name "The Dr. Chase Company." He sold three remedies—pills—which, before the Food and Drugs Act made lying on the label irksome if not expensive, were known, respectively, as "Dr. Chase's Blood and Nerve Food," "Dr. Chase's Kidney Food" and "Dr. Chase's Liver Food." As none of these pills could by the widest stretch of imagination be called a "food,"

The Sworn Evidence Read the Proof

Every Testimonial A Sworn Statement!

Can You Ask Anything More Convincing?

What We Have Done For Others, We Can Do For You

We have given you a description of the various forms of Diseases, as we have found them in an experience of over a quarter of a century. We have also given you a description of our treatment with which we have had such success. Now that you have read what we have had to say, we want you to read what our patients say of us, believing you will agree that we may well be proud of the record we have made.

Has any Specialist, Doctor, or Medicine House ever given you such overwhelming evidence of what they have done as we are giving you in this book. These are not just ordinary medicine testimonials, they are Affidavits, Sworn Statements, The Undisputed Proof, The Sworn Evidence.

If it were not an actual fact that these people have positively been cured, do you suppose they would go before a Notary Public or Justice of the Peace and swear to it? Would you?

Locomotor Ataxia Cured
Cured and Actively Engaged in Business Fifteen Years After Being Given Up to Die by Three Specialists of New York
SWORN STATEMENT
MR. J. H. TICHURD, 210 Forester Avenue, PHILADELPHIA

Gained Forty Pounds
SWORN STATEMENT
MR. W. B. DRAGON, 100 Chestnut Street, JOHNSTOWN, PA.
W. B. Dragon, before being cured, was a weak, nervous, and suffering from female weakness, and in fact, was a complete invalid. I wish I had a photo of my former self.

Female Weakness Cured
SWORN STATEMENT
MARY E. TREADWAY, WHISMAN, WOLFE COUNTY, KY.
I suffered from female weakness, and in fact, was a complete invalid. I wish I had a photo of my former self.

Cured of Facial Paralysis
After Doctor's Treatment Failed, Says Dr. Chase's Blood and Nerve Tablets Are Worth Their Weight in Gold
SWORN STATEMENT
MRS. MARY M. MILLER, R. F. D. 1, EARLYVILLE, ALABAMA

Locomotor Ataxia Cured
After Doctors at Hospital Discharge Him, Saying He Would Never Get Well
SWORN STATEMENT
MR. FRANK DELONG, West Water Street, CINCINNATI, OHIO
At first my legs were weak, numb and dead, and my hands and feet were numb and cold. I felt as though I had lead in my shoes. I could not shut my eyes, and I felt as though I had lead in my eyes. I could not see.

Nervous Break-Down Cured
More Than Thankful For Her Recovery
SWORN STATEMENT
WILLIAM HEINEMAYER, 210 Walnut Street, YORK, PA.
My wife was cured of a nervous break-down.

Paralysis Conquered at Last
By Dr. Chase's Special Strength Tablets. Doctors Puzzled. Professors Amazed at Recovery of our Patient.
Paralysis is entirely understood to mean a weakness in the muscles of the body, and is usually confined to the legs, although the arms are often affected.

Locomotor Ataxia
Many Cases Given Up to Die, Found to be Benefitted With Dr. Chase's Special Strength Tablets.
Locomotor Ataxia is considered the most terrible disease, kindred to Paralysis. It is usually confined to the legs, although the arms are often affected.

Some pages and parts of pages (reduced) from one of the Hafer booklets. Note the claims that the pills would cure paralysis, locomotor ataxia, etc.

the names were changed, after the "Pure Food Law" went into effect, from "food" to "tablets." In those halcyon days for nostrum makers when everything "went" and the advertising pages of the majority of publications were open to any advertiser who could pay for space, the Chase concern advertised in some magazines of comparative respectability. During the past few years, however, the advertisements seem to have been largely confined to those cheap weeklies and monthlies whose advertising income is mainly derived from the less reputable products of the advertising world.

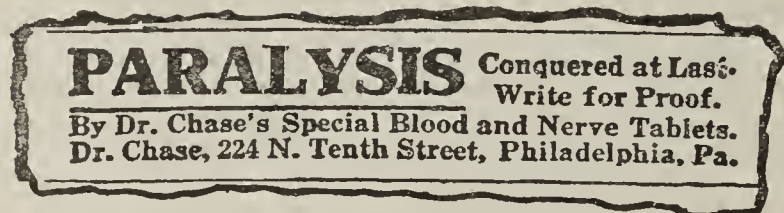
The federal authorities have investigated Hafer's business, and, very naturally, concluded that he has been conducting a scheme for obtaining money by means of false and fraudulent pretenses, representations and promises. Henceforth the mails are closed to the Dr. Chase Company. In his case with the government Hafer had for his attorney H. B. Thompson, the counsel for the "patent medicine" interests, the "Proprietary Association." It seems fitting that the legal light of the Proprietary Association should have come to the defense of the Dr. Chase Company, which, by the way, seems to have been a member of that organization. THE JOURNAL has, before this, called attention

to the fact that the membership of the Proprietary Association is secret and that, while it periodically protests that it and its members are *sans peur et sans reproche*, it is careful to prevent a general list of its membership becoming known.

Judge W. H. Lamar, the Solicitor of the Post Office Department, in his memorandum for the Postmaster-General recommending the issuance of a fraud-order, quotes quite fully from the claims made by Hafer in his advertising matter. In brief, it may be said that these claims were to the effect that the Dr. Chase Company had "spent years of time and thousands of dollars in perfecting the prescriptions" of the pills; that the pills had cured many cases of paralysis "of long standing, many of whom were pronounced incurable, given up to die and past the aid of human skill"; that "the Blood and Nerve Tablets" would "build up the blood and nerves faster than any other remedy"; that the "Special Kidney Tablets" would "give strength to the spine . . . stop all wasting of albumen through the urine, neutralize the uric acid, and relieve all rheumatic and sciatic pains"; that the "Liver Tablets" would "put the liver and stomach into such a perfect condition" that it would be impossible for those that took them to have sallow skin, foul breath, coated tongue, sour stomach, drowsiness after meals, constipation, etc.

In 1916 a Post Office Inspector interviewed Hafer and following this interview Hafer eliminated the word "paralysis" from the booklets he sent out (although he continued using it in his magazine advertisements) and substituted the phrase, "loss of power and strength." As Judge Lamar pointed out in his memorandum:

"A number of similar changes have been made with respect to other diseases; the paragraph relating to 'Gravel-Stone in the Bladder' has been omitted and promises of relief, while



A typical advertisement. The one reproduced—slightly enlarged—appeared in the *Gentlewoman*, April, 1917. In 1916 Hafer had "hedged" on the use of the word "paralysis" in his advertising booklets—this following an interview with a post-office inspector. Violating the spirit of the law while making a pretense of keeping the letter is typical of the fraudulent "patent medicine" business.

conveying the same sense, have been made less positive on their face. These changes clearly show the intent of Mr. Hafer to conduct this fraudulent business while evading, if possible, the consequences of his infraction of the law. In his attempt to do this he has not hesitated to change the language of the affidavits reprinted by him in such a manner as to substitute for the names and descriptions of diseases therein other names and descriptions which he thought would pass muster."

The judge then states that the tablets sold by Hafer were composed of drugs well known to the medical profession and that the evidence demonstrated that these drugs, neither alone nor in combination, had the powers with which Hafer had endowed them. Continuing, the memorandum says:

"The holding forth of these tablets as curative, or even allevial, in all the conditions which may give rise to the symptoms enumerated, regardless of the condition of the patient or the cause of the trouble, is not only unjustified but flagrantly fraudulent. Some of the diseases from which these symptoms arise are incurable, some of them are only amenable to surgery, and many of them make no response whatever to drug treatment. According to the testimony adduced at the hearing in the great majority of these diseases these tablets are of no value whatever.

"Hafer, as might be inferred from the character of his representations, is entirely uneducated along medical lines.

"The business originated in his going to a chemical concern [The Wm. R. Warner Company, it is said.—Ed.] and having a tonic tablet made up in the business of selling which he intended to engage. He testified that at that time he had

no intention of representing these tablets as of value in the various diseases which he included later in his advertising matter. This was done, according to him after persons to whom he had sold these tablets told him, that they had been cured of these various diseases. With no other basis for these claims, and little, if any, knowledge of the therapeutic value of those drugs, he proceeded to build up his claims without recourse to science or to experts along medical lines."

The memorandum further points out that if Hafer had been desirous of conducting his business honestly he would have sought knowledge regarding the value of these tablets from reputable sources of information, for he was put on notice several times as to the questionable character of his representations. He had, in fact, been cited before the Bureau of Chemistry for misbranding his stuff and modified his labels, which came under the purview of the federal Food and Drugs Act, but, as Judge Lamar points out, "at the same time he continued the same fraudulent representations to which his attention had been invited, in his advertising matter."

In 1917 Hafer was indicted for misbranding his preparations, pleaded guilty and was fined \$250. "Under the circumstances," says the memorandum, "and in view of the evidence, I am constrained to hold that it was always his intention to go as far as he could in his claims for these tablets without regard to their actual value in the treatment of disease."

In view of all the findings, it was recommended that the Postmaster-General should issue a fraud order against the Dr. Chase Company. The mails were closed to the company, Jan. 17, 1918.

ADVERTISING PRINCIPLES—LAY AND MEDICAL

THE JOURNAL has received two letters, one from a physician who had written to the New York *Tribune* protesting against an advertisement of "Aspirin (Bayer)" that appeared in the rotogravure supplement of a Sunday edition and the other the New York *Tribune's* answer to the protest. The two letters make an editorial in themselves. Here is the letter of the physician—Dr. Edwin H. Shepard of Syracuse, N. Y.—which was addressed to the editor of THE JOURNAL:

"When a great daily newspaper takes a stand for honest advertising it seems worthy that acknowledgement should be made. On April 14 the illustrated Sunday supplement of the New York *Tribune*, together with many of the other papers of the country, published a duplicate of the enclosed advertisement of 'Aspirin.' Your own instructive editorial on 'Acetylsalicylic Acid, or What's in a Name?' had appeared in the copy of THE JOURNAL of the day preceding.

"Believing in the sincerity of the *Tribune* in its effort for honest advertising, I sent them a copy of your editorial together with the page of advertisement, also calling attention to the statements in the advertisement which seemed questionable. Among the questionable matters in the advertisement were the statements 'The one genuine Aspirin,' 'No other is genuine,' 'That which is genuine possesses qualities of excellence never found in imitations,' 'For your protection . . . every package and tablet is marked with the Bayer cross,' 'Your guarantee of purity,' and 'Refuse substitutes as they may prove ineffective and harmful.'

"The *Tribune* was requested to investigate into the standing of the Bayer company and its product. A few days later the enclosed letter was received from the paper's Bureau of Investigations."

And here is the New York *Tribune's* answer, signed by R. R. Baer, assistant director of that paper's Bureau of Investigations:

"We have your letter of April 14th, which was acknowledged on the 22nd, in re Aspirin. For your information: Our rotogravure supplement is printed a number of days in advance of the Sunday paper. When these copies which have already been printed are used, no further Aspirin copy will appear. This means a loss of some four pages."

How many of the numerous medical journals that are still carrying the "Aspirin (Bayer)" advertising would make such a financial sacrifice for mere principle?

Retain the Efficient Health Officer.—A tactful, energetic health officer can control the death rate in his locality provided he is given a few years to do it; but to expect great results in the time he ordinarily holds office is beyond power. —Public Health (Mich.).

Correspondence

BÁRÁNY CHAIR TESTS AND FLYING ABILITY

To the Editor:—In the article on "Bárány Chair Tests and Flying Ability" (THE JOURNAL, April 13, 1918, p. 1064), Parsons and Segar conclude with the statement that "the evidence, therefore, seems to point to an absence of correlation between equilibrium tests, as established in the Bárány chair, and actual flying ability."

While it is not clear just what impelled the writers to attempt "the correlation study of one hundred naval aviators," the article clearly implies to the medical reader unfamiliar with the principles underlying the tests of the internal ear that the Bárány test was intended to foretell the flying ability of the applicant tested. Just so far as this impression is conveyed by this article, the article is ill advised and untimely. It would naturally be as illogical and unwarranted to deduce that the aviator has no need of normal vision and eye muscle balance, on discovering that certain men who showed inaptitude at learning to fly possessed normal vision and eye muscle balance, as to make similar deduction concerning normal vestibular sense. The authors, in interpreting the examination of the vestibular apparatus as an attempt to determine the applicant's future proficiency under flying tutelage, have first formulated a hypothesis unheard of by the otologist, and then proceeded to prove it completely erroneous. Readers unfamiliar with the fundamental truths of the physiology of the internal ear and with the various methods of testing the vestibular apparatus are impelled to question the truth of teachings and tests in this comparatively new field of scientific medicine, and there is injected into their minds, by so raising doubts as to the soundness of these tests, a disturbing and disturbing element, quite unmerited by the scientific medical men who read to amplify their limited acquaintance with this apparently abstruse subject.

It is not impossible that this correlation study was intended as a psychologic research, in which case it would have been wise to make clear that such was the intention, and to publish through the medium of a journal, the readers of which are psychologists and hence capable of recognizing psychologic research and placing proper construction on it.

Interest in the study of the vestibular function on the part of those as yet unfamiliar with it is particularly timely in this day of intensive development of great military air service. The general principles of labyrinthology are simple; the anatomic and physiologic details underlying them are somewhat complex; and a clear conception of the meanings of the tests is hardly to be expected to crystallize out of a few weeks or months of its study.

The writers introduce the subject of their article by saying, "Since the Bárány chair has been universally used by both the Army and the Navy in the selection of candidates for aviators," but they fail to state how long it is "since this chair has been used" in their service. This question cannot be raised in the minds of those familiar with vestibular physiology by the second and third sentences in the article: "We knew, for instance, that trapeze performers and Russian dancers have very little, if any, nystagmus after whirling, and that their proficiency in their performances depends on their sense of balance. We knew that men who have a so-called 'normal' nystagmus time before flying often lose all or a great part of it after numerous flights." These two statements have no foundation in truth. A scientific man who is familiar with this subject would need no actual tests to convince him of the unsoundness of such statements. However, tests have been made in the past of a large variety of whirling artists, in vaudeville, circus and dancing work, and in every case their responses to the standard stimulation of the vestibular apparatus were normal.

Epidemics of mumps among the flying schools have furnished opportunities of reexamining aviation cadets who had been tested previously, on the occasion of their admission to training, and had been found to have normal reactions

to the vestibular stimulation. In some of these mumps cases both the cochlear and the vestibular functions were found to have been impaired seriously by the disease; in others, only the vestibular portion of the internal ear was found to have been affected. Special medical examinations have also furnished instances such as the following:

An aviator, who had been examined and found to have normal responses to standard vestibular stimulation, and who had a record of months of successful flying on the west front, was finally noted by his flight commander to be flying progressively worse and worse, and experiencing greater and greater difficulties in making landings. At the instance of his flight commander he was sent to Major R. G. for special physical examination, and comparison with his former responses to vestibular stimulation showed a striking diminution in acuity of vestibular perception—from twenty-six seconds to seven seconds duration of nystagmus, and from three past pointings and proper falling to no past pointing and no falling. Further examination revealed syphilitic infection subsequent to his original vestibular tests.

It is not at all impossible that the cases coming to the knowledge of Parsons and Segar in which men having a so-called "normal" nystagmus time before flying lost all or a great part of it after numerous flights, were in reality similar to these just mentioned. It was unfortunate that accurate diagnosis of the cause of the loss in acuity of this special sense apparatus was not made and the details set forth in connection with allusion to the condition. Failing in this, the cases should not have been mentioned. This because, as the statement appears in the article, it is susceptible of only one interpretation, namely, that these men lost part or all of it after numerous flights solely because they had flown, which is plainly controverted by adequate available evidence showing the contrary to be true.

In saying, "it seemed to us, therefore, that for the most part the use of the chair has been taken more or less on faith after the following line of reasoning: A well defined sense of equilibrium is necessary for aviation. The Bárány chair determines the normality or abnormality of function of one's semicircular canals, which have to do with equilibrium. Therefore, by use of the chair, the sense of equilibrium of a candidate for aviation can be established. The question as to whether or not this line of reasoning is theoretically sound we are willing to leave to the otologists for argumentation," the authors make an assumption which is hardly in accord with the facts. One familiar with the work done on the labyrinth recognizes that it is merely a peripheral sense organ which, as Alexander C. Brown stated in 1876, "furnishes information of the change of aspect of the head in space." This normally has definite connections with the central nervous system by way of certain nerve paths and brain centers; the end-organs, nerve paths and brain centers constitute a special system or apparatus, which is commonly known as the vestibular apparatus. The semicircular canals may be determined to be functioning by standard tests, and yet there may exist a lesion preventing the normal operation of the vestibular apparatus.

Prior to the advent of neuro-otology, it would have been in the province of the neurologist alone to determine the location and character of such a lesion; the otologist, however, in dealing with the broad problems arising in the study of the vestibular apparatus, finds himself compelled to overstep the boundaries formerly confining his activities, and to avail himself of the information that otologic neurology places at his disposal.

The relative ability of an individual to utilize effectively the various special informations poured in on the central nervous system from all the special sense end-organs in no way could be conceived as falling within the province of otology or neuro-otology to determine.

It appears from the paper of Parsons and Segar that not all subjects examined have proved to be able to avail themselves of all the incoming special informations with equal facility; but it is not clear how it has been shown that the vestibular findings are specially involved. Until this has been pointed out, the relevance of their article is difficult to conceive.

Further allusion might be made to the incomplete data concerning those constituting the basis of this correlation study, particularly evidenced by the statement "unfortunately, all of these men had presumably passed a satisfactory Bárány

examination." But it does not seem justifiable to go further in elaborating the defects so glaringly present both in premise and in development of this article.

E. R. LEWIS, M.D.,
Major, M. R. C., U. S. Army.
F. H. PIKE, Ph.D.,
New York.

To the Editor:—When the work of examining candidates for commissions as fliers in the Aviation Section of the Signal Corps began, the ocular requirements were placed at as high a level as possible: to be brief, a pair of perfect eyes was demanded, and that standard has never been lowered. The phrase "a pair of perfect eyes" might be transposed to "a perfect pair of eyes," for not only were the various functions of each eye to be considered with the greatest care, but also the relation of each eye to the other was most completely studied. So stringent were the demands made, especially on the muscular balance, that one of America's best known ophthalmologists expressed the opinion that if they were adhered to there would be no aviators, a rather amusing statement when placed in juxtaposition with some of the recent articles on this subject, the writers of which seem to be hazy as to whether even a demand for two eyes is made.

It was felt that perfect ocular mechanism was none too good when the demands made on it were considered—the start from the ground, the needs of observation, the estimation of distances, the quick recognition of approaching planes, whether friendly or hostile, and as important as any, the landing. During daylight hours, unless enveloped in cloud or fog, of course the eyes play also a very important part in the maintenance of equilibrium: this is realized and admitted by all concerned in the study of the mechanism of equilibrium, and on clear nights the visual impulse is useful in keeping right side up; but on cloudy nights, or when flying in cloud or fog, the aviator may as well be blindfolded for all help he receives from his eyes, and here a normal ear-balancing apparatus is most essential.

The standard of visual acuity was made $20/20$, uncorrected, in each eye, and it was most rigidly adhered to, no waivers being granted for deficiencies in this particular. Where a few seconds' difference in the time of two adversaries starting to maneuver, and where the advantage of position frequently mean the difference between life and death, it was felt that while quick perception and recognition of objects does not entirely lie in keenness of vision, this basic factor must be present in full degree. The near point must be consonant with the age of the candidate, and especial attention was given to this test with the view of eliciting all the information possible concerning the refraction of the eye. At first the refraction of each man was gone over under homatropin cycloplegia on the conclusion of all the other tests; but this was later abandoned, and the refraction was estimated by comparison of the near point, muscle balance and the ophthalmoscope. It was quite obvious that no myopes of over a quarter diopter could make the visual acuity demanded, and it was felt that hyperopia of over 2 diopters was not desirable, owing to the possibility of relaxation of the ciliary muscle under fatigue and the resulting blur of vision.

What limitations of muscular imbalance might be allowed with safety was a question that was most difficult to settle, and at least two alterations were made in the original determination. The maximum hyperphoria to be allowed was placed at 1 degree at the outset, and it was not changed, every one in authority agreeing that a wider deviation in this particular would possibly lead to actual diplopia on fatigue. The horizontal limits were not so easily defined: the final standard was not to allow more than 2 degrees of either exophoria or esophoria without doing prism duction tests, and if the relation between the abduction and adduction was maintained, to pass the man, provided, of course, the deviation was not too high; one over 4 degrees was seldom passed unless the man was especially desirable.

Normal color vision was considered a necessary asset, and was tested with Jennings's color chart; but slight variations

in the recognition of extreme shades were considered as negligible, the feeling being that what was required was ability to determine the basic colors, and not all their tones. The visual field was examined only for form, the sensitivity of the retinal periphery for colors not being studied.

A careful examination of the pupil reaction to light, both direct and consensual, and to accommodation was required, and the rotation of the eyeball was studied for both inequality in action and nystagmus. Should the latter be developed within 45 degrees of central fixation, it was absolutely disqualifying. It was felt that some useful knowledge of the condition of the central nervous system might be obtained by these examinations, and great stress was laid on the examiner's being particular in making them. Ocular tension was tested by finger pressure unless there was some special reason for using a tonometer.

Since estimation of distance is one of the great requirements for a skilful pilot, the stereoscopic vision, was examined with great care. A card containing ten small silhouettes was used, and a correct reading of their sequence, by giving the number attached to each, was demanded. Of course, a normal stereoscopic vision will not enable an untrained person to estimate distance in the air with any accuracy, but it will be most helpful to him in attaining this accuracy and will be an essential factor in his making a safe landing.

After all other parts of the ocular examination were concluded, the pupils were dilated and an ophthalmoscopic examination was made.

Such an examination, it will be admitted, when properly made, would exclude all organic conditions that could interfere with the candidate's success as a pilot, and there remained only functional derangements. A most searching inquiry was made as to the candidate's having had attacks of migraine with scotomas or hemianopsia, diplopia or other ocular manifestations of disturbances in cerebral circulation; for not only would such an attack, should it occur in flight, be most disastrous, but such attacks usually indicate a none too stable nervous tone.

It will be admitted, it would seem, that the examination as above outlined tends to be rather searching in its scope and should satisfy even the most exacting critic. To be sure, certain things are not gone into which bring in what may be called the mental elements of vision; but these matters of judgment seem to be concerns rather for the psychologist than for the ophthalmologist.

H. MAXWELL LANGDON, M.D., Philadelphia.

To the Editor:—I have watched with much interest the process of determining who are and who are not fit for the aviation service: what makes for and what against, a good aviator.

Unquestionably the aviator must be high in equilibration efficiency, and, no doubt, the semicircular canals have much to do with this, as do also the eyes.

It is my belief, however, that there is a certain something aside from both of these that is very important which we do not grasp at present—a certain sense of direction as well as equilibration, of which some individuals are more possessed than others, and which is susceptible to a high state of cultivation—the sense by which he who possesses it may return from a long ramble in strange forests or mountains and sit down and draw a very true map of the course he has taken; or at the end of his ramble can draw an accurate map of the way back, while another individual traveling with him will have no idea whatever of the direction in which return would be.

This sense of direction is highly developed in the pigeon. May it not be that from those wonderful carriers we can eventually discover the secret of that which makes a good aviator? Is there not possibly an association center controlling this matter of equilibration and direction—a center for aviation, so to speak?

Would it not be a good added test of the probable efficiency of an aviation candidate if he were put through some mechanical labyrinth or through by-ways of confusing direc-

tions, and then asked to point the way in a direct line to the spot from which he started? I believe that this would bring to light a surprising difference in the ability of different candidates to retain direction memory, or, in other words, to remember *which way is home*, a very important item to the flier in military service.

V. A. CHAPMAN, M.D., Milwaukee.

A NATIONAL PUBLIC HEALTH DAY

To the Editor:—The celebration of Public Health Day in Philadelphia, May 1, 1918, concerning which a news item appeared in *THE JOURNAL*, May 4, excited considerable local interest in the subject of sanitation and the question of improving the national physique. It has been decided more recently by Dr. Krusen, director of public health and charities, to carry on follow-up work in the different sections of the city.

In view of the great importance of physical fitness of the civilian population, especially during the present critical period, I would suggest that a national public health day be celebrated as soon as practicable. In this connection, it is to be recollected that the percentage of rejections among our recruits (29 per cent.) is, sadly enough, too high, and a country-wide, systematic effort should be made to reduce it as rapidly as possible.

In this way a propaganda, having for its object an improvement of our national physical reserve, may be successfully inaugurated. The value of physical fitness will be accentuated through the observance of a national health day. We must not lose sight of the fact that the American race has been slowly and gradually deteriorating physically during the last century. It has been said that if the war is to be won it is to be won by health and certain constructive factors. It follows that among our home defense agencies, an improved national physique easily holds first place.

Moreover, it is vitally important that the civilian population should aim to increase its average man power for national service. There has already taken place a great diminution in the number of producers, because of the fact that many young men have enlisted in the military service and because production, especially farm production has been and must be further increased, not only to feed our own soldiers, sailors and the civilian population, but also to assist in the feeding of our allies abroad.

The recent appointment of physical reserve committees in every community under the auspices of the National Security League will doubtless accomplish good results, if their work properly planned, since it will tend to upbuild the body, and to that extent improve the health of the general public. It is a matter of common observation by those who have considered the essential factors that enter into hygienic living that muscular activity has been greatly neglected by the average individual; hence a strong movement for the purpose of encouraging physical exercise in this country is both timely and important.

Additionally, however, a practical interest through an enlightened public sentiment, in municipal health rules and regulations, in germ diseases and how to escape them, in personal hygiene and the great economic value of physical fitness, is greatly to be desired.

I feel convinced that a national public health day, properly planned, would stimulate increased interests in, and attention to, the important work of improving the national physique, a matter of vital importance during the present crisis. The celebration of such a day would mark the beginning of so-called follow-up work throughout the country during the ensuing year. This should consist, among other things, of an extension of the time devoted to personal hygiene, sanitation and preventive medicine in the upper grades of the public schools; also courses in these subjects in our colleges and universities, and a campaign of education in the interests of public health, in which our medical and civic bodies should actively and jointly engage. This follow-up work could best be conducted under the auspices of the American Medical Association, which touches the local profession everywhere.

Indeed, the announcement by this leading organization of a national public health day at its forthcoming session would be likely to bear much fruit, particularly if President Wilson could be induced, which is quite probable, to issue a proclamation endorsing the movement.

Surely, the question of physical fitness at this time imposes an obligation on the organized medical profession.

JAMES M. ANDERS, M.D., Philadelphia.

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—Referring to the article of Dr. Noguchi (*THE JOURNAL*, April 20, 1918, p. 1157) and his supplementary note (April 27, p. 1252) on the use of sodium acetate in preserving guinea-pig complement for the serum diagnosis of syphilis, I should like to add that while sodium acetate does work very well with many guinea-pig serums, it is not entirely satisfactory with some specimens, owing to a certain amount of precipitation that occurs occasionally. The sharp reactions and rapid hemolysis that tend to take place with complement preserved with the acetate has in my experience during the last six months indicated that in the weaker positive reactions they were more likely to become negative, thereby giving one a misleading result. This so far is the only criticism that I could make regarding the use of sodium acetate for the purpose. I might say that with the ice-box method of preliminary incubation as done by the New York Board of Health, the use of complement preserved by the acetate has proved highly satisfactory, while a check with the same specimens, using the same reagents, has given an end-result that shows either a complete or partial hemolysis except in the strong positive cases.

Referring to the use of the native complement in human serums in making the Wassermann test, I desire to say that there are a certain number of serums that contain sufficient native complement for the test, yet at the same time these serums are more or less anticomplementary in the active state, which property is somewhat increased during the first hour's incubation, tending to produce a false positive result in otherwise negative serums. This particular variety of serum is found sometimes in patients that are jaundiced, and even inactivation does not always destroy the anticomplementary substance. Bile in the blood is likely to cause misleading results, and has already been mentioned in the work of several serologists.

I should like to know if the best procedure in testing those serums that are slightly anticomplementary would not be a careful titration in the active state in addition to inactivation and further tests with increasing amounts of guinea-pig complement. It should be emphasized that many serums are even too anticomplementary after inactivation for dependable results, and the only thing to do is to draw another sample of blood and repeat the test. Where bile is a disturbing element, a calomel purge may produce the desired result. Other conditions may be cleared up by change of diet, etc., as the well known milky serums usually found after a hearty meal. I often encounter the so-called "milky" serums under other conditions, and they are all practically more or less anticomplementary after inactivation.

There is no doubt that the ideal Wassermann test would be a careful titration, using the native complement present, provided the antigens are acetone-insoluble preparations and a careful check is made on each serum for anticomplementary properties. The much heralded Hecht-Weinberg and its various modifications depends for its reputation on the native complement, natural antishrimp amboceptor, etc. With this new method as outlined by Dr. Noguchi one can easily get the index by using enough tubes, varying the amounts, etc.

There are many laboratory workers who condemn every new method that appears before a thorough trial, thereby causing the general practitioner to adhere to this or that particular test or modification, because the advertisement says it is the best, without fully understanding the principles involved.

It is, I think, generally conceded by most serologists that both the cholesterinized and the alcoholic (preferably the acetone-soluble) antigens should be used with each specimen

tested. This is not being followed by some, and only emphasizes one more reason why we should have a standard technic, at least a standard antigen or a prescribed method for making one; there is as much indication for a standard antigen as there is for a standard unit for diphtheria and tetanus antitoxin, and I hope to see the U. S. Public Health Service adopt a standard antigen if not a standard method.

S. S. HINDMAN, M.D., Toledo, Ohio.

To the Editor:—Dr. Hideyo Noguchi, in his article on serum diagnosis of syphilis under war conditions (*THE JOURNAL*, April 20, 1918, p. 1157), mentions that in strongly positive serums complement is fixed wholly in twenty minutes at 21 C., but that on account of weaker reactions the time for fixation should be prolonged to two hours. In recent experiments I have found that complement is completely fixed practically at once at room temperature. The results of a number of special tests indicate that in routine tests it probably is quite sufficient to allow the serum-complement-antigen mixture to stand for ten minutes before adding corpuscles and amboceptor. This seems to be time enough even with weakly positive serums and spinal fluids. As I am unable to make comparative tests on a large scale, I hope that the possibility of shortening the time of the Wassermann reaction in the way indicated may be studied further by others more favorably situated for the purpose.

J. M. RETINGER, Chicago.

THE PHARMACIST IN THE ARMY MEDICAL DEPARTMENT

To the Editor:—There seems to be a well defined attitude toward pharmacists in the Army—that of almost completely ignoring their professional distinction, along with an amazing indifference as to their proper place and utilization. Needless to say, such a policy results not only lamentably as regards the pharmacist's status in the Army, but his professional value is lost to the Medical Department.

It is also quite apparent that since modern war machines are essentially and thoroughly businesslike in structure and character, modern methods must be employed to achieve success. It is therefore logical and imperative that every branch and wing of that complex machine be conducted on the modern principle of specialization. The trained man, the specialist, was never more desirable, never more absolutely indispensable. Such a principle is the very backbone of all modern institutions, and invariably spells success. Division of labor and centralized effort are built, supported and owe their existence to the specialist—the trained man.

The pharmacist is a specialist, trained in a part of medical science that cannot be ignored without affecting the efficiency of the Medical Department as a whole. A pharmacist's business ability to buy and distribute should be taken advantage of in medical supply depots. His experience would help to correct mistakes in buying and avoid improper packing for distribution of such supplies. This part cannot be emphasized too strongly, since it would effect an enormous economy hardly ever appreciated by nonprofessionals. Likewise a pharmacist would be invaluable at large base hospitals, and his recognition becomes imperative when the dangers of the improper compounding of prescriptions by nontrained men are fully realized.

Aside from sentimental considerations for the pharmacist as an underpaid, neglected professional, his recognition is dictated by common sense and cannot fail to justify itself from a business and economical standpoint. Never would such a step be more timely, never was it more obvious and desirable. Indicting criticism of the present system of the neglected pharmaceutical branch of the Medical Department could be easily brought to light. The method of packing for distribution could be pointed at as wasteful, which a professional eye could readily detect and condemn. Immense savings could be gained even in the small Army dispensaries were the business end of medical supplies placed in the hands of the logical man—the pharmacist. As for prescriptions, their importance and the skill required for their preparation

cannot be overlooked. The idea that a bright private could be taught to perform the few simple operations is not only fallacious but also fraught with dangers.

Perhaps the following incident will serve to illustrate the folly of just such a belief: At an examination for promotion to the grade of sergeant, the aspirant was asked what a "C. C. pill" is. "Any pill containing one cubic centimeter," was his immediate reply. Another applicant was asked how to administer a Seidlitz powder. "Place the powder on the patient's tongue and wash it down with water," was his answer.

Pharmacy is a science—as exacting and important as the science of surgery—and a pharmacist's place should be second only to that of the surgeon. Are civilians more entitled to protection against mistakes of unskilled hands than soldiers?

ALBERT WHITE, Post Dispensary, Corozal, C. Z.

MODIFIED LAVATORY CHAMBER

To the Editor:—In *THE JOURNAL*, May 18, Dr. Zan D. Klopper of Chicago has an article entitled "The Practicability of the Modification of the Lavatory Chamber." This is not a new idea, as the late Dr. B. Howard Rand, professor of chemistry in Jefferson Medical College, in 1876, drew a diagram similar to Figure 2 in Dr. Klopper's article, on the blackboard before his class. His idea was superior to Dr. Klopper's, as he not only embraced all of the doctor's but he had a cover to the seat with a spring attachment to compel the individual to keep his body bent forward. The idea was not only to aid defecation but to prevent the occurrence of a hernia.

J. B. POTSDAMER, M.D., Philadelphia.

[NOTE.—Dr. Klopper claimed no originality for the theory. The physiologic basis for the position which he described has been understood for many years. He did, however, work the matter out in some detail and presented drawings to enable those interested to design a proper apparatus.—Ed.]

ARSPHENAMIN (SALVARSAN) REACTIONS

To the Editor:—Many have gained the impression that arspenamin is a severely toxic spirocheticide. I believe that none of the American preparations are as toxic as was the German-made salvarsan. Many physicians have used the American products in our laboratories, and have found the reactions fewer and lighter than were formerly noticed with the German-made salvarsan. These deductions are made from several thousand treatments with the German salvarsan and the American-made salvarsan and arsenobenzol. An unfortunate feature is that many physicians have substituted other forms of antisyphilitic treatment, with the result that the patients do not have such an efficient destruction of spirochetes as they did with the use of salvarsan. When a death or severe reaction follows the use of one of these drugs, it is reported both in the public and in the medical press, but very little is said of the thousands of favorable results.

Occasionally a reaction may occur from other causes than faulty technic. All patients who are to receive an intravenous arspenamin treatment should have a laxative the night before, should not have any breakfast, and should not eat a full meal the same day that the arspenamin is administered. Some patients that have taken several intravenous arspenamin injections without any reactions have had reactions of variable degree following treatment soon after a full meal. Reactions have occurred in a large percentage of patients who have eaten a large meal within six or eight hours after treatment. These reactions come on slowly with headache, nausea, vomiting, diarrhea and a temperature of 102. The symptoms may last two days.

In preparing the solutions we recommend the use of triple distilled water, redistilled through glass, mixing the salvarsan brand of arspenamin in about 50 c.c. of cold water never over 100 F., and preferably under that. The solution is neutralized with sodium hydroxid and then filtered through a sterile cotton filter into 100 c.c. of cold redistilled water.

With the arsenobenzol brand of arsphenamin it is necessary to dissolve in hot water; otherwise the technic is the same. Hot water should never be used in preparing the salvarsan brand. With both preparations the intravenous injection should be made within a few minutes after the material is prepared.

H. S. WARREN, M.D., Chicago.

THREE DROP METHOD OF DETERMINING HEMOGLOBIN BY THE TALLQVIST SCALE

To the Editor: In working with the Tallqvist hemoglobin scale, I find that by taking three drops of blood about 2 cm. apart, each drop coming under an opening in the scale, one can determine the results of the hemoglobin test much better than by the one drop system, as it affords three scales to read from at once.

R. J. WEIDMANN,
Takoma Park, D. C.

Corporal, Medical Department, U. S. Army.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BREATH HOLDING IN CHILDHOOD

To the Editor:—Please give cause and treatment for child holding his breath to the point of cyanosis and convulsions, seen most often when crying from anger.

W. T. POTTER, M.D., Aurora, N. C.

ANSWER.—This condition of breath holding, also called inspiratory apnea, is not infrequently observed in early childhood. At first one would be led to think that the condition is a manifestation of spasmophilia or tetany with the associated laryngeal spasm and generalized convulsive seizures. In further investigation, however, this is not confirmed. Breathing is arrested or remains stationary in the midst of the crying attack, but no inspiratory spasm occurs. The child attempts to cry, but the inspiratory muscles remain in a tonic state. He throws himself about, becomes extremely pale and finally cyanotic, the body becomes rigid, the eyes turn or become set, and he loses consciousness momentarily. The attack usually lasts only a few seconds, though it may continue several minutes. In the more severe cases, general convulsions may occur. When the spasm relaxes the child cries, though he resumes normal breathing, and soon acts as though nothing had happened, or falls asleep.

This condition also suggests a possibility of epilepsy, or other organic changes in the central nervous system. It is true that the differentiation of attacks of inspiratory apnea from breath holding from true epilepsy may present great difficulties. Nevertheless, it should be pointed out that the breath-holding attacks follow immediately after severe crying or excitement, while epileptic attacks occur suddenly while the child is at quiet play or even during sleep. Biting the tongue is characteristic of epileptic attacks. Involuntary evacuation of the bladder or bowels may occur in either attack. Prolonged sleep usually follows an epileptic seizure and is characteristic, though in some cases of breath holding, the prostration may be so great that a prolonged sleep, lasting several hours, ensues after the attack.

These attacks of breath holding occur most commonly in the second and third years of life, and disappear about the fifth year, whereas the genuine spasmophilia occurs during the first year or two of life. These occur in neuropathic children and are brought on by fear, anger, fright or some other psychic trauma. The children are irritable and ill humored. Parents fear the recurrence of the attacks and consequently humor them in every possible way. They permit no one to cross the child, no whim remains ungratified, and the little patient is not helped to offer resistance to the recurring attacks. Patients practically always recover after some time, although the attacks may be severe and protracted. It has been pointed out that children with this disorder who fall ill with an acute infectious disease, or who may happen to need some surgical treatment, may become so severely frightened that a protracted breath-holding attack

with general convulsions may be so severe as to terminate fatally.

The treatment should be directed toward the general management of a nervous child. He should be warned not to repeat the attacks. Every form of mental overstimulation should be avoided. Frequently patients improve most rapidly if they are removed from the excitement and tension of home surroundings. A short stay at the hospital away from parents and friends is often advisable. Bromids are advised in addition to psychotherapy. During the attack the child may be sprinkled with cold water or he may be immersed in a cold bath.

NUMBER OF MEDICAL RESERVE OFFICERS NEEDED— SALARIES, EXPENSES AND ALLOWANCES

To the Editor:—Please answer these questions regarding the Medical Reserve Corps of the Army and Navy:

1. How many medical men will be needed after the present enlistment of 5,000?
2. Are there openings in the Navy? How many are needed there, and what salary is paid?
3. What is the cost of a complete officer's equipment in each service?
4. What provision does the government make for dependents of officers in the way of money provision outside of the regular salary?
5. What are the salaries of officers in the Army?
6. I have been told that an officer does not receive pay until in active service, which means to me that after receiving a commission the candidate is sent to one of several places for instruction, paying his own railroad fare and paying his own expenses, his salary starting when he begins duty at one of the several cantonments. Is this correct?

FREDERICK A. BAKER, M.D., Rudyard, Mich.

ANSWER.—1. The call of the Surgeon-General is for 5,000 additional reserve officers before Jan. 1, 1919, and at least 2,500 additional each year as long as the war continues.

2. The Navy will probably require 1,000 additional reserve officers during the next year. The salaries paid are: rank of lieutenant, junior grade, \$2,000 per year and \$432 allowance for quarters when not furnished by the government; rank of lieutenant, senior grade, \$2,400 and allowance for quarters, \$576; rank of lieutenant-commander, \$3,000 and allowance for quarters, \$720. There are also liberal allowances for heat and light, the amount varying according to rank, etc.

3. For the cost of the equipment of a medical officer in the Army, see THE JOURNAL, May 18, 1918, p. 1469. When naval officers first report for active service for training they are accredited with a clothing allowance of \$50, except in the Volunteer Naval Reserve not on active duty. When on active duty, members of the Volunteer Naval Reserve receive the service pay of their grade and service.

4. The only money provision made by the government for officers with dependents, outside the regular salary, is the allowance for quarters which is as follows: first lieutenant, \$36 per month; captain, \$48 per month; and major, \$60 per month.

5. The salaries of medical officers in the Army are: first lieutenant, \$2,000 a year and allowance for quarters, fuel and light; captain, \$2,400 a year and allowance for quarters, fuel and light; major, \$3,000 a year and allowance for quarters, fuel and light. The allowance for quarters is granted only to those with dependents; the allowance for fuel and light varies according to tables published by the Comptroller's Department.

6. Medical reserve officers of the Army when ordered to active duty to receive instruction, either in training camps or in other courses of instruction, receive pay from the time they first report for duty or for instruction. They also receive traveling expenses to their various stations.

THE DUNFERMLINE SCALE

To the Editor:—Please tell me what the Dunfermline scale is or where I can find information about it. It is mentioned as used by the Bureau of Child Hygiene of the New York City Health Department in a survey of schoolchildren of Manhattan (THE JOURNAL, April 27, 1918, p. 1257).

E. C. G.

ANSWER.—The Dunfermline scale is a scheme for classifying children according to their degree of nutrition. It was devised at the College of Hygiene and Physical Training and School Clinics in Dunfermline, Scotland, founded by the Carnegie United Kingdom Trust. Children are placed in four nutrition grades: (1) superior condition; (2) passable condition; (3) requiring supervision, and (4) requiring medical treatment. In the 2,535 children examined in New York, the first two grades included each approximately one third of the total number, and the remaining third was divided between the other two.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

INDIANA: Indianapolis, July 9-11. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

IOWA: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

NEBRASKA: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.

NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capital, Harrisburg.

RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Addenda to State Board Statistics

Table D on pages 1084 and 1085 of THE JOURNAL of April 13, 1918, was based on signed reports from the various state licensing boards. New York and New Jersey have since reported that the University of Virginia Department of Medicine, the University of Illinois College of Medicine, and the Hahnemann Medical College of Chicago have been admitted to their registered lists. The secretary of the Kansas State Board of Medical Examiners also had reported that only Class A medical colleges were granted recognition. In a later communication he states that Class B colleges will be recognized until 1922. The medical schools now rated in Class B for which recognition in Kansas has been extended until 1922 are: University of Arkansas Medical Department, Little Rock; College of Physicians and Surgeons, Los

Angeles; College of Medical Evangelists, Loma Linda; Loyola University School of Medicine, Chicago; Hahnemann Medical College and Hospital, Chicago; New York Homeopathic Medical College and Flower Hospital, New York; Leonard Medical School, Raleigh; Eclectic Medical College, Cincinnati; Ohio State University College of Homeopathic Medicine, Columbus; Temple University Medical Department, Philadelphia; Meharry Medical College, Nashville, and Fort Worth School of Medicine, Fort Worth, Texas.

Connecticut March Examination

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the practical and written examination held at New Haven, March 12-13, 1918. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 17 candidates examined, 10 passed and 7 failed. Two candidates were granted reregistration licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1917)	83.1
University of Maryland	(1907)	76.6
Tufts College Medical School	(1915) 75.6; (1917)	83
Columbia University	(1918)	82.8
Fordham University	(1918)	81.8
University and Bellevue Hospital Medical College	(1918)	88.8
University of Pennsylvania	(1917)	77.8
University of Vermont	(1917, 2)	76.5
FAILED			
University of Maryland	(1916) 74.1; (1917)	72
College of Physicians and Surgeons, Boston	(1908)	54.5
University of North Carolina	(1910)	59.3
University of Vermont	(1914)	60.9
Medical College of Virginia	(1917)	63.3
National University, Athens	(1911)	58.3

District of Columbia April Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, April 9-11, 1918. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1917)	89.2
Howard University	(1910) 82.6; (1917) 90.6; (1918) 77.8, 80,	81
Baltimore Medical College	(1905)	80.1
Harvard University	(1904) 80.4; (1908)	84.7
University of Vermont	(1912)	75.4

Book Notices

RADIOGRAPHY AND RADIO-THERAPEUTICS. By Robert Knox, M.D. M.R.C.S., L.R.C.P., Consulting Radiologist, Great Northern Central Hospital, London. Part I, Radiography. Cloth. Price, \$9. Pp. 40 with 115 illustrations. New York: The Macmillan Company, 1917.

This is one of the best books covering the subject of general roentgen diagnosis issued within recent years. It is especially adapted for use by the general practitioner or the student of roentgenology, although it contains much of interest and information of value to the specialist in this line. It has been thoroughly revised to cover the field to the date of issue, describing modern equipment and the technique employed. The chapter on the localization of foreign bodies by methods used in the present war is of special interest at this time. Numerous plates of gas gangrene cases are shown. The work is well and profusely illustrated, and covers the subject with a thoroughness that leaves little to be desired in a volume with so broad a scope.

Meat and Luxury.—So far as is known, taking meat even in large excess is not harmful, but it represents luxury and waste.—Lusk, Food in War Time.

Medicolegal

Color Blindness as a Loss of Sight

Rount v. Brotherhood of Railroad Trainmen (Neb.), 165 N. W. R. 141)

The Supreme Court of Nebraska affirms a judgment for the plaintiff for \$1,740, the full face of a benefit certificate issued by him in the defendant association, and interest, on account of his having become afflicted with color blindness and for that reason having been discharged from the service of a railroad company that had employed him as a railroad trainman. A rule of the association provided that any beneficiary member in good standing who should suffer the complete and permanent loss of sight of both eyes could be considered totally and permanently disabled and could thereby be entitled to receive the full amount of his beneficiary certificate. The plaintiff contended that as a railroad trainman he had become totally blind, and that within the terms of the policy held by him in the defendant association he had suffered the complete and permanent loss of the sight of both eyes, which the defendant denied.

The condition, the supreme court says, was not made that the eyes of the insured should be taken out of their sockets and away from his physical body, but only that he should suffer the complete and permanent loss of sight of both eyes. It did not say that he should become blind in both eyes so as to become unable to see objects of any kind, but that he should lose "the sight of both eyes." This he did when he became color blind. He lost his sight in both eyes. It affected both eyes alike. Besides, the color blindness was "complete and permanent." He could not see, and that applied to both eyes, and he was discharged because the defect in his vision made him unfit for railroad service. The thing for which he sought indemnity, loss of his vision, came to him. If his insurance did not indemnify him, it served no good purpose. Besides it was ambiguous and misleading, and should be construed as the defendant knew the plaintiff would understand it.

Where the peculiar malady known as color blindness so impairs the sight that the member of a fraternal insurance association of railroad trainmen who is insured therein is unable longer to continue in the train service, and is discharged therefrom on account of such defect in his vision, it will be held that he is entitled to the benefits provided by the certificate, the constitution, and by-laws and rules of the society. In such case, while the sight of the insured may not be entirely destroyed for some purposes, it will be deemed destroyed and lost as to the particular vocation of railroad trainman, and he will be held entitled to recover on the benefit certificate which he holds. Three members of the court dissent.

Employment of Jail Physician and Remedy of Latter

(Sawyer v. Commissioners of Androscoggin County (Me.), 102 Atl. R. 226)

The Supreme Judicial Court of Maine directs a peremptory writ of mandamus to be issued to compel the county commissioners to fix the pay of the petitioner for services as a physician. The court considers at some length the question of who, if either, the county commissioners or the sheriff, has the legal right to employ a physician to render medical attendance to sick prisoners confined in jail. The court says that there is no statute in Maine conferring express authority either on the sheriff or on the county commissioners to employ a "physician authorized to attend sick," as expressed in Chapter 85, Section 47, of the Revised Statutes of 1916, or "the physician appointed to attend said prisoner," as said in Chapter 127, Section 26. These expressions and the necessity of such action necessarily imply the duty and power of some authority, having the control and custody of prisoners, who are helpless in their own right, to employ a physician to administer to the welfare of the prisoners in the county jail at the expense of the county. This authority once implied from the statutes is as positive as if expressed in the statutes.

The situation presents a county containing a jail erected and supported for the confinement and detention of the prisoners that may be committed to it. These prisoners are in the custody of the law and helpless. They can neither confer nor communicate with the outside public except through the medium of some official agency. Their health, as an infliction on themselves, or as a menace to the other prisoners, as in the case of an infectious or loathsome disease, depends on official attention. These are not theoretical, but actual, conditions. These circumstances demonstrate the necessity of lodging authority in some agency that can act quickly and efficiently in the employment of medical aid. In view of the official functions of the sheriff, as jailer, and the county commissioners, officers of the county, which agency is the better adapted to meet the requirements of this situation? The conclusion reached by the court is that an interpretation of the statute, by express language, not only gives, but imposes on, the sheriff or his deputy, as jailer, the sole responsibility for the care, custody and safeguarding of the prisoners, and by necessary implication authorizes him alone, when necessary, to employ a physician to administer to the prisoners.

It having been determined that the sheriff had the implied power to employ a physician to treat the prisoners, was the physician entitled to the remedy of mandamus? This question could be settled by the process of elimination. Section 27 of Chapter 85 of the Revised Statutes provides that for all subordinate assistants and employees of the jailer the county commissioners shall fix their pay. They therefore cannot bring suit against the county until the pay is fixed: 1. The commissioners, while they had refused to pay the bill presented by the physician in this case, had not fixed his pay. Hence he could not bring an action of assumpsit on an implied contract or quantum meruit (for the reasonable value of his services). 2. He was not a public officer. He was an employee. His employment was conceded. The legality of his employment only was in question. Hence quo warranto did not lie. 3. The county commissioners had not acted, according to the statute, on his bill. They had rejected it, not "fixed his pay" as something or nothing. Hence certiorari would not lie. It quite clearly appeared that no remedy would lie except on a petition for mandamus. The petitioner must show that he was legally employed and had a claim against the county on which it was the duty of the county commissioners to fix the amount to be paid. The legality of his bill depended on the legality of his employment.

Not Liable for Injury to Patient Escaping from Pesthouse

(O'Brien v. Stromme et al. (Mont.), 169 Pac. R. 36)

The Supreme Court of Montana says that the complaint alleged that the plaintiff, being afflicted with smallpox, was taken to the pesthouse maintained at or near Butte for the accommodation of such cases by the Silver Bow County Board of Health; that while in delirium from the disease and because of the board's failure to provide sufficient guards, he escaped on a cold winter's night and so froze his feet that amputation of several toes became necessary, for which he claimed damages. He was nonsuited at the trial, and sought by appeal to present the question of whether the members of the board were liable. The judgment of nonsuit is affirmed.

Conceding that if, in arranging to care for matters of this kind, the board acts judicially or quasi (as it were) judicially, no liability for mere mistakes would exist, the plaintiff insisted that the defendants were liable on the theory that the duties of the board in the premises were ministerial, and for negligent nonfeasance or misfeasance the members must answer to whosoever is injured thereby. Whether this was correct the court might not decide here because the record did not show negligence or any injury due to negligence. It was true that practically all the evidence offered by the plaintiff for that purpose was excluded on objection—why, this court does not entirely understand; but since no question was made of the correctness of these rulings, this court could not import into the record what the plaintiff did not prove. No more than any one else can public officers be held to respond for injuries until it is shown that their fault is the proximate cause of such injuries.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.
 American Association of Anesthetists, Chicago, June 10-11.
 Alpha Omega Alpha Society, Chicago, June 10.
 American Climatological and Clin. Assn., Boston, June 5-6.
 American Dermatological Association, Philadelphia, May 23-25.
 American Laryngological Association, Atlantic City, May 27-29.
 Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
 American Medico-Psychological Association, Chicago, June 4-7.
 American Ophthalmological Society, New London, Conn., July 9-10.
 American Otological Society, Atlantic City, May 28-29.
 American Pediatric Society, Lenox, Mass., May 27-29.
 American Proctologic Society, Chicago, June 10-11.
 American Surgical Association, Cincinnati, June 6-8.
 American Therapeutic Society, Richmond, Va., June 7-8.
 Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
 Maine Medical Association, Portland, June 4-6.
 Massachusetts Medical Society, Boston, June 18-19.
 Montana Medical Association, Butte, July 10-11.
 Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
 New Jersey Medical Society, Spring Lake, June 25-26.
 North Dakota State Medical Association, Fargo, June 19-20.
 Oregon State Medical Association, Portland, June 27-29.
 Rhode Island Medical Society, Providence, June 6.
 Southern Minnesota Medical Association, Winona, Minn., June 24-25.
 Washington State Medical Association, July 10.
 Western Roentgen Society, Colorado Springs, June 27-28.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago May, 1918, 15, No. 5

- 1 *Cutaneous and Intracutaneous Tuberculin Tests in Infants and Children. M. H. Bass, New York.—p. 313.
- 2 *Hypertonic Infant; Curative Action of Atropin on Certain of Its Manifestations. S. V. Haas, New York.—p. 323.
- 3 Effect of Hunger on Nervous Irritability. J. R. Gerstley and R. G. Hoskins, Chicago.—p. 336.
- 4 *Treatment of Enuresis without Drugs; Report of Thirty-Four Consecutive Recoveries. W. R. P. Emerson, Boston.—p. 339.
- 5 Xanthochromia of Spinal Fluid with Complete Coagulation in Tuberculous Meningitis. D. B. Leitch, New York.—p. 348.
- 6 Pylorospasm and Congenital Pyloric Stenosis. J. Foote, Washington, D. C.—p. 351.
- 7 Congenital Intestinal Obstruction; Report of Case. A. V. St. George, New York.—p. 354.

1. **Value of Tuberculin Tests.**—Each child was given a von Pirquet test which was observed after twenty-four, and again after forty-eight hours. If positive, this was regarded as evidence of tuberculous infection. If negative after forty-eight hours, a second von Pirquet test was performed. After forty-eight hours a third test was made. If this proved negative, an intradermic injection of 0.1 c.c. of 1:1,000 old Koch tuberculin (that is, 0.1 mg.) in saline solution was given. If after forty-eight hours this was negative, 0.1 c.c. of a 1:100 solution (that is, 1 mg.) was injected and repeated after forty-eight hours if negative. If after these six tests the case still failed to react, it was considered definitely negative. In all, 1,165 tests were made on 206 children. In all, fifty-two children showed a positive reaction to some of the tests, a percentage of 25.2. If but a single von Pirquet test had been employed the incorrect conclusion would have been drawn that only 3.3 per cent. of the inmates had been infected with the tubercle bacillus. If two von Pirquet tests had been used the percentage would have been doubled (6.8), and so on, until by the use of the intradermic tests the true percentage of infected cases was found to be 25.2.

2. **Atropin for Hypertonic Infant.**—The hypertonic infant shows a tendency to rigidity, overaction of involuntary muscles and soon after birth develops signs of physical and psychic irritation, presenting the syndrome (physical) of vomiting, often visible peristalsis, constipation and imperfect nutrition; (psychic) or general irritability, insomnia and crying. In Haas' opinion the etiologic factor of this state

would appear to be a hyperexcitability of the autonomic nervous system. Although apparently a feeding problem, changes in method and character of feeding does not correct the condition. Atropin in doses of 1 drop or more of a 1:1,000 solution with each feeding usually relieves the condition at once and apparently increases the infant's tolerance for milk. Atropin in these cases may be used in large doses without danger. Haas suggests that investigation along these lines may reveal the etiology of hypertrophic pyloric stenosis.

4. **Drugless Treatment of Enuresis.**—The children included in Emerson's series of thirty-four cases all recovered without the use of any drugs whatsoever. The treatment is directed toward teaching the child the "dry habit" and, on the other hand, of interrupting and eliminating the "wet habit." This treatment consists of four methods, all or one of which may be used in a given case to establish the "dry habit." The "dry habit" once inaugurated must then be continued by careful oversight. 1. Mental suggestion. 2. Establishing the "dry habit" by teaching the reflex to act at regular intervals, and always before the time the "wet habit" occurs. 3. Local irritation by irritating the vesicular sphincter and the posterior urethra by means of a bougie-a-boule, so that sensory impulses passing to the brain will become intensified sufficiently to attract the patient's attention, until the habit of control is attained. 4. Cerebrospinal irritation is produced by the injection into the spinal canal of physiologic sodium chlorid solution, producing such stimulation as to arouse the whole mechanism into consciousness when habit holds it under control. These methods singly or combined, have been sufficient to relieve the thirty-four children in this series.

American Journal of Physiology, Baltimore

April, 1918, 46, No. 1

- 8 *Regulation of Renal Activity. Regulation of Urea Excretion by Concentration of Urea in Blood and in Urine. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 1.
- 9 Id. Regulation of Urea Excretion by Anatomic Factors. T. Addis, A. E. Shevky and G. Bevier, San Francisco.—p. 11.
- 10 *Id. Regulation of Urea Excretion by Unknown Factors. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 22.
- 11 Salivary Factor in Relation to Dental Caries. P. R. Howe and M. R. Keniston, Boston.—p. 28.
- 12 *Influence of Music on Electrocardiograms and Blood Pressure. I. H. Hyde and W. Scalapino, Lawrence, Kan.—p. 35.

8. **Regulation of Urea Excretion by Concentration of Urea in Blood and in Urine.**—According to the authors neither the concentration of urea in the urine nor the volume of urine are factors which appreciably influence the rate of excretion of urea.

10. **Regulation of Urea Excretion by Unknown Factors.**—There was a progressive increase in the rate of urea excretion in consecutive observations on rabbits subjected to catheterization and bleeding, so that at the last the rate was nearly twice as great as at the commencement of the experiment and exceeds the rate yielded by the rabbit under the same conditions except for the absence of handling. This increase in the activity of the kidney occurs in spite of the absence of any change in blood urea concentration.

12. **Influence of Music on Cardiovascular System.**—The object of the experiment made by Hyde and Scalapino was to ascertain the effect of different kinds of music on the heart and blood pressure in individuals who are known to have musical talent and are fond of music; also in persons who are indifferent and have no fondness for music, in neurasthenics and in some animals. The cardiograms were recorded with the Einthoven string galvanometer. The pulse and pressure were obtained with a Tycos and a modified form of Erlanger's sphygmomanometer, and the music from phonographic records. The pieces of music were first, Tchaikovsky's *Symphonie pathétique*, characterized by its tragic, slow minor movements; second, the *toreador's* brilliant description of the bull fight from *Carmen*; and third, the *National Emblem*, a stirring rhythmic march by Sousa. While listening to the symphony, the average effect is a slight decrease in any of the "P. P." wave, and therefore a relatively slight increase in the pulse rate, and also that the amplitude of

E. M. F. of the "R." wave is increased. From two to ten minutes after the music has ceased, the pulse rate and the E. M. F. have increased considerably, but the systolic and pulse pressure have fallen. Consequently the minor tones of the symphony records caused an increase in cardiac activity and action current, but a fall in blood pressure.

Toreador's stirring song produced a different picture of cardiograms. The pulse rate was accelerated and the E. M. F. or amplitude of "R" wave became less as soon as the song was heard. This is graphically shown in the decrease of the "P. P." and "T. P." phases, and height of the "R" wave in cardiograms obtained while listening to the song. The after effect was increased systolic and pulse pressure and pulse rate, but decreased action current. It seems, therefore, that this kind of music had a stimulating effect on the circulation by increasing the blood pressure and pulse rate while lessening the action of current of the ventricular contraction. The effect of the inspiring rhythmical tones of the National Emblem, was a slower pulse rate, a longer pause or "T. P." wave, and an increase of not only the systolic and pulse pressure but also the action current of the ventricular contraction. It seems that this music had its stimulating effect on the vagus, and that this as well as other kinds of music may have an influence on the system in other respects. The authors suggest that it is possible that a careful selection of music may be a beneficial aid in the treatment of nervous disturbances.

Boston Medical and Surgical Journal

May 2, 1918, 178, No. 18

- 13 Tuberculosis. J. B. Hawes, 2nd, Boston.—p. 589.
- 14 Medical Competence and Hospital Efficiency. F. D. Donoghue, Boston.—p. 594.
- 15 Radium in Treatment of Carcinoma of Buccal Cavity. R. B. Greenough, Boston.—p. 598.
- 16 Study of Diphtheria Carriers. D. M. Lewis, New Haven, Conn.—p. 602.
- 17 Plea for Legitimate Trial of Scientific Medical Methods in Chronic Intestinal Conditions Before Resorting to Surgical Interference. M. D. Ordway, Boston.—p. 606.
- 18 Primary Syphilis of Eyelid; Report of Case. H. D. Lloyd, Boston.—p. 609.

Cleveland Medical Journal

April, 1918, 17, No. 4

- 19 Colon Bacillus Infections. J. Philipps, Cleveland.—p. 215.
- 20 Determination of Type and Serum Treatment in Pneumococcus Infections. J. E. McClelland, Cleveland.—p. 226.
- 21 Campaign against Venereal Diseases in State of Ohio. H. N. Cole, Cleveland.—p. 231.
- 22 Marriage Customs and Human Evolution. C. L. Redfield, Chicago.—p. 236.
- 23 Simultaneous Avulsion Fracture of Tubercle and Upper Anterior Surface of Both Tibiæ. J. J. Kurlander, Cleveland.—p. 241.
- 24 Conservation of Vision Classes. S. H. Monson, Cleveland.—p. 245.

Florida Medical Association Journal, Jacksonville

March, 1918, 4, No. 9

- 25 Medical Preparedness in Great Drive of Democracy. J. C. Bloodgood, Baltimore.—p. 255.
- 26 What War Has Done for Medicine. S. W. Lambert, New York.—p. 261.
- 27 What is Nightmare or Pavor Nocturnus? C. C. Ruter, Madison.—p. 263.
- 28 Angina Pectoris. J. P. Esch, Daytona Beach.—p. 264.

Journal of Biological Chemistry, Baltimore

April, 1918, 34, No. 1

- 29 Hydrogen Ion Concentration of Contents of Small Intestine. J. F. McClendon, A. Shedlov and B. Karpman, Minneapolis.—p. 1.
- 30 *Placental Transmission of Creatinin and Creatin. A. Hunter and W. R. Campbell, Toronto.—p. 5.
- 31 Nutritive Factors in Animal Tissues. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 17.
- 32 The Two Forms of Glycerin. K. G. Falk and K. Sugiura, New York.—p. 29.
- 33 New Method for Direct Nesslerization of Ammonia in Urine. J. B. Sumner, Ithaca, N. Y.—p. 37.
- 34 *Presence of Growth Producing Substance in Cultures of Typhoid Bacilli. A. J. P. Pacini and D. W. Russell, Brooklyn.—p. 43.
- 35 Studies in Metabolic Changes Induced by Administration of Guanidin Bases. Influence of Guanidin on Urinary Ammonia and Acid Excretion. C. K. Watanabe, New Haven, Conn.—p. 51.
- 36 Id. Relation between Tetanoid Symptoms of Guanidin Administration and Condition of Acidosis. C. K. Watanabe, New Haven, Conn.—p. 65.

- 37 Id. Influence of Administration of Calcium on Blood Sugar Content in Rabbits with Guanidin Hypoglycemia. C. K. Watanabe, New Haven, Conn.—p. 73.
- 38 Stoichiometrical Character of Action of Neutral Salts on Swelling of Gelatin. J. Loch, New York.—p. 77.
- 39 Estimation of Nonprotein Nitrogen in Blood. I. Greenwald, New York.—p. 97.
- 40 Estimation of Creatinin and of Creatin in Blood. I. Greenwald and G. McGuire, New York.—p. 103.
- 41 *Studies in Calcium and Magnesium Metabolism. M. H. Givens, New Haven, Conn.—p. 119.
- 42 Inorganic Elements in Nutrition. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 131.
- 43 Effects of Electrolytes on Gelatin and Their Biologic Significance. Effects of Mixtures of Salts on Precipitation of Gelatin by Alcohol. Antagonism. W. O. Fenn, Cambridge.—p. 141.
- 44 Relation of Blood Fat to Sex, and Correlation between Blood Fat and Egg Production in Domestic Fowl. O. Riddle and J. A. Harris, New York.—p. 161.
- 45 Blood Fat in Fowls. D. E. Warner and H. D. Edmond.—p. 171.
- 46 Preparation of Pure Lecithin; Composition and Stability of Lecithin Cadmium Chlorid. P. A. Levene and C. J. West, New York.—p. 175.
- 47 Some Hydantoin Derivatives. C. J. West, New York.—p. 187.
- 48 *Method for Determination of Sugar in Normal Urine. S. R. Benedict and E. Osterberg, New York.—p. 195.
- 49 Modification of Lewis-Benedict Method for Determination of Sugar in Blood. S. R. Benedict, New York.—p. 203.
- 50 Studies in Carbohydrate Metabolism. Preliminary Report on Sugar Elimination in Urine of Normal Dog. S. R. Benedict and E. Osterberg, New York.—p. 209.
- 51 Id. Study of Urinary Sugar Excretion in Two Normal Men. S. R. Benedict, E. Osterberg and I. Neuwirth, New York.—p. 217.

30. **Placental Transmission of Creatinin and Creatin.**—Hunter and Campbell found that the concentrations of creatinin and creatin in the maternal plasma differ little, if at all, from those of the same substances in the fetal. Parturition is accompanied normally, although perhaps not invariably, by a temporary rise in blood creatinin. This effect appears to be illustrated most strikingly among primiparas. The creatin content of the plasma at parturition corresponds with that found normally in association with creatinuria. The concentration of creatin in the whole blood is generally greater in the fetus than in the mother; but the concentration in the corpuscles, as in the plasma, is practically the same in both. The concentration of creatin in the corpuscles of parturient women is greater than in those of nonpregnant women or of men. It would appear that pregnancy is accompanied by a special accumulation of creatin in the corpuscles.

34. **Growth Producing Substances in Typhoid Bacilli Cultures.**—According to Pacini and Russell the typhoid bacillus, in growing, produces vitamin which can be isolated and identified by proper biologic methods. The bearing on the effect of the same on the general metabolism of typhoid patients, and indications of a scientific basis for new methods of feeding these cases, are under investigation.

41. **Studies in Calcium and Magnesium Metabolism.**—The daily urinary calcium and magnesium excretion of nine healthy adults on a diet of natural foods containing more magnesium than calcium ranged from 0.05 to 0.25 gm. calcium and from 0.03 to 0.15 gm. magnesium; on a diet having more calcium than magnesium the limits were 0.12 to 0.47 gm. calcium and 0.05 to 0.23 magnesium. In the nine persons in general more calcium than magnesium was excreted in the urine; or if such was not the case the usual calcium-magnesium relation could be promptly brought about by ingestion of milk. The urinary output of both calcium and magnesium was increased by consumption of milk. Dried skimmed milk was practically as effective as raw milk in influencing the urinary alkali earth excretion. The urinary calcium excretion was always increased after taking calcium lactate. The urinary magnesium excretion was apparently not affected by the introduction of magnesium citrate. Comparable quantities of calcium salts, represented by calcium lactate, were not as efficacious as milk in producing increased urinary excretion of lime. Attention is called to the variation in the relative amounts of alkali earths excreted through the kidneys by different persons. The quantities bear no fixed relation to body weight, but presumably are influenced not only by the diet but also by the tissue reserves, particularly in the bones, of the persons.

48. **Determination of Sugar in Urine.**—The procedure adopted by Benedict and Osterberg is an adaptation of the colorimetric

procedure of Lewis and Benedict for determination of sugar in the blood. Their work with the Myers' modification has convinced us that results by this method are too high (due partly to imperfect removal of creatinin). The method presented is considered under two divisions: (1) the preliminary precipitation of interfering substances from the urine, and (2) the determination of the sugar in the filtrate. They have found that urines can be almost entirely freed from the substances enumerated above by single precipitation with excess of mercuric nitrate in presence of a slight excess of sodium bicarbonate. After subsequent removal of the mercury with zinc dust the filtrates are water-clear, and contain almost no measurable nitrogen, or at least not more than 0.1 mg. per c.c. No creatinin can be detected in the filtrates. The special reagents used in the final method for the determination of sugar in urine are: 1. Mercuric nitrate solution. It is prepared as follows: To 160 c.c. of concentrated nitric acid in a beaker add in small portion, 220 gm. of mercuric oxid. When all is dissolved heat the mixture to boiling, cool and add 60 c.c. of 5 per cent. sodium hydroxid solution. Make up to 1 liter and filter. Keep in a brown bottle. 2. Picrate-picric acid solution. To 500 c.c. of 1 per cent. sodium hydroxid solution in a liter flask or stoppered cylinder add 36 gm. of picric acid, and about 400 c.c. of hot water. Shake occasionally until the picric acid is dissolved, cool and dilute to 1 liter.

The procedure for the sugar determination is as follows: Measure 15 or preferably 20 c.c. of urine into a 500 c.c. beaker and add an equal volume of the mercuric nitrate solution and mix. Then add solid sodium bicarbonate in moderate quantities, with gentle shaking, until frothing ceases and the mixture reacts alkaline to litmus paper. Filter at once through a dry filter into a small dry flask or beaker. To the perfectly clear filtrate add a pinch of zinc dust and 1 or 2 drops of concentrated hydrochloric acid. Shake and let stand for about five minutes. Filter through a small dry filter into a dry test tube or small beaker. From 1 to 4 c.c. of this final filtrate (the volume to be used depends on the sugar content of the original urine, from 0.5 to 2 mg. of sugar is the quantity desired) are measured into a large test tube, which should be graduated to indicate 12.5 and 25 c.c. Where less than 4 c.c. of filtrate have been used enough water is added to make exactly 4 c.c. and 1 c.c. of 20 per cent. (anhydrous) sodium carbonate solution is added. Four c.c. of the picrate-picric solution is now added, the tube plugged with cotton, and placed in boiling water for ten minutes. The tube is then removed, cooled to room temperature with the help of running water, and the contents are diluted with water to the 25 c.c. mark, or to 12.5 c.c. if the quantity of sugar present was much below 1 mg. The colored solution is then matched (within half an hour) in a colorimeter against a standard prepared by treating 1 mg. of glucose in 4 c.c. of water, just as the final filtrate was treated; or against a permanent standard of picramic acid solution or potassium dichromate.

Benedict and Osterberg have found that the best permanent standard is to be prepared from pure picramic acid, together with some of the picrate-picric acid solution used in the determination. This standard solution has the following composition: To 105 c.c. of exactly 0.01 per cent. picramic acid solution in 0.02 per cent. sodium carbonate solution, add 0.5 c.c. of 20 per cent. sodium carbonate solution, and 15 c.c. of the picrate-picric acid solution. Then dilute to 300 c.c. with distilled water. Starting with pure picramic acid, the depth and quality of the color of this solution duplicate very exactly that obtained from 1 mg. of glucose dissolved in 4 c.c. of water, treated as described for the final urine filtrates, and the colored solution diluted to 25 c.c. The standard in the colorimeter should be set at a height of 15 mm.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1918, 3, No. 7

- 52 *Investigation of Certain Phenomena of Allergy with Special Reference to Respiratory and Circulatory Systems in Relation to Cause of Death. M. D. Pelz and D. E. Jackson, St. Louis.—p. 387.

- 53 *Studies on Immunity with Special Reference to Complement Fixation. A. Blumberg, Salt Lake City.—p. 397.
54 *Meningitis at Camp Greene. P. G. Woolley, Charlotte, N. C.—p. 409.
55 *Intravenous Use of Red Mercuric Iodid. L. W. Rowe, Detroit.—p. 412.
56 Outline for Combined Teaching of Pathology and Bacteriology in Small Medical Colleges. E. Kellert, Albany.—p. 416.
57 Clinical Method for Determining Respiratory Exchange in Man. R. G. Pearce, Cleveland.—p. 420.
58 *Highly Differentiating Polychromatic Toluidin-Blue Stain. M. Barron, Minneapolis.—p. 432.
59 Ordinary Brown Mice Substitute for White Mice in Pneumococcus Grouping. O. J. Walker and W. J. Bruce, Oklahoma City.—p. 434.

52. **Allergic Phenomena and Cause of Death.**—From the experimental evidence obtained by Pelz and Jackson are certain that on the injection of the antigen in highly sensitized spinal dogs, the asphyxia produced by the acute bronchial constriction may readily be the cause of death, and that the phenomenon occurs with the liver and other abdominal viscera wholly removed from the circulation. The phenomena occur in those dogs sensitized to egg white equally as well as in those sensitized to normal horse serum. The bronchial and blood pressure changes produced in acute anaphylactic shock bear a striking and almost complete resemblance to those produced by certain opium alkaloids, such as codeine, heroin, peronin, etc. For producing relaxation of the bronchioles, and aiding in recovery in acute anaphylactic shock epinephrin is the most dependable substance, but to produce the best effects the drug must be injected early, before the bronchoconstriction has had time to become too intense.

53. **Studies on Immunity.**—The authors show that true antigens (that is, antigens which contain the etiologic factor of the disease, emulsified or autolyzed) will work only where there is a polymorphonuclear leukocytosis present. While tuberculosis is a disease presenting a lymphocytosis, it will fix the complement with a specific antigen, which, however, is not a bacterial emulsion, but a heated egg medium culture containing small amounts of lipoid. Tissue extracts of mammals, birds, reptiles and fishes may serve as useful antigens for the diagnosis of syphilis. If normal urine is added, the complement of the hemolytic system is affected without the presence of a specific antigen. The presence of hemolysis in the test of the fourth group indicates either some type of affection of the kidney (even when no albumin or casts are demonstrable) or pregnancy, the two conditions frequently being separable by the clinical history of the patient. The absence of hemolysis in a hemolytic system to which urine is added speaks against the condition of pregnancy. In complement fixation without an antigen, reaction affecting the third tube (which serves as control tube and should not hemolyze) speaks for nephritis, rather than pregnancy.

54. **Meningitis at Camp Greene.**—Statistics at hand indicate that there have been between 5 and 7 per cent. of carriers in Camp Greene. In the only organization which made use of systematic nasal sprays since the first of the year no single case developed, and in those organizations in which sprays were resorted to after the appearance of the disease no other cases appeared. Woolley says that this may be merely coincidental, but when one discovers that also following the adoption of sprays the total sick rate falls, especially that due to respiratory diseases, and bears in mind the current conception that the meningococci inhabit the nasal passages, one comes to have a very healthy respect for dichloraminol as an agent for the prevention of diseases of upper respiratory tract origin.

55. **Intravenous Use of Mercuric Iodid.**—Rowe claims that red mercuric iodid in combination with an equal amount of potassium iodid can be injected in solution into animals intravenously with comparative safety if reasonable care is exercised in the manner of injection and in the size of the dose injected. It is very little if any more toxic than mercuric chlorid, safer for intravenous use, and of greater germicidal efficiency.

58. **Differentiating Polychromatic Toluidin-Blue Stain.**—The preparation of the stain used by Barron is as follows: toluidin-blue, 1.0; potassium carbonate, 1.0; distilled water, 400.0. Boil solution in glass beaker until it is reduced to

300 c.c. Cool; then add: toluidin-blue, 2.0; sodium chlorid, 3.0; glacial acetic acid, 12.0; alcohol, 15.0. Stir mixture until ingredients are completely dissolved. It is ready for use at once, and can be used over and over again. It does not precipitate and keeps indefinitely. The following technic is employed in staining frozen sections for rapid diagnosis. A piece of tissue which is not more than 3 mm. in thickness is dropped into boiling 10 per cent. formaldehyd solution for about one minute. Fresh tissue without hardening may be used in many cases but the sections are more difficult to handle. The tissue is cut with the freezing microtome, and the sections are placed in a dish containing physiologic salt solution. The sections are quickly straightened out and carried over into a small dish of the stain where they are left for about fifteen seconds. They can be left for a much longer time without overstaining. The sections are then transferred to another dish of physiologic salt solution where they are rapidly washed for a few seconds to remove the excess of stain, and then are at once mounted in the same solution on a slide, and a coverslip applied. The section is now ready for examination. The entire process, from the time the section is cut to the completed preparation for microscopic study, need not take more than one minute in most instances.

Journal of Nervous and Mental Disease, Lancaster, Pa.

April, 1918, 47, No. 4

- 60 Influence of Angle of Section on Measurements of Cortex Depth and on Cyto-Architectonic Picture. S. T. Orton, Philadelphia.—p. 241.
- 61 *Unilateral Ophthalmoplegia; Report of Case Due to Carotid Aneurysm. H. Viets, Boston.—p. 249.
- 62 *Medical Treatment of Exophthalmic Goiter; Special Reference to Use of Corpus Luteum Extract. H. H. Hoppe, Cincinnati.—p. 254.
- 63 *Intracranial Treatment of Paresis. H. A. Cotton and W. W. Stevenson, Trenton, N. J.—p. 262.

61. Unilateral Ophthalmoplegia Due to Carotid Aneurysm.—An unusual case of aneurysm of the right intracranial carotid artery is reported by Viets. The symptoms were: complete ophthalmoplegia with sensory disturbances of the trigeminus. The aneurysm was seen at operation. No etiologic factor was found. Rupture has not taken place after seven months of symptoms. The author has failed to find in the literature a report of a similar case.

62. Medical Treatment of Exophthalmic Goiter.—Hoppe has treated about twenty cases of exophthalmic goiter. The ordinary Forchheimer treatment was attended with only indifferent success. The combination, however, of quinin hydrobromate, extract belladonna with the extract corpus luteum was found to be rapidly beneficial in nearly all the cases and the improvement was usually so rapid and so marked, in a few days to a week, to convince Hoppe that rest, diet, hygienic measures, all of which he had used for twenty years before, could not account for the result, but that the corpus luteum was the active therapeutic agent.

63. Intracranial Treatment of Paresis.—The authors make use of two methods—the method of Hammond and Sharpe and the method of Wardner. The difference between these two methods is that in the former the serum is introduced into the ventricle and in the latter it is introduced under the dura. Six or more treatments are given by the former and then several of the latter, or alternating them. The authors have modified the methods of intracranial treatment, both the intraventricular and the subdural, so that the time necessary for these operations has been materially reduced. They do not give a general anesthetic, but merely cocaineize the scalp.

The results of four years' experience in the treatment of cerebrospinal syphilis are summarized as follows: 1. The intracranial (either the intraventricular or subdural) method is the most efficacious method in the treatment of paresis and should be the method of preference. 2. The intraspinal method is the most efficient one for the treatment of tabes and syphilitic meningitis. 3. Arsphenamin is the best drug for the treatment of cerebrospinal syphilis and preferable to the diarsenol brand and other substitutes. 4. The mercurial-

ized serum of Byrnes is of doubtful value, as it is not of sufficient potency to destroy the spirochete. 5. The success of any method of treatment depends on the stage in which the disease is treated, and the earlier the stage the better the outcome of the treatment. Therefore, if possible, the disease should be diagnosed in the preparetic stage or as soon as symptoms are present. 6. Every case of syphilis should have an examination of the spinal fluid at frequent intervals after all symptoms of the acute stage are lost, especially if the blood Wassermann remains positive after sufficient treatment has been given. 7. All cases of paresis can be arrested and possibly cured if treatment is begun early enough. 8. Physicians should be taught to recognize the importance of an early diagnosis and trained to make such a diagnosis, so that cases can be referred for treatment before the process has gone too far for treatment to be effective. 9. The treatment of paresis should be undertaken by all institutions for the insane, and all cases treated, as it is a difficult matter to decide whether a given case has reached the stage when treatment would be useless.

Medical Record, New York

May 4, 1918, 93, No. 18

- 64 Narcotic Drug Addict. E. S. Bishop, New York.—p. 751.
- 65 Problem of Narcotic Addiction of Today. C. F. Stokes, New York.—p. 755.
- 66 Cellular Changes in Various Forms of Acute Leptomeningitis. G. B. Hassin, Chicago.—p. 760.
- 67 Plea for Use of Potassium Nitrate in Treatment of Cancer. E. P. Robinson, New York.—p. 764.
- 68 Some of Rabelais' Ideas of Stomach. D. W. Montgomery, San Francisco.—p. 769.

Military Surgeon, Washington, D. C.

April, 1918, 42, No. 4

- 69 Manifest Pulmonary Tuberculosis. G. E. Bushnell.—p. 383.
- 70 *Report on Neurocirculatory Asthenia and Its Management. T. Lewis.—p. 409.
- 71 Malingering in U. S. Troops, Home Forces, 1917.—p. 427.
- 72 *Foot Strapping. D. J. Morton and R. T. Taylor.—p. 450.

70. Neurocirculatory Asthenia.—Lewis points out that this is not a new and strange syndrome, but a condition frequently seen in civilian practice in a milder form after an attack of grip, typhoid, severe tonsillitis, or scarlet fever. The general type of patient is one who is readily exhausted, physically and psychically. His subjective symptoms are referable chiefly to the circulatory apparatus and nervous system. He complains not constantly perhaps of dyspnea on effort, of feeling generally "shaky," of pains in the left chest, of palpitation, headache, dizziness and faintness. He is usually susceptible to cold and becomes readily fatigued. He is often quite aware of his tremor and complains of the fact that he perspires too profusely. Lewis suggests a new name for this condition, neurocirculatory asthenia. He suggests further that all medical officers of the American forces should learn to recognize the clinical picture of this syndrome, and a certain selected number should have the opportunity of studying such cases and of learning by actual experience to employ a system of graduated exercises as a therapeutic measure and as an aid to categorization. To limit the occurrence of this disorder in a prophylactic way it is suggested that: (a) Measures be taken for the early recognition of cases of neurocirculatory asthenia, that is, at the time men are called to service and at the training camps. (b) Men who are seen to flag or show signs of breathlessness by their drill instructors should be reported to the medical officer and thoroughly overhauled from the point of view of this syndrome at an early date. (c) The period of convalescence after infectious diseases be made sufficiently long, and, after complete recovery, the soldiers be gradually hardened before returning to full duty. It is strongly recommended, above all, not to transport soldiers suffering from this disorder overseas for active service, as it is now known that their period of service on full duty is short.

72. Foot Strapping.—A method of strapping with adhesive plaster for foot strains and for pronated and flattened feet is submitted by Morton.

Nebraska State Medical Journal, NorfolkApril, 1918, **3**, No. 4

- 73 Medical Inspection in Public Schools of Omaha. E. T. Manning, Omaha.—p. 105.
- 74 Nephritis. A. Sachs, Omaha.—p. 109.
- 75 Diagnosis and Management of Cardiovascular Renal Disease. J. W. Shuman, Sioux City, Iowa.—p. 114.
- 76 Treatment of Certain Fractures Occurring in or Near Joints. C. H. Newell, Omaha.—p. 116.
- 77 Physical Examinations of Applicants for Aviation Service, U. S. Army. F. M. Conlin, Omaha.—p. 120.
- 78 Prophylaxis. J. L. Sutherland, Grand Island.—p. 124.
- 79 Smallpox. R. W. Fouts, Dawson.—p. 130.

Neurological Bulletin, New YorkApril, 1918, **1**, No. 4

- 80 Hemorrhage into Basal Cisterns and Ventricles of Brain. F. Tilney and L. Casamajor, New York.—p. 161.
- 81 Multiple Sclerosis Associated with Internal Hydrocephalus. S. P. Goodhart and J. H. Globus, New York.—p. 175.
- 82 Infantile Pseudobulbar Palsy with Choreo-Athetosis. O. S. Strong, New York.—p. 179.
- 83 Case of Amyotrophic Lateral Sclerosis. I. S. Wechsler, New York.—p. 183.
- 84 Chorea Followed by Paralysis, Simulating Anterior Poliomyelitis. C. A. McKendree, New York.—p. 187.
- 85 Two Cases of Superior Alternating Hemiplegia—Weber's Syndrome. J. H. Nolan and F. Tilney, New York.—p. 192.
- 86 Thalamic Syndrome with Left Hemianopsia and Right Optic Atrophy. O. S. Strong, New York.—p. 199.

New York Medical JournalApril 27, 1918, **107**, No. 17

- 87 Liberty Loan and Physician. A. Jacobi New York.—p. 769.
- 88 Three Things Liberty Bonds Can Do. R. T. Morris, New York.—p. 769.
- 89 Morbid Impulses. A. Gordon, Philadelphia.—p. 771.
- 90 Genito-Urinary Clinic. N. P. Rathbun, Brooklyn.—p. 774.
- 91 Trend of Modern Dermatologic Research and Its Bearing on General Medicine. M. Scholtz, Cincinnati.—p. 775.
- 92 Factors in Causation of Tinnitus Aurium. J. L. Maybaum, New York.—p. 780.
- 93 Value of Chemical Tests on Serums and Spinal Fluids of Syphilitics. B. Mann and A. I. van Saun, Albany.—p. 783.
- 94 An Air Expansion Pipet Reagent Bottle. J. I. Fanz, Philadelphia.—p. 787.
- 95 Biologic Law and Human Health. J. S. Lankford, San Antonio, Texas.—p. 788.
- 96 Orthopedic Principles Applicable to War Cripples as Aid to Vocational Occupation. J. M. Taylor, Philadelphia.—p. 791.
- 97 Neuropsychiatry and Mobilization. P. Bailey, Washington, D. C.—p. 794.

May 4, 1918, **107**, No. 18

- 98 True Epileptic. L. P. Clark, New York.—p. 817.
- 99 Relation of Carbohydrates to Protein Synthesis. N. W. Janney, New York.—p. 824. To be concluded.
- 100 Clinical Significance of Fecal Analysis. L. W. Kohn, Philadelphia.—p. 829.
- 101 New Method of Preserving and Mailing Specimens for Wassermann. W. L. Snider, Hot Springs, Ark.—p. 831.
- 102 When a Cancer Is Not a Cancer. E. V. De Pew, San Antonio, Texas.—p. 832.
- 103 Two Stage Operation for Tendon Suture in Hand. J. E. Fuld, New York.—p. 833.
- 104 Hydronephrosis as Underlying Cause in Attacks of Acute Abdominal Pain. S. P. Martin, Buffalo.—p. 834.
- 105 Reconstructing Crippled Soldiers of France. D. C. McMurtrie, New York.—p. 839.

Public Health Journal, TorontoApril, 1918, **9**, No. 4

- 106 Infant and Child Welfare Work. A. Brown, Toronto.—p. 145.
- 107 Mothers' Pensions vs. Provincial Aid for Children. A. M. Huestis, Toronto.—p. 163.
- 108 Child Welfare Clinics. E. M. Forsythe, Toronto.—p. 169.
- 109 Birth Registration and Infant Welfare. R. E. Mills, Toronto.—p. 171.
- 110 Essentials of Family Case Work. R. C. Dexter, Montreal.—p. 173.

Ohio State Medical Journal, ColumbusMay, 1918, **14**, No. 5

- 111 Health Insurance. E. R. Hayhurst, Columbus.—p. 270.
- 112 Seminal Vesiculitis. I. E. Seward, Cleveland.—p. 275.
- 113 Chorio-Epithelioma; Report of Case. K. Becker, Toledo.—p. 278.
- 114 Progress in Therapeutics for 1917. C. W. McGavran, Columbus.—p. 281.

Rhode Island Medical Journal, ProvidenceMay, 1918, **2**, No. 5

- 115 Eyestrain as Related to General Practice. F. J. McCabe, Providence.—p. 71.
- 116 Review of One Hundred Consecutive Cases of Acute Diseases of Appendix, Gallbladder, Duodenal and Gastric Ulcers. F. V. Hussey, Providence.—p. 75.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, LondonApril 6, 1918, **1**, No. 2988

- 1 Case of Huntington's Chorea. C. Allbutt.—p. 389.
- 2 Necessity for Fuller Consideration of Local Processes of Disease and Repair in Treatment of Pulmonary Tuberculosis. H. M. Davies.—p. 390.
- 3 Importance of Regulating Fat-Intake in Diabetes Mellitus. P. J. Cammidge.—p. 393.
- 4 *Phlebotomus Fever. J. H. Hartley.—p. 395.
- 5 Id. J. A. Delmege and C. S. Staddon.—p. 396.
- 6 Involvement of External and Internal Popliteal Nerves in Lesions of Sciatic Nerve. T. E. Hammond.—p. 397.
- 7 Epidemiology of Meningococcal Meningitis, of Cerebrospinal Fever. A. M. N. Pringle.—p. 398.
- 8 Fatal Case of Paratyphoid B Simulating Typhus. P. S. Hichens and E. J. Boome.—p. 398.

April 13, 1918, **1**, No. 2989

- 9 *Nature and Symptoms of Cardiac Infection in Childhood. F. J. Poynton.—p. 417.
- 10 *Shell Shock and Neurasthenia in Hospitals in Western Command. E. W. White.—p. 421.
- 11 *War Psychoses Occurring in Cases with Definite History of Shell Shock. R. Eager.—p. 422.
- 12 Early Stage of Hysteria. M. Culpin.—p. 425.
- 13 Medical Aspects of Food Problem. R. Hutchison.—p. 426.

4. **Phlebotomus Fever.**—An outbreak of phlebotomus fever (sandfly fever) occurred in a squadron of yeomanry on outpost duty in mid-Egypt in the middle of the summer of 1917. The post was on the western edge of the cultivation, and Hartley was in medical charge of the unit. Of the total strength, 86.4 per cent. were infected. The incubation period was from four to seven days. The onset was very sudden, accompanied with severe malaise, headache, and suffusion about the eyes and postorbital pain. Pain in the lumbar region was generally intense, and pain and cramp in the limbs occurred. Constipation was nearly always present and profuse sweating. The temperature rose quickly to 102.5 or 103, and on a few occasions to 105. After twenty-four hours the pyrexia diminished, and at the end of three days, fell to normal. The pulse was not correspondingly accelerated—it was seldom above 80; it became soft and weak and the cardiac condition required attention. The suddenness of the onset was the marked feature. Subsequent debility was a marked feature considering the shortness of the acute stage, but many managed to recover sufficiently to return to light duty after fourteen days.

9. **Cardiac Infection in Childhood.**—Among 524 children, all under 12 years of age, examined by Poynton, the following conditions were present: heart disease in 293; chorea in 268; arthritis and arthritic pains in 267; sore throats in 147; nervous manifestations other than chorea in 80. Two important groups are recognized by the author: 1. Cases with sore throat, arthritis, and morbus cordis. 2. Cases with chorea and morbus cordis.

10. **Shell Shock and Neurasthenia.**—The mental symptoms noted by White in over 800 cases of shell shock and neurasthenia have occurred in the following order of frequency: confusional, melancholic, delusional, stuporose and maniacal. In many patients the memory was impaired for recent events and day to day actions and happenings, and there is a blank in regard to the incidents of their shell shock period. Memory for recent events to daily life, however, improves as the case progresses to recovery. The moral tone of the individual may be changed for the worse, and this change of character may be out of all proportion to the severity of the original shell shock. With it there may be altered feelings, affections, temper, and habits generally. From the medicolegal standpoint this morbid mental state is very important in regard to responsibility, and must be duly recognized. The patients with acute symptoms are kept in bed, but made to get out and walk a few steps every day, when able. Absolute quiet and fresh air (veranda life if weather permits) are essential, and no stimulants can be allowed. The milder cases with tremors and those with hysterical or pithiatic, and mild hystero-epileptic symptoms improve under bromid and valerian, nux vomica, arsenic, and other nerve tonics, but

environment and habits of life play an even more important part than drugs. Carefully controlled employment of mind and body is most necessary to expedite recovery and divert the patient's thoughts. He must be outdoors whenever the weather permits, engaged in gardening, wood-cutting, and outdoor sports and games, and when indoors, in workshops, and in taking part in the various amusements of home life. Clear, bracing air is very important.

11. **War Psychoses in Cases of Shell Shock.**—The following were by far the commonest symptoms noted by Eager in an examination of over 4,000 cases: amnesia, melancholia, mental confusion, delusion and hallucinatory disturbances. The condition of stupor was also met with, but was not so common as the aforementioned, and in some instances the sequence of events showed that cases which had been admitted to the hospital originally as definite cases of shell shock, have subsequently passed into a neurasthenic condition, which again has not improved, but drifted into states closely resembling dementia praecox. Retardation of thought was a pronounced symptom in the majority of cases; mutism and deafness were also met with. Associated with the above symptoms were headache, insomnia, terrifying dreams, general nervousness, and varying strange sensations in the head. As regards the physical signs, the deep reflexes were always very much increased, tremors were present almost universally in the tongue and outstretched hands, and the pupils were generally dilated. Frequently patients complained of throbbing sensations in the precordia, clamminess of the skin, and appeared before one as highly strung and emotional.

Bulletin of Naval Medical Association of Japan, Tokyo

March, 1918, No. 18

- 14 Changes of Carcinoma in Breast After Roentgen-Ray Treatment, with Special Reference to Paget's Disease of Nipple. J. Ogata.—p. 1.
15 Case of Tuberculosis of Penis. T. Kurita.—p. 3.

Indian Medical Gazette, Calcutta

February, 1918, 53, No. 2

- 16 Chlorination of Drinking Water Supplies in Field. P. Hehir.—p. 41.
17 *Intravenous Injections of Tartar Emetic in Treatment of Malaria. T. A. Hughes.—p. 42.
18 Quinin in Malarial Prophylaxis. A. R. S. Anderson.—p. 45.
19 Treatment of Cerebrospinal Syphilis by Means of Sero-Arsenous and Mercuric Iodid. I. F. Frost and O. I. Dewadatta.—p. 48.
20 Indian Crèche in Bangalore. S. Amritaraj.—p. 51.
21 Tobacco Fleas and Plague. S. Mallanah.—p. 53.

17. **Tartar Emetic in Treatment of Malaria.**—The observations recorded by Hughes were made in the spring of 1917 at an Indian hospital in German East Africa. The cases, except three, were not chosen, some being severe and some slight. The exceptions were three cases of blackwater fever, which after the blackwater had disappeared developed fever with parasites in the peripheral blood. There being some doubt as to the advisability of administering quinin except in small doses to such cases, tartar emetin intravenously was tried. One case had a relapse of blackwater after an intramuscular injection of 10 grains of quinin bihydrochlorid. In all, thirteen cases were treated, ten of subtertian, two of benign tertian, and one of quartan. Two of the subtertian cases and the quartan case were blackwater convalescents. The drug was injected in 2 per cent. solution in normal saline by means of a 10 c.c. syringe into a vein at the bend of the elbow, the quantities administered varying from 3 to 14 centigrams, given as a rule every second or third day. At first the smaller quantities were used beginning with 3 or 4 centigrams and working up to 8, while in later cases 10 centigrams was given as the initial dose and increased to 14 centigrams. With the latter dosage toxic symptoms manifested themselves, coughing and vomiting being sometimes troublesome.

Care had to be taken that none of the solution escaped into the tissues surrounding the vein. This happened on two occasions and gave rise to much local pain, and eventually in one case to suppuration. During the administration of tartar emetic all quinin was withheld, except in one case. So far as conclusions can be drawn from the few cases here mentioned, the results would tend to show that tartar emetic is

not a cure for subtertian malaria, at least in nontoxic doses. Curative effects were observed in varying degrees only when doses toxic to the patient were given. This bears out Greig's statement that tartar emetic appears to be rather a general protoplasmic poison than a specific poison for the malarial parasite.

Journal of Tropical Medicine and Hygiene, London

April 1, 1918, 21, No. 7

- 22 Possible Intermediary Hosts of *Schistosoma* in South Africa. F. G. Cawston.—p. 69.

Practitioner, London

April, 1918, 100, No. 4

- 23 Prevention and Treatment of Hemorrhage in Enucleation of Tonsils. W. Hill.—p. 301.
24 Hemorrhage Following Removal of Tonsils and Its Treatment. I. Moore.—p. 334.
25 Pro-Ether. D. J. Munro.—p. 362.
26 *Impetigo Contagiosa as Possible Cause of Acute Nephritis; Report of Cases. W. F. Stiell.—p. 368.
27 Masturbation. J. Hepburn.—p. 372.
28 Prevention of Measles. J. A. Milne.—p. 376.
29 Hematuria; Report of Two Cases. W. H. S. Armstrong.—p. 379.
30 False Aims in Medicine. O. C. Gruner.—p. 381.
31 *Historical Case of Rickets. C. Burland.—p. 391.

26. **Impetigo Contagiosa as Cause of Nephritis.**—Stiell reports five cases of acute nephritis resulting from typical impetigo contagiosa. From an analysis of these five cases, it seems probable that an acute streptococcal impetigo is capable of producing an acute nephritis, every bit as severe as that following an ordinary attack of scarlatina. Stiell does not suggest that every case of impetigo subsequently develops nephritis as a complication, but, at the same time, he does consider that the risk of this occurrence, even in efficiently treated cases, is quite as great as in scarlatina, and that impetigo is frequently and explanation of many of the sudden and acute cases of nephritis, occurring in children, for which formerly there has been no satisfactory explanation. He suggests that in a similar manner it is possible that many of the cases of so-called "trench nephritis" in soldiers are, in fact, a complication either of an impetiginous pediculosis or an impetiginous scabies.

31. **Historical Case of Rickets.**—Burland republishes an account of the medical examination of the remains of Princess Elizabeth, daughter of King Charles I., who died at Carisbrook Castle, September 8, 1650, written by E. P. Wilkins in 1856.

Archives des Maladies du Cœur, etc., Paris

February, 1918, 11, No. 2

- 32 *The Blood in Typhus. D. Danielopolu.—p. 49.
33 *Aortic Insufficiency from Air Concussion. A. Cramer.—p. 66; J. Brossard and J. Heitz.—p. 71.
34 *Pulsus Alternans and Digitalis. Carpentier.—p. 79.

32. **The Blood in Typhus.**—More or less pronounced leukocytosis was evident in the first week in 62 per cent. of the 250 typhus patients examined, and in the second week in 96 per cent. In the severer cases the leukocytes numbered from 20,000 to 128,000, the leukocyte curve thus serving as a reliable index of the toxic action of the disease. More than 20,000 indicates an unfavorable outcome. A leukocytosis rapidly jumping from 25,000 to 50,000 and 90,000 served to differentiate typhus in one puzzling case in which the temperature dropped early to normal and below. The hyperleukocytosis also revealed associated typhus in some typhoid cases. Any complicating inflammatory process in typhus is liable to increase the leukocytosis, but this has no bearing on the prognosis. The blood shows constantly mononuclear leukocytes with protoplasm staining intensely blue, excentric nucleus, and no granulations, but this type of "plasmatic cells" are found in certain other infectious diseases, although less numerous.

33. **Aortic Insufficiency from Air Concussion.**—Cramer's patient presented the signs of severe aortic insufficiency which had developed after the young soldier had been flung several feet into the air by the air concussion from a bomb. He had previously been healthy and had always escaped the diseases which predispose to heart disease, but he is now one of the *grands blessés médicaux* of the war.

Brossard and Heitz report two similar cases of traumatic aortic insufficiency following shell shock. In one the valvular symptoms were pronounced at once; in the other they developed in the course of a few days. The wind from an exploding bomb, without fall or contusion, even with the man already flat on the ground, we know is capable of inducing hemorrhage in the nerve centers or rupture of both lungs as in Sencert's case, injury of the optic layer, as in Léri's case, and it was evidently responsible for the laceration of the aortic valve, the most fragile of all the valves, in these three cases.

34. Pulsus Alternans.—Carpentier compares recent works on pulsus alternans with Windle's study of the effect of digitalis on alternance of the pulse in seventy cases. None of Windle's patients survived for more than three years, but some improvement under digitalis was constant. The pulsus alternans was never accentuated; it generally became attenuated under the digitalis and during the following two or three weeks, except in the cases with arteriosclerosis. Windle does not seem to have had his attention called to the frequency of syphilis in the antecedents in cases of pulsus alternans. Some others have reported syphilis certain in nine and probable in four others in forty cases of alternance, or 15 per cent. in other groups. In Windle's experience, the pulse never assumed the alternans type during treatment with digitalis except in two cases, and in one of these it subsided under the continued use of tincture of digitalis. He pushes it until nausea or coupled rhythm appear, giving from 12 to 28 gm. of the tincture (*Quarterly Journal of Medicine*, 1917, **10**, No. 40), according to the severity of the case. The effect is exhausted in two or three weeks, and the digitalis must then be resumed.

Archives de Médecine et de Pharm. Militaires, Paris

December, 1917, **68**, No. 6

- 35 *Operative Indications for First Treatment with Multiple War Wounds. J. Okinczyc and H. D. Clavaud.—p. 833.
 - 36 *Comparative Study of Antiseptic and Aseptic Treatment of Wounds. F. Ferrari and A. Delotte.—p. 858.
 - 37 *War Nephritis. C. Laubry and L. Marre.—p. 885.
 - 38 Camp Epidemic of Bacillary Dysentery. C. Lesieur, F. Pellagot and P. Jacquet.—p. 903.
 - 39 Malaria in Morocco. L. Netter and J. Guilhem.—p. 911.
 - 40 Factitious Albuminuria. Serr, Biron and Brette.—p. 935.
- January-February, 1918, **69**, No. 1-2
- 41 *Transactions of the Third Conférence Chirurgicale Interalliée.—p. 1.

35. The Indications with Multiple Wounds.—Okinczyc and Clavaud describe twenty-three cases in which the large number of wounds seemed to forbid any attempt at operative measures, but in which they succeeded in enlarging the limits of the possible and saving life in many of these non-transportable cases. The decision as to whether to operate or not should be made in from thirty to forty-five minutes during which time heat and other measures to combat shock are applied. Heating longer than this predisposes to hemorrhage. If the radial pulse is 120 or over or is imperceptible at this time, there is little hope from any intervention. Two of the men had no perceptible radial pulse for twenty-four or thirty-six hours, but then it reappeared and the men recovered after the amputation done then. Roentgenoscopy is indispensable to show the number and location of the multiple projectiles. In eleven cases of abdominal wounds with numerous wounds elsewhere, three of the men recovered after a thorough abdominal operation. Laparotomy was done in one case merely to relieve the atrocious pain from blood and bowel content loose in the abdomen. The man died the next day, but without suffering further pain. Anti-tetanus serum should be given once a week for three weeks if there are still projectiles left in the tissues. The bleeding wounds should be attended to first, and if there are several on one limb, the upper one first. Injured joints and bones should be given special attention to ward off complications. Amputation of a limb with several grave wounds does away with multiple sources of shock and almost certain infection. Each one of these *polyblessés* cases is a new problem in itself, and it takes courage to attempt the impossible, knowing that the outcome at best will probably be vicious stumps or badly healed wounds.

36. Secondary Suture of Wounds.—Ferrari and Delotte analyze their experiences with the Carrel and other methods for preparing a wound for suture. They have learned never to suture a wound that looks bad, even if the bacteriologic findings are favorable. The findings would not be so favorable if every spot of the entire area of the wound could be tested. On the other hand, when the wound looks good and there seems to be a good cellular reaction, they do not hesitate to suture even with five or six diplococci to the field. They estimate the cellular reaction by the number of blood cells that are not polynuclear whites, and they feel safe in suturing when from 15 to 30 per cent. of the leukocytes are mononuclears. They suture without draining or with only a filiform drain, ready to clip one or two of the hairs if need arise in the next few days. In five cases they preceded the suture with an intravenous injection of a polyvalent serum against the agents of inflammation and supuration. The suture healed smoothly in each case. The main thing in suturing is not to leave any of the walls not in contact; any spaces left are liable to fill up with blood. The hematoma is the greatest and most frequent danger, and hence we cannot be too careful in insuring hemostasis. Fever the same or the following day after suture is often due merely to hematoma, which can be easily evacuated, and healing proceeds undisturbed, especially when the cavity is rinsed out with ether poured in through the drains or between the stitches. The other dangers are the cutting through of the suture threads where the skin is too tender; and gangrene of the flap drawn too tight.

37. The Nephritis Service.—The soldiers with pathologic albuminuria are sent to the service arranged for this purpose by Laubry and Marre, and they describe the methods for diagnosis and treatment, with the outcome, in 200 cases of nephritis. Each man has his "renal certificate" on which are recorded the curve of urine output, the chemical and microscopic findings in the urine, the findings in regard to chlorids, with and without alimentary tests, the urea content of the blood, and the Ambard coefficient, also the response to the methylene blue test of the permeability of the kidney, and the arterial pressure. If the man recovered enough to return to the ranks, the regimental medical officer was sent confidentially a copy of this *fiche rénale*. If the man was unfit for duty, it served as a basis for his discharge from the army.

41. Surgical Conference.—Some of the conclusions at this third conference were mentioned in these columns May 18, p. 1520. There were ten American army medical officers present, seven British, seven Belgian, eight French, two Japanese and one Canadian, Italian, Portuguese and Serbian. This bulky volume of 365 pages with twenty-four plates reproduces the communications presented by the various speakers, with the discussions. A fourth conference has been held since, and the conclusions adopted are summarized below, Abstract 69.

Archives Mens. d'Obstét. et de Gynécologie, Paris

October-December, 1918, **6**, No. 10-12

- 42 *Social Problems Affecting the Mother and Child. P. Bar.—p. 273; Welfare Work for Mothers and Infants in Paris District during the War. Id.—p. 275; For Pregnant and Nursing Women in Factories. Id.—p. 287; Repression of Criminal Abortions. Id.—p. 333.
- 43 The Midwives of France. P. Bar.—p. 385.

42. Social Problems Affecting the Mother and Child.—Bar remarks that the war has deprived the medical schools and the hospitals of most of the men devoted to scientific research, while, on the other hand, the tragic events of the war render more than ever necessary the study of medico-social questions involving the very life of the nation. Hitherto the indifference of too many of the politicians and the neglect by too many officials has left these questions unsolved as of negligible importance. He urges that a systematic campaign must be undertaken against the plagues which are the capital causes of depopulation: syphilis, tuberculosis, alcoholism, voluntary birth control, etc. He then reviews and comments on the discussions held recently in various scientific societies, the Prison Society, the decrees

of the minister of munitions and the laws enacted affecting mothers and infants and prospective mothers, at home and in the factory.

Bulletin de l'Académie de Médecine, Paris

March 19, 1918, 79, No. 11

- 44 *The Toxicity of Eggs. G. Linossier.—p. 237.
45 The Terminal Nerve. A. Nicolas.—p. 250.
46 *Vaccination of Pacific Ocean Islanders against Typhoid.—G. Laroche and Mazet.—p. 252.
47 Spontaneous Alteration of Atoxyl. François.—p. 255.
48 *Film Treatment after Mastoid Operation. Daure.—p. 258.

44. **Toxicity of Eggs.**—Linossier remarks that there seems to be a tendency now to disparage eggs as liable to prove toxic under certain conditions, even when quite fresh. He has made a special study of the subject for several years, having published an article on it in 1905. His present conclusions are to the effect that there is undoubtedly some substance in eggs which has a toxic action on certain predisposed persons. The predisposition is often congenital. When it is acquired, it seems to be connected with liver and intestinal disturbance. The toxic substance is probably a toxalbumin, and it is destroyed by heat. All that is necessary is to coagulate all the albumin in the egg, in the yolk as well as in the white. He remarks that the reason why cooked egg seems to be harder of digestion than raw, is because it is digested in the stomach, while the raw egg is passed on undigested, and is not hydrolyzed until it reaches the intestines. He warns against prolonging the action of heat after coagulation is complete, as the harder the coagulation, the more difficult the digestion by the gastric juice. He insists that there are no grounds for denying eggs in liver diseases, but with a tendency to gallstones, it is wiser not to allow more than one egg a day, so as not to increase the cholesterolemia. Well cooked eggs can be allowed with albuminuria, but persons with interstitial nephritis and hypercholesterolemia had better refrain from eggs.

46. **Vaccination of Pacific Islanders Against Typhoid.**—Summarized in Paris Letter, page 1320.

48. **Film Treatment After Mastoid Operation.**—Daure refers to radical petromastoid clearing out of diseased tissue, the aftercare of which has always been a tedious and risky business. The film treatment simplifies it very much and reduces the risks. The cavity is half filled with the paraffin mixture at 70 C.; a cord is introduced in the midst of the paraffin. It is left undisturbed for five or six days, and then the solid block of paraffin is lifted out by the cord and fresh paraffin dressing applied, after the cavity has been dried with cotton or hot air. When the conditions were such as to forbid the film treatment, he applies the Carrel irrigation technic until the field is ready for the film dressing.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 1, 1918, 42, No. 4

- 9 *Graphic Sign of Abdominal Aortitis. A. Mougeot.—p. 109.
10 *Bradysphygmia. F. Ramond and A. Petit.—p. 111.
11 *Urogenital Complications of Typhoid. G. Faroy.—p. 114.
12 *Test for Quinin in Urine. J. Baur and Reveillet.—p. 119.
13 Purulent Pleurisy from Typhoid Bacilli. Tavernier, Serr and Brette.—p. 123.
14 Hospital Apparatus for Subcutaneous Injections of Quinin. J. Baur.—p. 127.

49. **Pathognomonic Sign of Abdominal Aortitis.**—Mougeot has noticed that the femoral pulse beat at the root of the thigh was felt from a fortieth to a twentieth of a second before the radial pulse beat in cases of abdominal aortitis. With aneurysm of the lower aorta, the femoral pulse lags behind the radial pulse, but with abdominal aortitis the femoral pulse is advanced before the radial pulse. As this finding was constant in the fifty cases of abdominal aortitis studied for this sign, he thinks that it may be regarded as pathognomonic. In all other forms of disease of the aorta, during the abdominal portion, the radial and femoral pulse beats are synchronous.

50. **False Bradycardia.**—The pulsus bigeminus with extra-systoles was only 44 but the heart beat was 88, when the young man was reclining. When sitting up or standing, the radial pulse and the heart beat were both 80 and regular.

In the reclining position the oculocardiac reflex did not modify either, but, seated or standing, both were retarded by eight or ten beats. Epinephrin and atropin accelerated both heart and pulse beat. A nervous origin for the bradysphygmia thus seemed beyond question. But the sympathetic system and not the pneumogastric seemed to be the one involved.

51. **Typhoid Genital Lesions.**—Faroy reports three cases of typhoid and paratyphoid orchitis and epididymitis, with urethritis in two of the cases. The onset was sudden, intense pain in one testicle, occurring in convalescence or as defervescence impended. The genital complications subsided completely in eight or ten days without entailing supuration or atrophy. The urethritis was revealed merely by a purulent drop squeezed out of the passage. There was no history of and nothing to suggest gonorrhea in any of the cases. The urethritis preceded and was probably responsible for the orchitis.

52. **Test for Quinin in Urine.**—An aqueous solution of picric acid added to fluids containing traces of salts of alkaloids, especially quinin, forms a very fine, light precipitate of picrates, causing opalescence or turbidity in the fluid or sedimentation. A set of ten test tubes are prepared with normal urine plus progressive amounts of quinin, from 0.01 to 0.10 gm. per liter. To each tube is added 5 c.c. of 1 per cent. solution of picric acid or Esbach reagent. This gives a set of standards with which the turbidity of the urine to be tested is compared. All must be well shaken up at the time, and five minutes contact be allowed. The urine must be free from albumin and other alkaloids, etc. Uric acid crystallizes on the walls of the tube, without causing turbidity.

Journal de Médecine de Bordeaux

March, 1918, 89, No. 3

- 55 Soldiers' Cemeteries. L. Bosredon.—p. 55.
56 *Acute Nonsuppurating Encephalitis. Creyx.—p. 62.
57 *Pneumococcus Meningitis. H. Mallié.—p. 67.

56. **Nonsuppurative Encephalitis.**—Crex remarks that what we call meningeal symptoms in reality are not meningeal, as the meninges in themselves are not capable of inducing such symptoms. They manifest their lesions by the reaction in the parts which they inclose. In an acute case described, a young woman had had fever and diarrhea for two weeks and then coma developed, with slight trismus and slight contracture of the arms and exaggeration of the tendon reflexes. The legs were relaxed, the tendon reflexes abolished. There was no Kernig sign nor trace of hyperesthesia or convulsions. Lumbar puncture released limpid fluid under considerable pressure. There was nothing to suggest poisoning, and the temperature kept very high. The woman died the third day after the onset of the coma, and necropsy revealed merely acute encephalitis without suppuration, as the only lesion accompanying the septicemia. The bacteriologic findings were negative, but the examination was not very thorough. The irregularity in the distribution of the lesions entails remarkable variety in the symptoms, very different from the systematic phenomena noted with chronic disease of the nerve centers. The acute encephalitis may subside without leaving a trace, but it usually leaves some definite sclerosis at certain points or in certain fibers, and these acquire a definite character. Acute nonsuppurative encephalitis has been observed in connection with malaria, syphilis, rabies, poliomyelitis and tuberculosis, as well as with streptococcus, staphylococcus and pneumococcus infection. Suppuration is the rule with mixed infection. According to the localization of the inflammation, the symptoms are delirium, convulsions and coma, with a diffuse process, but with focal lesions they are localized. The age makes a difference: in the fetus, Little's disease results; in children, cerebral paralysis or symptoms from the sequels of the inflammatory process, possibly typical insular sclerosis.

57. **Pneumococcus Meningitis.**—Mallié found one case of meningitis accompanying pneumonia in 244 cases of frank pneumonia in a camp of German prisoners. In another case there was pneumococcus meningitis without pneumonia, confirmed by necropsy. Weill reported in 1915 a similar case in

a child. He regards the pneumonia as merely a habitual episode in pneumococcus septicemia; it is not a local disease like tonsillitis or phlegmon.

Journal de Radiologie et d'Electrologie, Paris

November-December, 1917, 2, No. 12

- 58 Electricity in Treatment of Neuralgia. L. Delherm and M. Chas-sard.—p. 689.
- 59 Roentgen Examination of Fracture of the Fore Arm. F. Mas-monteil.—p. 704.
- 60 Bone Anomalies; Two Cases. J. Pierquin.—p. 710.

Presse Médicale, Paris

April 4, 1918, 26, No. 19

- 61 *Phrenopericarditis. F. Trémolières and L. Caussade.—p. 169.
- 62 Warping of the Ulna after Fracture. F. Masmonteil.—p. 170.

April 8, 1918, 26, No. 20

- 63 *Study of Uremia. F. Legueu and H. Chabanier.—p. 177.
- 64 *Cancer of Rectum. M. Desmarest.—p. 180.
- 65 Epinephrin and Pituitary Treatment of Asthma. R. Bensaude and L. Hallion.—p. 185.
- 66 Present Status of Diverticulitis. M. Romme.—p. 186.

April 11, 1918, 26, No. 21

- 67 *Gastroptosis. V. Pauchet.—p. 189.
- 68 *Neuro-Arthritism with Thyroid Instability. L. Lévi.—p. 191.
- 69 *The Fourth Interallied Surgical Conference.—p. 193.

61. **Adhesions Between Pericardium and Diaphragm.**—The functional disturbance is a set of symptoms suggesting angina pectoris. The physical symptom is the disappearance of the apex beat. The roentgen symptom is a shadow at the left side where the heart and diaphragm are soldered together. This triad characterizes adhesive phrenopericarditis. Trémolières and Caussade have encountered twenty cases of this kind. Although the angina pectoris symptoms may be distressing at times, yet they never had serious consequences in their experience.

63. **Urea Content of the Blood and Ambard's Constant.**—Legueu and Chabanier discuss the significance, the clinical application and the import for the prognosis of azotemia and the ureosecretory constant according to Ambard's formula. They have simplified this formula to the coefficient found by dividing the urea content of the blood by the square root of the urea content of the urine brought up to twenty-five per thousand. This coefficient in normal conditions is 0.070. Experience has confirmed, they reiterate, that this coefficient is an absolute and quantitative index of the secreting power of the kidneys. It insures a precision previously unattainable. A dog was submitted to the various tests of kidney functioning with methylene blue, etc. Later the dog was returned to the same investigators for repetition of the tests, without informing them that one kidney had been removed. This was not discovered until the Ambard formula was applied, but this revealed the exact proportion of renal parenchyma that was missing.

Death occurs in nephritis usually during an acute exacerbation of the azotemia. An acute exacerbation may be occasioned by any infectious or toxic state or may follow any operation anywhere on the body. Death from acute azotemia is often mistakenly ascribed to congestion or embolism of the lung or other cause. The organism is producing urea in excess while the kidneys are excreting less than usual. The oliguria may not be extreme, but still the azotemia may reach a fatal height, and here again the Ambard formula reveals the true state of affairs. It is particularly useful when applied to the urine from each kidney separately when it is a question of nephrectomy.

64. **Cancer of the Rectum.**—Desmarest gives an illustrated description of the method for removing a cancer in the lower half of the rectum without loss of the sphincter of the anus. He works through two incisions, one transverse, across the perineum, and one longitudinal, over the coccyx. He has applied this method in twenty-one cases, and the interval of three years since the first case enables him to speak confidently of the superior advantages of this technic. There has been recurrence in only two of his first series of seventeen cases, and in only one of these soon after the operation. Comparison of the outcome, with the natural anus function-

ing, shows the superiority of the method, he says, over others which require an artificial anus.

67. **Gastroptosis.**—Pauchet emphasizes that gastroptosis must not be considered a purely local lesion, such as can be cured by an operation. There is always a complex pathologic condition, insufficiency of the glands in the abdomen (liver, suprarenals, etc.); degeneration of tissues, and unstable nervous system. Persons with gastroptosis may have to be treated for months and years to correct each of the disturbances depending on these various causes, with liver and suprarenal organotherapy, physical culture, outdoor exercise, psychic reeducation, massage and general hygiene. It requires a kind of abdominal orthopedics with the cooperation of the surgeon, the physician, the masseur and the physical culture trainer. He describes the operation he has found most effectual to bring the stomach and transverse colon into their proper place. He sutures the transverse colon to the lower margin of the stomach, and then draws up the stomach into the proper shape and size with half a dozen parallel threads quilted superficially the length of the anterior stomach wall, stopping short of the pylorus region and greater curvature. The threads are brought out through the skin and the field is painted with iodine to induce adhesion.

A bandage often gives great relief but it has to be fitted at first under the roentgen rays, and be put on while still reclining in bed each morning. In Pauchet's experience with thirty operative cases, in six the operation alone failed to give permanent relief from all the disturbances. They yielded only when orthopedic principles were applied. Then the patients gain in weight and the general condition improves while the pulse in the erect position is no longer abnormally fast (80 instead of 120 in Leven's case). Gastroptosis is often mistaken for salpingitis if the colon is sensitive, or for wandering kidney if the cecum is distended and painful; for gastric ulcer if there is pain at once after eating, and for chronic appendicitis if there are pains in the iliac fossa. The splashing sound may suggest simple dilatation of the stomach, and if all these can be excluded then a purely functional nervous trouble is sometimes assumed. Operations have often been done on these mistaken diagnoses. Sometimes they merely augment the patient's discomfort and sufferings. Differentiation is based on the history of the case and roentgen examination standing and reclining. The bismuth shows the site and degree of the reducible or permanent kinks in the digestive tract.

68. **Instability of the Thyroid with Neuro-Arthritism.**—Lévi describes the case of a woman of 31 who has presented neuropathic symptoms for many years as well as migraine, recurring lumbago, abdominal ptosis, nasal asthma and varicose veins. Attacks of local congestion in various organs also occurred at times in the lungs or joints or elsewhere and she had an anaphylactic crisis after injection of horse serum. There were also symptoms of exophthalmic goiter at times while at others the symptoms suggested thyroid deficiency. The thyroid gland varied in size at different times and Lévi ascribes the whole train of symptoms to this instability of the thyroid gland. This assumption was confirmed by the regulating effect of thyroid treatment. The attacks of hyperthyroidism develop on a basis of chronic hypothyroidism, and hence thyroid treatment, bringing this basic level up to normal, causes the subsidence of the angioneurotic disturbances. This does not surprise those who have witnessed the subsidence under thyroid treatment of urticaria, Quincke's edema and intermittent hydrarthrosis. This case, as also the benefit from thyroid treatment of this woman's sister with somewhat similar symptoms, confirms the necessity for studying the thyroid functioning when these *poussées fluxionnaires* are noted in any organ.

69. **Conclusions Adopted by the Interallied Surgical Conference.**—This fourth conference was held at Paris in March and the conclusions adopted on the seven subjects appointed for discussion may be partially summarized as follows:

Transfusion of Blood: This is indicated in the first few hours after the wound in case of grave hemorrhage, but in collapse from gas gangrene it has not seemed to benefit, and in shock the indications for transfusion have not been deter-

mined as yet. Later posthemorrhagic anemia does not call for transfusion if the general condition is satisfactory. Donors should be tested for agglutinins and classified ready for use, except in emergency cases; fatal accidents have occurred from agglutination of the blood corpuscles by the donor's plasma, but the danger of this is relatively small and may be disregarded at an advanced post, but strict asepsis is indispensable. Transfusion should not be attempted until the bleeding has stopped. It is important to know the quantity of blood transfused. Tests of blood kept for several days have been satisfactory. This method will render great service at the advanced posts during intense military activity. Good results have been obtained with citrated blood, blood drawn into a paraffin ampule, and blood drawn into a syringe.

Trench Foot: Wet cold, long standing or crouching, and secondary infection are responsible for this pathologic condition. It affects soldiers from hot countries more than Europeans, and youth, hyperidrosis and a preceding attack are predisposing factors. The Belgians ascribe the rarity of trench foot in their army to the fact that they have discarded strapped leggings. With preventive treatment, trench foot becomes very rare: facilities for keeping the feet dry and warm, frequent change of units in wet regions, and daily greasing and massaging the feet; changing the shoes, with surveillance not to allow constriction from the puttee straps. Treatment should include a tepid bath and soaping of the foot with a boric acid and camphor soap every two or three days, wrapping it up daily in a large moist boric acid and camphor dressing. Phlyctenas should be opened and if there are eschars they should be merely scarified not to make them bleed but to let the medication act on the subjacent tissues. The eschars should be left to drop off of themselves. No operation should be done unless the surgeon's hand is forced by the general condition except finally to regulate vicious stumps. But preventive tetanus antitoxin should be given every week until healing is complete.

Wounds of the Pelvis: Comminuted fractures of the crest of the ilium require extensive trephining. An intraperitoneal wound of the bladder or rectum requires a laparotomy and suture, and with a suprapubic, extraperitoneal bladder wound, a primary suture of the bladder is in order. With a wound of the side or the base of the bladder the drainage is sufficient and, later, a retention catheter aids in the healing of the urine fistula. Primary emergency cystostomy is required only when there are retention and progressive infiltration around the bladder, or severe hematuria or a foreign body in the bladder. Secondary infection calls for cystostomy with drainage. With an extraperitoneal wound of the rectum, open up the wound, tampon the hole in the bladder, and keep the man constipated. When both bladder and rectum are injured, a retention catheter, ventral decubitus, and micturition in knee-chest position, favor the spontaneous healing of the bladder-rectum fistula, after clearing out the extravascular track of the projectile.

Pseudarthroses: The inevitable cause of pseudarthrosis after a war fracture is the primary destruction of part of the diaphysis. With working men we should aim to secure direct ankylosis between the femur and tibia, with or without an interposed graft. For men following a sedentary occupation, a pseudarthrosis permitting flexion has greater advantages. Either of them is better than an artificial leg. No operation should be done for pseudarthrosis until the skin wound is completely healed and the inflammation subsided. A number of further points for management of pseudarthrosis of elbow, etc., are given in minute detail. A combination of a metal plate screwed to the bone and a bone-periosteum graft has given very fine results in simple pseudarthrosis or when there is loss of substance in a limb with a single bone.

Wounds of the Foot: The integrity of the sole is extremely desirable, and reunion by primary intention particularly important here, even if certain bones have to be sacrificed to permit this. All operations on the anterior tarsus seem to give favorable results if there is no complication from the cicatrix or from the condition of the articulations. Vicious attitudes of the feet can be ameliorated by severing or transplanting tendons if the articulations are free. Partial resection of the calcaneum gives less unfavorable results if the

foot is kept at a right angle throughout the treatment. On the whole, operations on the posterior tarsus often cause graver functional disturbance than disarticulation or a Syme amputation. Depage stated that in case of suppuration of the articulations of the tarsus, persisting in spite of astraglectomy, the suppuration can be conquered by severing tendons and ligaments enough to turn the foot forward or inward (*renversement du pied en avant ou en dedans*), keeping it with a bandage in this position, thus favoring disinfection of the focus. The foot can be restored to normal position in one or two weeks.

Osteosynthesis for Fractures: Primary osteosynthesis is a difficult operation which exposes to grave complications. It should be reserved for specialist skill. Apparatus give such good results now that it is rarely called for outside of pseudarthrosis cases. Temporary osteosynthesis with plate and screws is preferred.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 16, 1918, 48, No. 11

- 70 Short Race as Test for Heart. J. Karcher.—p. 337.
71 Mobilization Psychoses in Swiss Army. F. Uhlmann.—p. 345.

Policlinico, Rome

March 24, 1918, 25, No. 12

- 72 Economy in Dressing Materials. G. F. Novaro.—p. 269.
73 Detection of Picric Acid Jaundice. A. Scala.—p. 271.
74 Aneurysm of Femoral Vein Simulating Inguinal Hernia. C. Marchesi.—p. 277.

Rivista Critica di Clinica Medica, Florence

March 23, 1918, 19, No. 12

- 75 *Pernicious Anemia plus Lymphadenosis. B. Frattini.—p. 133.
76 Rhythmic Spasms of Face Muscles. L. Siciliano.—p. 137.

75. **Pernicious Anemia Plus Lymphadenosis.**—The previously healthy soldier developed progressive pernicious anemia which kept up for months and then passed into lymphatic leukemia which soon proved fatal, with lymphadenosis. It had evidently been a case of leukemia from the start, the pernicious anemia findings being its earliest manifestation. Until the necropsy revealed the typical findings of lymphatic leukemia, the lymphadenosis seemed to have been merely superposed on a progressive pernicious anemia.

Prensa Medica, Buenos Aires

Feb. 10, 1918, 4, No. 25

- 77 Classification and Treatment of Inguinal Hernias. E. Corbellini.—p. 339.
78 *Nonoperative Reduction of Aneurysm. T. Castellano.—p. 347.
79 Fibroma in Maxillary Sinus with Calcareous Degeneration. E. Galiano and J. Laya.—p. 349.
80 Normal Beef Serum in Treatment of Anthrax. J. Penna and others.—p. 350. Continuation.

78. **Medical Cure of Aneurysm.**—Castellano's patient was a man of 50 who for a year had been having pain in the middle portion of the right supraclavicular region. Then he noticed a tumor, which rapidly increased in size and proved to be an enormous aneurysm of the trunk of the brachiocephalic artery. The man was kept absolutely quiet in bed, on a milk-vegetable diet, without much liquid, and he was given once a week a subcutaneous injection in the flank of 60 or 40 c.c. of a 2 per cent. solution of gelatinized serum. As the Wassermann reaction was positive, mercurial treatment was given at the same time. Improvement was rapid and pronounced. The only reaction to the injections was local pain, slight rise in temperature and transient leukocytosis. The aneurysm subsided to a clinical cure. The absolute repose in the horizontal position seemed to be an important element in the treatment. Twenty injections were made in this case.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 14, 1918, 42, No. 1494

- 81 Effect of Electricity on Lacteal Secretion. J. S. de Figueroa.—p. 161.
Feb. 21, 1918, 42, No. 1495
82 *Pathology of Skin and Internal Pathology. D. E. de Oyarzabal.—p. 193.

82. Relations Between the Pathology of the Skin and Internal Pathology.—De Oyarzabal discusses here the connection between liver disease and the color of the skin. His clinical observation has confirmed the existence of jaundice in certain cases when the liver seemed to be normal. The jaundice was evidently due to destruction of blood corpuscles and release of their pigment, but he thinks there is much evidence that it requires passage through the liver before it can induce jaundice. The amount of bile formed in the liver increases with the supply of the substances out of which the liver produces the bile. The pressure in the bile is normally less than the blood pressure, but if circumstances conspire to increase the bile pressure above that of the blood, then the bile passes into the blood. These data sustain the contention of Naunyn and others that there is no directly hematogenous jaundice; it is always the result of reabsorption. When the liver becomes atrophied and the circulation through it impeded, ascites develops unless the collateral circulation is sufficiently developed. A network of varicose veins over the region is a favorable sign, as this testifies to ample collateral circulation. We should aim to induce it and increase it; this is accomplished by tapping the ascites. This relieves the veins from the compression by the ascitic fluid, and the veins then dilate and assume the task of the collateral circulation. In regard to xanthoma and xanthelasma, he says that the connection between them and jaundice is not very clear or close. The frequency of jaundice and the rarity of the others, and the existence of xanthoma with apparently normal liver, seem to testify against such connection. On the other hand, cholesterol crystals have been found in xanthomas.

Semana Medica, Buenos Aires

Jan. 31, 1918, 25, No. 5

- 83 *Prophylaxis of Plague. J. B. Valdes.—p. 121.
- 84 *Crystals in Blood and Date of Death. B. Valverde.—p. 124.
- 85 Hygiene of the Eyes. P. B. Ferro.—p. 130.
- 86 Campaign against Social Plagues in Argentina. E. R. Coni.—p. 135.
- 87 Mutations of Tubercle Bacilli. M. R. Castroman.—p. 140.

83. Prophylaxis of Plague.—Valdes is chief of the public health service at Rosario, and gives the regulations enforced there. A squadron is entrusted with the business of free deratization and disinfection of premises where plague is found, and no building can be erected or remodeled without an isolating cement floor, at least 5 c.c. thick, in the basement. These measures are enforced for warehouses and shops as well as dwellings. Some rats examined for plague were found with echinococcus cysts or streptothrix tumors.

84. Crystals in the Blood as Determining Date of Death.—Valverde reproduces thirteen microphotographs showing the varying aspect as time passes of certain characteristic crystals found in blood after death. These crystals are fragile and colorless; and their size is proportional to the interval since death, up to thirty-five days, and then they disappear. They are dissolved by acids but are not modified by bases or alcohol, and do not dissolve in water. They turn black under a 5 per cent. solution of silver nitrate, and blue under potassium ferrocyanid. These crystals are always found in putrefying blood, and sometimes even in aseptic blood. They appear the third or fourth day or even earlier in summer, the fifth or sixth day in winter. Their disappearance by the thirty-fifth day aids in determining the date of death. The crystals were found the fourth day in blood drawn from a living person, but a dried spot from a drop of his blood did not show the crystals till the fifteenth day. They have straight sides but coffin-like ends, and increase in size from less than one twelfth to over half the diameter of the microscopic field.

Siglo Medico, Madrid

Feb. 9, 1918, 65, No. 3348

- 88 Needed Reforms in Medical Course. V. Prieto.—p. 102.
- 89 Morphology and Movements in Vitro of Blood Corpuscles. F. Mas y Magro.—p. 103. Continuation.
- 90 Treatment of Acute Psoriasis. Sicilia.—p. 106.

Feb. 16, 1918, 65, No. 3349

- 91 *Syphilis Acquired after Conception. D. E. M. Villapadierna.—p. 122.
- 92 *Stones in the Ureters. A. P. Martin.—p. 124.

91. Postconception Syphilis.—Villapadierna says that if the child shows no signs of syphilis while the mother gives a positive Wassermann reaction, the question whether the child should be given to the mother to nurse should be decided only after serious consideration of the case. Several cases are described which show that the probability is that the new-born child is infected, even though it may show no signs of syphilis, even at necropsy.

92. Concretions in the Ureter.—Martin reports three cases, in a girl of 9, a boy of 11, and an adult. The diagnosis was made with the roentgen rays or cystoscope, and as the stones were small, they were dislodged and expelled by promoting the diuresis. He insists that morphin not only relieves the pain from an impacted stone but aids directly in its expulsion, as it relaxes the spasmodic contraction which is increasing the pain, and the increased pain induces greater contraction. Morphin breaks up this vicious circle, and as the spasm relaxes the stone drops down.

Vida Nueva, Havana

April, 1918, 10, No. 4

- 93 *Duodenal Alimentation in Treatment of Gastric Ulcer. F. Pages and J. A. H. Ibañez.—p. 132.
- 94 *Oxygen in Disease of the Stomach. R. G. San Martin and P. A. Barillas.—p. 137.
- 95 Necessity for Propaganda for Cremation. C. Hoyos.—p. 140.
- 96 Prophylaxis of Venereal Disease. J. E. L. Silvero.—p. 142; R. B. Agramonte.—p. 143.

93. Duodenal Alimentation in Treatment of Gastric Ulcer.—Pages and Ibañez relate that this method has proved extremely successful in their hands. They describe here four typical cases in detail out of their total seventy-two cases in two years. They introduce the tube into the duodenum at night and feed with 150 gm. of tepid milk daily, then 200 gm., but never up to 300 gm., as this amount cannot be borne with comfort. Yolks of eggs are given, up to four a day. A saline injection is given after each feeding. The relief of pain is the first effect noted. The success was complete in all but two cases, one complicated with stenosis of the pylorus and one with actual and severe Reichmann's disease. With inoperable gastric cancer, some of the patients were relieved of pain and the general health improved under the duodenal feeding, but in others it not only failed to relieve but brought on gastric hemorrhage, sometimes fatal.

94. Oxygen Treatment of Stomach Disease.—By means of a stomach tube and generator, the stomach walls are treated with oxygen, and in the forty-eight cases reported the pain, hypersecretion and pylorospasm all subsided. The beneficial effects are most plainly evident in cases of long standing stomach disease, rebellious to the ordinary measures. In four of their cases the stomach symptoms had returned after a gastro-enterostomy, but were banished anew by the oxygen treatment.

Russkiy Vrach, Petrograd

Dec. 2 to 30, 1917, 16, No. 48-52

- 97 *Surgical Shock. N. A. Kruglevsky.—p. 577.
- 98 *Diaphragmatic Hernia from War Wound. I. E. Hagen-Torn.—583. Commenced in No. 43, p. 554.
- 99 Differentiation of Chronic Aortitis. K. M. Rutkevitch.—p. 587.
- 100 Buried Goiter. M. A. Tchalusoff.—p. 589.
- 101 Action of Alkaline Metal Salts on the Vessels of Internal and Peripheral Organs. M. I. Gramenitzky.—591. Commenced in No. 33, p. 493.
- 102 Embryology in the Medical Schools. K. M. Yakhontoff.—p. 597.
- 103 Preparation of Giemsa Stain. A. I. Savatieff.—p. 598.
- 104 *The Ferments in Infectious Diseases. A. S. Solovtsova.—p. 601. Commenced in No. 43, p. 569.
- 105 Tropical Ulcer in Russian Soldiers. B. A. Bolter.—p. 605. Commenced in No. 33, p. 504.
- 106 War Wounds of the Eyes. R. A. Kats.—p. 606. Conclusion.

97. Surgical Shock.—Kruglevsky reviews what has been published on this subject by Crile, Seelig and Lyon, McNee and others, and endorses the general view that surgical shock is a complex process. The various phases of it include the increased ventilation of the lungs—hyperpnea, entailed by irritation of the respiratory center—and the reduced tension of carbon dioxide in the arterial blood—acapnia. The acapnia entails arrest of the respiration—apnea, which lasts until

normal CO₂ tension is restored. In case of very great losses of oxygen by way of the increased ventilation of the lungs, the reserves of oxygen may be exhausted, and this entails death of vital organs. The insufficiency of O₂ entailed by apnea in each case induces a certain asphyxia of the tissues, accompanied by formation of nonvolatile acids—acidosis. The acidosis of the blood and tissues deranges the venopressor mechanism, the consequence of which filtration, diffusion and osmosis, exceeding the limits of physiologic functioning, draw out from the blood the greater part of its plasma, thus inducing relative oligemia and stagnation of the blood corpuscles in the small arteries. Thus death in all the aspects of surgical shock occurs with the manifestations characteristic of shock from hemorrhage.

The best means to ward off shock is by inhalation of O₂; for this he prefers Volhard's technic. Injection directly into the blood of physiologic salt solution is useless in shock because this solution is unable to restore the osmotic tension of the blood and tissues, and hence does not diminish the acidosis. Injection into the blood of a hypertonic solution of sodium chloride reduces the extravasation of the plasma, but it is to be done in time. He adds that excision of the group of muscles involved is the best means for warding off shock from gas gangrene.

18. Diaphragmatic Hernia from War Wound.—Hagen-Torn concludes from his own experience and analysis of the literature that the possibility of rupture of the diaphragm and development of a hernia through it should always be borne in mind with a firearm wound in this region. It must not be forgotten that the clinical picture of diaphragmatic hernia refers to extreme cases, with protrusion of the stomach into the pleural cavity. In the majority of cases, however, with firearm wounds there is not enough of an opening for this; by the omentum and with it a loop of small intestine, slide into the chest cavity. The signs and symptoms from this form of hernia are less distinct, and they can be detected only by repeated careful examination of the patient. The roentgenograms are of great assistance in the differential diagnosis in certain conditions. A laparotomy besides the thoracotomy is required in some cases. He reiterates in conclusion that in selecting the measures for differentiation of and for operation on diaphragmatic hernia, we must not forget that operative measures should be applied at once, without waiting for the appearance of signs of strangulation of stomach or bowel. He gives some roentgenograms taken with the patient lying on his side and in others reclining on his back; the changes in the shadow with change of position are instructive. Grösser in 1908 had compiled 433 cases of diaphragmatic hernia, but only 10 of them were found only at necropsy. Among those diagnosed during life, in nearly all the stomach was included in the hernia. No case is on record like the one Hagen-Torn reports in detail in which merely the omentum and a loop of small intestine formed the contents of the hernia, diagnosed before the operation. The patients do not complain of severe symptoms, the traction on the omentum, etc., being comparatively slight. The strangulation of the loop of small intestine may occur at a point where the bowel is comparatively less sensitive. These factors were combined in his case, so that he long hesitated before operating. Only his anxious desire to get at the explanation of the cause of the pains experienced by the patient led to repeated examination and final correct interpretation of the findings, and a successful operation.

4. The Ferments in Infectious Diseases.—Solovtsova here includes her extensive study of the ferments in various infectious diseases, and especially their connection with the disease. A number of diagrams and tables are given for comparison of the findings in respect to protease, amino-acids, urea and the protein split products, according to Sørensen, in the urine in relapsing fever. They show that as the temperature falls at the crisis, in relapsing fever, the proportion of proteolytic ferments is increased as a rule. The amount of protein split products is reduced. The artificial crisis induced by intravenous introduction of drugs forms the exception to the rule, as with this the split products accumulate in the blood. The amount of amino-acids in the urine gradually

increases, beginning with the attack and through to the falling temperature of the crisis; at the time of the crisis itself it jumps suddenly still higher. With the artificial crisis, this sudden upward jump is delayed and does not occur till the day after the crisis. Negative findings, or the absence of protease, is observed only with a very severe crisis or unfavorable termination of the disease. Leukocytosis is observed at the crisis, but she found no morphologic changes in the blood. The findings with lipase are conflicting; generally it increases toward the crisis. Antitrypsin shows a reduction with the natural crisis and a rise with the artificial. The fall of the temperature at the crisis, she declares, is dependent on the massive appearance of the split products in the blood. With relapsing fever the drop in temperature at the crisis is dependent on the massive destruction of the spirochetes and—in all probability—on the disintegration of their bodies by the ferments of the organism. The ferments (toxins) generated by the spirochetes of relapsing fever evidently have little affinity for the cells of the organism. The most important cause of the favorable or unfavorable course and issue of infectious disease in human beings is the condition of and the relations between the ferments of the organism and the degree of affinity between them and the infecting agent.

She has previously published a similar study of the ferments in typhoid fever, and on the influence on the temperature of parenteral injection of albumin. She compares here her results with those of Vaughan, Joblin, Petersen and others, as published in *THE JOURNAL* and the *Journal of Experimental Medicine*.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 9, 1918, 1, No. 10

107 *Epidemic Meningitis. G. Kapsenberg.—p. 669.

108 *Albuminuria in Schoolchildren. J. M. Hamelberg.—p. 679.

109 Present Status of Asthma. S. Brandes.—p. 686.

107. Contagiousness of Meningitis.—Kapsenberg remarks that the meningococci are not restricted to the meninges but invade the nasopharynx which is open to the outer world, and thus every person with the disease is likely to spread the infection even after recovery. In the first week of the disease the cocci are found in the nasopharynx in from 54 to 78 per cent. of cases. But as the sick stay in the house and as there may not be susceptible persons in their immediate environment, other cases seldom develop directly from them. But the persons in the environment harbor the cocci, and as these healthy carriers go in and out they are liable to encounter some susceptible persons among the large numbers they meet, and the disease develops in these susceptible contacts. He cites various data along these lines, especially reports by Ostermann in 1906, among others, showing 70 per cent. of carriers found in the contacts; Bruns, 36.7 per cent. in 609 examined; and 10 per cent. in Kapsenberg's own experience last year among forty-one examined. It is possible that repeated reciprocal infection of each other by the sound carriers may induce conditions in one or more of them so that they finally acquire susceptibility, and thus develop the disease after having been merely a healthy carrier for some time. He emphasizes the necessity for seeking out all the carriers in the environment. When possible, they should be isolated. As a rule, their carriership is transient. But in any event they should be warned of their danger for others, and instructed how to reduce this danger to the minimum by controlling their sneezing, coughing, the use of the handkerchief, and other opportunities for droplet infection of others. But the vital thing is to detect the persons who are permanent carriers. They are the main source for the perpetuation of the disease, and if they can be discovered and rendered harmless, a great stride will have been made toward conquering the disease.

108. Albuminuria in Schoolchildren.—Hamelberg found albuminuria in nine of sixteen boys after a class in gymnastics while there was no albumin to be found in their urine on a day when there was no gymnastic class. This led to examination of the urine of 401 boys and 311 girls in the school. The examinations were made before and after the gymnastics

class and, when albuminuria was found, the child was ordered to bring morning urine for examination. The children were all of the upper grades in the school. Albuminuria before the gymnastics was evident in 8 per cent. of the boys and 24 per cent. of the girls; after gymnastics, in 14 per cent. of the boys and 33 per cent. of the girls. In both categories the percentages grew higher the older the children; among the girls of the sixth grade and higher grades the proportion was 49 per cent. This albuminuria of adolescents is generally extrarenal, and Hamelberg applied the postural test to all the children with albuminuria to decide to what extent lordosis was a factor. He had the children stand ten minutes in the military attention position, or kneel for ten minutes with the trunk held straight, or lie prone on the ground and lift themselves up by their hands on a bench placed close to them. This last exercise induces extreme lordosis and showed albuminuria in fourteen of thirty-four children who had given negative findings with the two other tests.

He remarks parenthetically that it took skilful suggestion sometimes to get the children to void urine repeatedly at such short intervals, but he accomplished it. The trunk of the child was always bare during these exercises; this enabled oversight not only of the lordosis but of the general nourishment, etc. The findings as a rule confirmed Jehle's statements that the lordosis which induces albuminuria is exclusively that in the upper portion of the lumbar spine, but Hamelberg does not agree with him that lordosis in this region is the sole explanation of albuminuria in children. Chemical tests show a difference in the albumin found in different cases. Fatigue is evidently a factor in some cases. To exclude fatigue, he had some gymnastic exercises done with the arms alone as the children lay on the floor. He draws no practical conclusions from this research except that the children who present this extrarenal albuminuria are the very ones who most need gymnastics and other measures to strengthen them. Fully 90 per cent. were frail children among those with lordotic albuminuria, and 70 per cent. of those with albuminuria in general; only 10 per cent. of the total were lively healthy children.

Hospitalstidende, Copenhagen

March 13, 1918, 61, No. 11

110 *Fracture of Calcaneum. T. Eiken.—p. 321.

111 *Tests for Sugar Content of Blood. W. Leschly.—p. 326.

112 Present Status of Five-Day Fever. O. Thomsen.—p. 332.

110. Isolated Fracture of Anterior Process of the Calcaneum.—Eiken's patient was a young woman who twisted her foot in dancing; as she remembered, it was in supination. The foot was treated with bed rest and massage, but did not improve. She applied for treatment to five or six different physicians, and each treated her for the assumed sprain, or tendon or nervous trouble. She was up and about and even took part in dancing, but there was always pain in the foot, gradually increasing. Finally roentgenoscopy revealed the cause of the disturbances in an isolated fracture of the anterior process of the calcaneum at the point where there had been tenderness. There had been no swelling, according to her testimony, at any time. The foot could be moved freely except that rotating movements increased the pain, which then spread upward along the Achilles tendon. The fracture seemed to involve both the anterior articulation and the calcaneocuboid. A plaster cast was applied, with the foot at a right angle, for twenty days, with elevation for six. Roentgenoscopy showed considerable callus in three weeks. Crutches were then allowed and in four days the patient was walking with a cane, and there was only slight pain in walking and no tenderness except along the flexion tendon. This rapidly subsided and the girl was soon playing tennis and dancing. This is Eiken's fourth case of this fracture, but is the only one in which the fracture must have occurred from traction by the ligament. The fact that there was no displacement of the fragment explains the comparatively slight disturbances. The case emphasizes the importance of early roentgen examination in all cases of severe sprains, even when no sign of fracture can be detected otherwise, especially when the injury occurred along the longitudinal axis. The

continued use of the foot in this case kept the fracture from consolidating, and serious disturbance might have resulted as after two months of this there were no signs of healing. Hence the prompt healing under rest in a cast for twenty days was particularly striking.

111. Comparative Determination of Sugar Content of Blood.—Leschly applied to forty persons parallel tests with the Myers and Bailey technic and Bang's uranyl method for determination of the sugar in the blood. The results are tabulated with other metabolic findings. Only slight differences were found with the two technics. As the American method gives the sugar content in 100 c.c. of blood and Bang's in 100 gm. of blood, this is equivalent to the latter giving constantly 5 per cent. higher values than the former. As the solutions used in the Myers-Bailey keep well, this seems to be, he says, the preferable method when the test is to be made only occasionally. He adds that Bang's uranyl method is an improvement over his original technic, as it removes the iodine-binding substances. Leschly's research confirms that from 0.100 to 0.105 is the normal sugar range in the blood.

Hygiea, Stockholm

March 30, 1918, 80, No. 6

113 *Nasal Reflex Neuroses. A. Hofvendahl.—p. 321.

114 Glioma in Optic Nerve of Child. E. Rietz.—p. 344.

115 Cystosarcoma of the Mamma. H. Westermark.—p. 352.

113. Nasal Reflex Neuroses.—Hofvendahl says that experimental research has apparently shown that drugs and gland extracts which increase the tonus in the sympathetic nervous system modify the blood picture in the direction of neutrophils and eosinophilia, while those that increase the tonus in the cranial and sacral autonomic nerves (which may be designated as the parasympathetic system. It includes more than the vagus), modify the blood picture in the direction of mononuclears and eosinophilia. The parasympathetic nerves, whatever organ they are found to respond always alike with paralysis to atropin and with stimulation under pilocarpin. The sympathetic system, on the other hand, is not influenced by these but responds promptly to epinephrin and choline. Hormones from the ductless glands and bacterial toxins are liable to induce similar contradictory effects on the sympathetic and the parasympathetic systems. Bronchial asthma is usually preceded by a copious watery discharge from the nose (overstimulation of the parasympathetic system) and swelling of the interior of the nose (irritation of the vasodilators, which belong to this system), while the transient improvement under atropin testifies that this parasympathetic system is temporarily paralyzed by this drug. In three or eleven typical cases of nasal asthma, tuberculous toxins were evidently responsible for the irritation of the parasympathetic system and eosinophilia. This nasal neurosis sometimes precedes other appreciable manifestations of tuberculosis. Hofvendahl found vasomotor disturbances in the nose in 10 per cent. of 500 tuberculous persons in the first and second stages of the disease. Thorough examination of the whole body is indispensable in cases of nasal neuroses. The sympathetic-parasympathetic balance in such persons is easily upset and this may occur from emotional stress, bacterial toxins, mechanical pressure, odors, pollen dust, etc. There is liable also to be an unstable balance in the endocrine system in such persons, especially the balance between the thyroid and genital glands, with a special tendency to disturbances during transitional periods. The slightest anomalies in the interior of the nose should be corrected in persons with this exaggerated reflex irritability of the nasal mucosa. In several of the cases reported, after removal of a polyp, the tendency to attacks of asthma progressively declined. In one case the nasal asthma first developed under a course of digitalis treatment and it subsided under atropin. Toxic action from the digitalis seems to have been responsible for the nasal reflex neurosis in this case. In one woman of 27 with bronchial asthma and symptoms of hyperthyroidism, they became much exaggerated with the onset of the menses. She sweated profusely during the attacks of asthma. There has been no return of the asthma since resection of a spine and cartilages which were much enlarged.

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USE OF CORN (MAIZE) AS HUMAN FOOD

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About three fourths of the world's corn crop is produced and consumed in the United States, but considerably less than one tenth of it is used as human food. We produce three times as much corn as wheat, so that only one sixth of the corn crop need be eaten in order to replace, or save, one half of the wheat crop. In fact, the increase of our 1917 corn crop over the three-year average of the period from 1911 to 1913 is 48,000,000 bushels, or the equivalent of three fourths of a normal wheat crop. This extra corn is not needed for animal feeding, since the number of animals has not increased correspondingly. Much anxiety has been felt on account of the large proportion of soft corn, not suitable for grinding, in the 1917 crop; but this and much more will be fed to farm animals in any case. A fifth of the total corn crop or a third of that is suitable for milling, would, if consumed as human food, set free all the wheat needed for our friends abroad and leave enough corn on the farms for the adequate feeding of all the live stock now on hand.

In response to the appeals of the Food Administration, much has already been done by our people in the direction of wheat saving, either by direct diminution of bread-stuffs consumed or by substitution of other grains for a part of the wheat formerly used in bread-making. Of the various grains available as wheat substitutes, corn is so much the most important quantitatively that it has seemed well to study by carefully controlled experiments the value of corn as human food and the practicability of making it a large factor in the diet even of people previously accustomed to only a small and occasional use of corn products.

In a series of experiments on healthy men and women, carried out by the department of food chemistry, Columbia University, in cooperation with the New York Association for Improving the Condition of the Poor, special attention has been paid to the question of digestibility and to the nutritive value of the corn proteins. Four experiments were made on many different subjects, one man and three women, one of whom had been accustomed to any considerable use of corn as food.

The man who served as subject for the first experiment was engaged primarily in studying the value of simple mixed diet consisting very largely of wheat bread. As much as 600 gm., or more than 21 ounces, of bread were consumed daily with only small amounts of other foods. When the attempt was made at once

to replace one third of this bread by an equivalent amount of corn meal, and to consume the latter in the form of mush, it was found that the quantity of mush was too large for the unaccustomed digestive tract already somewhat taxed by the large bulk of bread in the diet. The large quantity of mush was unpalatable and digestive discomfort was experienced. The nitrogen balance was difficult of interpretation because the total intake was diminished; but since the output was diminished to at least an equal extent, it appeared that the corn meal protein was as well utilized by the tissues as was an equal amount of protein from wheat flour.

In the second experiment, a woman, weighing from 59 to 60 kg. (from 130 to 132 pounds) studied the efficiency of wheat and corn proteins by making them prominent in a low-protein diet and determining the intake and output of nitrogen for twenty-three days. The protein intake was kept under 50 gm. per day and was distributed as follows: milk protein, 18 per cent.; wheat protein, 47 per cent.; corn protein, 31 per cent. This involved the consumption of nearly a half-pound of corn meal daily, namely, 200 gm., of which 90 gm. per day were eaten as mush and 110 gm. were mixed with wheat flour and eaten as bread. The subject maintained her weight and general health and energy, working in the laboratory about ten hours per day, notwithstanding the hot summer weather. Twice during the month, however, she experienced digestive discomfort with a tendency to flatulence and slight diarrhea. This was during some of the hottest days of the summer, and it is a question whether the discomfort should be attributed to the corn meal or to the fact that the diet as a whole was too bulky and too starchy for the season. Notwithstanding the small protein intake, nitrogen equilibrium was maintained throughout, indicating a very satisfactory efficiency of both the wheat and the corn proteins.

The third subject consumed 110 gm. of corn meal per day for eight days, after being twenty days on a known diet consisting largely of bread made in part from patent and in part from whole wheat flour. Of the corn meal eaten daily, 85 gm. were substituted for entire wheat flour and used in bread, and 25 gm. were eaten as mush in place of 25 gm. of sugar. The net effect of these substitutions was to leave the protein content and energy value of the diet very nearly unchanged, and the nitrogen balance showed that the tissues made as good use of the corn protein as of the wheat protein which it replaced. The subject felt, however, that the abrupt introduction of about 4 ounces of corn meal per day, in place of more familiar foods, rendered the diet more difficult of digestion.

In all three of these cases, the experimental diets containing corn meal included also considerable

amounts of wheat flour. So it is a question whether the slight disturbances or discomfort of digestion should be attributed primarily to the corn meal or rather to the continued use of a bulky and starchy diet, especially as all of these experiments were made in summer. Another question that arises is, whether the corn meal used in these experiments was cooked in such a way as to be digested to the best advantage.

A fourth experiment was therefore planned, in which the amount of corn meal used was still larger, but it was baked in the form of thin scones so that the starch was more uniformly heated than in the baking of ordinary loaves of bread, and was presumably somewhat more thoroughly cooked than when simply boiled with water to a mush. More than 10 ounces (300 gm.) of corn meal were eaten daily, the remainder of the diet consisting of limited amounts of milk, fruit, sugar and fat. The corn meal furnished about half of the calories and three fourths of the protein of the diet. It replaced the whole amount of breadstuffs and cereals ordinarily eaten. Under these conditions there was no disturbance whatever of either appetite or digestion, although the corn meal diet was taken continuously for a month. Determination of the nitrogen balance showed that the maize protein functioned with unexpectedly high efficiency, since the equilibrium was maintained throughout the month with an intake of only 36 gm. of protein per day, of which three fourths was maize protein. The body weight of the subject was practically constant at 56 kg. throughout the month of the experimental diet.

In the last experiment, the corn meal was cooked by being mixed with boiling water and a little fat and salt, and baked in portions three-eighths inch thick for about one hour at low oven temperature to insure thorough and uniform heating throughout. The finished product, while only golden brown on the surface, was well done and crisp to the center. The thorough mastication and admixture with saliva, which the crispness of this form of corn bread insures, is probably a factor of some importance in its digestibility.

It is evident that corn meal, suitably cooked, can be substituted for corresponding wheat products even to an extent equivalent to the whole of the usual consumption of wheat in the dietaries of those who live largely on bread, without detriment to the nutritive value of the diet. When conditions are unfavorable or the subject is particularly sensitive to a change of food, a considerable substitution of corn for wheat may give rise to some discomfort in digestion; but in the three cases here observed, the nutrition of the body tissues appeared to be as well maintained as when the digestive process was entirely regular. It is confidently believed that suitably cooked corn products can enter into the dietary, even of those not accustomed to their use, in large proportion without any effect whatever on digestion. Nor need the palatability of such a diet suffer when even greater quantities of corn products are introduced in varied forms.

Acting on my suggestion as to the feasibility of deriving half the calories of a mixed diet from corn, some of my friends have experimented from the housekeeper's standpoint, with results wholly successful in palatability, in conformity to conventional menus, and in attractiveness to the eye.

Miss Monroe and her colleagues¹ prepared a week's meals, in the total of which 50.5 per cent. of the

calories were contributed by corn products. The results of the twenty-one meals served are summarized in the accompanying tabulation.

Corn-wheat yeast bread, with one part corn meal to three parts wheat flour, was served at all meals, when no other bread is mentioned in the table. Corn oil was used in the more highly seasoned, but not in the bland salad dressings. Corn syrup was not substituted for sugar in any case in which substitution would be perceptible either to the eye or to the palate. There was no suggestion of monotony as one looked over and tasted the twenty-one meals in succession, and each individual meal was such as to be highly acceptable to the housewife or culinary expert of conventional ideas and high standards of palatability—not merely to the "scientific enthusiast."²

MENUS FOR TWENTY-ONE MEALS

Day	Breakfast	Luncheon	Dinner
1st	Malaga grapes; popped corn with cream; samp spoon bread, orange honey; coffee	Cheese polenta, tomato sauce; buttered peas and carrots; spice cake; tea	Boiled tongue, spinach; creamed hulled corn; hot corn bread; jellied apples; pop corn laces; coffee
2d	Grapefruit; corn flakes and cream; fried corn mush; maple corn syrup; coffee	Corn and chicken soup, corn bread croutons; green peppers stuffed with hominy grits; corn relish, steamed corn bread; maple custard, pop corn drops; tea	Baked cod, sauce tartare; corn meal bouletts; deviled corn; watercress salad; corn tutti frutti; coffee
3rd	Stewed apricots; puffed corn, top milk; creamed corn on toast; coffee	Escalloped corn; cider jelly salad, johnny cake crisps; cottage pudding, chocolate sauce	Yakhuah, baked corn croquettes, pear salad; popped corn pudding; coffee
4th	Crisp cereal with bananas; creamed hominy with hard cooked egg; spider corn cake; coffee	Corn chowder, corn sticks; corn bread salad; corn meal rolls; chocolate; cornstarch pudding; tea	Southern chicken pie, pineapple and cheese salad; steamed corn meal pudding with fruit sauce; coffee
5th	Stewed prunes; corn meal mush, cream; creamed herring, browned hulled corn; corn-wheat bread toasted; coffee	Gnocchi di farina gialla; grapefruit and orange salad; Richmond corn muffins; cocoa; spice cookies	Escalloped corn and oysters; asparagus with butter sauce; cabbage and pimiento salad; corn meal banana fritters; fruit sauce; coffee
6th	Sliced oranges; corn-let griddle cakes, maple corn syrup; coffee	Escalloped hominy and cheese; tomato jelly salad, corn-wheat bread sandwiches; corn short cake with peaches; tea	Round steak, Swiss potatoes in halibut shell; corn and southern; corn wheat rolls; romaine with chiffonade dressing; corn starch and prune molds; coffee
7th	Baked apple; codfish mush balls; samp with cream sauce; corn muffins; coffee	Cream of cornlet soup; cooked corn sticks; corn meal and samp waffles, maple corn syrup; chilled pineapple and orange; cake; tea	Roast chicken, cranberry sauce; candied sweet potatoes; corn oysters; Waldorf salad; corn crackers; cheese; coffee; corn syrup mints

In another case,³ two women, who had had some professional training in food work, but whose duties were such as to preclude the spending of much time on either the planning of menus or the preparation of meals, found that under every-day household conditions and without the adoption or development of any unusual combinations, it was easily practicable to derive more than one third of the week's calories from the products of ordinary field corn. Corn meal, corn flakes, puffed corn, hominy, cornstarch, corn oil, and corn syrup were used. A liberal use of fresh fruit and vegetables was found very helpful to the palate.

1. Monroe, Guilford and Colman: Data to be published in full by the Bureau of Publications of Teachers College, Columbia University, New York.

2. An enthusiast could easily have made the corn kernel contribute a considerably higher percentage of the total number of calories by more frequent substitution of glucose for sucrose and of corn oil for olive oil, and by the use of a higher percentage of corn meal in bread making, thus making a product of less conventional texture but equal food value.

3. Allen and Short: Results to be published.

bility of the diet, especially on those days on which much corn meal was used. With the diet thus supplemented, it was found that a week's daily use of enough of the corn products to furnish over one third of the calories caused no loss of appetite, nor disturbance or discomfort of digestion, and was entirely satisfactory to the two women and to the man of the family.

Granted that corn products may be substituted for those of wheat to a large extent, or entirely, if desired, without detriment to the attractiveness and palatability of the diet or to the nutritional condition as studied in human subjects by determination of intake and output in quantitative experiments of as much as a month's duration, the question may still arise in some minds as to whether long continued use of corn would give results in every way as favorable as the corresponding use of wheat.

The investigations of McCollum, in which laboratory animals have been kept on restricted diets, often for a lifetime, and in several cases for more than one generation, seem well calculated to bring to light any differences in the more obscure factors of food value or in the general wholesomeness of the two grains, if any such differences exist. In recent summaries of the results of an extended experience with such experiments, McCollum has repeatedly stated that wheat and maize are very similar in their dietary properties. If this seems surprising in view of the well known inadequacy of zein when fed as the sole protein of the diet, it should be recalled that Osborne and Mendel, to whom our knowledge of the nature of this deficiency of zein is so largely due, have demonstrated also that the other important protein of corn, maize glutelin, is adequate to meet all protein requirements and maintain a normal rate of growth when fed as the sole protein of the diet. They have also shown that zein, while inadequate alone, may yet take the major part in meeting the protein requirements, either of maintenance or of growth, when it is supplemented by a much smaller amount of milk protein.

Persistent use of a diet consisting too exclusively of corn products may lead to unfavorable results, but this is true of the other grains as well. To quote a very recent article by McCollum: "When an animal is fed solely on a single kind of seed, regardless of the kind of plant from which it is derived, loss of weight ensues and death is certain to supervene." This is as true of wheat as of corn, and is no argument against the partial or complete substitution of the one for the other. To the slight extent that two such similar seeds may supplement each other, the substitution of corn for, say, half the wheat ordinarily eaten may improve the biologic value of a diet drawn largely from these grains. Seeds should, however, be supplemented not so much by other seeds as by leaves and tubers, and still better by milk. Quoting McCollum again: "Moderate amounts of milk supplement the deficiencies of the seeds most satisfactorily, and its use forms the greatest factor of safety in our diet."

It is probably no longer necessary to point out that, if pellagra is due to faulty diet, the fault lies not in the use of corn, but in the fact that the diet contains too little of foods of other types. Lusk⁴ has recently stated the case of pellagra in the corn belt and the use of corn as food as follows:

It must be here definitely stated that the use of corn meal is not the cause of pellagra, provided the right kind of other foods be taken with it. . . . Pellagra is generally believed

to be produced by a too exclusive use of highly milled corn and wheat flour in association with salt meats and canned goods, all of which are deficient in vitamins. The administration of fresh milk is naturally indicated. Goldberger states that after the addition of milk to the diet of a pellagrin, the typical clinical picture of pellagra no longer persists. The poor in the mill towns of the South lived too exclusively on a corn diet without admixture of milk or fresh animal food or even of cabbage, and pellagra has been the consequence.

The Food Administrator asks us to eat corn bread and save the wheat for export. It is a very small sacrifice to eat corn bread at one meal or more a day. Indian corn saved our New England ancestors from starvation, and we can in part substitute it for our wheat and send the latter abroad to spare others from starvation. The simplest elements of patriotism demand that we do this.

The plea for a fuller use of corn as human food in place of a part of the wheat which we ordinarily consume gains new emphasis and significance from the fact that the wheat situation is becoming constantly more acute, and all indications are that even with a good crop this summer, economy of wheat will continue to be a pressing problem for at least the coming year, whatever may be the fortunes of war.

SKIN GRAFTING *

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ROCHESTER, MINN.

At no time in the world's history have there been under treatment so many persons injured and crippled as now. As a great majority of these are suffering from infected wounds, frequently with a great deal of sloughing and destruction of extensive areas of skin and superficial tissues, anything that will tend to hasten healing and cover raw surfaces will be a great benefit to the patient, and a great saving in time and money.

Much has been done in the way of simplifying dressings, and in the control of infection by the scientific application of time-honored surgical principles, and the introduction of antiseptics that have a maximum bactericidal action and a minimum destructive action on the tissues. I shall not, however, dwell on the treatment of wounds or on the major surgical operations indicated, but shall confine myself to the final stage of the treatment of most infected wounds, that is the covering of the raw surfaces with skin.

A great many wounds primarily infected are, under modern methods, made rapidly sterile, as shown by the disappearance of pus and bacteria, and may then be closed with impunity like any fresh wound. But in many of these cases, when there has been extensive destruction of skin, the healthy edges of the raw surfaces cannot be brought together by the ordinary plastic method, and skin grafting must be resorted to.

In reviewing the history of surgery it is not surprising to note that skin grafting was one of the first operations attempted; in fact, it is asserted that the ancient Hindus and Egyptians successfully transplanted skin before the Christian era, and it is generally accepted that this operation has been done with varying degrees of success in different parts of the world ever since. It was not, however, until 1869, following the reading of a paper and the presentation of a case by Reverdin before the Société de chirurgie

* From the Mayo Clinic.

* Presented before the Olmsted County Medical Association, Rochester, Minn., April 10, 1918.

4. Lusk, Graham: *Scient. Month.*, 1917, 5, 298-309.

in Paris, that it was accepted as a regular surgical procedure, and since that time a great deal has been written on the subject.

The grafts, as first suggested by Reverdin, were very similar to those that we now accept as probably

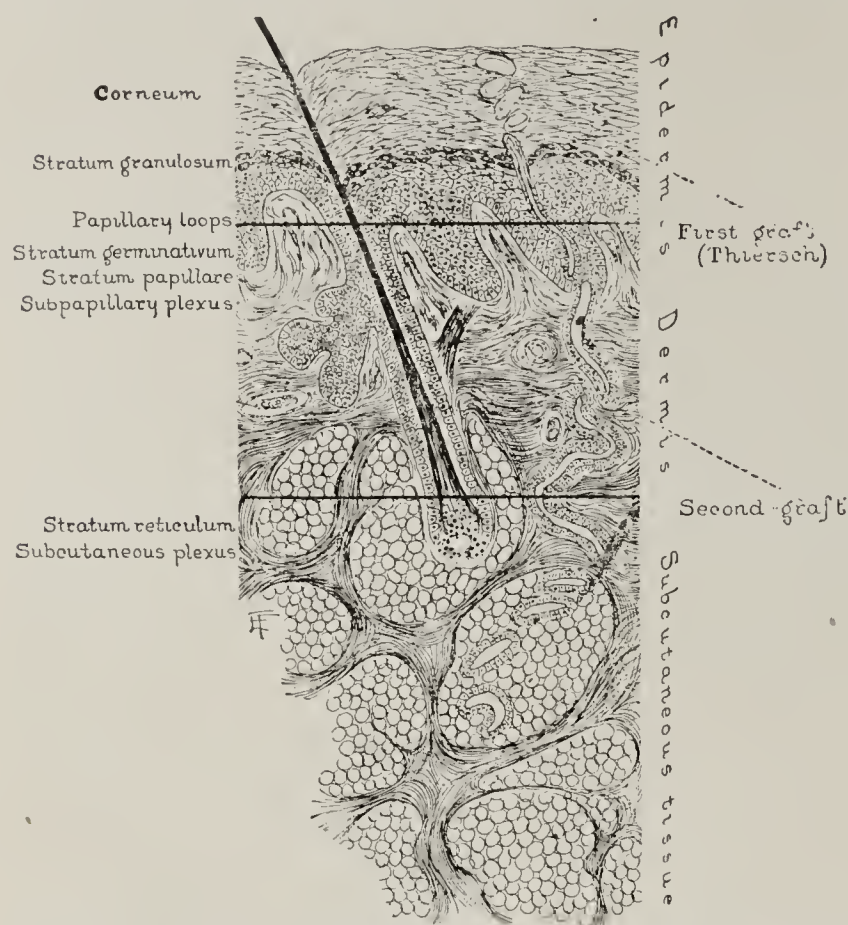


Fig. 1.—Normal skin, showing part utilized in Thiersch graft, and the deep part utilized by a new method.

of the best type of graft for use in the ordinary case in which closure of the wound is the all important consideration. These are small island grafts, principally epidermic, but containing some dermis in the center, and called by Davis small, deep skin grafts. The other accepted and useful grafts are known as Thiersch grafts and Wolfe grafts. The former are thin sheets of skin, removed with a razor, and include all the layers of the epidermis and possibly a portion of the dermis; the latter are composed of the entire thickness of the skin, and when successfully used are the most satisfactory.

Skin grafting is divided into three distinct types, depending entirely on where the grafts are obtained: (1) autoplasmic grafts—skin taken from another part of the body of the patient; (2) isoplasmic grafts—skin taken from another person, and (3) zooplasmic grafts—skin taken from one of the lower animals. All authorities agree that the autograft is the most satisfactory, and a great many hesitate to use even isografts when it is possible to get skin from the patient.

I myself have had no experience in the use of zoodermic grafts, but am satisfied that there is a much larger field of usefulness for the isograft than is generally believed. When one takes into consideration the ease with which good grafting material may be obtained in the operating room without discomfort or inconvenience to the donor, and with the removal of all dread of the operation from the recipient, one is convinced that it should certainly be more frequently practiced. In isografting, the cause of failure should not always be attributed to the graft itself, since it may be due to the patient, to the condition of the wound or to the after-care and dressing, etc. This problem is especially difficult to solve in private prac-

tice, in which time is such an important consideration to the patient and little or no help can be obtained by experimental work.

In all the patients requiring skin grafting who were under my care during the past year, the blood of the donor, as well as that of the recipient, has been tested for agglutination. The results have been very interesting and instructive, and I feel sure will add a great deal to the popularity of the use of the isograft. In many cases the method will obviate the unnecessary removal of skin when there is little or no likelihood of its taking. I have tested the principle with the three varieties of grafts, and am satisfied that blood grouping is just as important for good results in skin grafting as it is necessary in transfusion, and that it is governed by the same principles.¹ While the results obtained are not positive, nevertheless, I have never had the skin take which was removed from a donor whose red blood corpuscles were agglutinated by the serum of the patient. The results in all other cases have been very satisfactory, almost, if not entirely, equal to autodermic grafting. In most cases in which a donor's skin is to be used, a Wassermann test should be made to guard against syphilitic infection.

In any case in which it is considered expedient to resort to skin grafting, the first consideration is to have the raw surface in a healthy condition. Experience shows that only poor results can be expected on an indolent ulcer, one covered with exuberant granulation tissue or one in which the microscopic slide shows numerous bacteria. Grafting may be satisfactorily done on fresh raw surfaces, but pedicle or plastic grafts are, as a rule, more satisfactory in these cases,

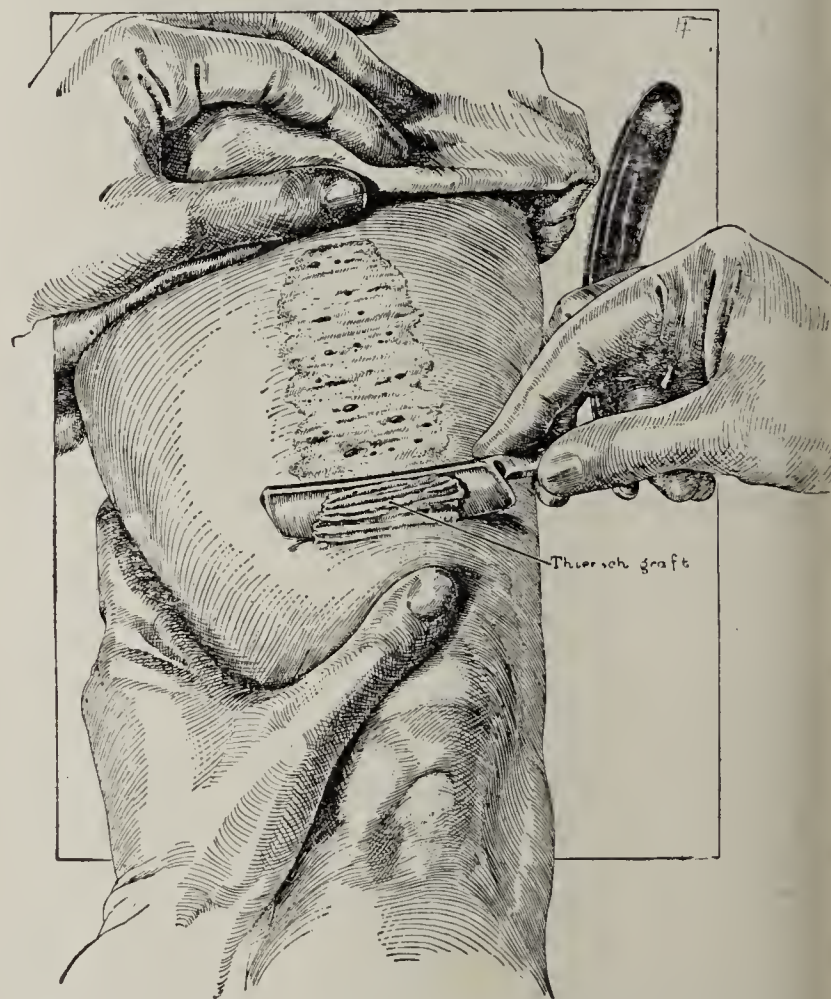


Fig. 2.—Ordinary method of obtaining Thiersch graft.

and true skin grafting is much more frequently indicated as a secondary method in closing open wounds or ulcers.

1. Sanford, A. H.: Selection of the Donor for Transfusion, *Journal of the Lancet*, 1917, 37, 698.

In all chronic ulcers, especially those resulting from x-ray or electric burns, the first consideration is to improve the circulation in the part, and to stimulate healing by the removal of the unhealthy granulations, either by curetting or by excision of the ulcer. Grafts may be placed immediately, but in most cases it is advisable to apply to the raw surface hot saline boracic dressings until it is covered with healthy granulations, and in some cases it is desirable to use mercuric iodine ointment (8 per cent.) once in two days until a healthy condition of the granulating surface is obtained and a small pellicle of new skin appears along the edge. Satisfactory results can then be expected from grafting.

In the more recent cases, such as are so often seen in patients following burns, extensive superficial infections, or radical operations in malignancy, the best method is to apply hot saline, neutral solution of chlorinated soda (Dakin's solution) or chloramin-T, until the wound is made sterile, as shown by smears three consecutive days. The grafts may then be applied direct,

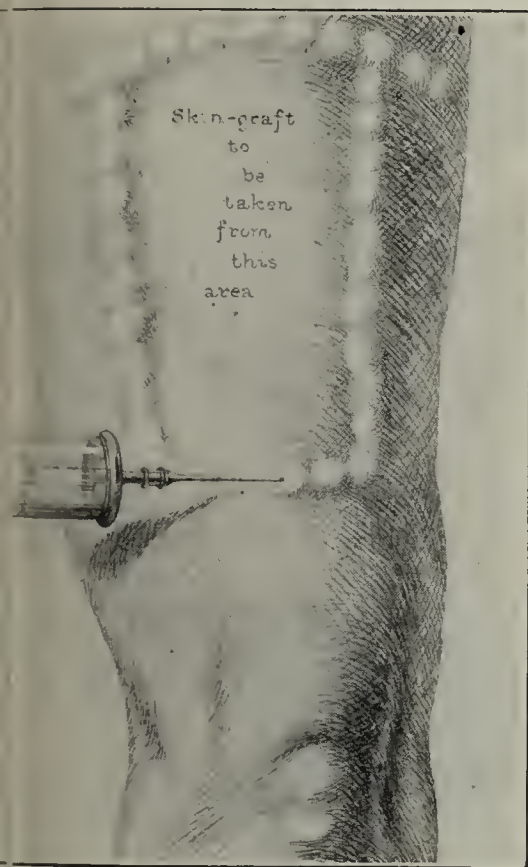


Fig. 3.—Superficial blocking with local anesthesia for skin grafting.



Fig. 4.—Further utilization of area from which Thiersch graft has been removed.



Fig. 5.—Excision of remaining layers of skin from surface denuded by Thiersch graft.

If the granulations are exuberant, they may first be curetted away or rubbed off with a piece of dry gauze, controlling hemorrhage by pressure with gauze moistened with hot saline solution and applying the grafts immediately, pressing them well into place with dry gauze. If there is much oozing it is better to delay the placing of grafts for twenty-four hours, drying up the hot moist dressings.

The types of grafts to be used and where they shall be obtained are very important considerations. The thickness, or Wolfe graft, gives the most normal appearing and best functioning skin, but has the disadvantage that it is not so apt to take as is either the Reverdin or Thiersch graft. However, in annular ulcers of the extremities, around joints, or in dealing with extensive areas, it is necessary to have at least part of the surface covered with grafts of the entire thickness of the skin.

In deciding where to obtain grafts, the type of skin desired should naturally be considered. For most cases the skin from the anterior and outer surface of the thigh or upper arm will be found best, whether it be from the patient himself or from a donor.

General anesthesia is frequently advisable, but even extensive grafts may be obtained under local anesthesia with very little discomfort to the donor, although so far as the operation or the surgeon is concerned, the latter has no advantage. It is much easier, however, to obtain a donor if it is understood that he will not be anesthetized.

It makes very little difference what method is used in preparing the skin, and the iodine method is as satisfactory as any. The area is first cleaned with benzine containing 1:1,000 iodine, and after drying, it is given two coats of 3.5 per cent. iodine in alcohol. Figure 1 is a transverse section of the normal skin. A Thiersch

graft is then cut after the ordinary method (Fig. 2). If local anesthesia is to be used, the skin is injected, as shown in Figure 3. If the skin is thick, a second layer may be removed from the same area in the same way, or small island grafts may be taken from the center of the raw surface to include some of the deeper layers of the epidermis and some of the superficial layers of the dermis (Fig. 4).

It is advisable to reduce the size of the wound, especially if much of the dermis has been removed, by cutting an elliptical piece of tissue (Fig. 5) and suturing the edges together with silkworm gut and horsehair. The tissue thus removed may also be utilized for grafting by cutting it into small sectional grafts (a term used by Colebrook and Fleming) and applying just as the Reverdin grafts are applied. Figure 6 shows the wound covered with Thiersch grafts and small, deep grafts taken from the denuded

area. The advantages of this method are: (1) Grafting material equal to twice the denuded area is obtained; (2) it is easily and quickly done and is especially suited for local anesthesia, and (3) the clean cut wound may be expected to heal by primary union after being sutured with silkworm gut and horsehair, which has a distinct advantage over the raw area left after the Thiersch method or the necessary multiple wounds of the Reverdin method.

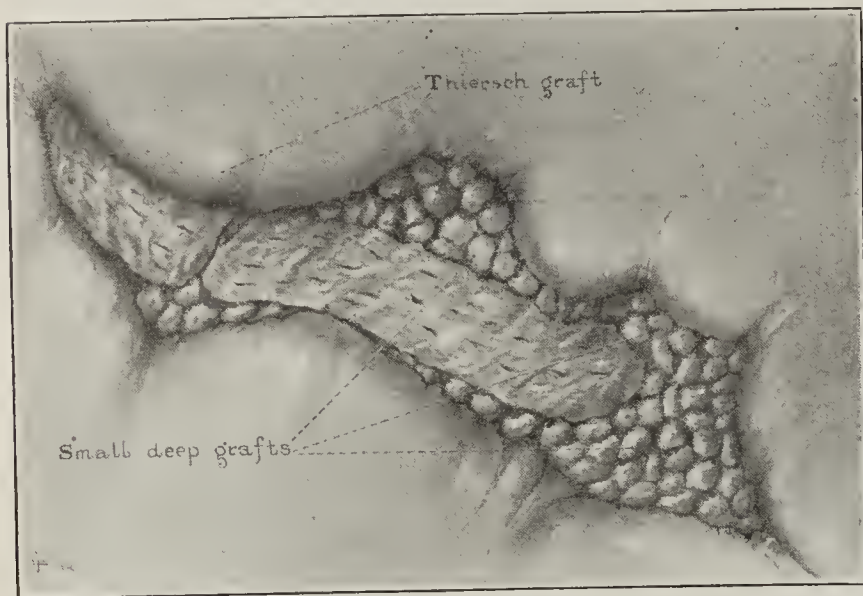


Fig. 6.—Wound covered with Thiersch grafts and small deep grafts taken from denuded area.

If large grafts, either Thiersch or those from superficial dermic layers, are used, they should be punctured at numerous points to allow the free escape of serum, which would otherwise tend to float them from the surface.

The type of dressing to use is of the utmost importance and varies with the nature of the case. If the wound is completely covered with Thiersch grafts, the open method of treatment, that of protecting the surface with a wire screen, is probably the best, with an occasional removal of any crusts or thick secretions and the application by atomizer of dichloramin-T (4 per cent.) or neutral solution of chlorinated soda. If the wound is only partially covered with grafts, the most satisfactory dressing is first to cover the raw surface and grafts with open-mesh net that has been previously impregnated with paraffin, and then to apply a wet dressing, which should be changed every four hours for three days without disturbing the paraffined net, the latter being held in place by sutures or by applying soft paraffin along the edges to fix it to the surrounding skin. Open air treatment is then combined with hot dressings, the hot dressings being used at night and the wound left exposed during the greater part of the day and sprayed once or twice during the twelve hours with neutral solution of chlorinated soda. As a rule, grafts have taken well in one week's time, after which sterile petrolatum makes a very satisfactory dressing.

Frequently the paraffined net becomes firmly adherent to the grafts while wet dressings are being combined with open air treatment; but it may easily be freed by applying a liberal petrolatum dressing or by spraying with liquid petrolatum for from four to six hours before attempting its removal.

Body Heat and Oxidation.—The total quantity of heat produced by the body is a measure of the intensity of the oxidation of carbohydrate, fat, and protein within the body.—Lusk, *Food in War Time*.

PHYSIOLOGIC COLECTOMY IN CHRONIC TOXEMIAS OF INTESTINAL ORIGIN

CHARLES A. L. REED, M.D.

CINCINNATI

The cumulative experience of both physicians and surgeons engaged in a large way with the treatment of gastro-intestinal conditions, and of experimental scientists in dealing with these problems, tends to confirm what may be expressed as at least tentative conclusions as follows:

1. The origin of certain toxins and of the now recognized anaphylatoxin¹ demonstrated to be present in certain toxemias, both convulsive and nonconvulsive in type, is due to certain conditions of stasis in the gastro-intestinal tract.

2. Stasis in the gastro-intestinal tract implies (a) fecal retardation in either the small intestine or the colon or both; (b) venous retardation in either the mesocolic circulation or the mesenteric circulation or both, and (c) retardation in the lymphatic circulation of both the mesocolon and the mesentery.

3. These three forms of stasis are associated with and obviously dependent on some form of gastro-intestinal displacement or other distortion, and are therefore, primarily mechanical in origin.

4. There can be no permanent benefit from treatment in these cases of stasis with consequent constitutional manifestations without first a correction of the initial link in the chain of pathologic sequences just enumerated. This can be accomplished in the majority of cases only by the surgical correction of the displacements or distortions of the gastro-intestinal tract as revealed by careful diagnostic methods, often including exploratory incision.

It is of the highest importance that the general practitioner who is the attendant in the first instance

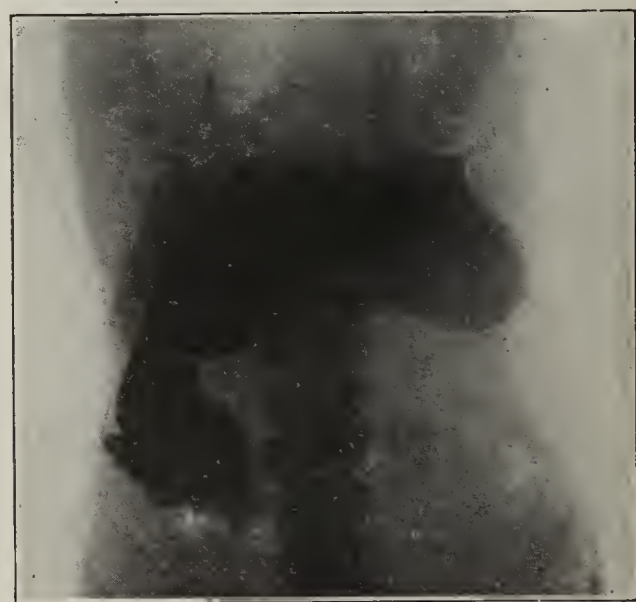


Fig. 1.—Necessity for physiologic colectomy (colonic exclusion) in a child aged 3½ years. Colon stasis with chronic colitis. Ileal stasis due to adhesions at terminal ileum. Resulting chronic convulsive toxemia. Fifty-six seizures in week preceding operation; no seizure to date (eleven months) since operation. (Internal conditions shown in Fig. 2.)

of these unfortunate persons should know just what surgical measures are available for their relief, and just what results may reasonably be expected. In this connection it is important at the very outset to emphasize the rule that either no surgery at all or the least

1. Novy, F. G., and DeKruiff, P. H.: Anaphylatoxin and Anaphylaxis. *THE JOURNAL A. M. A.*, May 26, 1917, p. 1524.

and safest surgery possible should be employed to accomplish the end in view. My own practice under this rule began with the conservative nonsurgical treatment consisting of diet judiciously applied, vis-

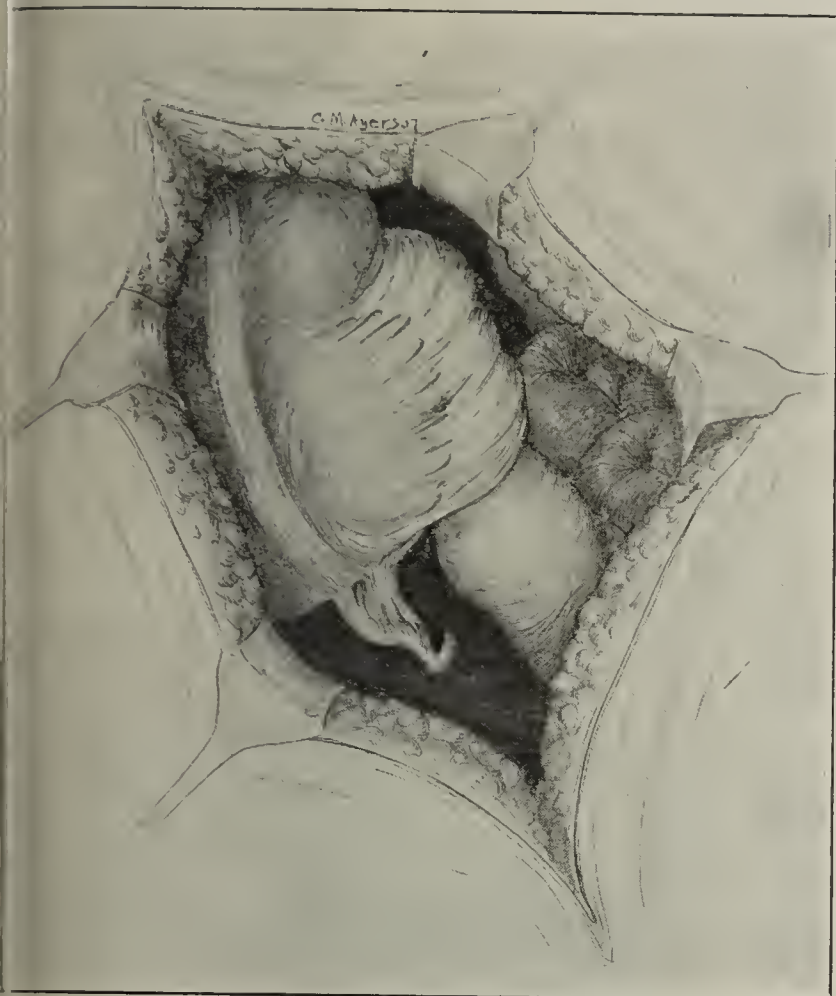


Fig. 2.—Stricture at ileocecal junction with dilatation of the ileum and extensive exudate (Jackson membrane) over the cecum. (Same as Fig. 1).

al massage, posture and attempted mechanical support of the displaced and generally ptotic organs. This regimen was effective in producing even symptomatic cures in only a limited number of cases. I then devised the operation of parietal implantation of the colon with anchorage of the stomach.²

I found this procedure not only primarily but permanently effective in a much larger percentage of cases. There were, however, certain cases, particularly of the chronic convulsive type, in which secondary changes in the colon seemed to preclude the possibility of functional restoration and consequently demanded its exclusion from functional duty. This led me to adopt Lane's procedure of ileosigmoidostomy. Satisfactory results were defeated in some but not all of these cases by anastaltic loading of the displaced colon; but in some others in which this did not occur, follicular hypertrophy and hypersecretion of mucus associated with atrophy of the muscularis persisted and the toxigenesis continued. I then practiced colectomy with the result that I found it a prohibitively dangerous procedure, especially in chronic convulsive toxemias, and one justified only by extreme conditions in this or any other class of cases. In the instances in which complete relief from both local and constitutional symptoms followed removal of the large bowel, I became convinced that the salutary result was attributable in an important degree at least to the fact that retardative traction had thereby been removed from the superior mesenteric vein, and the venous turgescence of the mesocolic and mesenteric

circulation had consequently been corrected. It will be seen, therefore, that the necessities of the situation demanded some procedure which would be less dangerous than primary colectomy. I therefore tried to do this operation at two stages, namely, a primary ileosigmoidostomy and secondary removal of the colon. In occasional instances, however, anastalsis was pronounced, with the result that the unused colon speedily became loaded, causing an aggravation rather than an amelioration of the toxemic phenomena. A secondary colectomy was thus made necessary before adequate benefit had been derived from the first stage of the operation. This experience forced on me a realization of the importance of devising some means against anastaltic loading of the colon following ileosigmoidostomy, with the result that I beg leave to report on the methods thus evolved.

Before doing so, however, I feel that it is important to call attention to certain modifications which I have adopted in the manner of doing ileosigmoidostomy. Thus it will have been noted that in practically all illustrations of ileosigmoidostomy there is either an end-to-side anastomosis or a side-to-side anastomosis with the proximal ileum coming down from above. In all cases that I have seen, the proximal ileum lies loosely on the floor of the pelvis, from which it comes up or may be brought up to the level of the sigmoid. It follows, therefore, that, to avoid retardative angulation at the point of anastomosis, the terminus of the proximal ileum should point upward rather than downward. End-to-side anastomosis between the ileum and sigmoid, whether done by the button or by suture, is sure to be followed by enough cicatricial contraction of the resulting stoma to interfere with free discharge of the ileac content. The use of the clamps in ileosigmoidostomy is both unnecessary and cumbersome, and interferes with the intelligent control of incidental hemorrhage. These



Fig. 3.—Stasis in remnant of transverse colon after right side colectomy, retardative angulation at splenic flexure not being relieved.

considerations have prompted me to revise the technic as follows:

REVISED TECHNIC OF ILEOSIGMOIDOSTOMY

1. Approximate the ileum and sigmoid with walls relaxed for a distance of about 2½ inches, taking care that the ileum proximal to this point shall hang freely in the pelvis.
2. Stitch the ileum to the outside of one tenia of the sigmoid, using fine but strong Japanese silk for the purpose of carrying this suture line the full length of the proposed anastomosis.

Reed, C. A. L.: Fixation of the Ptotic Stomach and Colon by Peritoneal Implantation, *THE JOURNAL A. M. A.*, March 28, 1919, p. 999.

3. Open both the ileum and the sigmoid nearly the full length of this suture line, controlling the always slight hemorrhage when necessary by forceps pressure.

4. Trim away the tissue from the free margin of the sigmoidal incision back to the other tenia and also cut away a very little tissue from the free margin of the ileac incision.

5. Suture the cut margins together with hemostatic stitch of small chromic gut, the suture line being frequently inter-



Fig. 4.—Ileac stasis after right side colectomy with end-to-side anastomosis, the retardation in the ileum being due to contraction of the anastomotic stoma.

rupted by a lock knot, tied without cutting the thread, the hemostatic suture being carried around to point of beginning.

6. The outer line of suture is then continued to the point of beginning.

7. The ileum is then clamped about three-quarters inch from the distal end of the anastomosis with two parallel hemostats and divided between, the cut edges of the intestine being treated with tincture of iodine.

8. The end of the proximal (anastomosed) ileum is then stitched over the hemostat and infolded, this process being supplemented by another infolding by a purse-string suture with the object of inverting the end of the ileum wedgelike into and through the upper end of the long anastomotic stoma. In this way the stoma is pried open and held open, thus

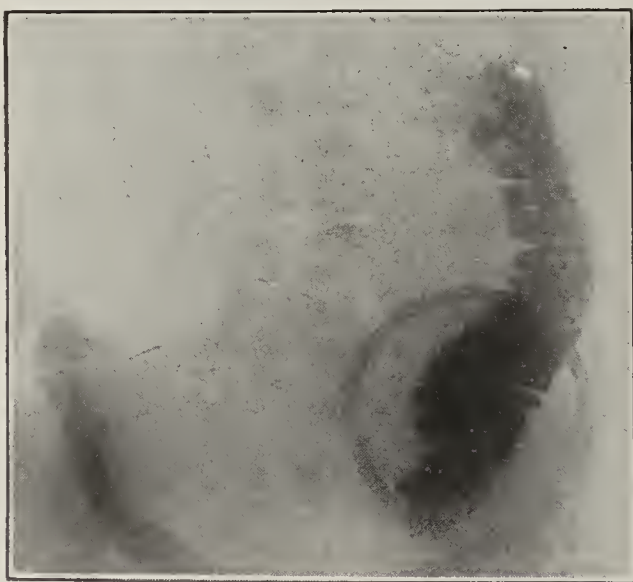


Fig. 5.—Complete relief of ileac stasis by parietal implantation of the colon and cecostomy. The cecostomy tube is shown in situ. Complete relief of toxic symptoms.

obviating the use of the always difficult and sometimes mischievous tube. The problem of the "blind end" of the ileum is thus also eliminated.

PHYSIOLOGIC COLECTOMY WITH COMPLETE EXCLUSION OF THE LARGE BOWEL (FIG. 8)

The first method to evolve in my hands was based on the conception that, in doing a two-stage colec-

tomy, the first stage—that of ileosigmoidostomy as just described—might be safely supplemented by complete exclusion of the colon, based on the experiments of Barbour to the effect that the disused colon rapidly undergoes atrophy both in its walls and in its follicular elements.¹

1. Open the abdomen by a 6-inch oblique incision in the left lower quadrant.

2. Explore the abdomen and break up all adhesions, taking great care to isolate the terminal ileum at its cecal connection, which can generally be done by elevating the abdominal wall with a retractor.

3. Do an ileosigmoidostomy as described in the preceding paragraph.

4. Divide the sigmoid in its upper arch at a point from 2 to 4 inches above the anastomosis.

5. Close the upper end of the distal sigmoid by infolding with at least three layers of sutures, the last or peritoneal layer being of fine but strong silk.

6. Stitch the open end of the proximal sigmoid in the upper angle of the incision.

7. Stitch the open end of the distal ileum in the lower angle of the incision.

8. Close the intervening part of the incision with laminated chromic catgut fortified with two or three *en masse* silkworm sutures.

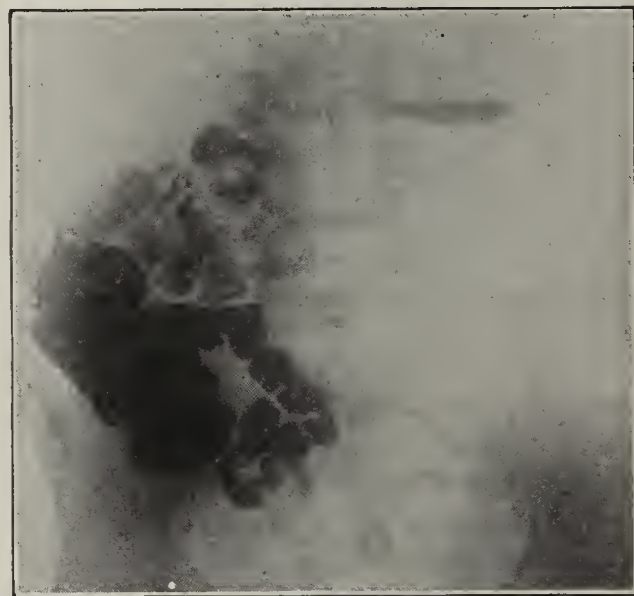


Fig. 6.—Failure to relieve ileac stasis by parietal implantation of the colon and cecostomy with resulting failure to relieve the constitutional symptoms.

9. Insert a large size catheter through the open ileum into the cecum and a large tube (1.5 cm.) into the open orifice of the proximal sigmoid.

10. Insert a rectal tube with several perforations up to but not through the anastomosis.

The tubes should be left in position from a week to ten days. Irrigations of the colon should be inaugurated on the third day and kept up daily until all fecal discharge ceases. The tubes may then be removed and put back only as needed for irrigations. The intervals between irrigations may now be prolonged to two days according to the amount of mucus secreted. The secretion diminishes with the progressive atrophy of the disused bowel. In practically all of my cases it has become negligible in from six to ten weeks, the exceptions being those cases in which mucous colitis, always present in some degree, is unusually severe. In all instances the patients are speedily up and about their daily occupations following primary surgical recovery. Thus, for example, a school teacher has resumed her occupation, a bridge-builder is working on the channel span of a new structure, a lineman is climbing poles and working with live wire, a farmer is back at his crops, a stenographer is again

at her desk, a mechanical engineer is again in charge of the power of a large establishment, a large manufacturer is again running his business, a child of 3½ is again at play. In none of these exacting occupa-

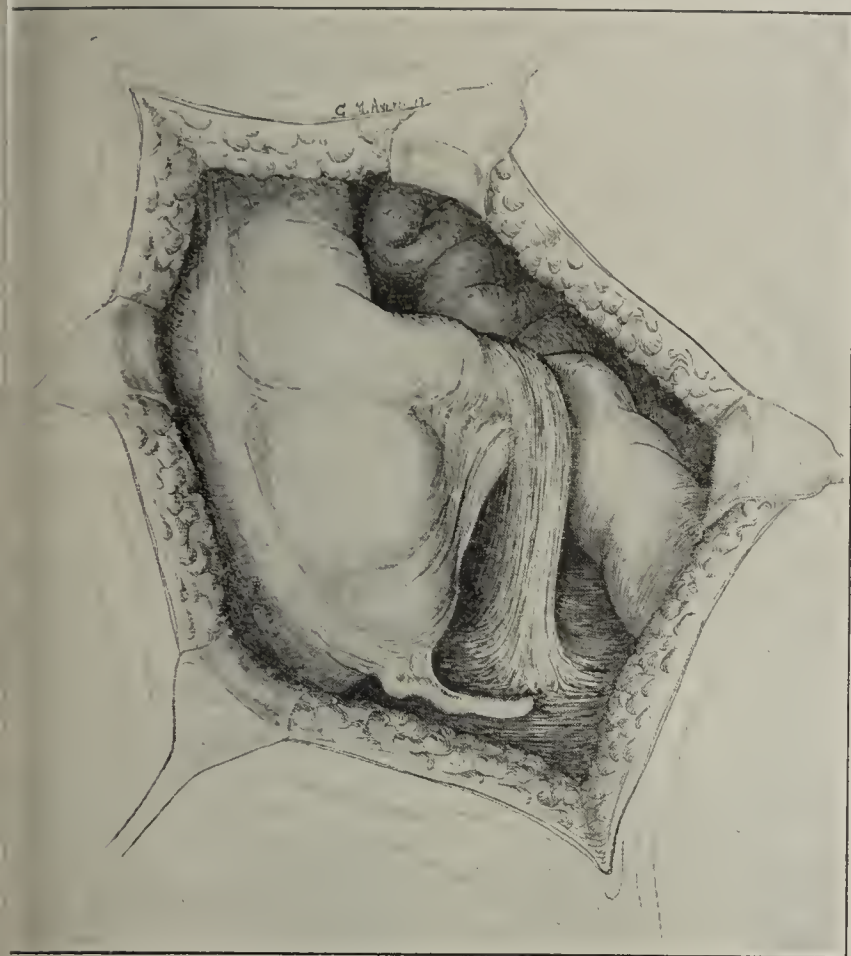


Fig. 7.—Extensive band adhesion at the terminal ileum causing marked ileac stasis with dilatation of small intestine.

ons is the condition resulting from this form of colon exclusion proving to be an embarrassment, particularly as compared with conditions prevailing before the operation.

The further argument in favor of this procedure as the first stage of a possible anatomic colectomy may be stated as follows:

1. It is less dangerous than a primary colectomy. In a series of thirty-one cases, I have lost only one due to the operation itself. In this case, the patient died apparently anaphylactic shock from fecal extravasation into the peritoneum due to analstatic pressure in the occluded distal sigmoid. In the two other cases, first in this series, one, a child, aged 3½ years, died on the eighth day in serial convulsions, while, in the other, male adult, death resulted from anuria.
2. It facilitates detoxication of, first, the alimentary canal and, second, the general system.
3. It tends in most cases to arrest the toxigenic process and thus to restore the normal surgical resistance of the patient.
4. It so far restores the general health without establishing embarrassing local conditions that I have not so far had to do a single anatomic extirpation as a secondary procedure.
5. If secondary operation shall become necessary, this primary procedure will have caused detoxication of the patient with restoration of surgical resistance, while the atrophy of the colon with corresponding shrinkage of blood vessels and nerves will have materially diminished the technical difficulties of the final procedure.

The argument against this operation is as follows:

1. It is always associated with some superficial *coli* infection which, however, through the use of

a solution of sodium para-toluenesulphochloramin (chlorazene), during and after operation, has never proved serious.

2. In at least 5 per cent. of the cases and in spite of all precautions, pressure from anastalsis is liable to force open the upper end of the sigmoid, thus necessitating a secondary operation for its closure.

3. In one case I have had a ventral hernia develop from the upper or colon end of the incision.

4. The two intestinal orifices, not troublesome but requiring some attention, are, however, permanent unless a secondary operation is done. This secondary operation may be (a) either a complete extirpation of the colon as I at first contemplated but have not yet had occasion to do, or (b) a restitution of the tract with formation of an intrasigmoidal valve such as I am about to describe.

PHYSIOLOGIC COLECTOMY WITH CIRCULAR INTRA-SIGMOIDAL VALVE (FIG. 9)

The objections to the operation of colonic exclusion as first described prompted me to devise a procedure against anastaltic pressure, one that would require less attention and would less likely require secondary operation for its termination. The result was the procedure which is done as follows:

1. Make the ileosigmoidostomy by side-to-side anastomosis, as already described in this paper.
2. Divide the upper arch of the sigmoid, if possible, 4 inches above the anastomosis.

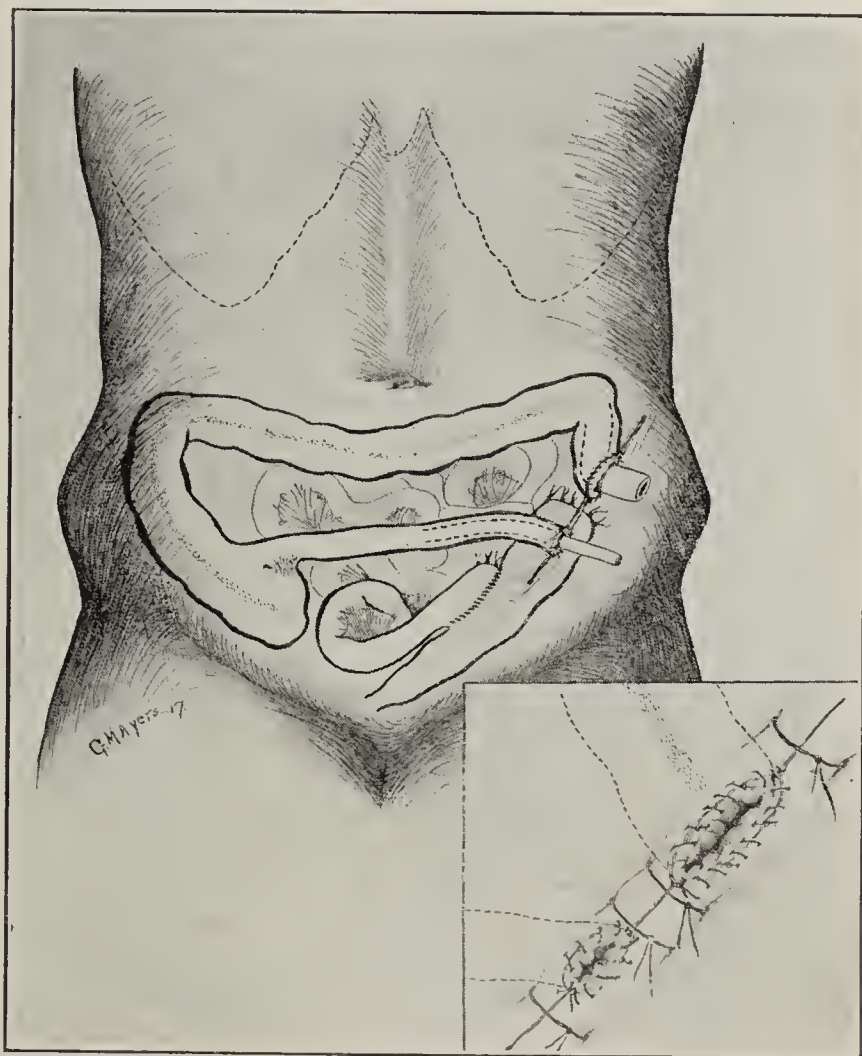


Fig. 8.—Colon exclusion (physiologic colectomy) completed with tube in terminal ileum. A catheter is generally used and carried through the ileocecal valve into the cecum. The effluent tube is seen in the open end of the colon. The method of fixing the open ends to the skin is shown in the lower right hand corner. (First method.)

3. Dissect both of the divided ends of the bowel from the mesosigmoid for a distance of at least an inch.

4. Reunite the divided ends of the sigmoid by means of a Murphy button smaller than the natural lumen of the intestine.

5. As soon as the button is clamped, invaginate it into the distal sigmoid to the depth that it will go—probably an inch.

6. Make this intussusception permanent by stitching the margin of the fold to the wall of the invaginated portion, using preferably fine but strong Japanese silk for the purpose.

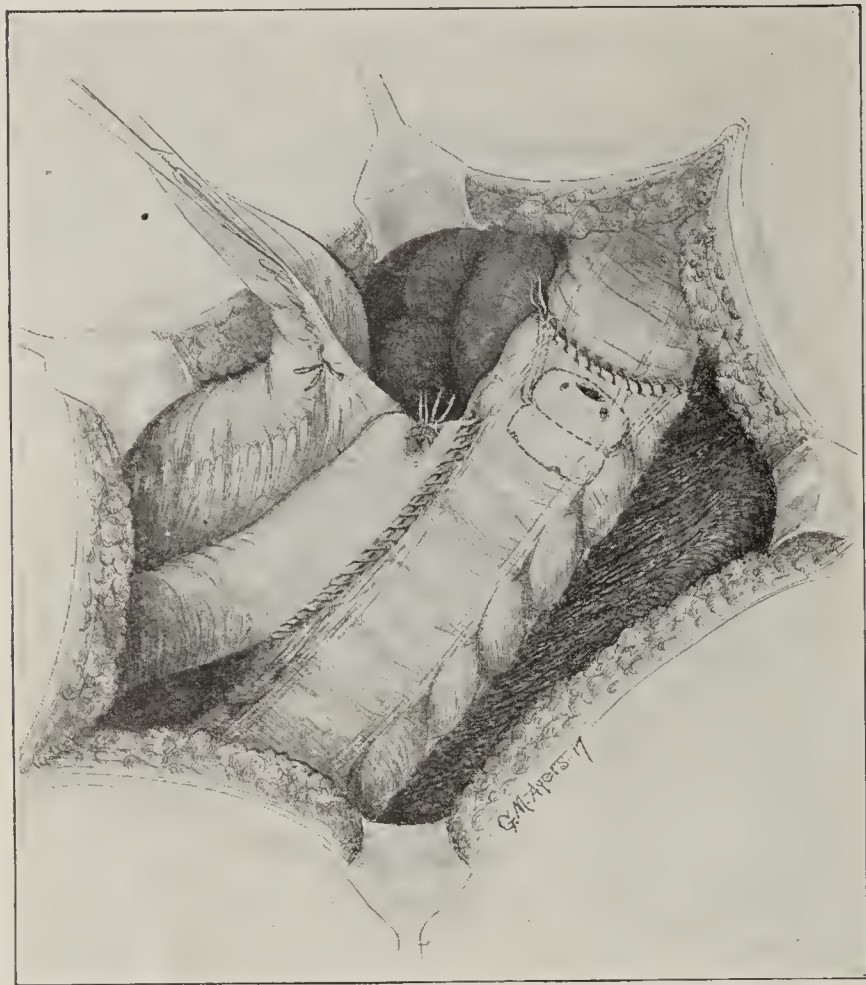


Fig. 9.—Ileosigmoidostomy with side-to-side anastomosis and sigmoidosigmoidostomy with circular intrasigmoidal valve to prevent anastaltic filling of the disused colon. (Second method.)

7. Stitch the open end of the terminal ileum into the lower angle of the wound.

8. Insert a large catheter through the terminal ileum into the cecum.

9. Insert a large rectal tube up to but not through the anastomotic orifice, the perforations in the tube extending down nearly to the level of the levator ani muscle.

10. The wound, after being thoroughly cleaned with chlorazene solution, is closed with laminated chromic gut, fortified with a few silkworm sutures and dressed with gauze saturated with chlorazene.

The patient should be given a liquid diet for a few days, there being no hurry to stimulate the normal peristalsis of the small intestine. Irrigations through the ileocecal catheter should be deferred for from six to eight days, or in the absence of symptoms, until the button comes away. They may then be inaugurated by throwing into the cecum about 4 ounces of some one of the numerous liquid petrolatums. This may be repeated every six hours until the contents of the colon have become at least semiliquid and will drain away through the rectal tube. The rectal tube itself, inserted at the time of operation, should be kept in for at least ten days, and should be removed only for purposes of cleansing. After its first removal following the establishment of fecal drainage, no attempt should be made to reinsert it for a distance of more than 4 inches. The ileocecal tube should be kept in and the irrigations continued for several weeks or months, after which the ileac orifice may be closed or permitted to close spontaneously.

The argument in favor of this procedure is that:

1. It is obviously safe. I have so far done it in only

five cases, but in each instance without the slightest difficulty. 2. The valve formation is apparently effective against anastaltic pressure as, following the primary cleansing of the colon, no fecal matter has been detectable through the ileocecal tube. 3. If the drainage of the colon is thus permanently secured without the danger of anastalsis, there is no obvious reason why the large bowel should ever be removed. The argument against the procedure is that it is not available in cases in which the sigmoid is short or buried in fat or bound down, literally buried, by adhesions of an old perisigmoiditis. The chief argument against it as a primary procedure is that in the subsequent prolonged drainage of the colon, the highly toxic mucus must come down through the rectum from which it is absorbed with facility. In this particular, colon exclusion with external drainage is obviously superior.

THIRD METHOD: PHYSIOLOGIC COLECTOMY WITH LATERAL TRAP-VALVE IN THE SIGMOID

In three cases the conditions just described, namely, short sigmoid buried in adhesions, made it impracticable to apply either the first or the second method just described. In these circumstances, I had recourse to a technic which may be carried out as follows:

1. Do an ileosigmoidostomy as described in this paper.
2. Divide the anterior wall of the sigmoid at a point as far as possible above the anastomosis, carrying the incision through all the layers from outside of one tenia to a similar distance outside the other tenia.
3. Closely whip-stitch the margin of the upper lip of the wound.

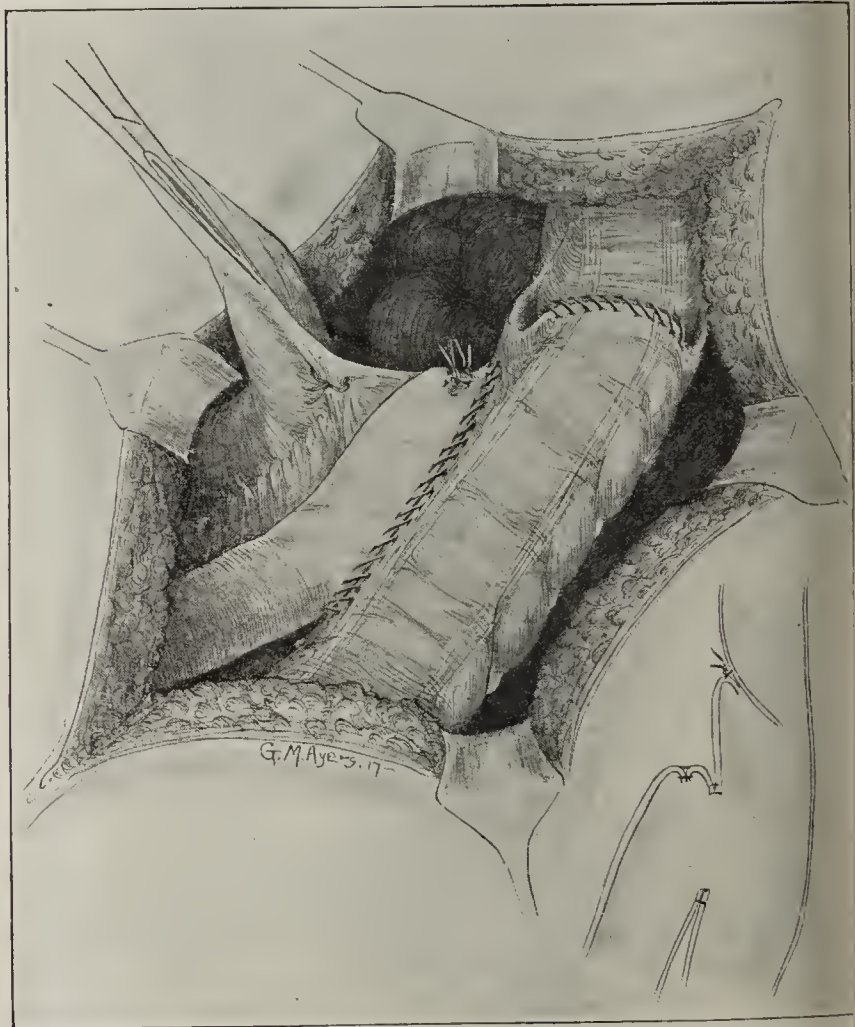


Fig. 10.—Ileosigmoidostomy with side-to-side anastomosis and an infolding flap of sigmoid for formation of trap-valve to prevent anastaltic filling of the unused colon.

4. Bring the lower lip of the wound up to a point about an inch above the margin of the upper lip, and stitch the former to the peritoneal surface by a double row of fine but strong Japanese silk.

5. Conclude the operation in all other particulars as described in the "second method."

The argument in favor of the method first described is that it can be done under anatomic conditions when neither of the other methods is available. It is simple and seems to have been effective in the cases in which I have employed it. The argument against it is that the suturing may give way under violent anastalsis just as in the first method. This accident has not been encountered in my brief experience with this particular technic. The valve formation may not be as effective as the circular valve secured by the second method. In any event, it would seem that the condition established by the operation is sufficient to inhibit the anastaltic wave while not interfering with the peristaltic wave from the cecum to the sigmoid. If further experience shall confirm this conception, the procedure just described may become the one of election in physiologic colectomy.

FOURTH METHOD: PHYSIOLOGIC COLECTOMY BY END-TO-END ILEOSIGMOIDOSTOMY AND SIDE-TO-SIDE SIGMOIDOSIGMOIDOSTOMY.

The very interesting experimental studies in anastalsis and therapy of the colon by Lynch and Draper³ resulted in the suggestion by them of a procedure to lock the anastaltic wave. This procedure, as I understand it chiefly from the illustration accompanying their article, may be described as follows:

1. The ileum is divided near the cecum, and the orifice of the distal segment is closed.
2. The sigmoid is divided about its middle, and both ends are closed.
3. An end-to-side anastomosis is effected between the proximal ileum and the upper end of the distal segment of the sigmoid.
4. A side-to-side anastomosis is then done between the two segments of the sigmoid, the stoma being located well below the ileosigmoidal connection.

The valvelike arrangement effected by the slit connecting the two segments of the sigmoid may serve effectively to prevent reflux into the upper colon while not interfering with efflux from it. In any event, it is evident that the continuity of the anastaltic wave is intercepted by the division of the intestine and the lateral anastomosis. There are, however, many sigmoids in which this procedure cannot be carried out. It would seem, too, that the closed end of the distal sigmoid is subjected to dangerous anastaltic pressure. It is evident, too, that the procedure must involve tedious details and consume much time. On its experimental basis, however, it stands as an interesting confirmation of the principle for which I contend.

CONCLUSIONS

In summarizing my experience so far I may say that it has led to at least tentative conclusions as follows:

1. Patients with intestinal stasis should be treated first by dietetic and hygienic measures, including massage and support, until and only until the inutility of such procedures has been demonstrated in the individual case.
2. Colon fixation with incidental anchorage of the stomach when properly done is at once striking and permanent in the relief afforded, and being conservative, is to be recognized as the operation of choice in all but extreme cases.
3. Physiologic colectomy with valve formation just above the sigmoid may well be done as a safeguard

against anastalsis in cases of ptosis of the colon, causing glandular hypertrophy which has further resulted in a marked catarrhal colitis associated with atrophy of the muscularis of the colon.

4. Physiologic colectomy with external drainage through the distal ostium of the colon should be done only in extreme cases, and then only with the understanding that it is to be followed ultimately either by (a) reestablishment of the colonic canal with valve formation at the point of anastomosis or by (b) the complete removal of the colon.

THE VALUE OF THE WASSERMANN REACTION

A REPLY *

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In an article on the value of the Wassermann reaction, as indicated by postmortem investigation in 331 cases at Bellevue Hospital, Symmers, Darlington and Bittman¹ have made an attempt to correlate with their necropsy findings the results of the Wassermann reaction taken during the life of a patient. They assert that from 31 to 56 per cent. of patients who, during life, gave a negative Wassermann showed at necropsy positive evidence of syphilis. A second assertion is that the Wassermann reaction was positive in 30 per cent. of the cases that showed negative findings at necropsy.

The impression made on the reader of the article is that the Wassermann reaction is not dependable in the diagnosis of syphilitic affections, and of little value as an indication of the cure of the individual affected with syphilis. It is true that physicians who are unacquainted with the technic and the interpretation of the reaction have had reason to criticize the conflicting results obtained in many Wassermann laboratories. These contradictory results, however, are largely due to inexperience, carelessness and the failure to develop a technic based on clinical and serologic correlation. The value of the reaction has been determined by the study of thousands of cases clinically, and by the much slower process of comparing the serologic with the pathologic findings. Before the introduction of the Wassermann reaction, our knowledge of syphilis was chiefly centered on the various types of skin lesions, with a very meager knowledge of the visceral manifestations. Since then the rôle of syphilis as a causative agent in producing pathologic changes in various organs has been greatly extended. The incentive to this study was the Wassermann reaction, and today

* From Pathological Laboratories, City Hospital.

1. Symmers, Douglas; Darlington, C. G., and Bittman, Helen: The Value of the Wassermann Reaction as Indicated by Postmortem Investigation in Three Hundred and Thirty-One Cases at Bellevue Hospital, THE JOURNAL A. M. A., Feb. 2, 1918, p. 279.

3. Lynch, J. M., and Draper, J. W.: Am. Jour. Med. Sc., December, 1914, and Publications from Laboratory of Surgical Research, New York University.

many a syphilitic aortitis would go undiagnosed without the assistance of a serologic test.

Why has the Wassermann reaction fallen into disrepute with clinicians untrained in the laboratory side of syphilis? A short summary of the history of the reaction may answer this question. Following the technic as originally laid down by Wassermann, the results of the test agreed surprisingly with the clinical diagnosis of the skin lesions in the different stages of the disease. The serologic method was thus hailed as the final word in diagnosing syphilis. When to this was added further information regarding visceral lesions, such as the frequent association of an aortic insufficiency with a positive Wassermann reaction, the enthusiasm knew no bounds. Four factors, however, soon developed which proved a serious complication:

1. The discovery that the reaction was a nonspecific one.

2. The attempt to modify the reaction so as to make it available to the practitioner in his office.

3. The use of reinforced antigens and other changes in technic to render the reaction more sensitive.

4. The practice by some physicians of sending their blood specimens to commercial in preference to recognized hospital laboratories.

The first factor, the discovery that the reaction was a nonspecific one, was a great disappointment. Nevertheless, while we could not explain why alcoholic extracts gave positive fixations with specific serums, the fact remained that such was the case, and after the first storm of skepticism gradually subsided, the explanation was left for the serologist to determine at a future date. The application of the test is another matter.

The second factor, the attempt to modify the reaction so as to make it available to the practitioner in his office, was and is a serious matter. No one hesitates to admit that the practice of serology entails special training; nevertheless it is astounding how quickly makeshift methods are accepted by the profession. The result is apparent, and needs no further comment.

The third factor, the use of reinforced antigens and other changes in technic to render the reaction more sensitive, has been of great interest and value to the serologist, who has a working knowledge of clinical and pathologic syphilis, but a great stumbling block to the general practitioner, or even to the pathologist, who has not the technical training of the serologist. Many of the discrepancies in the various laboratories are due to the lack of standardization in technic. While some adhere to the employment of either plain alcoholic extract antigens or to cholesterinized antigens with the original Wassermann technic, others use alcoholic antigens with icebox fixation, or one of the numerous other known modifications. These modifications that have been introduced have made the name "Wassermann reaction" ambiguous. Today there are hardly two men practicing the same technic, with the result that there are many discrepancies in their final diagnoses. To the syphilographer and the pathologist trained in serology, these discrepancies are more apparent than real. They know that differences will result when the various modifications are employed. With proper controls and an accurate routine technic, however, each known modification (plain alcoholic extracts or reinforced cholesterin antigens, or both, or the icebox fixation method) give

results, which, though not always similar, are, at least, of immense value when properly interpreted and correlated in the light of the clinical evidence. A certain percentage of cases give a positive reaction with a cholesterinized antigen and a negative with the icebox fixation method. Another percentage of cases will react positively with plain alcoholic extract antigens, and negatively with cholesterinized antigens. It is the old and treated cases, especially, that give varying results with the different methods employed. In recent cases of florid syphilis the Wassermann reaction is, as a rule, strongly positive with all antigens. It is imperative, therefore, in order to detect old cases of syphilitic infection, that two or more methods be employed synchronously. The use of cholesterin antigens along with plain alcoholic extracts is an advantage, though a positive result with cholesterin antigens with some serologists is much less conclusive. On the other hand, a negative result with cholesterin antigens is much more desirable from the point of view of the patient. Cholesterin antigens and other sensitive methods often give a positive result much earlier with chancres, and in treated cases the positive reaction persists longer in the majority of them. Numerous other facts could be stated to show the necessity of the proper interpretation of the various serologic methods.

We would suggest, therefore, that when an investigator reports the value of a certain serologic procedure he should not be misleading and report it as the "Wassermann reaction," but state definitely the particular method of the complement fixation employed.

The fourth factor, the practice of physicians of sending their blood specimens to commercial in preference to recognized hospital laboratories, pertains to all laboratory work. In our experience there are few such laboratories that deserve serious recognition.

To meet both the favorable and the unfavorable criticisms of the Wassermann reaction, some plan of study must be formulated, in order to give an idea of the absolute value of any serologic procedure in diagnosing syphilis. Each modification of the reaction has its adherents, and unjustifiable claims are made for each method. The proof that any method approaches technical perfection is no evidence in itself that its application is any improvement over another method. The point in question is merely to prove that one particular technic when applied to the diagnosis of syphilis has unquestionable advantages over any other. To what rigid application, then, must this procedure be submitted?

We name the two following requisites:

Requisites for any serologic procedure	1. Its value in diagnosing any known syphilitic lesion	(a) Chancre
		(b) Skin manifestations
	2. Its value in establishing the presence or absence of a syphilitic infection	(c) Visceral syphilis
		(d) Neurosyphilis

We have three direct methods at our command to demonstrate syphilitic manifestations in the body: (1) clinical observation; (2) spirochetal demonstration and (3) pathologic study. With a reasonable degree of accuracy we can diagnose clinical syphilitic manifestations, such as chancre, skin lesions, pronounced aortitis, general paresis and tabes. Many other visceral conditions, such as a latent aortitis, and

p gummas of the liver, too often escape the notice of the most accurate clinical observer. The clinician, therefore, can only partially assist, and then only with these manifestations of syphilis that lend themselves to a definite and accurate diagnosis of syphilis. He is more to be relied on, however, for the value of the Wassermann reaction in diagnosing chancre, than is the pathologist.

VALUE OF WASSERMANN REACTION (CHOLESTERIN ANTIGENS WITH WARM FIXATION, AND PLAIN ALCOHOLIC ANTIGEN ICEBOX FIXATION) IN DIAGNOSING CLINICAL CASES OF UNDOUBTED SYPHILIS

In studying the present records of one of us (Forrester), the value of the Wassermann reaction (cholesterin antigens and alcoholic extracts with icebox fixation) in diagnosing undoubted clinical manifestations of syphilis becomes quite apparent. In primary syphilis the reaction does not become positive until there is a generalization of spirochetes. This occurs before the appearance of the rash, and the reaction may be positive as early as from ten days to two weeks, or as late as from six to eight weeks after the development of the chancre, depending on the antigens and the technic employed in the reaction.

In secondary syphilis the laboratory that employs the correct technic will obtain a positive reaction in 100 percent of untreated cases. Our records fail to show a single instance of a negative reaction in such individuals.

In 309 cases of tertiary syphilis with manifestations of the skin and mucous membranes, the Wassermann reaction was strongly positive in 283, weakly positive in eight, and negative in eighteen. Of the latter, four became strongly positive under treatment. The percentage, therefore, of negative Wassermann reactions in tertiary syphilis with active lesions is about 6.

The results in 112 cases of tabes were as follows: twenty-two had positive reactions in the blood and in spinal fluid; thirty-seven were negative in the blood; of these thirty-two had positive fluids; three positive bloods gave a negative fluid; four were positive in the blood and fluid. In sixteen with a positive blood, the fluid was not examined. The percentage, therefore, of cases of tabes with a negative blood and fluid is less than 4, and as we recognize an active form of tabes, it is fair to assume that the negative ones were either cured spontaneously or by treatment.

In paresis, eighty-one cases were examined with positive blood in eighty and positive fluid in all. It is optional to find an untreated case with the objective stigmata of paresis that shows either a negative blood and fluid or a negative fluid. In taboparesis, twenty-six cases showed a positive blood and positive fluid.

In cerebral syphilis, other than the types mentioned, twenty-three cases were examined, eighteen of which were positive in the blood, and five were negative in the blood. Seventeen were punctured, of which fifteen were positive and three negative in the fluid. In cerebrospinal syphilis, fifty-seven cases showed a positive blood and fluid; five a positive blood and negative fluid; nineteen a negative blood and positive fluid; and twelve both negative blood and negative fluid. The percentage of cases of cerebrospinal syphilis, especially of the vascular type, in which negative Wassermann reactions were obtained in the blood and spinal fluid is larger, therefore, than in any other

variety of syphilis. In these cases the administration of mercury and iodids, together with arsphenamin, activates a certain number of apparently negative cases.

SPIROCHETAL DEMONSTRATION

Spirochetal demonstration, however, as a direct method of demonstrating syphilitic infection is the ideal one. With the exception of open skin lesions this method, unfortunately, is hardly available, though Dr. Warthin² reports finding them with remarkable constancy in syphilitic organs. No one else, apparently, has been so uniformly successful, excepting with congenital organs, though the literature throughout the scientific world abounds with numerous attempts.

PATHOLOGIC STUDY

Pathologic study, therefore, is the one method at our command for an accurate estimation of the value of any complement fixation test for visceral syphilis. The importance of such a study is not to be denied, and any scientific report must meet all the necessary and critical requirements to make any conclusions drawn beyond a question of doubt. It is for this reason, therefore, that we feel called on to criticize the remarkable deductions of Dr. Symmers and his colleagues. The conclusions drawn are unwarranted and misleading to the practicing profession. To make our claim good it will only be necessary to analyze their report in detail.

We have already stated that the name "Wassermann reaction" is an ambiguous term. It is necessary, therefore, to study separately the value of each complement fixation method. The two distinct points mentioned in regard to the serum reaction are the use of cholesterinized and alcoholic extract antigens. Nothing is said in the article as to the technic employed. This is an unfortunate and serious omission. Ottenberg³ has shown in an elaborate comparative study of fifteen distinct modifications of the Wassermann reaction in active use in different laboratories that apparently minor variations in technic, such as different methods of determining the dose of complement, different ingredients, variations in time and temperature of incubation, and even the variation of the order in which the reagents are added, as well as the difference in the kind of antigens used, make an enormous difference in the results obtained. For this reason, he pointed out that no discussion of the reaction could be of any value, unless accompanied by an accurate protocol of the method used. Since the various modifications give different results, it is obviously essential in comparing serologic results with pathologic data, that the problem should be a study of the value of all the recognized and type methods of serologic procedure. Only in this way can one arrive at any definite conclusions.

We first review the figures on the alcoholic extract antigens, which we have compiled from the protocol in the article under discussion.

VALUE OF THE WASSERMANN REACTION (PLAIN ALCOHOLIC EXTRACT ANTIGENS, WARM FIXATION) IN DIAGNOSING AN UNDOUBTED SYPHILITIC VISCERAL LESION (PATHOLOGIC STUDY)

A review of the recent literature reveals that the results obtained show a remarkable discrepancy with

2. Warthin, A. S.: The Persistence of Active Lesions and Spirochetes in the Tissues of Clinically Inactive or "Cured" Syphilis, *Am. Jour. Med. Sc.*, 1916, **152**, 508.

3. Ottenberg, Reuben: On the Reliability of the Wassermann Reaction, *Arch. Int. Med.*, March, 1917, p. 456.

these reported by Dr. Symmers and his co-workers. Gruber,⁴ studying 106 cases of syphilitic aortitis pathologically, obtained 94.3 per cent. positive fixations on postmortem serums when employing alcoholic extract of syphilitic livers as antigen. Curiously enough, in a study of syphilitic aortitis we (Larkin and Levy⁵) obtained identical results (94 per cent.) on antemortem serums, using as antigen the alcoholic extract of guinea-pig heart. From the table submitted by Dr. Symmers and his co-workers, in thirty-two cases of syphilitic aortitis, in which the serum reaction was reported with alcoholic antigens, only 56 per cent. of the serums gave positive reactions. In all cases, with so-called positive lesions of syphilis they obtained the strikingly low figure of 53.8 per cent. positive reactions with the alcoholic extracts. The reasons for this we can only suggest. To criticize a serum test that is not described is, of course, difficult. Nevertheless, if others can obtain much better results with identical antigens, one must assume that some error in the technic is responsible, and that better serologic results should have been obtained. On the other hand, can we question the pathologic diagnoses? Though the gross picture of syphilitic aortitis is characteristic, and can often be diagnosed by the naked eye, nevertheless arteriosclerotic changes may so obscure the picture that the diagnosis may be extremely difficult, and could be made only by histologic examination. No mention that this was done is made. Further, the possibility of error in the diagnosis is quite apparent from the fact that the organs were not all personally studied by the authors, but the data as given on the records accepted, in some cases, as final. The fallacy of such a procedure for detailed study of any subject is not to be denied.

VALUE OF A POSITIVE WASSERMANN REACTION (PLAIN ALCOHOLIC ANTIGEN, WARM FIXATION) IN ESTABLISHING THE PRESENCE OF A SYPHILITIC INFECTION

In considering cases with positive serum reaction, which showed on postmortem examination the presence or absence of specific changes, again one finds results that do not agree with the experience of others. Using alcoholic extract antigens, Dr. Symmers and his co-workers found that in fifteen cases with positive serum reactions, only 75 per cent. revealed postmortem evidence of syphilis; we (Larkin and Levy⁵) in seventeen cases were able to find evidence of syphilis "in the aorta alone" in 90 per cent. of the cases. It is stated that "we shall hope not to leave it to be read between the lines that our technic has precipitated certain exceedingly regrettable mistakes." It is self evident, however, that there have been, at least, omissions of acute observation and study of the pathologic material and the recent literature on the subject. In the article space is devoted to a discussion of the failure of spirochetal demonstration, and not a word is mentioned as to the histologic examination of organs in search of the presence of syphilis. The fallacy of diagnosing the absence of syphilitic infection merely by gross examination of organs has been pointed out by several workers. It is now a matter of general knowledge that syphilis incites a productive inflammatory reaction, which, only in certain organs, is characteristic and diagnostic, and that these changes may be present in an organ without producing

any gross manifestations discernible by the naked eye. We (Larkin and Levy⁵) have reported evidence of this both in the aorta and the nervous system. Dr. Larkin has in his collection type cases, such as the following:

A woman, aged 26, died of a cardiac condition, with positive serum reaction before death. At necropsy the heart showed evidence of an infectious endocarditis. The aorta appeared normal. But on histologic examination the diagnosis of syphilis was unquestioned.

In a patient dying of a ruptured aneurysm, the spinal fluid had given positive findings antemortem. Gross examination of the cord and brain revealed nothing abnormal. After a painstaking and exhaustive histologic examination an early sclerosis of the posterior nerve root ganglion cells was found.

In view of these facts, it is easy to understand the surprisingly low percentage which Dr. Symmers and his co-workers found when checking up the positive serum reactions with evidence of syphilis at necropsy. Those cases in the protocol which have been designated as having "no signs of syphilis" might very well reveal histologic changes in the aorta that are pathognomonic of syphilis, though to the naked eye the aorta may appear normal.

No mention is made of the possibility of dealing with latent syphilis in reporting such a high percentage of positive serums in apparently normal individuals. Neither is there any report given of spinal fluid examination, or findings in the brain and cord. One might, therefore, suspect a latent infection, or draw the conclusion that normal serums were examined with a highly sensitive cholesterin antigen, since the majority examined with an alcoholic extract antigen gave a negative result, and that false positive were obtained. To exclude syphilis at necropsy beyond a question of doubt would mean an amount of work that is physically impossible in the laboratories connected with the pathologic departments of the various hospitals. It would be necessary, in the first place, to exclude involvement of the nervous system, which, in a certain percentage of cases, shows involvement, even in the absence of visceral syphilis. It is well known that shortly after the appearance of the initial lesion in experimental and acquired syphilis the lymph nodes, bone marrow and spleen may harbor spirochetes, and from our knowledge of the syphilitic process it is fair to assume that in certain cases these organisms may persist in these regions for an indefinite length of time. Have the authors of "The Value of the Wassermann Reaction" examined the lymph nodes, the bone marrow and the various other possible sites of spirochetal selection in their necropsy work? If, in the four cases in which Dr. Symmers and his colleagues found no evidence of syphilis, an examination, microscopically, of the aortas alone had been made, the conclusions arrived at might have been different. A positive diagnosis in two of these four cases may have given a percentage approximating the 90 per cent. found by us.

CHOLESTERIN ANTIGENS

In studying the results of the cholesterin antigen, as tabulated in the protocol, one cannot but help seriously questioning the accuracy of the serum reaction. In a series of fifty-one cases, in which both antigens were employed, identical reactions were obtained in only fifteen cases. In other words, there was a discrepancy in 70 per cent. of the cases. It is obvious that the technic employed with one or the other of the

4. Gruber: Ueber die Doehle-Heller'sche Aortitis, Jena, 1914.

5. Larkin, J. H., and Levy, I. J.: A Pathological Study of Syphilitic Aortitis and Its Serology, Jour. Exper. Med., 1916, 23, 25.

igens (if not with both) was faulty. Practically
other worker who has compared the two antigens
obtained anywhere nearly so large a discrepancy.
enberg⁶ has found not more than 15 per cent.
erence.

On analyzing the results of the cholesterin antigens
h the necropsy findings, we note, when summing
all the positive cholesterin reactions (that is, posi-
tively, strongly positive and very strongly positive) that
y 47 per cent of the reactions had postmortem evi-
ce of syphilis. We⁵ accounted for 77 per cent. of
positive reactions by histologic examination of the
aorta alone. Again we must assume faulty technic in
performing the serum tests, or careless and inaccurate
nologic observation.

n regard to the statement that "the Wassermann
reaction in the living patient is positive in at least 30
cent. of the cases in which it is not possible to
monstrate any of the anatomic lesions of syphilis,"
lack of appreciation of the existence of the several
hods of performing the Wassermann reaction is
alent. We have here an average of the results
ained by using two widely different serologic meth-
s, instead of noting definitely the results obtained
each method. If we should employ this fallacy
would have 17 per cent. of our positive reactions
accounted for by syphilitic changes in the aorta (the
verage of 10 per cent. alcoholic extract antigens and
per cent. cholesterin antigens).

VALUE OF A NEGATIVE WASSERMANN REACTION (PLAIN ALCOHOLIC EXTRACT ANTIGEN) IN ESTABLISHING THE ABSENCE OF A SYPHILITIC INFECTION (FROM PRESENT DATA)

ne could have accepted the study of Dr. Symmers
his co-workers as a fair attempt to correlate posi-
serum reactions with postmortem findings, if they
not drawn such definite conclusions, and at the
e time felt called on to give the practitioner such
olutionary advice about the Wassermann reaction.
ely when they discovered the positive phase of the
reaction was so misleading and confusing, a negative
ult, on the other hand, may at least be of some
e. This they apparently omitted to consider. To
lemn a laboratory procedure on data not complete
comprehensive is a fallacy that is not altogether
onable. By other men, however, the negative
e of the reaction has been touched on; and, sur-
ing as it may seem, suggests that a negative Was-
mann reaction is of certain value in eliminating
presence of syphilis.

a study of twenty-four aortas, in which there
no perivascular infiltration, the serums, antemort-
of these patients gave a negative reaction in
ty-two (Larkin and Levy⁵). In a comprehensive
y of all the organs of the two positive serologically
might have been successful in finding pathogno-
ic evidence of syphilis. This, however, was not
e. Nevertheless, in the study of the aorta alone
absence of syphilitic infection gives a negative
reaction in probably about 91 per cent. of the cases
(Larkin and Levy⁵).

QUESTIONABLE SYPHILITIC PATHOLOGIC DIAGNOSES

urther, in studying the protocol of Dr. Symmers
his colleagues, we find under "Necropsy Findings"
following: "No signs of syphilis, smooth indura-

tive atrophy of the tongue, syphilitic orchitis, syphilitic
osteitis, scars on shin," etc. The authors admit the
difficulty of interpreting syphilitic changes in organs
of syphilitic individuals. They fail to recognize the
fact, however, that in estimating the value of any
laboratory procedure in diagnosing the etiology of
pathologic changes in organs that this etiologic factor
must produce physical changes in organs that are
characteristic and pathognomonic, and these changes
must be present with a fair degree of constancy. The
reverse is true in the absence of the infectious agent.
It is a great fallacy to diagnose the presence of syphi-
litic infection by physical changes in organs that are
not of undoubted syphilitic origin. It is just as great
a mistake to negate syphilitic infection, unless there is
a thorough search, microscopically, for the character-
istic physical changes produced by syphilis. The con-
clusion "no signs of syphilis" has no meaning, unless
we are assured of such an inspection.

Dr. Symmers,⁷ individually, on two or three previ-
ous occasions, and now with his collaborators,¹ warns
the clinician, and advises distrust in the use of the
Wassermann reaction. He forgets that the most con-
stant symptom of syphilis is a positive Wassermann
reaction. The folly of insisting on the importance of
a healed scar on the penis, atrophic pigmented scars
in the pretibial region, or a roughening of the anterior
border of the tibia as diagnostic phases of syphilis is
too evident to all syphilographers. That syphilis may
produce these lesions has been known for years; but
other infections often are causative factors. Tubercu-
losis, chancroidal ulcers and pyodermias may lead
to scarring of the genital organs. We frequently see
pigmented scars in the pretibial skin due to ecthyma,
tuberculous ulceration and to infected injuries, which
present all of the characteristics of syphilitic scars.
And when one recalls the invariable absence of these
signs in practically every known phase of syphilis, one
wonders if Dr. Symmers is asking us to take a step
backward to the dark ages for our method of the
diagnosis of syphilis. The same applies to superfi-
cial lymphadenopathy. Increased consistency and
diminished sensitiveness of one or both testes would
scarcely appeal to the clinician as an evidence of syphi-
lis of these organs. Leukoplakia of the mouth and
tongue is by no means the invariable consequence of
syphilis. It is frequently seen in individuals who
have never been infected. Syphilitic orchitis and
syphilitic osteitis suggest physical changes in these
organs, the etiologic factor of which could easily be
questioned. Scars on the skin present nothing char-
acteristic to prove that they are of syphilitic origin,
though they very well could be considered as evidence.
Scars of old syphilis may exist at necropsy in persons
in whom the spirochetes and infection had disappeared.
These persons may have suffered from syphilis, but
the scar is the end-result of a syphilitic process. We
not infrequently see patients with multiple scarring of
the skin, pigmentation or characteristic changes in the
mucosa, who are cured of their infection.

Before classifying necropsy cases as showing posi-
tive evidence of syphilis, it is exceedingly important
to distinguish between active progressive lesions or
healed and nonprogressive ones. We should also have
the data as to the influence of treatment before the

7. Symmers, Douglas: Anatomic Lesions in Late Acquired Syphilis, THE JOURNAL A. M. A., May 6, 1916, p. 1457; Syphilis as an Etiological Factor in Laennec's Atrophic Cirrhosis of the Liver, Internat. Clin., 1917, 1, 58.

Wassermann reaction was taken. Dr. Symmers and his colleagues apparently ignored entirely the amount of treatment that any of the cases reported with positive clinical evidence may have received. Surely they must be familiar with the fact that reversal of the reaction may occur after therapeutic administration, though anatomic residua may persist.

Lichen planus, tuberculosis, lupus erythematosus, and pemphigus of the mouth and tongue may at times closely simulate the syphilitic process, and can be differentiated only by a careful correlation of the clinical manifestations aided by the Wassermann reaction. We (Fordyce) have seen in our clinical and pathologic work fully as many errors made by relying on the clinical signs as we have seen made by a wrong interpretation of the Wassermann reaction, if not more.

As an evidence of the persistence of spirochetes in the body, and as a guide to cure, the Wassermann reaction is of vastly more importance than the clinical observation alone. We have seen in the past years many patients treated by the old clinicians and discharged as cured of their syphilitic infection, who have returned with involvement of the central nervous system, cardiovascular system and other syphilitic affections revealed by a positive Wassermann reaction and objective evidences of the disease. If these patients at that time had been properly controlled by the serologic tests, it is fair to assume that a large percentage of them would have been cured of their infection.

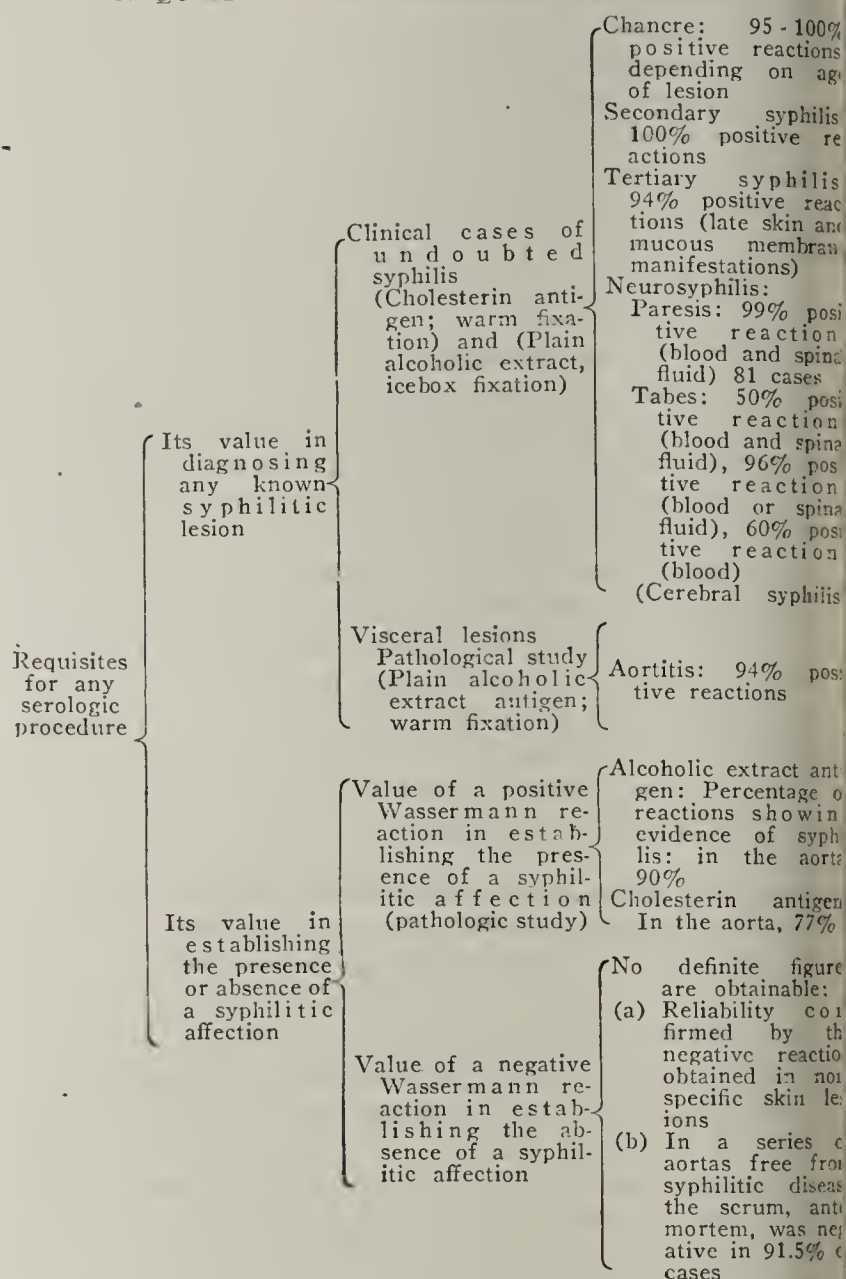
After the earnest endeavors made to teach the proper evaluation of the Wassermann reaction, it would be a great pity if the article by Dr. Symmers and his colleagues were taken too seriously by that part of the profession which has not had the proper training in both laboratory and clinical interpretation. The impetus given to the study of neurosyphilis has been based largely on the findings in the spinal fluid, especially in the secondary stage of syphilis. Without the Wassermann reaction and the training necessary to interpret its significance, many patients who are positive serologically only in the spinal fluid would be denied the treatment that will cure their condition, and will be permitted to develop the various chronic nervous diseases, such as tabes and paresis, as in the past.

The old rule, too, which related to the marriage of syphilitics often led to the most disastrous consequences. A patient under the old clinicians was given permission to marry from three to five years after his syphilitic infection, if he had been free from symptoms during one year before marriage. We have seen a number of men acting on such advice, who married from five to eight years after their syphilitic infection, transmit syphilis to their offspring. On the contrary, we have known a number of instances in which persons, cured by modern methods, married two years after their infection and procreated healthy children. In the latter group of cases a cure was obtained serologically; in the former group, only a so-called clinical cure had been brought about. The Wassermann reaction, therefore, as a guide to marriage is of vastly more importance than the element of time.

The article by Dr. Symmers and his colleagues is, in our opinion, filled with erroneous deductions; and so far as it tends to discredit the value of the Wassermann reaction as a guide to the existence of syphilis and as a criterion of cure, it will mislead that part of

the profession which is not trained to interpret and correlate laboratory and clinical findings, and is easily influenced by work carried out in institutions of the dignity and age of Bellevue Hospital.

REQUISITES FOR SEROLOGIC PROCEDURE



SUMMARY

The term "Wassermann reaction" includes several methods of serologic procedure. An accurate interpretation of each method is essential in arriving at proper diagnosis.

A positive reaction is the most constant symptom of syphilis.

The value of the reaction in diagnosing undoubted syphilis is shown by the fact that:

1. The reaction is positive in practically 100 per cent. of the cases of florid syphilis.
2. In active tertiary syphilis of the skin and bone the reaction is positive in about 94 per cent. of the cases.
3. In syphilis of the central nervous system, cognizance must be taken of the reaction in both blood and spinal fluid. The blood is positive in about 8 per cent. of the cases.
4. In a pathologic study, the Wassermann reaction (alcoholic antigen, warm fixation) was positive in 9 per cent. of cases of syphilitic aortitis.

As a means of corroborating syphilitic infection, the Wassermann test is at least 90 per cent. dependable as shown in a series of positive reactions in which 9 per cent. could be accounted for by syphilitic change in the aorta alone.

The value of a negative reaction has been studied and its reliability confirmed by the negative reactions obtained in nonsyphilitic affections of the skin. In a series of necropsies in which it was demonstrated histologically that the aorta was free from syphilitic disease, negative reactions were obtained in 91 per cent.

The conclusions of Dr. Symmers and his co-workers are shown to be fallacious and a misrepresentation of facts owing to:

1. The apparent disregard of the different results obtained by various serologic methods and the employment of a questionable technic.
2. The careless survey of pathologic material.

PRIMARY UNILATERAL OPTIC ATROPHY IN A CHILD, FOLLOWING FRACTURE OF THE SKULL

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PHILADELPHIA

REPORT OF CASE

A. S., girl, aged 4 years, was sent to me for examination by Dr. Nichols, April 14, 1918. The child had been run down by a motor truck and knocked unconscious, November 10. She was taken to the Polyclinic Hospital. The hospital record shows that she was still unconscious when she got there. There was bleeding from the nose and ears. The right eye was swollen and chemosed so that the pupillary reaction could not be noticed, but the left pupil reacted well. Roentgenoscopy revealed a fracture of the base of the skull as well as the frontal bone into the frontal sinus. The child remained in the hospital four weeks and discharged. There was no ophthalmoscopic examination made. When I saw the child about five months later, I found the following ocular condition: right pupil 3 mm., left pupil 2 mm., reaction in right eye sluggish. There was slight muscular deviation showing insufficiency of the right internal rectus muscle. Ophthalmoscopic examination (under a mydriatic) revealed the media clear, the disk well defined, somewhat excavated and slightly pale, and the retina normal. Though the child was too young for visual examination, I made the following successful tests: When I held a pencil to the left beyond the median line, the child could see it without turning its head. When I held the pencil to the right beyond the median line, the child had to make a compensatory head movement to see the pencil, indicating that the right eye was probably only reduced in visual acuity. I then tied the left eye and asked the child to find the father, who was present at the examination. The child attempted to comply and walked to the chair and into the table standing near by. A diagnosis was made of primary optic atrophy caused by the fracture of the skull.

COMMENT

Primary optic atrophy in children is very rare. In adults it is seen not infrequently in tabes, multiple sclerosis and cerebrospinal syphilis. It may even be the first sign that leads one to suspect tabes or cerebrospinal syphilis. Of course, this form of atrophy, even of constitutional origin, is usually bilateral, affecting both eyes simultaneously or at an interval over a short period. Whenever we find a unilateral primary optic atrophy, we must always think of a possible injury to the skull. Primary atrophy in children probably never occurs as a constitutional condition, but may be caused by trauma. This trauma may affect the optic nerve directly, causing disorders such as laceration of the optic nerve, or indirectly, as a

result of some pressure resulting from the injury. The pressure exerted on the nerve in unilateral atrophy is usually anterior to the chiasm and is due to hemorrhage. The hemorrhage may be in the orbital cavity, flowing into the sheath of the optic nerve. The fracture may, of course, also involve the orbital bones. The prognosis in these cases is very grave, as they usually lead to blindness. I saw this patient five months after the injury, so I do not know when the atrophy began. As I have nowhere seen any record of primary atrophy of the optic nerve in a child so young, the case deserves to be recorded.

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Military Medicine and Surgery

ALL YEAR MEDICAL STUDY AND THE EDUCATION OF MEDICAL OFFICERS

GEORGE DOCK, M.D.

ST. LOUIS

We in America should be used to making changes in the medical course. We have seen the benefits from rearranging; we are hospitable to new proposals. Do we discuss such proposals as freely as they deserve?

This thought is raised by the paper read by Major H. D. Arnold¹ at the Conference on Medical Education, held in Chicago in February.

Major Arnold's plan, in brief, is to compress medical education into three years, in such a way that next year classes will be graduated four months ahead of the schedule, and each succeeding year another four months earlier, up to the end of three years.

There was very little discussion over this novel plan. Many of those who spoke left the main subject and dilated on the waste of time in vacations by teachers and students, the extravagance of empty class rooms, etc.

As it offers so many different advantages, it will not be surprising if Major Arnold's plan, with or without modifications, is put into effect. If so, I am sure all medical educators will do their best to make it a success. Nevertheless, I believe it may be useful to discuss some of the details, whether it is adopted or not, for they illustrate some important phases of education.

All will agree with Major Arnold that the present standard in medical education must be kept up, and that no concession should be made to those who raise the specious plea of war need, to lower the standards of entrance and of graduation.

No doubt many medical teachers will approve the control over medical schools exercised by the Surgeon-General of the Army (though there seems no reason why the Navy and the Public Health Services should not be concerned), and hope that in time some equally powerful authority will deal with secondary education. Seeing, too, that the federal government will have to supervise medical studies from the beginning, one must hope that it will soon be brought to see the necessity for universal service.

Here a comment may be made on one item of Major Arnold's address—that in which he contrasted the

1. Arnold, H. D.: Medical Education, Medical Interns and the War, THE JOURNAL A. M. A., Feb. 16, 1918, p. 451.

medical student and his long vacation with the soldier and his constant service. The comparison seems unfair. The medical student's work is always fairly strenuous; soldiers do have periods of idleness. Soldiers occasionally have furloughs; Major Arnold's plan would not permit anything like furloughs to medical students. In another point the treatment of the medical student seems unfair—if he cannot keep up with his class he is sent to the ranks. He could not complain if all were treated alike; but why not apply the same rule to professional loafers, the large class of low parasites, the "workmen" whose "helpers" do all their short stint, and those who strike for frivolous reasons?

In the discussion of Major Arnold's plan one can touch two distinct topics—compression of the course from four to three years, purely as a war measure, and teaching all the year round, without any connection with war, but as a means of using buildings and apparatus more economically. The latter may be considered first, as a sort of amendment to an original motion. Much that has been said about continuous teaching is the by-product of the irrational plan we have worked into in the last third of a century. The "nine months course"—really about eight in most schools—has been made the ideal. No doubt the college term had most to do with the plan, and this left the hot summer months vacant. It gave a longer study time than that adopted in some other countries, and if a long term is the best way to cover much work, one could forgive a plan that made the term otherwise rigid and unpractical. A little consideration of the facts will show that a longer term does not necessarily mean more work.

In the Central Empires the total official course is about seven months, but much of the best work is done in the vacations of two or two and a half to three months. Many laboratory and other practical courses are then given. No one thinks of closing up laboratories. Those who wish to work for a month or even a whole vacation can arrange to do so, and many men, of all ranks, go away to work in other laboratories with different men. This is one incentive to the migration that so widens the intellectual horizon of the undergraduate. An excellent opportunity also is given to teachers for seeing the work of one's colleagues in their own or in allied fields. The official work in the summer semester ends there in the middle of July. Our summer vacation is so timed that not enough cool weather is available at either end, in many places, for serious work. In some places the time from the middle of June to the end of July could easily be used for practical or intensive didactic courses; in others, all of September; in still others, both periods. But almost anywhere in the United States the continental division of time could be followed.

Those who took their undergraduate work in this country before the nine months' plan was adopted must wonder at the idea consciously or unconsciously suggested by those who now speak for long terms. In those early days there was plenty of work, and all who hoped to make themselves useful took special courses that quite made up a nine months' course.

Absence of necessary relations between length of term and amount of work done per year was recognized outside of medical schools. I have recently heard that the University of Toronto had a seven months' course, but all students who tried for honors

worked most of the remaining five months, and my informant, a prominent humanist, tells me that his best work was done when he read at night and thought over his reading next day behind the plow.

The idea that study or other work is done only in school time has, I think, a close relation with another idea too widely held—that study ends at commencement time. Overcoming this belief will open a new intellectual world.

To recapitulate the foregoing, it is better to have two (at least) terms than one; better to have two vacations a year than one, provided the shortest is no less than six weeks. Such terms would facilitate migration by undergraduates, and visiting or exchange among investigators as well as teachers of all grades.

I am quite prepared to hear objections raised to these proposals, but these objections will merely indicate the Chinafication that has impressed itself on us as a nation in other lines besides medical education.

A different method from that mentioned has been in existence more than a quarter of a century in the University of Chicago, as was stated by several speakers at the conference. In the quarterly system the continued use of the plant is secured, and although the scheme is not so elastic as the continental plan, it gives the teacher, within certain limits, an opportunity of taking time off when he can do something more than what is offered by summer vacation, and give the undergraduate a chance for migration, though with little hope of getting what he wants without loss of time, as long as there are no other schools with identical terms.

As to the matter of compressing work into three years as a war measure, the question whether state laws would permit such a change seems hardly worth discussing in war time.

The lack of vacations for the teachers is not to be looked on as serious. The teachers who remain at home are for the most part hardened; they do not get vacations now; they can forego extensive time for private research even during a long war. The younger graduates, who should be doing the most active research work, are all away working at special subjects. The undergraduates can stand the continuous work. Many of them work all summer as it is and did so in peace time. That they can do as we under the proposed plan I do not believe, but the experiment would be useful. Even those who before the war worked in summer had a change, had the stimulus of new surroundings in hospitals or elsewhere, and had time to digest what had been taken in large and often indigestible quantities in the preceding term. Under the new plan there will be less chance to make up for inevitable deficiencies in class work, and the suggestion by Major Arnold of a period for making up cannot easily be fitted in with the swiftest tempo of all year round work.

The division of the year into three terms of four months each will not lend itself to the schemes not successfully followed in some medical schools in which intensive clinical work is taken for periods of three months. The quarterly system would be much better in that respect, and would of course bring about an equally rapid production of graduates.

To my mind the most serious fault in the scheme is what it overlooks in physical training and military training. Medical students even now are not able to take as much exercise or athletic work as men in other departments. With a continuous term I think the ou

look would be even worse. Men would therefore leave the medical school, go at once into a hospital or laboratory for a year, and then, without a pause, at the age of 25 or 26, begin the severe physical and mental work of Army surgeons.

In the past year it has been shown that medical officers require from three to eight months to get broken into their duties. It would seem much more rational, on physical and technical grounds, to prepare for military life gradually, following a plan that was suggested at the conference but was not discussed.

Let the colleges retain their present terms until a better plan can be adopted. Send all medical students, about the middle of June, to camps of instruction and keep them there until a week or two before the fall term. In the first summer let the training be physical and military. The latter not to make soldiers, but to give knowledge of the soldier's activities and the soldier's "smartness" to the future medical officer. Setting-up drill, sports, swimming, riding, fencing and rifle and revolver practice could be learned, with the school of the soldier. The training then begun would never be forgotten.

In the second summer put the men in hospitals at training camps. Continue exercise, and train in the work of hospital orderlies, so as better to teach others. Many medical officers do not know how a stretcher should be carried or how a patient is put from a stretcher on a bed. Part of the "paper work" could also be learned at this time. Tedious as this work is, it is necessary, and much less tedious if really known.

In the third year, also in hospitals, as assistants, the more medical duties as well as "paper work" could be finished, with exercises and sports as before.

At the end of the intern year the young medical officer could at once take up his work, and be physically, militarily and medically much more useful than he is now.

The training could be much less costly than at present. Undergraduates would have the status and pay of enlisted men. Healing of accidents, such as broken bones and loss of time from appendicitis or hernia operations would not be so costly as at present.

It has been objected that it would be expensive to send medical students off to camps. It should not be. Most medical schools are near war camps. Inaccessible desert camps need not be used, and even if some expense is entailed by traveling, the amount would be trifling in the total cost of military training.

Medical Journalism in Mexico.—The medical journals have had a hard time of it in Mexico during the unrest of the past few years, and few numbers have been issued. Among them have been the *Escuela Medico-Militar* and the *Gaceta Medica de Mexico*, the official organ of the National Academy of Medicine, which condensed six months' transactions into the one issue reviewed in *THE JOURNAL*, Feb. 2, 1918, p. 351. An arrangement has recently been perfected with *El Universal*, a daily newspaper of the city of Mexico, which devotes one of its Saturday pages to scientific medicine, giving the official, signed report of the proceedings of the Academia Nacional de Medicina, translations of important medical articles appearing in other languages, and news of interest to the profession throughout Central and South America. This "Saturday Medical Page" is in charge of Dr. A. B. Vasconcelos, and he hopes to make it a scientific forum for the profession in Mexico and elsewhere. Some of the articles in *THE JOURNAL* and in the *American Journal of Diseases of Children* have already been reproduced, as also the notice sent out by the Secretary of the American Medical Association to the physicians of Mexico inviting them to be present at the annual meeting of the Association in June at Chicago.

REPORT ON PROGRESS OF TRENCH FEVER INVESTIGATIONS

TRENCH FEVER COMMISSION OF MEDICAL RESEARCH COMMITTEE,
AMERICAN RED CROSS*

MAJORS R. P. STRONG, HOMER F. SWIFT AND E. L. OPIE; CAPTAINS
WARD J. MACNEAL, WALTER BAETJER AND A. M. PAPPENHEIMER,
M. R. C., U. S. ARMY, AND LIEUTENANT A. D.
PEACOCK, R. A. M. C. (T.)

At the first meeting of the Medical Research Committee of the A. R. C., held in October, 1917, and presided over by Major Alexander Lambert, Chief Surgeon, American Red Cross, one of us¹ suggested the subject of the transmission of trench fever as being one of the most important for investigation in connection with the loss of man-power in some of the armies on the western front, and as being a more urgent problem for study in connection with the prevention of this disease than that of its etiology, the latter problem having already been studied extensively. It was requested that a statement be submitted at the next meeting of the committee regarding our present knowledge of this disease. This report was submitted at the meeting of the Research Committee held in November, and was published in the *Medical Bulletin* of the A. R. C. for December. Following the reading of this report it was voted that the subject of the method of transmission of the disease, and an investigation regarding the infectious properties of the blood in trench fever, were important problems for investigation, and that such investigations should be undertaken. A trench fever committee, consisting of Majors Cushing, Swift and Strong, was therefore appointed. At this and at subsequent meetings, one of us¹ was asked to plan and take charge of the work, select the personnel, and begin the experiments as soon as possible.

Major Cushing was asked (in November) to confer with the British authorities in reference to cooperation on these investigations, and to see if either the services of Mr. Bacot of the Lister Institute, or of Lieut. A. D. Peacock, R. A. M. C., could be secured to help in the work.² He received considerable encouragement from Col. T. R. Elliot, R. A. M. C., and Gen. Sir Wilmot Herringham later wrote inviting one of us to attend a meeting of the Medical Investigation Committee of the B. E. F., held Dec. 8, 1917. There were present at this meeting Col. Sir William Leishman, chairman, Major-Gen. Sir John Rose Bradford, Major-Gen. Sir Wilmot Herringham, and Col. W. O. Beveridge. This committee then voted to accept our offer of assistance in the study of trench fever, and after some discussion agreed to turn over to us for investigation two subjects; first, the method of transmission of the disease, and, second, the question of the infectious properties of the blood, with a view to repeating and confirming if possible the previous work of Major McNee, R. A. M. C.

It was finally arranged, on the recommendation of Gen. Sir William Macpherson, A. D. G. M. S., by Field Marshal Sir Douglas Haig, the commander-in-chief of the British armies in France, and General Pershing, the commanding general of the American Expeditionary Forces, that this work should be carried on at a stationary hospital of the B. E. F. which was near enough to the line, where cases of trench fever in the very early stages of the disease could be secured. Perhaps the most important problem was the securing of volunteers for the experiments, for, since the disease could not be transmitted to animals, it was clear that unless volunteers were secured, the experiments could not be performed. Col. M. W. Ireland, U. S. M. C., successfully undertook this task, and the commander-in-chief of our army, December 22, gave permission to General Bradley, our chief surgeon, to have these experiments made on volunteers from the American army, pro-

* Read by Major R. P. Strong, March 15, 1918, at the Pasteur Institute, Paris, at the meeting of the Medical Research Committee of the American Red Cross. A similar report of the scientific results was presented at the meeting of the Inter-Allied Sanitary Conference, Paris, March 13, 1918, and is preserved in the archives of that commission.

* Reprinted from the American Red Cross Medical Bulletin, March, 1918.

1. Major Strong.

2. The services of Lieutenant Peacock were secured, Jan. 26, 1918.

vided, as Colonel Ireland had outlined, that each volunteer was to have it carefully explained to him what he was volunteering for, and that after this explanation he should sign a paper that he was willing to undergo the experiment.

In the meantime the necessary equipment with which to carry on the work had been selected and gathered together in Paris, the funds for the purchase of the same being supplied by the A. R. C. through the instructions of Major Lambert, its chief surgeon. The laboratory apparatus and supplies, tents, lumber for latrines, ablution chambers, flooring, drainage and water pipes, window glass, etc., were shortly afterward received at the stationary hospital where the experiments were to be carried on. Sixty volunteers from the U. S. Army arrived a few days later and eight others subsequently.

The first week was occupied largely in the examination of the volunteers and in converting the empty hut supplied us into a laboratory, in erecting tents, and in building latrines, ablution chambers, construction of drains, etc., in which work we were greatly assisted by the British personnel of the hospital. Clinical histories of the volunteers were taken, physical examination made, and bacteriologic and serologic examinations of the blood, urine and feces performed, in order that complete records of the men might be available before the experiments were made. All the men used in the experiments were healthy and robust.

Four-hourly temperature charts were kept of all of them from the date of their arrival. A plan for semiweekly inspection and bath, and for complete sterilization of clothing once a week, was arranged, and other precautions were taken to prevent the men from becoming lousy by natural means during their station at this hospital. In order that the results obtained in the experiments should be unquestioned, the men of the detachment also were segregated from the B. E. F. hospital personnel and patients.

The experiments were conducted on the plan already described at a previous meeting, relating to the subjects of the transmission of the disease and of the determination as to whether the organism causing it was situated in the blood, and particularly in the blood cells, as had been previously reported.

Thirty-four men have been employed in the blood inoculation experiments, and these have been inoculated either with blood or some constituent element of it taken from trench fever cases in the febrile stage of the disease. Of these, twenty-three have developed typical trench fever. Sixteen of these were inoculated with whole blood, of which number fifteen have developed the disease. The number of individuals inoculated with whole blood may seem large, but it should be observed in this connection that in every series of the experiments it was necessary to determine at the time the presence of the virulent organism in the trench fever blood employed. Unless its presence could be demonstrated in the whole blood used at the time and under the conditions of the other experiments, no conclusions could be drawn regarding its apparent absence in any part of the blood or in filtrates of it.

Five individuals were inoculated with clear unfiltered plasma of the blood, free from cells, all of whom have contracted the disease; four were inoculated with washed corpuscles, of whom three have developed trench fever; five with plasma or serum filtered through Berkefeld filters, of whom none have contracted the disease; and two with extracts of ground corpuscles, filtered through Berkefeld filters, of whom none have contracted the disease. From these experiments it is evident that the organism causing the disease is present in the blood and particularly in the plasma of the blood. It is also evident that it may be centrifuged down with the corpuscles of the blood and is not washed free from them by saline solution, but sometimes appears to adhere to them in sufficient quantity to produce the disease after injection of the corpuscles. The organism is perhaps also brought down by the fibrin meshwork of the clot when the clotted blood is centrifuged. From the experiments performed up to this time it would appear that the organism is either not present in the filtrates or at least is not present in sufficient amount, or in proper condition, to produce the disease following inoculation. It may remain behind or in the filter, in which case it is prob-

ably of sufficient size to be visible under the microscope under certain conditions or during some stage of its life history.

The incubation period of the disease produced by inoculation with blood varies from 5 to 20 days. Of 20 cases inoculated with whole blood or plasma: in 9 cases it was 5 days; in 4 cases, 6 days; in 2 cases, 7 days; in 1 case, 9 days; in 2 cases, 13 days; in 1 case, 19 days, and 1 case, 20 days. In those cases, with one exception, in which the incubation period was long (2 cases of 13 days and 1 of 20 days) the individuals were inoculated with blood either taken late in the disease (sixth or seventh day) or during the relapse of the fever. The blood appears from the inoculation experiments to be most infectious on the first and second days of the disease, and more infectious during the first attack than during the relapse. In the first series of inoculations the blood was taken from seven cases of trench fever occurring naturally in members of the B. E. F. and was injected from each case into a single American volunteer. All of the seven volunteers developed the disease. The organism causing the disease has in addition been carried from three trench fever cases through three more generations in man from the original case in three series of experiments.

In the inoculation experiments, varying susceptibility to the disease and relative immunity of some individuals are demonstrated by the length of the incubation period, the severity of the attack, and even, in one instance, by failure, so far, to develop trench fever. With reference to these instances of relative immunity by parallel experiments, it was shown that the organism was at the time alive and sufficiently virulent in the blood to infect other individuals in a shorter time, while the more immune individuals inoculated at the same time developed the disease later, or, in one instance, has remained healthy.

In relation to transmission of the disease by the louse *Pediculus corporis*, twenty-six men have been subjected to experiment. Of these, twenty-two have harbored lice which have bitten trench fever patients in the febrile stages of the disease, and the remainder have harbored, for the same period of time, normal, uninfected lice which have not bitten trench fever patients. Eight other volunteers living under exactly the same conditions as those contracting trench fever and kept free from lice, as well as the four controls bitten or infested by normal uninfected lice, have all remained healthy. In the great majority of the experiments the lice were pure bred and were hatched from ova brought from England.

We have previously reported the method of infection, but it may be advisable to repeat here that three groups of lice, numbering from twenty-five to 100 adult lice each, have been placed on the trench fever patients as follows:

Group 1, feeding during the first and second days of the fever.

Group 2, feeding from the third to 6th days of the fever.

Group 3, feeding for the first week of the disease.

These three groups, as they were removed from the patient with trench fever, were placed on a volunteer. In one series of experiments they were all to remain on the volunteer until he contracted trench fever or for a period of thirty or more days. In a second series of experiments one half of them were to be removed from the volunteer after from forty-eight to sixty hours from the time they had bitten the original trench fever patients, and were then to be placed on a second volunteer to remain until he developed trench fever, or, if he did not develop trench fever, for thirty days. These two series of experiments have been performed in order to exclude purely direct mechanical transmission of the blood and organism by the louse.

In another series of experiments planned, the interval between the biting of the infected patient and the second volunteer has been extended to six days.³

In still another series of experiments comprising three volunteers, so-called "wild lice" were employed for infection; that is, lice taken from the clothing of trench fever patients. A fourth series of experiments is being performed to see if

3. It was originally planned in case the louse was found to convey the infection to test its infectivity at intervals of forty-eight hours up to the limit of time of such infectivity.

There is hereditary transmission of the virus of trench fever from the louse.

In the majority of the experiments the lice have been placed in a covered cell made of calico, strapped on the arm with adhesive plaster. Into this cell is placed a small piece ofannel shirt. The cell measures inside from 3 to 4 inches long by about 2 inches wide. In it the lice live naturally, clinging to the fibrous cloth, and at other times wandering to the skin, feeding and depositing their excrement. They also feed and lay ova, some of the latter of which hatch in the cell. At intervals the cell was removed, the lice examined, and the patient, in some instances, was allowed to scratch the area if he so desired. In this way perhaps louse excrement sometimes entered slight abrasions caused by the scratching. Often a crushed louse was found in the cell, for the patient might scratch himself with the cell on his arm. In other words, if the individual contracted the disease in this manner from the louse it was evidently by a natural mode of infection. So far twelve of the individuals who have harbored the infected lice in this manner have contracted the disease. The time which elapsed from the date when the lice were first placed on these individuals to the date of the beginning of the disease has been: 1 case, 16 days; 1 case, 17 days; 2 cases, 18 days; 1 case, 20 days; 2 cases, 21 days; 1 case, 25 days; 1 case, 26 days.⁴

The period from the time the lice were put on the patient to the date of the development of the disease, as would be expected, is somewhat longer than the incubation period in the majority of the cases in which the disease was produced by the injection of a large dose (10 c.c.) of the blood, though in two instances, as noted, the individual inoculated with whole blood did not develop the disease until about the twentieth day after inoculation.

The disease produced by inoculation of the blood or by the louse infection is apparently the same. In the four men, Nos. 9, 28 and 52, who have developed the disease, it should be noted that the lice employed in infecting them were allowed to feed first on four trench fever patients. They were then after an interval placed on four different volunteers, Nos. 5, 39, 47 and 13, for approximately two days. One half of them were then removed from these men and placed on Nos. 23, 9, 28 and 52, who developed the disease after nineteen, twenty-six, twenty and twenty days, respectively. Apparently, therefore, the transmission of the disease by the louse is not necessarily direct and mechanical.

The cases of experimentally produced trench fever have been confirmed, and the diagnosis of the disease confirmed, not only by themselves but also by the members of the Trench Fever Commission of the B. E. F., consisting of Sir William Leishman, Chairman of the commission, Major-Gen. Sir Wilmot Herringham, Major-Gen. Sir John Rose Bradford, and Col. W. O. Overidge, as well as by a number of other prominent clinicians.

Clinical laboratory serologic and bacteriologic examinations of blood, and of feces and urine of each patient employed and of each volunteer who has developed the disease, have also been made. The investigations and experiments have also demonstrated that trench fever is a specific disease and is not a form of typhoid fever.

They have also confirmed certain clinical knowledge of the disease. These and other points will be discussed fully in a complete report.

To summarize, it has been shown that the organism causing trench fever is present in the plasma of the blood and up to the present time it has not been shown to be filtrable (though regard to the filtrability of the virus, sufficient time has not elapsed in the inoculated subjects for us to give a final decision). The disease is transmitted naturally by the louse *Phlebotomus corporis*, and apparently this is the important and common means of transmission. The experiments are still in progress and a report will be made later of further results.

4. Since this report was read, transmission of the infection by the louse has been demonstrated in two more cases with incubation periods of thirty and thirty-five days, respectively.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ANTIPNEUMOCOCCUS SERUM.—A serum obtained from horses immunized by injection of virulent pneumococci. Each lot of antipneumococcic serum is submitted by the manufacturer to the U. S. Hygienic Laboratory for potency test before it is issued.

Actions and Uses.—The value in pneumonia of the serum properly prepared and administered seems to be established. Early massive (from 50 to 100 Cc.) intravenous doses of a highly potent serum, prepared from the type of pneumococcus present in the case to be treated are necessary. Investigations indicate that the pneumococcus in lobar pneumonia may be referred to one of four types in respect to its response to serum treatment (Dochez and Gillespie, *THE JOURNAL A. M. A.*, Sept. 6, 1913, p. 727). The serum used should be obtained from an animal immunized with pneumococci of the type corresponding to that present in the special case under treatment. Thus far Type I serum alone seems to be on reasonably secure clinical ground.

Lederle Antitoxin Laboratories, New York (Schieffelin and Co., New York).

Antipneumococcus Serum, Type I.—Marketed in a pressure syringe containing 50 Cc.

Parke, Davis and Co., Detroit.

Antipneumococcic Serum, Type I.—Marketed in a piston syringe containing 50 Cc.

E. R. Squibb and Sons, New York.

Anti-Pneumococcic Serum, Type I.—Marketed in vials containing 50 Cc.

PHENYLCINCHONINIC ACID, U. S. P. (See N. N. R., 1918, p. 269).

Acid. Phenylcinch.-Morgenstern.—A brand of phenylcinchoninic acid, U. S. P.

Manufactured by Morgenstern & Co., New York. No U. S. patent or trademark.

Tablets Acid. Phenylcinch.-Morgenstern.—Each tablet contains acid. phenylcinch-Morgenstern 0.5 Gm. (7.5 grains).

Sodium Phenylcinch. Water-Morgenstern.—A solution of sodium phenylcinchoninate containing sodium bicarbonate and sweetened with sugar, representing the equivalent of 1 Gm. (15 grains) acid. phenylcinch.-Morgenstern per fluidounce. It is prepared by dissolving acid. phenylcinch.-Morgenstern 15 Gm., sodium bicarbonate 11.7 Gm., sugar 90 Gm. in water enough to make 450 Cc.

PROCAINE. — $\text{CH}_2(\text{C}_6\text{H}_4.\text{NH}_2.\text{COO}).\text{CH}_2[\text{N}(\text{C}_2\text{H}_5)_2].\text{HCl}$. The monohydrochloride of para-aminobenzoyldiethyl-amino-ethanol.

Action, Uses, Dosage, Physical and Chemical Properties.—See New and Nonofficial Remedies, 1918, p. 32.

Procaine-Rector.—A brand of procaine complying with the N. N. R. standards.

Manufactured by the Rector Chemical Company, Inc., New York, under U. S. patent No. 812,554 (Feb. 13, 1906; expires 1923) by license of the U. S. Federal Trade Commission.

BARIUM SULPHATE FOR ROENTGEN-RAY WORK (See N. N. R., 1918, p. 56).

Barium Sulphate-Brady for Roentgen-Ray Work.—A brand complying with the N. N. R. standards for barium sulphate for Roentgen-ray work.

Manufactured by Geo. W. Brady & Co., Chicago.

Health and Taxes.—Provisions and expenditures which aid in the reduction of the things which sap the vitality of the nation will aid in preventing increased taxation for the support of the growing army of the unfit.—*Public Health* (Mich.).

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SATURDAY, JUNE 1, 1918

THE COST OF LIVING AND ADEQUATE NUTRITION

The problems of the standard of living have a bearing on the medical profession in more than one way. When the family income is reduced to a dangerously low level, the possibility of undernourishment is always present. The efficiency of the members is likely to be lowered, and sickness is almost certain to become prevalent. A vicious circle of successive misfortunes tends to become established. With the entrance of disease the already low earning capacities are impaired, so that the treatment of the afflicted must be provided and managed through public or private philanthropic agencies. The socialization of medicine makes an urgent appeal as the outcome of precisely such circumstances.

The cost of living has been discussed at times in these columns. A decade or two ago it seemed to be quite possible for an average family of five or more, living in an urban community, to maintain a fair standard of living, without incurring debt, on an income of \$750 a year. Estimating an allowance of two fifths of the income for food—a liberal proportion from the economist's point of view—somewhat less than \$6 a week would thus be provided to procure the minimum of wholesome food.¹ In other words, as a recent writer has expressed it, \$750 was ten or fifteen years ago a large enough sum to provide a family of father, mother and from three to five young children with the necessities for the maintenance of a fair standard of living, provided the money was wisely expended. A study made some years ago in New York indicated the necessity for an allowance of at least 22 cents per person per day for food; but the studies of Stern and Spitz² in Boston after the outbreak of the European war disclosed that this sum was

no longer adequate under the conditions of urban food prices.

Obviously the "living wage," the "standard of living" and the "working efficiency" of laboring classes, which comprise three quarters of the families in the United States, are closely interrelated. Never before has information bearing on these themes been more needed. All calculations based on conditions of a decade ago, or even those existing two years ago, leave us in the lurch. The purchasing power of money has become radically different. This may suffice to explain why so many sociological-physiologic studies in this field have been undertaken recently. One of the latest is concerned with the cost of living of working class families in Roxbury, Mass.,³ as late as the spring of 1917 following the rise of prices during the winter of 1916-1917. Statistics actually collected led Stites to the conclusion that, without making allowance for the rise in prices of other items, and considering merely the necessity of spending more for a minimum ration, the smallest income on which a normal family could maintain a proper standard of living in a city like Boston was \$850 a year—that is, reckoning fifty working weeks a year—\$17 a week; and if the amount spent for food was to be a proper proportion of the total expenditures, the family income in the latter part of 1916 should have been at least \$1,000. By the end of April, 1917, however, the simplest diet that would furnish adequate nourishment cost nearly \$2.75 per unit per week. A family of father, mother and four small children should have spent for food at that date a sum that would amount to more than \$568 a year. In order to have proper food and also to meet the other expenses of a normal existence, the family would have had to spend at least \$1,100 a year. The weekly income, therefore, should have been about \$22.

It is not likely that the majority of working class families are yet provided with resources of this magnitude, despite the great increase in wages in certain fields. For this reason it is interesting to learn what conditions of health and nourishment were actually observed in communities where the income was less than food prices seemed to demand. Estimation of the Roxbury budgets, says Stites, reveals the fact that at least eleven of the sixteen families were underfed. The amounts spent on food by these eleven households varied from a sum 40 per cent. short of an amount that would have purchased a living ration, to an amount only 2 per cent. short of that desirable minimum. Two families of this group spent less than two thirds of the amount that should have been at their command for food purchases, and four families had only about three quarters of the sum they needed. The average sum spent by these eleven families was about 20 per cent. less than it should have been. It

1. The Cost of Living and Retail Prices of Food, Eighteenth Annual Report, U. S. Commissioner of Labor, 1903. Chapin, R. C.: The Standard of Living in New York City, Charities Publication Committee, New York, 1909. Herzfeld, E. G.: Family Monographs: The History of Twenty-Four Families Living in the Middle West Side of New York City, New York, James Kempen Printing Company, 1905. More, L. B.: Wage Earners' Budgets, New York, Henry Holt & Co., 1907. Streightoff, F. H.: The Standard of Living Among the Industrial People of America, Boston, Houghton Mifflin Company, 1911.

2. Stern, Frances, and Spitz, Gertrude T.: Food for the Worker, 1917.

3. Stites, Sara H.: A Study of the Cost of Living of Working Class Families in Roxbury, Mass., Jour. Home Economics, 1918, 10, 147.

not very vivid contrast to this state of affairs, the budgets of four other families show a slight excess of expenditure for food, an excess averaging about 5 per cent. more than the sum necessary to buy an adequate supply. One family out of the group of sixteen spent approximately the correct amount.

It requires little speculation to reach the conclusion that when income is so restricted in relation to the cost of food, the other items in the budget, such as rent, fuel, clothing and insurance, must be limited. One feature of the Roxbury inquiry cannot fail to interest the medical reader:

Expenditures for health were very small, and it was a matter of interest to observe that no money was wasted on patent medicines. Three families spent nothing at all for the maintenance of their health during the weeks of the investigation. Most of the families, however, spent an average of a few cents a week for drugs and for treatment. Several sent their children to the Forsythe Dental Infirmary and paid small sums for the services rendered them there. One or two others availed themselves of the opportunities offered by hospital dispensaries for treatment of chronic troubles, as in the case of a child who had suffered from infantile paralysis.

The problems of maintaining those who cannot economize more is on us in new relations. Our profession is bound to meet them; and it cannot avoid contributing its share in the solution of great sociological questions.

SODIUM VERSUS POTASSIUM

The European war has taught us many lessons. Among them is the realization that we had become so dependent on Germany for certain things as to take for granted that this dependence was a necessity. Before the war, nearly all the potash used in the United States was obtained from Germany, where there were large natural deposits and, particularly, in such a form as to make them readily usable. As a result, Germany easily developed a potassium industry far ahead of that of any other nation. When the embargo was declared on Germany, the price of potassium salts in this country began to soar. This rise in price was one of the early manifestations of our previous dependence on that country for some of our important chemicals. During these years of supremacy of German potash, large natural potassium compounds were available in the United States, but not in such a form as to be easily adaptable for technical use. Nor was their chemical refinement commercially feasible against the German prices. However, since the war, American chemists have been investigating our own resources of potassium. Now the industry is developing favorably, demonstrating again that we can become independent of Germany in those instances in which necessity dictates. It will be a long time, however, before the potassium industry will be sufficiently developed to supply the urgent needs of war-time work.

Meanwhile, when a much-needed substance becomes scarce, or conditions develop making it necessary to economize in the use of a substance, we look around to see what substitute, if any, is available. In this instance we do not have to look far. Chemists tell us that potassium and sodium are sufficiently similar to be used interchangeably, and the latter is readily available. Within its borders the United States has an abundant supply of sodium salts in wells and mines, as well as in the oceans, and in forms readily usable from the commercial and the technical standpoint.

Why, then, have potassium salts become so generally used to the exclusion of many of the sodium salts? The answer has been, "German propaganda." Be this as it may, an editorial writer in a recent issue of the *Chicago Chemical Bulletin*¹ also credits it to prejudice:

The sodium salt should be superior to the potassium salt and yet because of the prejudice which extends throughout the chemical and medical fraternity, we continue to buy an inferior article at high prices and refuse to buy a superior article at a reasonable cost. Such is custom, tradition and prejudice among men—the chemist and medical doctor seem to be no exception in this regard.

Whatever the cause, we are so accustomed to using potassium rather than sodium salts that it has become a habit with us.

In addition to the chemical similarity of potassium and sodium, there is no preponderance of evidence to warrant us in believing that potassium salts as a therapeutic agent have any advantage over sodium salts.

Economically, the sodium salts now occupy a much more favorable position than the potassium salts; for instance, the current price of potassium acetate is \$2 a pound, and of sodium acetate, \$0.62; potassium bicarbonate, \$1.28, and sodium bicarbonate, \$0.05; potassium bromid, \$1.93, and sodium bromid, less than half, \$0.86 a pound; potassium chlorate, \$0.86, and sodium chlorate, \$0.57; potassium hydroxid, \$3.50, and sodium hydroxid, \$1; potassium iodid, \$4.64, and sodium iodid, \$5.15; potassium permanganate, \$5.23, and sodium permanganate, \$3.50.²

There are three reasons why sodium should be substituted for potassium: 1. By avoiding as much as possible the use of that which goes into ammunition or other war-time channels, especially if there is a scarcity, it will help win the war. 2. Therapeutically, the sodium salts are on the whole as good as potassium salts, and in some instances better. 3. Sodium salts are much cheaper than the corresponding potassium compounds. Physicians should acquire the habit of prescribing sodium compounds in preference to potassium compounds.

1. Sodium and Potassium, *Chicago Chem. Bull.*, May, 1918, p. 94.

2. Sodium chlorate and sodium permanganate are not official and have not been standardized. As potassium permanganate is largely used for fumigation with formaldehyd, it can be replaced by other reagents. The higher price of sodium iodid is attributable to the fact that it has not been widely used. No doubt as soon as the demand has increased, sodium iodid will decline in price below potassium iodid.

In connection with the foregoing, it is gratifying to note that the Army has recently awarded a contract for 40,000 pounds of sodium permanganate, totaling \$100,000. At previous times the Army has purchased potassium permanganate, simply, we presume, because sodium permanganate was not entered in the supply lists; this one order of sodium permanganate, thereby breaking away from the potassium habit, should save the government about \$100,000.

SOME LESSONS FROM TRENCH JAUNDICE

Among numerous lessons that the war has taught the medical profession, the importance of a proper recognition of certain forms of infectious jaundice must be included. Sufficient information is now available to make it seem unjustifiable for a careful clinician to utter an offhand diagnosis of ordinary catarrhal jaundice on the basis of simple icteric symptoms unattended by pain; for trench jaundice, as it occurs among the fighting forces, has directed attention anew to the widespread prevalence of an acute infectious disease characterized by malaise, prostration, and gastro-intestinal symptoms at onset, by fever of varying degree, and by jaundice of varying intensity and duration. In severe cases, bleeding from mucous surfaces and albuminuria are common. In moderately severe cases the rather high fever, marked prostration, and absence of local signs tend to exclude local disease of the biliary tract and present the clinical picture of an acute infection. It is stated,¹ however, that light cases of this affection seem to be clinically indistinguishable from ordinary catarrhal jaundice and therefore are seldom diagnosed correctly in the absence of an outbreak of the disease, which naturally directs attention to the probably infectious character of the malady.

Since 1916, it has become increasingly more probable that acute infectious jaundice is not merely the accompaniment of some long known infection, but is due to a definite micro-organism, the *Spirochaeta icterohaemorrhagiae*. It is assuredly not an entirely new disease; for, long before the present war, acute infectious jaundice was recognized as occurring especially among troops, sewer workers, agricultural laborers working in wet soil, and in mine workers. Neill,¹ of the United States Public Health Service, has collected evidence to indicate that something comparable to what we are discussing occurred among troops in the War of 1812; even more probable are the indications of the outbreaks of a similar malady in our Civil War. Among the civil population of the United States, epidemics of jaundice closely resembling those now believed to be caused by the spirochete have occasionally appeared.

From the standpoint of an understanding of the etiology and preventive measures, the discovery of the same spirochete in wild rats at various places has been

of the utmost importance.² The organism has been found in rats taken from the trenches where the disease had appeared among the troops, and likewise in rats captured in such widely separated localities as Washington, Nashville and New York. Noguchi has thus presented the situation:

The finding of the causative organism of infectious jaundice among wild rats in America, and the identification of this strain with those found in Asia and Europe, seem to be particularly important in revealing a latent danger to which we have been constantly exposed, but from which we escape as long as sanitary conditions are not disturbed by untoward events.

The mode of infection is still largely problematic. One can scarcely assume that rat-bites could account for all of the numerous cases. Such observations as have already been made indicate that about 10 per cent. of all wild rats wherever located probably carry the *Spirochaeta icterohaemorrhagiae* in their kidneys and excrete them in the urine. Hence Neill¹ ventures the hypothesis that if this organism finds a favorable environment in the soil, a sufficient number may live long enough to infect a human being who gets them in the mouth or on the skin. Under these conditions a larger number of rats also take up the spirochetes. In any event, every practitioner may proceed forewarned and prepared to recognize Weil's disease, which now is entitled to the more formidable designation of spirochetosis icterohemorrhagica.

THE ROCKEFELLER FOUNDATION AND ITS MEDICAL PROJECTS

Although the Rockefeller Foundation is at present devoting by far the larger part of its available resources to the support of war work, its projects have so largely acquired medical or hygienic interest that a mention of them seems desirable. They may be classified in general as dealing with medical education on the one hand and public health problems on the other. The educational projects along medical lines are too numerous to permit detailed mention here. The establishment of medical schools and hospitals in China, the organization of a school of hygiene at Johns Hopkins University for the training of sanitarians and the investigation of medical education and public health activities in South American countries are some of the features of work in progress.

Among the diseases, hookworm infection, malaria, yellow fever and tuberculosis have received attention from some directions. Thus last July the foundation through the International Health Board, appointed Dr. Livingston Farrand, president of the University of Colorado, director of a commission which went abroad to undertake the task of setting up in France

1. Neill, M. H.: The Problem of Acute Infectious Jaundice in the United States, Pub. Health Rep., 1918, 33, 717.

2. Noguchi, Hideyo: *Spirochaeta Icterohaemorrhagiae* in America. Wild Rats, and Its Relation to Japanese and European Strains, Jour. Exper. Med., 1917, 25, 755. Jobling, J. W., and Eggstein, A. A. The Wild Rats of the Southern States as Carriers of *Spirochaeta Icterohaemorrhagiae*, THE JOURNAL A. M. A., Nov. 24, 1917, p. 1787. (Note 1)

in close cooperation with the French government and the medical profession, a dispensary, publicity and training demonstration which should aim at helping to control tuberculosis. The work of the International Health Board in its warfare against hookworm disease has been referred to from time to time in THE JOURNAL.¹ Efforts directed to the control of the disease were extended during the year 1917 to three of the states in Brazil, to Siam, the Fiji Islands, the Seychelles Islands, and to four additional states of the Union — Alabama, Arkansas, Georgia and Maryland.² In one island, Antigua, the work that had been undertaken was completed. The board was at work during the year in thirty-seven areas, which included twenty-five foreign countries and twelve American states.

Recognizing clearly that malaria is a community problem rather than an affair of individuals, the International Health Board of the foundation has furnished demonstrations of the possibility of mosquito control. The Arkansas demonstrations are now reported as completed. At Crossett, Ark., the drainage problem was neither difficult nor expensive. The attack was therefore centered on exterminating the mosquito. The effect of this was striking. The numbers of doctors' calls for malaria fell from 600 in October, 1915, to forty-six a year later and to fourteen in October, 1917. The per capita cost for the first year was \$1.24. This included a considerable amount for capital expenditure in ditching and draining. During the second year (1917) the maintenance cost fell to a much lower figure. Crossett has now assumed full control of its malaria work. At Hamburg, Ark., after a year of successful demonstration, the entire expense of maintenance is being met by the community. The principle of teaching others to help themselves cannot but be commended as sound.

The campaign, projected some time ago for 1917, to rid the world of yellow fever, has been retarded by the war. It is believed that the seed-beds of the disease have been found on the west coast of South America, in a region along the south shores of the Caribbean Sea, in a strip along the north Brazilian coast, and in a certain area on the west coast of Africa. Despite the interruptions to the plans, scouting parties are on guard. The foundation's authorities believe that the real fight against yellow fever will come when the war is over; yet it is hoped wholly to exterminate the disease from the world.

An experiment that will be watched with interest is involved in the cruises of a hospital and dispensary ship carrying medical relief to the southern islands of the Philippine group. If these peaceful visits to remote places are successful, they will serve to demon-

strate that for purposes of placating primitive and suspicious peoples, medicine has some advantages over machine guns. This mode of dealing with a backward people has further general significance, to quote President Vincent, for the development of a system of mobile dispensaries operating from a base hospital. The principle may find expression equally well in a motor-car dispensary, with physician and nurse, operating through a rural area from a general hospital in an American county.

The war service rendered with the aid of the foundation's funds through the Rockefeller Institute for Medical Research are better known. To its war demonstration hospital, to the institute laboratories and to the institute hospital, medical officers of the Army and Navy are being officially sent for study and experience. To this may be added the plans to facilitate, under the direction of Major Thomas W. Salmon, the treatment of "shell shock" — the term for "that wide range of cases from true paralysis to simple cowardice." Mental diseases, subject to the investigations of the National Committee for Mental Hygiene, are not overlooked by the foundation's resources. The after-care of the victims of infantile paralysis has likewise been the recipient of aid. The many normal activities of the Rockefeller Foundation, President Vincent remarks, are not isolated items, each independent of the others; they all fall into a world-wide organization in the interests of scientific knowledge applied to human welfare.

BENEFACTANT STREPTOCOCCI

The mention of the term *Streptococcus* is more than likely to bring disagreeable sensations and unpleasant recollections to the minds of those who hear it. Thoughts of abscesses and suppurative processes, of inflammation and other pathologic reactions will arise in those for whom the word has any significance at all. From the standpoint of mere terminology this should not happen; for *Streptococcus* is merely the designation of a type of micro-organisms, of cells that divide in one plane so as to form short or long chains. However, association often determines the habits of mind as well as of body. The streptococci have so long been associated with disease that even the bacteriologist will inevitably tend to retain this relationship uppermost in his mental reactions. The condemnation of this group of bacteria is not of recent origin; for the attempts to produce powerful immune serums against streptococci date back to the earliest days of immunology. The differentiation of the types, the recognition of the peculiar pathogenicity of *S. viridans*, *S. hemolyticus* and others, and the appreciation of their baneful elective localization have not served to lessen the dislike of these enemies of mankind and the animal races.

There are instances in which the presence of streptococci does not lead to quite such severe indictments.

1. Problems in the Campaign Against the Hookworm, editorial, THE JOURNAL A. M. A., Nov. 10, 1917, p. 1611; Hookworm in the Mines of China, Nov. 17 1917, p. 1701; Hookworm Infection in Deep Gold Mines in California, Dec. 22, 1917, p. 2116.

2. These and other facts here cited are taken from Vincent, G. E.: The Rockefeller Foundation, Review of Work in 1917, New York, 1918.

In addition to the distinctly pathogenic groups that differ among themselves in virulence there are streptococci which are common in the udder, in the saliva, and in the intestine. They are generally believed to be devoid of real virulence; but the garget, mammitis, or mastitis related to the udder of cattle, their hoof rot and navel ill cannot be mentioned without casting additional suspicion on chain bacteria. Lately the designation *Streptococcus lacticus* has been assigned to milk-souring organisms once dignified with the name *Bacterium lactis-acidi*. Whether they win approval or condemnation depends on one's attitude toward their performance. Sour milk may be a desideratum in many instances; in still others it gives the impression of undesirable spoiling.

A government dairy bacteriologist in the Bureau of Animal Industry¹ has presented streptococci in an entirely different rôle, namely, as producers of flavor substances and other ripening changes in food prepared for consumption by fermentation, and particularly in the ripening of cheese. In this connection, says Evans,¹ the streptococci are important as one of the factors concerned in rendering palatable many articles of food in use throughout the world. But they are unobtrusive and demand little attention—only that the proper conditions for their growth shall be provided. The manufacturer of the food meets this demand without knowing why; he knows simply that if he follows such and such a procedure he will obtain the desired results. Therefore the flavor-producing streptococci have escaped notice.

Evans has found that streptococci differing from the more familiar *Streptococcus lacticus* are common in ripening cheese of various kinds and in other foods, such as kefir, the mash from which the Japanese condiment "soya" is prepared, and the Chinese "toku," or soy bean cheese. All of these represent products of fermentation of some sort. Evans believes that a study of the mouth, fecal and udder types of streptococci will show that cheese streptococci belong to those familiar types. Some conception of what such organisms can accomplish is summarized in Evans' report: A cream cheese inoculated with *S. lacticus* alone has its own peculiar flavor; a cream cheese inoculated with *S. lacticus* and *Streptococcus x* has a decidedly different flavor; one inoculated with *S. lacticus* and *S. kefir* has another flavor; and when all three species of streptococci are used together, still another flavor is produced. As some people prefer their ice cream flavored with vanilla, and others like chocolate flavoring best, so the one cheese flavor is more pleasing to some people, while others prefer another. It is gratifying to know that the highly variable demands of a discriminating public can be met in some respects by the employment of suitable streptococci in a beneficent rather than a baneful way.

1. Evans, Alice C.: A Study of the Streptococci Concerned in Cheese Ripening, Jour. Agricultural Research, 1918, 13, 235.

Current Comment

A MEDICAL ROLL OF HONOR

The survey of the war service of the medical profession, including the fundamental data relative to the supply of physicians in proportion to the population, appears in this issue of THE JOURNAL. As stated in the introduction to the survey, its compilation has been most difficult and time-consuming. Yet we believe that its importance more than justifies the work, time and expense involved in its preparation and publication. Undoubtedly it will be of great interest to every physician in the country; it will surely be of practical value to those who are directly concerned with the problem of supplying the Medical Department of the Army and Navy with a sufficient number of medical officers. While the tabular matter constitutes a survey, the list of names is, as stated, a real Honor Roll. It represents men who have made sacrifices for their country—men who have not only left the comforts of their homes, but also have given up professional work which in a majority of instances yielded far more income than the pay which they will receive as medical officers, even though they attain the highest possible rank. Among them are many of the most prominent physicians in our profession, including noted specialists, as well as surgeons and internists. This Honor Roll shows that the medical men of this country are not slackers. While the tabular matter indicates that there are only 19,692 medical officers, this does not represent the total number of physicians in military service. Including the Medical Corps and Medical Reserve Corps of the Army, the Medical Corps of the National Guard now in the Federal service, the Medical Corps of the National Army, the Medical Corps and the Medical Reserve Corps of the Navy, there are a total of 23,196 physicians actually commissioned, and practically all on active duty. Let it be remembered also that there are some 25,000 physicians engaged in the work of the local, district and advisory boards. As THE JOURNAL has stated repeatedly, the medical profession may be relied on to respond to any call the country may make on it.

LEST YOU FORGET

The authorized strength of the Regular Medical Corps of the Army is 2,975. The total present strength, i. e., on May 24, is 868. This indicates a splendid opening for over 2,000 ambitious medical men under 32 years of age.

KEEP UP YOUR OWN HONOR ROLL

Undoubtedly many of our readers would like to keep up to date a record of those—especially in their own county or state—who are giving their services to the government. This they will be able to do with little effort. Commencing this week, THE JOURNAL will publish a list, grouped by states, of those who, from this time on, accept commissions, with rank. It will be a comparatively simple matter, week by week, to copy the names into the Honor Roll as it appears in this issue of THE JOURNAL. It will take only a few minutes' time, and the satisfaction of having a complete list will be sufficient to pay for the slight effort. As noted in the introductory matter to the survey, there will be prepared for the county society and for the state association officials a list of registered physicians within the respective jurisdiction—that is, for the county or the territory covered by the component county society, and also for the state as a whole. On this list will be indicated (a) those who are commissioned; (b) those whose applications are pending, and (c) those who have been honorably discharged. These lists will be compiled as rapidly as possible; but not till after the meeting of the Association next month.

A MEDIEVAL PANACEA

At a period like that of the present when well-defined specialism has become an established fact in medicine and is accepted by the dependent laity as an inevitable, if not indispensable, feature of practice, the word "panacea" awakens a sequence of soothing reflections. Even the placebo is nowadays specialized for each suitable case. Little wonder that Asclepiades was looked on by the Romans as "a person sent from heaven" because the measures of treatment that this popular physician prescribed were agreeable and could at the same time easily be employed by almost any one. How can we of the twentieth century, accustomed to a multiplicity of difficult and sometimes dangerous therapeutic methods, appreciate the comfort of a medieval panacea, that which Bacon defined as a medicine by which life is protracted to its utmost natural limits, since it expels infirmity, reduces evil complexions to a good condition, and cures all diseases? Such a one Steele¹ has recently extracted, in new translation, from the *Secretum Secretorum* supposed to have been written by Aristotle for Alexander. The medium—a preliminary part of the prescription—consists of the juice of sweet pomegranates, apples, sugar and grape juice, mixed with that of sour pomegranates, quinces or apples, and boiled down to the consistency of honey. In the first medicine, for strengthening the brain, heart and stomach, a decoction of roses and violets was made; to this parsley water, sweet marjoram and bugloss extract were added. After further addition of myrobalans and cloves, and after standing twenty-four hours, the mixture was reduced to one third by heat. The product was completed when it was incorporated with the basal honey-like medium

along with musk, ambergris and aloes. Seven equally complex concoctions are described for fortifying the stomach, strengthening the viscera, tempering the stomach to expel melancholy, or to correct the liver. The final mixture of all in one, along with fresh tamarind pulp, oil of balsam and other rare products is then subjected to what Steele has happily designated "a grand orgy of expense" in the preparation of the supreme panacea. Powdered pearls, rubies, sapphires and amethysts, emerald dust and lastly finely divided gold are incorporated in the electuary in a gold pot, incensed with aloes. The product is then exposed to the influence of the heavens for eight days, "being carefully guarded from exposure to the moon in her malignant aspects." The dose is 1 dram fasting and 1 dram after meat. Humorous, do we say? Perhaps some of our present day nostrums or even prescriptions will likewise be quoted a few centuries hence as instances of the perpetuation of quackery in all ages.

THE LITCHI NUT AS FOOD

Although the edible litchi or so-called Chinese hazelnut, *Litchi chinensis*, is by no means unknown in this country, it has never attained sufficient prominence to deserve a place out of the class of dietary novelties. Most nuts that have obtained popularity as food products in the United States are rich in protein and fat. The chestnut alone is conspicuous for its richness in starch and its freedom from oil. According to the latest experiments of Read¹ at Yale University, the litchi likewise is practically fat free and contains little, if any, protein. From the nutritive standpoint the litchi was shown to deserve consideration because of its content of carbohydrate which is a mixture of simple sugars, principally invert sugar, such as is found in honey. An added flavor is due to the presence of citric acid, with possible traces of other common fruit acids which, as Read remarks, stimulate the appetite and are prized as "thirst relieving" substances. The possibilities in the way of suitable fruits and nuts, both of which the litchi resembles in some respects, are not so varied that an added one is not worthy of respectful consideration.

LARGE CITIES DELINQUENT

An analysis of our survey, or Honor Roll as we prefer to call it, will show that the large cities have furnished the smaller percentages of physicians to the Army and the Navy medical services. Yet it is these centers of population in which fewer physicians are needed in proportion to the population. Because of accessibility, one physician can care for two or three times as many patients as can be served in rural communities. Again, availability of hospital facilities, and the fact that the public is more and more inclined to go to hospitals, tend to economy of the physician's time. Our greatest efforts to secure volunteers for the Medical Reserve Corps must be made in the cities.

1. Steele, R.: A Mediaeval Panacea, *Proc. Roy. Soc. Med.*, Section the History of Medicine, 1917, 10, 93.

1. Read, B. E.: The Edible Litchi Nut (*Litchi Chinensis*), *Jour. Am. Chem. Soc.*, 1918, 40, 817.

Association News

THE CHICAGO SESSION

SELECTIVE SERVICE REGULATIONS AND STANDARDS OF PHYSICAL EXAMINATION

Discussion by Persons Connected with and Interested in the Selective Draft

At the Chicago session, there will be a discussion on the Selective Service Regulations and on the "Standards of Physical Examination" by persons connected with and interested in the selective draft. Meetings for this purpose will be held at the Studebaker Theater, Thursday, June 13, at 2 p. m., and Friday, June 14, at 10 a. m.

THURSDAY MEETING, 2 P. M.

MEDICAL ASPECTS OF THE SELECTIVE SERVICE:

Discussion opened by:

MAJOR HUBERT WORK, presiding, from the Provost Marshal-General's Office.

COL. FRANK BILLINGS, from the Surgeon-General's Office.

MR. GRAHAM TAYLOR, Illinois, representing Local Boards.

COL. JAMES PHALEN, representing the cantonments.

DR. JAMES B. HERRICK, Chicago, representing the District Boards of Appeal.

LIEUT.-COL. J. S. EASBY-SMITH, Washington, D. C., representing Provost Marshal-General Crowder.

Voluntary five-minute addresses and inquiries will be invited. Reply to inquiries will be made by Lieutenant-Colonel Easby-Smith.

FRIDAY MEETING

8:30 a. m.—Conference: LIEUT.-COL. J. S. EASBY-SMITH and MAJOR HUBERT WORK, with medical aides to the governors.

10 a. m.—Joint Session of medical aides, medical members of Local, District and Medical Advisory Boards, and dentists. Information discussion of the Selective Service Regulations with the representatives of the Provost Marshal-General's Office.

The "Standards of Physical Examination" will be available for discussion.

CONFERENCE OF MEDICAL SCHOOLS

A conference of medical schools, under the auspices of the Council on Medical Education of the American Medical Association, will be held at the Gold Room of the Congress Hotel, Tuesday, June 11. The sessions are to begin at 9 a. m. and 2 p. m. The conference will consider war problems in medical schools. The opening address will be given by COL. WILLIAM H. WELCH, who will act as chairman of the conference.

The program is as follows:

Committee on Education and Special Training, General Staff of the Army:

LIEUT.-COL. ROBERT I. REES, Military Aspects of Training.

DR. CHARLES R. MANN, Educational Considerations.

Medical Department of Army:

LIEUT.-COL. HORACE D. ARNOLD, Medical Schools.

COL. V. C. VAUGHAN, Medical Teachers.

Bureau of Medicine and Surgery, U. S. Navy:

ADMIRAL E. R. STITT, Medical Inspector, U. S. Navy.

Medical Schools:

PRESIDENT RAY LYMAN WILBUR; DEANS SAMUEL W. LAMBERT, J. WHITRIDGE WILLIAMS, JOHN M. DODSON and WILLIAM S. CARTER.

Council on Medical Education of the American Medical Association:

DR. N. P. COLWELL.

Council on Medical Education, American Institute of Homeopathy:

DR. GEORGE ROYAL.

State Licensing Boards:

DR. WALTER L. BIERRING; MR. AUGUSTUS S. DOWNING, and DR. JOHN M. BALDY.

GUESTS AT THE ANNUAL SESSION

The annual session of 1918 will be conspicuous for the distinguished guests who will honor the Association by their attendance. This session is distinctly a war session. The military medical department of our government will be represented by numerous officers, including the Surgeon-Generals of the various services. From London will come Sir Arbuthnot Lane and Sir James Mackenzie, perhaps as noted a surgeon and an internist as could be selected from among the British profession; the Canadian army will be represented by Col. Herbert Bruce. Dr. René Sand has been delegated by the Belgian general consul to represent that government. M. Justin Godart, for three years undersecretary of state for the military medical service of France, with Major E. Rist and Major Edmond Locard, will represent the French medical service. There will also probably be a representative from Australia and one from Italy; these names, however, are not yet available. Representative of the Red Cross will be Mr. J. J. O'Connor, director. The liaison officers from the Surgeon-General's Office. Col. Claude K. Morgan, C. M. G., R. A. M. C., of the British government, and Col. Charles Dercle of the French Army Medical Corps will also be present. The program of the Section on Diseases of Children includes Dr. Paul Armand de Lille of France and Dr. Truby King of New Zealand. This session will have an international character, serving to bind together more closely the bonds which are daily becoming stronger between our government and its allies.

GENERAL MEETINGS

One of the usual features of the annual session of the American Medical Association has been the President's Reception and Ball. Because such a feature would not be in accord with the times, it will be omitted this year, as it was last. However, there will be three general meetings.

Opening General Meeting

The Opening General Meeting will be held at the Auditorium Theater, Tuesday evening, June 11, at 8:15. In addition to the usual opening program, including the President's address, there will be a patriotic address by the Hon. Frank O. Lowden, Governor of Illinois. At this meeting, foreign guests will be introduced.

The War Meeting

The second general meeting will be held at the Medinah Temple, Ohio and Cass streets, at 8:15 Wednesday evening. The program for this meeting will consist of patriotic singing, and short addresses by some of the foreign guests, including those from Belgium, France, Great Britain, Canada and Australia, and, it is hoped, from Italy; by representatives of the Red Cross, of the Army and of the Navy, who have been on foreign duty, by Major-General Gorgas and by Admiral Braisted.

The Patriotic Meeting

The popular Patriotic Meeting will be held on Thursday evening at 8:15 in the Auditorium Theater. As already announced, the principal addresses will be those of Prof. John M. Coulter, on "Science and the War," of Judge Charles S. Cutting on "The Law and the War," and of Bishop C. P. Anderson on "American Ideals." The Great Lakes Training Station Band will be one of the features of this meeting. There will also be choral and other singing.

CLINICS AT THE CHICAGO SESSION

The local committee of arrangements, through its subcommittee on clinics, has provided a very complete and comprehensive schedule of clinics covering the five day period, June 6 to 11, inclusive.

No clinics will be scheduled after Tuesday, June 11; hence there will be no conflict with the regular programs of the Scientific Sections of the American Medical Association.

The preliminary announcement made in *THE JOURNAL*, May 11, has been added to materially, and details of all clinics will be printed and ready for distribution to those who attend. Over four hundred clinicians will participate, and the average number of clinics will exceed one hundred for each day. The list of clinicians and the hospitals in which they work, together with the hours of their clinics, has been completed and will be mailed to any physician on request. The final details of the cases are the only feature remaining to be completed; naturally there will be minor variations up to the hour of the clinics.

The committee has information as to the capacity of each amphitheater, and if the attendance demands it, admission will be by ticket, in order that no clinic may be overcrowded.

The headquarters of the clinic committee will remain at the office of the Chicago Medical Society, 25 East Washington Street, until Thursday, June 6, when the headquarters will be moved into the Sherman House and all information and tickets will be given out from there.

The schedules in the hands of the committee show that practically every specialty will be represented every day throughout the entire period.

The committee desired to repeat that there is no charge to Fellows of the American Medical Association for the privilege of attending these clinics.

CHARLES E. HUMISTON, Chairman.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 24, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 394 lieutenants.

MEDICAL RESERVE CORPS: 19,092, including 1,366 majors, 4,921 captains and 12,805 lieutenants. On active duty: 17,103, including 1,278 majors, 4,630 captains and 11,195 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,201, including 19 lieutenant-colonels, 244 majors, 153 captains and 785 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 141, including 2 brigadier-generals, 16 colonels, 115 lieutenant-colonels and 8 majors.

The discharges to date are:

Causes	Number	
	M.R.C.	M.C.N.G.
Physical disability	664	52
Inaptitude	257	20
Other branches of the service	507	71
Resignations	119	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	75	5
Dismissals	9	2
Duty completed	1	0
No reasons given	14	0
	1,755	183

To Be Brigadier-General Robert E. Noble, M. C.

On May 20 the Senate confirmed the nomination of Robert E. Noble, M. C., U. S. Army, as brigadier-general in the National Army. General Noble was born in Georgia. He graduated from the Alabama Polytechnic Institute in 1891, received his medical degree from Columbia University in 1899, and was an honor graduate of the Army Medical School in 1904. He served three years in the Philippine Islands, and for seven years was in the Canal Zone. He accompanied General Gorgas on a sanitary mission to South Africa and also rendered valuable service at Vera Cruz in 1914. When the United States entered the war he was a major in the Medical Corps and took charge of the organization and assignment of medical officers. He has also acted as director of hospitals.

Divinity and Medical Students Must Register

According to a statement by Provost-Marshal General Crowder, all medical and divinity students reaching the age of 21 on or before June 5, must register on that date along with all other young men born between June 6, 1896, and June 5, 1897. The exceptions to this rule are officers and enlisted men of the Regular Army, Navy, and Marine Corps, medical officers of the National Guard and Naval Militia, while in Federal service, members of the Officers Reserve Corps and enlisted men in the Enlisted Reserve Corps while on active duty. According to a law signed by the President on May 20, 1918, all students who were preparing for the ministry in recognized theological or divinity schools and those preparing for the practice of medicine and surgery in recognized medical schools on that date are exempt from the draft. However, they must first register in order to be exempted.

Special Board to Investigate Pneumonia

A board of medical officers, consisting of Cols. Deane C. Howard, M. C., U. S. Army; Frederick F. Russell, M. C., U. S. Army; Victor C. Vaughan, M. C., N. A.; Lieut.-Col. William H. Welch, M. C., N. A., and Contract Surg. Rufus Cole, has been appointed for the purpose of making an investigation as to the nature, causes and prevention and treatment of pneumonia, and its complications, in the various military camps in the United States. It will report from time to time to the Surgeon-General of the Army, to whom a full report will be made as soon as practicable after the completion of the investigation.

Decorated for Bravery

On May 28, it was announced that the British Military Cross for bravery had been awarded to the following officers of the Medical Reserve Corps attached to British units in France: Capt. Thomas Edward Walker, Cleveland, and Lieuts. Lynwood M. Gable, New York City; Abraham I. Haskell, Minneapolis; James B. Clinton, Philadelphia; Samuel Adams, Jersey City, N. J.; Gouverneur H. Boyer, Pottsville, Pa.; Harold E. Foster, Castile, N. Y.; John B. Gregg, Iowa City, Iowa; Albert L. Jones, Weatherford, Texas; Baldwin L. Keyes, Philadelphia; Guy D. Tibbetts, Bennington, N. H., and Harvey C. Updegrave, Easton, Pa.

INSTRUCTIONS TO MEDICAL COLLEGES

A circular letter to medical colleges issued from the Surgeon-General's Office, dated May 24, 1918, gives instructions to medical colleges as follows:

Continuous Sessions.—The circular letter urges all medical schools that can do so to hold summer sessions for the next senior class—the class of 1919—so as to enable those students to complete their course in the medical schools three or four months earlier. Medical schools which are able to establish the continuous session for the other three classes and at the same time maintain the efficiency of instruction are invited to do so. The immediate adoption of the plan, however, is left to the judgment of the individual schools.

In arranging for continuous sessions, the plan of four terms of twelve weeks each during the calendar year is favored, but the plan of three terms of sixteen weeks each is acceptable. One week in each term is allowed for examination, and the time specified means actual teaching exclusive of vacations. The college year under the "quarter" plan would thus consist of three quarters, including thirty-three weeks of actual instruction, and under the three term plan, two terms including thirty weeks of actual instruction.

Matriculation for Next Session.—A circular letter issued by the Surgeon-General's Office authorizes "well recognized" medical schools to begin matriculation of the freshman class of 1918-1919 at once, whether the next session begins this summer or in the fall. A bona fide matriculation will be accepted as establishing membership in the class, as affecting eligibility for enlistment in the Medical Enlisted Reserve Corps.

Medical Faculties.—It is planned to maintain efficient and adequate teaching forces in "well recognized" medical schools, and deans of medical schools have been asked to submit lists of essential teachers for the coming year as a basis for the selection of those who should remain as medical teachers for that period unless an extreme emergency should arise. The Surgeon-General is definitely of the opinion that a teacher of

students in the Medical Enlisted Reserve Corps may render as valuable service as those on duty with the active military forces. The appropriate recognition of such services in a military way is now being given serious consideration.

Other Problems.—Other problems of medical schools will be considered at the conference to be held in Chicago, June 11, the program of which appears elsewhere in this issue of THE JOURNAL.

INTERALLIED SCIENTIFIC FOOD COMMISSION

The first meeting of this committee was held at Paris in March, and the second meeting opened, April 30, at Rome. France is represented by Prof. E. Gley, C. Langlois and J. Alquier; Great Britain by E. H. Starling; the United States by Profs. R. H. Chittenden and Graham Lusk, and Italy by Profs. F. Bottazzi and L. Pagliani. There are also delegates from the farmers, economists, statisticians, etc., of the different allied countries. The food commissioner for Italy, Senator Crespi, presided at the conference. It is planned to have a secretary representing the commission in each of the allied countries, with a central office and secretary general at Paris. In France, Wednesday, Thursday and Friday are now meatless days, except that horse meat can be sold in shops selling horse meat alone. The slaughterhouses are to be closed from Monday evening to Friday morning, and the total animals slaughtered is restricted to two-thirds of the average number in March. Similar restrictions are to be enforced in Italy, except that mutton and goat's flesh can be sold and served on Wednesdays, and there is no restriction in the sale of pig products. Three days in the week are poultryless days.

REMEDYING THE REMEDIABLE DEFECTS OF REGISTRANTS IN GROUP B—THE REMEDIABLE GROUP

FROM: Office of the Provost Marshal-General.
To: Draft Executives in all States.
SUBJECT: Registrants in the Deferred Remediable Group.

1. This is to advise the Executives of the Selective Service of the increasing number of registrants anxious to enter the Army, but who have been placed in Group B (the deferred remediable group) because of physical defects which disqualify them for general military service, but which in the opinion of the Medical Examiners may be remedied by appropriate treatment, or surgical operations, not in themselves involving risk to life.

2. Requests from hospitals are also reaching this office, offering to care for registrants under treatment preparatory to their induction into service. Physicians and surgeons stand ready to cooperate with hospitals in this service.

3. Maryland through its Governor, his Adjutant-General, and Medical Aide cooperating, have already on their own motion inaugurated this patriotic cooperation, for which all parties to it volunteer. Eighty registrants from Group B (the deferred remediable group) are on the waiting list in Maryland, and it is believed that Group B registrants, in that state, will very soon be transferred to Group A.

4. No responsibility is of course assumed, either by the Government, the state, or by those called upon to perform these gratuitous services, it is to be regarded only as a patriotic commendatory measure to strengthen our soldiery.

5. You are, therefore, requested to aid, through the usual channels, in bringing to the attention of registrants the facilities available for remedying minor physical defects which, when cured, will remove the registrant from the deferred remediable group and fit him for immediate training as a soldier.

E. H. CROWDER, Provost Marshal-General.
By HUBERT WORK, Major, M. R. C.

[NOTE.—There might be added to the above circular a paragraph calling the attention of physicians to this opportunity for patriotic service. During the last two or three months it has become obvious that a decided change has taken place in the attitude of registrants toward military service. Many are today anxious to get into service who previously were seeking cause for exemption; consequently many registrants placed in Group B of Class 1 for some slight physical defect, such as hernia, hemorrhoids, missing teeth, minor foot defects, or chronic appendicitis, are trying to have the defects remedied and to get into the service.—Ed.]

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 17, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):	
All Troops	1,106.2
Divisional Camps	736.
Cantonments	1,227.2
Departmental and Other Troops	1,177.3
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	39.5
Divisional Camps	33.
Cantonments	44.7
Departmental and Other Troops	38.4
3. ANNUAL DEATH RATE PER 1,000 (disease only):	
All Troops	6.3
Divisional Camps	3.1
Cantonments	9.9
Departmental and Other Troops	4.2

NOTE: On account of frequent changes in organizations and personnel, it is no longer practicable to group troops separately as National Army, National Guard and Regular Army as has been done previously in this report. The new grouping is considered more accurate.

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 17, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000	Noneffective per 1,000
				Total	New Infections						
Beauregard.....	8	..	19	40	4	2	..	..	5	1,084.1	53.5
Bowie.....	3	..	4	80	74	..	..	..	0	870.9	31.1
Cody.....	10	1	..	5	2	..	..	..	3	432.3	22.7
Doniphan.....	1	..	..	10	0	1	..	..	1	2,156.2	68.6
Fremont.....	3	..	..	46	45	28	..	1	1	1,209.2	38.5
Greene.....	..	..	..	6	6	3	..	..	1	540.1	23.4
Hancock.....	..	..	..	..	..	..	..	..	..	..	..
Kearny.....	3	..	2	6	0	3	..	1	5	855.1	33.1
Logan.....	3	3	2	40	21	1	2	1	0	514.9	29.7
MacArthur.....	..	..	..	..	..	..	..	..	1	749.5	47.3
McClellan.....	..	..	..	95	21	..	..	..	0	854.5	31.5
Sevier.....	3	..	4	46	20	9	1	1	2	242.4	20.7
Shelby.....	..	4	2	12	2	1	1	..	2	652.4	36.9
Sheridan.....	1	..	2	20	15	..	..	4	2	398.9	20.3
Wadsworth.....	..	..	..	116	0	4	..	1	0	1,305.8	36.8
Wheeler.....	2	1	..	14	4	..	1	..	1	774.7	42.7
Custer.....	26	..	..	45	2	5	1	4	6	630.3	25.0
Devens.....	9	..	..	36	6	23	..	2	5	782.9	43.4
Dix.....	9	..	3	108	21	25	..	3	1	994.1	32.8
Dodge.....	36	..	..	136	0	44	..	3	14	1,843.3	82.6
Funston.....	42	..	1	29	11	13	1	2	9	1,016.2	44.1
Gordon.....	57	..	3	30	1	68	1	..	19	2,036.0	66.3
Grant.....	15	..	..	38	1	22	..	15	4	500.6	24.2
Jackson.....	31	1	1	334	3	26	1	..	14	1,888.4	59.7
J. E. Johnston.....	24	..	1	30	20	12	..	..	1	1,047.5	34.7
A. A. Humphreys..	2	..	..	18	2	18	..	..	2	893.0	16.2
Lee.....	6	..	1	246	16	11	..	..	5	998.3	43.9
Lewis.....	17	..	5	74	5	10	..	11	2	1,023.3	34.7
Meade.....	14	..	..	54	17	5	4	1	2	801.0	33.0
Pike.....	37	..	..	63	16	21	2	2	10	2,036.7	71.4
Sherman.....	4	..	..	114	6	12	..	5	3	1,145.4	39.4
Taylor.....	14	..	..	69	2	13	..	3	5	909.4	57.4
Travis.....	55	2	6	54	3	8	..	..	11	2,503.2	48.2
Upton.....	14	..	..	218	43	3	2	6	3	1,016.1	39.3
Northeastern Dept.	1	..	..	36	23	3	..	..	0	855.7	30.2
Eastern Dept.....	1	..	3	31	25	9	..	2	4	851.3	27.7
Southeastern Dept.	1	..	..	75	8	6	..	1	3	1,100.7	32.4
Central Dept.....	3	..	..	22	14	16	..	7	0	1,263.5	62.3
Southern Dept.....	10	..	3	170	59	8	..	6	6	1,418.4	41.7
Western Dept.....	3	..	..	38	17	7	..	6	2	1,007.0	18.5
Aviation, S. C.....	21	..	2	163	0	14	3	13	11	1,228.1	34.8
Alcatraz, D. B.....	..	..	..	..	..	..	..	..	0	645.9	15.5
Columbus Bks.....	1	..	..	8	0	..	..	1	1	643.0	21.1
Depot, Provisional Corps and Army Troops.....	10	..	1	62	0	3	5	2	0	1,515.3	35.7
Edgewood - Aberdeen.....	..	..	..	..	..	1	..	..	0	443.2	13.3
El Paso.....	..	..	..	..	..	..	..	..	0	298.3	13.3
Hoboken.....	14	..	2	113	9	13	3	7	3	647.1	48.8
Holabird.....	..	..	..	..	..	1	..	..	0	478.5	4.1
Jefferson Bks.....	6	..	..	371	2	7	1	3	2	3,589.0	84.9
Leavenworth, D. B.....	..	..	..	..	..	..	..	..	0	1,160.1	40.7
Logan, Fort.....	..	..	..	6	..	1	..	..	0	1,608.8	77.0
McDowell, Fort.....	..	..	1	63	0	2	..	1	0	2,740.5	78.5
Newport News.....	10	4	3	146	3	5	1	1	4	1,286.1	63.4
Raritan.....	..	..	..	..	..	..	..	..	..	..	..
Slocum, Fort.....	3	..	..	33	0	..	..	..	1	1,059.5	34.2
Springfield Armory	..	..	..	..	..	..	..	..	0	804.1	20.9
Thomas, Fort.....	2	..	..	24	0	5	..	..	0	1,622.9	27.6
Watervliet.....	..	..	..	2	0	..	..	..	0	406.2	39.0
West Point.....	..	..	..	..	..	..	..	..	0	448.8	8.6
Natl. Guard Depts.	..	..	..	13	0	7	1	1	0	..	..
Natl. Army Depts.	8	..	1	293	115	23	1	39	1	..	..
Total.....	543	16	72	3,901	666	522	32	161	178	1,106.2	39.5

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 17, 1918	Departmental and Other Troops, Week Ending May 17, 1918	Divisional Camps, Week Ending May 17, 1918	Cantonments, Week Ending May 17, 1918	Expeditionary Forces, Week Ending May 9, 1918
Pneumonia.....	21.8	12.5	6.7	36.7	21.7
Dysentery.....	0.6	0.58	1.6	0.2	0.1
Malaria.....	2.9	2.1	6.4	1.8	1.1
Venereal.....	156.9	198.1	98.0	151.2	32.3
Paratyphoid.....	0.0	0.0	0.0	0.0	0.0
Typhoid.....	0.0	0.0	0.0	0.0	0.2
Measles.....	21.0	14.6	0.5	30.2	9.3
Meningitis.....	1.28	1.9	0.9	1.1	2.1
Scarlet Fever.....	6.4	8.0	1.6	17.1	6.4

NEWS OF THE CANTONMENTS

Camp Zachary Taylor, Lincoln Division (Eighty-Fourth), Louisville, Ky.

MAY 27, 1918.

CAMP HEALTH IMPROVES

Health conditions continue to improve at Camp Zachary Taylor. The death rate is going down, only four deaths being recorded at the base hospital this month. There are fewer patients at the hospital than at any time since last fall. Measles has been reduced materially, there being but forty-nine suffering from this ailment. At one time there were more than 300 cases of measles. There are less than 100 cases of mumps.

Pneumonia and empyema are declining. The latter disease was never before known to have been so prevalent as it was at army camps throughout the country during the winter. The medical officers have successfully originated methods of treatment. The mortality from this cause has been decreased and the number of complete cures increased.

PERSONAL

Major Milton Board, M. R. C., U. S. Army, has tendered his resignation to Governor Stanley as medical director for the Workmen's Compensation Board, and it has been accepted. Major Board differed with the state administration, it is said, over its policy toward the Kentucky Board of Health, and, failing to have his views accepted, he severed his official connection with the state. He remains registrar of vital statistics for Jefferson County and a major in the Medical Reserve Corps.

COMMISSIONS ACCEPTED

- ALABAMA
- L. KELLEY, Birmingham
M. KYSER, Birmingham
MEYER, Birmingham
L. BOOTH, Buhl
C. SPEIR, Furman
L. SCOTT, Greenville
H. MOORE, Opelika
B. WARWICK, Talladega
- ARIZONA
- E. THOMAS, Phoenix
- ARKANSAS
- L. GARDINER, Little Rock
H. KING, Hot Springs
L. SMILEY, Siloam Springs
- CALIFORNIA
- A. KEOWN, Alhambra
C. CRUM, Hayward
C. GRINER, Lake Port.
Y. VAN METER, Los Angeles
D. FANTON, Riverside
P. PORTER, San Francisco
H. HIRSCHFELD, San Francisco
T. SUMMERSGILL, San Francisco
A. YOUNG, San Francisco
- COLORADO
- H. HALLEY, Pueblo
WORK, Pueblo
- CONNECTICUT
- C. PASUTH, Bridgeport
R. KNOWLES, Danielson
F. O'BRIEN, Hartford
F. ROONEY, Hartford
S. STARR, Hartford
L. STORY, Hartford
C. MARANTZ, New Haven
R. MILLER, Southington
- DELAWARE
- J. H. W. AYERS, Wilmington
- DISTRICT OF COLUMBIA
- T. E. NEIL, Washington
F. M. NOLAN, Washington
C. C. ROGERS, Washington
- FLORIDA
- W. C. WHITE, Live Oak
R. R. NIBLACK, New Smyrna
- GEORGIA
- E. J. HALL, Adel
J. W. BURNEY, Atlanta
M. B. HUTCHINS, Atlanta
- ILLINOIS
- H. S. MAUPIN, Bath
C. A. ELLIOTT, Chicago
W. H. HOLMES, Chicago
G. W. LAWSON, Chicago
E. D. QUINLAND, Chicago
A. K. SUTCH, Chicago
C. D. WILKINS, Chicago
E. J. WHEATLEY, Danville
C. A. ROBBINS, Dixon
R. T. WOODYATT, Evanston
O. F. MAY, Normal
W. J. WEISHEW, Oswego
- INDIANA
- H. H. HUBBARD, Boswell
H. C. BEMBRY, Evansville
H. S. HATCH, Indianapolis
J. R. NEWCOMB, Indianapolis
J. A. FRIEZ, Terre Haute
W. C. ZELLER, Union City
- IOWA
- J. T. HANNA, Kellogg
A. J. ROSS, Perry
P. C. INGHAM, Whiting
G. F. HARTWIG, Young America

- KANSAS
- E. W. JOHNSON, Coffeyville
H. E. MCCARTHY, Kansas City
L. M. SCHRADER, Kinsley
R. H. HERTZLER, Newton
G. W. HIGGINBOTHAM, Wichita
W. P. GUY, Winfield
- KENTUCKY
- J. L. STILLINGS, Atlanta
B. O. MOORE, Hopkinsville
S. ANDERSON, Louisville
B. L. HOLMES, Louisville
W. P. K. HOWARD, Louisville
F. V. GILGORE, Louisville
L. P. SPEARS, Louisville
B. M. Brown, Quicksand
- LOUISIANA
- J. W. KIRBY, Franklin
G. M. JONES, New Orleans
E. W. REEVES, New Orleans
W. C. ROYALE, New Orleans
J. M. SINGLETON, New Orleans
- MAINE
- J. S. BRAGG, Winter Harbor
- MARYLAND
- N. H. BRUSH, Baltimore
G. G. E. CROSS, Baltimore
S. SNYDER, State Sanitarium
- MASSACHUSETTS
- T. H. ASCHMANN, Boston
F. H. COLBY, Boston
D. C. GREENE, Boston
R. N. HATT, Boston
D. H. NISBET, Boston
P. M. PAPOULACOS, Boston
A. O. RAYMOND, Boston
L. H. ROCKWELL, Boston
L. M. SPEAR, Boston
G. V. DEARBORN, Cambridge
H. M. ENGLISH, Foxborough
E. J. SAWYER, Gardner
G. H. GREEY, Lynn
R. I. WALKER, New Bedford
C. W. ROBERTSON, North Dana
R. N. NYE, Springfield
H. ZIMMERMAN, Springfield
M. M. JORDAN, Westborough
F. R. SEDGLEY, West Roxbury
- MICHIGAN
- R. L. HADEN, Detroit
M. M. HYMAN, Detroit
F. C. MAYNE, Detroit
A. B. PERSLEY, Detroit
C. P. CLARK, Flint
A. W. HEINE, Mount Clemens
W. VAN DE ERVE, Norway
- MINNESOTA
- D. F. McCANN, Bemidji
W. H. CONNER, Finlayson
H. S. JONES, Minneapolis
M. SEHAM, Minneapolis
H. H. THOMPSON, Minneapolis
G. L. JOHNSON, Newfolden
H. O. McPHEETERS, Redwood Falls
J. B. NEIL, Rochester
B. J. WEIGEL, St. Paul
G. V. LYNCH, Winona
- MISSISSIPPI
- F. A. ROGERS, Agness
J. M. GUTHRIE, Meridian
- MISSOURI
- H. E. BRAUN, Independence
C. E. BRISCOE, Kansas City
M. GOLDMAN, Kansas City
G. W. SMITH, Kansas City
E. L. STEWART, Kansas City
W. L. SHARP, Little Rock
F. F. ALSUP, St. Louis
C. J. CLAPSADDLE, St. Louis
L. P. MACKLIN, St. Louis
H. E. MUDD, St. Louis
J. A. ROSSEN, St. Louis
G. L. TONELLI, St. Louis
A. L. STEPP, Vanduser
C. L. ARMSTRONG, Webster Groves
W. S. CULPEPPER, Willow Springs
- MONTANA
- W. L. KELL, Browning
C. A. GARDNER, Columbus
W. COTTON, Forsyth
- NEBRASKA
- C. C. COPELAND, Beaver City
S. J. STEWART, Hastings
- NEW HAMPSHIRE
- J. C. LAWLOR, Dover
- NEW JERSEY
- W. L. McCANTY, Barker
W. S. LONG, Haddonfield
M. MORRISON, Montclair
W. H. WHITON, Neshanic Station
S. BROOK, Newark
J. A. FREESE, Newark
E. M. MOUNT, New Jersey
T. L. CALDRONEY, Paterson
H. D. BELLIS, Trenton
- NEW MEXICO
- JOS. W. LACKEY, Carlsbad
- NEW YORK
- E. L. WILSON, Bolton Landing
L. FASKE, Brooklyn
W. H. FIELD, Brooklyn
M. GROLLMAN, Brooklyn
F. MOSKOWITZ, Brooklyn
A. SHORR, Brooklyn
G. J. SIGNORELLI, Brooklyn
W. S. SMITH, Brooklyn
L. ZIMTBAUM, Brooklyn
D. C. O'NEIL, Binghamton
L. E. SANFORD, Binghamton
T. H. McKEE, Buffalo
W. Z. DELL, Colden
B. F. HANENSTEIN, Fort Porter
H. C. TOOKER, Larchmont
J. L. KANTOR, Manhattan
E. B. GRAY, Mount Kisco
L. M. ALOFSIN, New York City
R. BAILIN, New York City
L. A. BONNCINO, New York City
W. C. BUNTIN, New York City
L. B. FARRIOR, New York City
S. S. FERN, New York City
S. S. FRIEDMAN, New York City
W. M. HANDLEMAN, New York City
H. HERSHBERG, New York City
H. SMITH, New York City
W. C. STADIE, New York City
H. TRAUTMANN, New York City
D. TROPAUER, New York City
F. S. SCHOONOVER, Rochester
G. J. HOGBEN, Rye
W. S. MARTENS, Shrub Oak
J. R. PATTON, Staten Island
F. T. OWENS, Utica
- NORTH CAROLINA
- G. S. MacPHERSON, Asheville
P. H. RINGER, Asheville
P. M. KING, Charlotte
M. C. KING, Franklinton
L. T. DELANY, Raleigh
- OHIO
- C. C. PATTON, Ashland
D. H. COLEMAN, Cincinnati
B. JOHNS, Cincinnati
H. M. LEE, Cincinnati
O. H. PINNEY, Cincinnati
R. H. VANCE, Cincinnati
H. B. WEISS, Cincinnati
J. D. OSMOND, Cleveland
G. A. ROWLAND, Columbus
R. T. SAUNDERS, Erie
F. C. HUNT, Gerard
J. F. EARP, Holgate
JOHN D. NOURSE, Kenton
C. GEO. SMITH, Marion
B. LEE, Massillon
T. E. BROWN, Youngstown
- OKLAHOMA
- W. A. AITKEN, Enid
R. E. LONG, Guthrie
W. A. COOK, Tulsa
R. L. MITCHELL, Vinita
- OREGON
- B. F. SCAIEFE, Eugene
J. PRINZING, Ontario
C. S. MENZIES, Portland
L. E. STORY, Portland
- PENNSYLVANIA
- W. J. JONES, Allentown
A. M. BENNARDI, Bradford
A. HUNTER, McKeesport
J. T. BUNTING, Philadelphia
J. M. CAHAN, Philadelphia
C. E. CASE, Philadelphia
A. R. ROZPLOCH, Philadelphia
H. C. SANGREE, Philadelphia
G. S. VAGAN, Pittsburgh
R. H. ARMSTRONG, Scranton
R. McG. HURSH, Steelton
I. A. DARLING, Warren
W. WEBB, West Chester
L. M. HARTMAN, York
- RHODE ISLAND
- J. M. MCCARTHY, Providence

TENNESSEE

T. E. WRIGHT, Bethpage
T. M. HARPER, Medina
O. N. BRYAN, Nashville
W. J. EZELL, Paris
J. E. RANDOLPH, Shelbyville

VERMONT

S. MITCHELL, Richmond

VIRGINIA

W. H. SQUIERS, Burlington
R. W. H. BUCKNER, Hopewell
M. S. FITCHETT, Norfolk
C. WILLCOX, Norfolk
J. W. MARTIN, Richmond
A. P. JONES, Roanoke
H. H. TROUT, Roanoke
H. R. LIVESAY, Waynesboro

WASHINGTON

H. H. SLATER, Deer Park
V. PIRO, Ferndale

W. W. BRAND, Rosalia
H. H. HEWITT, Seattle

WEST VIRGINIA

S. H. POST, Clarksburg
E. P. SMITH, Fairmont
J. C. FORD, Hansford
H. E. WHALEY, Hansford
S. GRAY, Martinsburg
C. A. CLEMMER, Weirton
J. E. MILLER, Widem
W. W. ORR, Worthington

WISCONSIN

A. J. LOOZE, Brodhead
G. M. SMITH, Chippewa
H. F. WOLTERS, Milwaukee
H. H. AINSWORTH, Richland
Center
C. N. SONNENBURG, Sheboygan
L. H. OLIVER, Siren
H. C. DALLWIG, Wauwatosa

Arizona

To Camp Beauregard, Alexandria, La., as member of a board examining the command for tuberculosis, from Camp Logan, Lieut. FREDERICK F. MILLER, Miami.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Jefferson Barracks, Lieut. JACOB LER. PRITCHARD, Winslow.

Arkansas

To Camp Logan, Houston, Tex., base hospital, from Fort Riley, Lieut. MILES E. FOSTER, Fort Smith.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. THERON E. FULLER, Texarkana.

To Fort Oglethorpe for instruction, Lieut. EDWIN B. BUCHANAN, Texarkana.

California

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. RAY W. KARRAS, Soldiers' Home.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. CARLTON S. ALLEN, Los Angeles; JAMES G. ANDERSON, Petaluma.

To Chicago, Ill., Northwestern University School of Medicine for instruction, from Fort Riley, Lieut. WALTER C. S. KOEBIG, JAMES G. McLAUGHLIN, Los Angeles.

To Hoboken, N. J., base hospital, from Fort Oglethorpe, Capt. EMIL F. THOLEN, Los Angeles; from Camp Bowie, Lieut. WALTER M. HOLLERAN, GEORGE F. SCHENCK, Los Angeles; ROY F. RUTH, Upland.

To Manila, Philippine Islands, Philippine Department, for duty, from Camp Dodge, Lieut. RAYMOND B. McNAMARA, San Francisco.

from Camp Kearny, Lieut. GABRIEL J. J. VISCHI, San Francisco.

To Philadelphia, Pa., University of Pennsylvania, for duty, from Camp Lee, Major FREDERICK P. GAY, Berkeley.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. CHARLES F. CURTIS, Los Angeles.

To Rockefeller Institute for instruction in bacteriology, and on completion to Army Medical School for duty, Lieut. FREDERICK W. HERZER, Loma Linda.

To San Francisco, Calif., Letterman General Hospital, for temporary duty, Major CLARENCE G. TOLAND, Los Angeles.

The following order has been revoked: To Los Angeles, Calif., for instruction in orthopedic surgery, Lieut. CHARLES A. WARMER, Ontario.

Canal Zone

To report to the governor, Panama Canal, for duty, Capt. CHARLES A. HEARNE, Lieut. HERBERT C. WATTS, Cristobal.

Colorado

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. JOSEPH W. PECONY, Denver.

Connecticut

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Capt. VINCENT J. IRWIN, Jr., Granby; Lieut. ULRIC PLANTE, Hartford.

District of Columbia

To Camp Crane, Allentown, Pa., for duty, from New York, Major HARRY H. KERR, Washington.

To Camp Grant, Rockford, Ill., with the board examining the command for nervous and mental diseases, from Camp Zachary Taylor, Capt. JOHN J. MADIGAN, Washington.

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILFRED N. BARTON, Washington.

To Camp Wadsworth, Spartanburg, S. C., as division psychiatrist, from Camp Meade, Major ROSS McC. CHAPMAN, Washington.

To Fort Benjamin Harrison, Ind., for duty, from Fort Riley, Lieut. LEO F. BELL, Washington.

To Fort Oglethorpe for instruction, Capt. JAMES B. LAUGHLIN, GUY S. SAFFOLD, Washington.

To Washington, D. C., for duty, Capt. ALEXANDER Y. P. GARNETT, Washington.

Florida

To Camp Wheeler, Macon, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. JULIAN E. GAMMON, Jacksonville.

Georgia

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Sherman, Lieut. STEPHEN T. BROWN, Atlanta; from Garden City, Lieut. WALTER J. STEWART, Sylvester.

To Camp Lee, Petersburg, Va., for duty, from Fort McPherson, Lieut. JOHN R. MANLEY, Frolona.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieut. CHESTER A. WITMEN, Waycross.

To Fort McPherson, Ga., for temporary duty, from Army Medical School, Lieut. WILLIAM B. PHILIPS, Atlanta.

To Fort Oglethorpe for instruction, Lieut. BARNEY C. WEINKLE, Atlanta.

To Newport News, Va., for duty, from Camp Wheeler, Lieut. JAMES H. NICHOLSON, Madison.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Lieut. WILLIAM E. GROVE, Johnstown.

The following order has been revoked: To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOHN H. HALL, Atlanta.

Idaho

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Jefferson Barracks, Lieut. DUNCAN L. ALEXANDER, Twin Falls.

Illinois

To Camp Beauregard, Alexandria, La., with the board examining the troops for cardiovascular diseases, from Camp Upton, Lieut. FRED M. SMITH, Chicago.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Riley, Lieut. RUSSELL A. HENNESSEY, Chicago.

To Camp Crane, Allentown, Pa., base hospital, from Camp Joseph E. Johnston, Capt. CHARLES RICKSHER, Kankakee.

To Camp Dix, Wrightstown, N. J., Camp Devens, Ayer, Mass., Camp Upton, L. I., N. Y., and on completion to Army Medical School, for duty, from Allentown, Pa., Lieut. THOMAS A. WAYLAND, Dallas City.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Crane, Allentown, Pa., for duty, from Fort Riley, Lieut.-Col. ARTHUR W. MORSE.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut.-Col. HORACE D. BLOOMBERGH, Major JOSEPH A. WORTHINGTON; from Camp Devens, Lieut. HARRY H. TOWLER.

To Hancock, Augusta, Ga., as assistant to the camp surgeon, from Camp Zachary Taylor, Lieut.-Col. WM. M. SMART. To Camp Jackson, Columbia, S. C., for duty from Camp Zachary Taylor, Lieut.-Col. LUTHER H. POUST. Base hospital, from San Francisco, Major HARRY L. DALE.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Sevier, Lieut. ROBERT B. McGENEHY.

To Camp MacArthur, Waco, Tex., as division surgeon, from Plattsburg Barracks, Lieut.-Col. ALLIE W. WILLIAMS. On completion to Camp Travis, Fort Sam Houston, and Camp Logan, Houston, Tex., for conference, and on completion to his proper station, from Camp Bowie, Lieut.-Col. LOUIS H. HANSON.

To Camp McClellan, Anniston, Ala., as assistant to the camp surgeon, from Camp Kearny, Lieut.-Col. CHARLES W. DECKER.

To Camp Pike, Little Rock, Ark., and on completion to Camp Doniphan, Fort Sill, Okla., and Camp Dodge, Des Moines, Ia., for conference, and on completion to his proper station, from Camp Custer, Lieut.-Col. NEAL N. WOOD.

To Camp Raritan, Metuchen, N. J., as camp surgeon, from Camp Dix, Major HENRY L. KRAFFT.

To Camp Sheridan, Montgomery, Ala., for duty, and on completion to his proper station, Col. ROBERT E. NOBLE. As assistant to the camp surgeon, from Camp Raritan, Major CHARLES C. HILLMAN.

To Camp Sherman, Chillicothe, Ohio, as assistant to the camp surgeon, from Edgewood, Lieut.-Col. GLENN I. JONES.

To Camp Travis, Fort Sam Houston, Tex., as assistant to the camp surgeon, from Camp Baker, Lieut.-Col. WILLIAM L. LITTLE.

To Edgewood, Md., as camp surgeon, from San Francisco, Major LEO C. MUDD.

To Fort Benjamin Harrison, Ind., for duty, from Fort Riley, Lieut. LEO P. BELL.

To Fort Monroe, Va., for duty, and on completion to his proper station, Col. VICTOR C. VAUGHAN.

To Fort Oglethorpe as an instructor, from Fort Riley, Major WILLIAM M. RICHARDSON. For instruction, Lieut. LEE C. VORRUS.

To Fort Riley as assistant to the camp surgeon, from Newport News, Major ERNEST C. McCULLOCH.

To Hoboken, N. J., for duty, from Fort Riley, Lieut.-Col. WILLIAM H. TEFFT, Major SAMUEL J. TURNBULL; from Fort Oglethorpe, Major CLARENCE P. BAXTER.

To Newport News, Va., for duty, from San Francisco, Major MORRISON C. STAYER.

To New York City, for duty, and on completion to his proper station, Col. DENNE C. HOWARD.

To Rockefeller Institute for consultation, and on completion to his proper station, Lieut.-Col. EDWARD B. VEDDER.

To San Francisco, Calif., from Philippine Department, Major WILSON C. VONKESSLER.

To San Juan, Porto Rico, as commanding officer of base hospital, from Camp Las Casas, Major PHILIP B. CONNELLY.

To Washington, D. C., for consultation, and on completion to Fort Bayard, N. H., as commanding officer of U. S. Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM. On completion to Camp Sevier, Greenville, S. C., for duty, from Camp Lee, Lieut.-Col. CONDON C. McCORNACK.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Dix, Wrightstown, N. J., evacuation hospital, from Fort Riley, Major HERBERT P. COLE, Mobile.

To Camp Grant, Rockford, Ill., base hospital, from Atlanta, Capt. ROBERT E. HALE, Bellamy.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Jackson, Lieut. ROBERT GOLDTHWAITE, Montgomery.

To Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, Capt. TAXEY D. HAAS, Mobile.

To Fort Riley, evacuation hospital, from Fort McPherson, Major WESTLEY E. DRENNEN, Birmingham.

To *Camp Dodge*, Des Moines, Ia., base hospital, from *Camp MacArthur*, Lieut. FRANCIS T. H'DOUBLER, Chicago.
To *Camp Jackson*, Columbia, S. C., for duty, Lieuts. ARTHUR K. EDWIN, JOHN W. DEVRY, Chicago.
To *Camp Lee*, Petersburg, Va., base hospital, from *Camp Meade*, Lieut. WINFIELD G. MCDEED, Monticello. For duty, from *Army Medical School*, Lieuts. WILLIAM D. NAPIANTEK, RICHARD HEPIN, Chicago.

To *Camp Sheridan*, Montgomery, Ala., base hospital, from *Fort Oglethorpe*, Lieut. FRED F. SCHWARTZ, Chicago. For duty, Lieut. WILIP H. WOLFRAM, Chicago. With the board examining the cases for nervous and mental diseases, from *Fort McPherson*, Lieut. ELSON K. DYER, Kankakee.
To *Camp Wadsworth*, Spartanburg, S. C., as member of tuberculosis unit, from *Fort Oglethorpe*, Capt. HERBERT G. VAUGHAN, Oak Ridge; from *Camp Travis*, Lieut. FRANCIS H. GBURCZYK, Joliet. For duty, from *Fort Oglethorpe*, Lieut. ROVAN L. PHIPPS, Toledo.
To *Camp Carson*, S. C., for duty, from *Camp Wheeler*, Lieut. THEO-DORE P. REUSCH, Collinsville.
To *Chicago, Ill.*, Northwestern University School of Medicine, for instruction, Lieut. SHEPPARD REMINGTON, Chicago.
To *Fort Leavenworth*, Kansas, for duty, Lieut. RUSSEL D. HER-OLD, Chicago.

To *Fort Oglethorpe*, for instruction, Lieut. BROOKS J. MUSSEL-HITE, Chicago.
To *Hoboken, N. J.*, for duty, from *Camp Wheeler*, Lieut. CHARLES LAUGHLIN, New Berlin.
To *New Haven, Conn.*, for duty, from *Chicago*, Capt. CLARENCE LEIGH, Chicago; from *Fort Riley*, Lieut. JOHN M. HOFFMAN, Chicago.

Indiana

To *Camp Lee*, Petersburg, Va., for duty, from *Army Medical School*, Lieut. PORTER W. HOPKINS, East Chicago.

To *Camp McClellan*, Anniston, and *Camp Sheridan*, Montgomery, and *Camp Wheeler*, Macon, Ga., for conference, and on completion to his proper station, from *Camp Gordon*, Major SIMON J. LONG, Valparaiso.

To *Camp Pike*, Little Rock, Ark., base hospital, Capt. THOMAS Z. LL, Waveland.

To *Camp Sheridan*, Montgomery, Ala., for duty, Lieut. LEE M. EEN, Easthaven.

To *Camp Sherman*, Chillicothe, Ohio, base hospital, from *Chicago*, Lieut. WILFRED P. FRELIGH, Terre Haute.

To *Fort Oglethorpe* for instruction, Lieut. JACOB ADER, Danville.
To *Hoboken, N. J.*, for duty, from *Fort Oglethorpe*, Capt. GEORGE HOCKETT, Anderson.

Iowa

To *Camp Crane*, Allentown, Pa., base hospital, from *Fort Oglethorpe*, Lieut. GEORGE R. NARRLEY, Keokuk. For duty, from *Camp Grant*, Lieut. FREDERICK W. SALLANDER, Fort Madison.

To *Camp Dix*, Wrightstown, N. J., as division psychiatrist, from *Camp Grant*, Capt. SAMUEL C. LINDSAY, Independence.

To *Chicago, Ill.*, Northwestern University School of Medicine, for instruction, from *Jefferson Barracks*, Capt. ALBIN B. PHILLIPS, Lake; from *Camp Logan*, Lieut. BENJAMIN C. HAMILTON, Jefferson.

To *Fort Sam Houston*, Tex., as orthopedic surgeon, from *Jefferson Barracks*, Capt. CHARLES B. TAYLOR, What Cheer.

To *Manila, Philippine Islands*, Philippine Department, for duty, from *McHenry*, Major CHARLES E. RUTH, Des Moines.

Kansas

To *Camp A. A. Humphreys*, Accotink, Va., for duty from *Army Medical School*, Lieut. HOWARD E. MARCHBANKS, Pittsburg.

Kentucky

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from *Army Medical School*, Lieut. WILLIAM P. K. HOWARD, Willins Creek.

To *Camp Crane*, Allentown, Pa., for duty, from *Camp MacArthur*, Lieut. WILLIAM B. GODDARD, Harrodsburg.

To *Camp Meade*, Annapolis Junction, Md., with the board examining the troops for cardiovascular diseases, from *Fort Riley*, Capt. ALFRED KELLY, Shirley.

To *Camp Sevier*, Greenville, S. C., for duty, from *Army Medical School*, Lieut. WILLIAM P. FOREMAN, Corinth.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to *Camp Zachary Taylor*, Louisville, Ky., base hospital, from *Dix*, Lieut. WILLIAM H. NEEL, Bowling Green.

To *Fort Oglethorpe* for instruction, Lieut. WILLIAM F. PORTER, Hann.

To *Hoboken, N. J.*, for duty, from *Camp Sherman*, Lieut. LUTHER H. JACKSON.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to his proper station, from *Camp Jackson*, Lieut. WILLIAM ASH, Finchville.

Louisiana

To *Camp Lee*, Petersburg, Va., for duty, from *Army Medical School*, Lieut. LOUIS A. HERBERT, New Orleans.

To *Camp Sevier*, Greenville, S. C., for duty, from *Army Medical School*, Lieut. JOHN B. FERRAN, Jr., New Orleans.

Maine

To *Camp Sevier*, Greenville, S. C., for duty, from *Army Medical School*, Lieut. FRANK O. BLOSSOM, Caribou.

To *Hoboken, N. J.*, for duty, from *Fort Oglethorpe*, Major HARRY B. WEBSTER, Castine.

Maryland

To *Camp Crane*, Allentown, Pa., for duty, from *Camp Hancock*, Lieut. JACK M. HUNDLEY, Jr., Baltimore.

To *Camp Wheeler*, Macon, Ga., for duty, from *Fort Oglethorpe*, Lieut. MARCUS D. SMITH, Cambridge.

To *Fort Oglethorpe* for instruction, Major JOHN HOWLAND, Baltimore.

To *New York City*, for duty, and on completion to his proper station, Lieut. ROBERT T. TAYLOR, Baltimore.

To *Philadelphia, Pa.*, University Hospital, for instruction and on completion to his proper station, from *Camp Jackson*, Lieut. WILLIAM ALLEA, Baltimore.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to his proper station, from *Edgewood*, Lieut. JOHN F. BAKER, Baltimore.

To *Colonial, N. J.*, for duty, Lieut. HARRY L. WHITTLE, Baltimore.

Massachusetts

To *Camp Crane*, Allentown, Pa., base hospital, from *Camp Meade*, Capt. HARRY C. BURRELL, Medford. For duty, from *Camp Jackson*, Lieut. WALTER H. LACEY, Wollaston.

To *Camp Devens*, Ayer, Mass., base hospital, Lieut. THEODORE H. ASCHMANN, Boston.

To *Camp Lee*, Petersburg, Va., *Camp Jackson*, Columbia, S. C., and *Camp Wheeler*, Macon, Ga., for consultation, and on completion, to his proper station, from *Camp Devens*, Major LESLEY H. SPOONER, Boston. For duty, from *Army Medical School*, Lieut. HENRY J. KEANEY, Everett.

To *Camp Meade*, Annapolis Junction, Md., base hospital, from *Camp Devens*, Major SAMUEL J. MINTER, Boston.

To *Camp Jackson*, Columbia, S. C., for duty, Lieut. DAVID E. HARRIMAN, Springfield.

To *Camp Sevier*, Greenville, S. C., for duty, from *Army Medical School*, Lieuts. FRANK S. HALE, Brookline; RUFUS W. LONG, Manchester.

To *Cape May, N. J.*, for temporary duty, Capt. GORDON BERRY, Worcester.

To *Fort McPherson, Ga.*, for consultation, and on completion to his proper station, Major KENDALL EMERSON, Worcester.

To *Hoboken, N. J.*, for duty, from *Fort Oglethorpe*, Capt. WILLARD S. PARKER, Boston.

To *Mineola, L. I., N. Y.*, Signal Corps Aviation School, for duty, Lieut. CLARENCE H. BIRDSALL, Boston.

To *Newport News, Va.*, for duty, from *Army Medical School*, Lieut. EDWARD W. YOUNG, New Bedford.

To *Orono, Maine*, University of Maine, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion to his proper station, from *Camp Devens*, Lieut. WILLIAM J. DILLON, Springfield.

To *Rock Island, Ill.*, for duty, from *Army Medical School*, Capt. GEORGE G. PARLOW, Fall River.

To *Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, from *Army Medical School*, Lieut. EDWARD KING, Boston.

Michigan

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from *Army Medical School*, Lieut. HAROLD L. HURLEY, Jackson.

To *Camp Crane*, Allentown, Pa., base hospital, from *Fort Oglethorpe*, Lieut. WILLIAM C. HOEBEKE, Kalamazoo. For duty, from *Camp Shelby*, Capt. DAVID D. TODD, Calumet; from *Camp Hancock*, Lieut. WILLIAM A. HYLAND, Grand Rapids.

To *Camp Logan*, Houston, Tex., base hospital, from *Fort Riley*, Lieut. OTIS B. MALLOW, Detroit.

To *Camp Jackson*, Columbia, S. C., for duty, Lieuts. ISADORE I. BITTKER, HENRY R. BOYES, Detroit.

To *Camp Sevier*, Greenville, S. C., for duty, from *Army Medical School*, Lieut. WALTER W. J. BIEN, Union City. With the board examining the troops for cardiovascular diseases, Lieut. CHARLES E. LEMMON, Detroit.

To *Camp Shelby*, Hattiesburg, Miss., with the board examining the troops for cardiovascular diseases, from *Camp Zachary Taylor*, Lieut. KENNETH F. MANEY, Detroit.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, Capt. JAMES A. ELLIOTT, Battle Creek.

To *Fort Oglethorpe* for instruction, Capt. ARTHUR E. OWEN, Lansing; Lieut. ALFRED J. RADZINSKI, Detroit.

To *Fort Riley* for duty, from *Fort Oglethorpe*, Capt. EDWIN J. EVANS, Greenland.

To *Fort Snelling*, Minn., for duty, from *Fort Oglethorpe*, Capt. HERMAN J. RUNO, Detroit.

To *Hoboken, N. J.*, for duty, from *Fort Oglethorpe*, Capt. EDWARD A. FLORENTINE, Ewen.

To *Waynesville, N. C.*, for duty, from *Army Medical School*, Lieut. ROBERT P. STARK, Allegan.

Minnesota

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from *Army Medical School*, Lieut. MICHAEL A. DESMOND, Glenwood.

To *Camp Crane*, Allentown, Pa., base hospital, from *Camp Grant*, Lieut. ROBERT E. SPINKS, Middle River; from *New York City*, Lieut. PAUL W. GIESSLER, Minneapolis. For duty, from *Williamsbridge*, Capt. RALPH T. KNIGHT, Minneapolis.

To *Camp Kelly*, San Antonio, Tex., U. S. Army School, from *Dallas*, Capt. JOHN C. WILKINSON, Red Lake Falls.

To *Camp Lee*, Petersburg, Va., for duty, from *Army Medical School*, Lieut. HAROLD B. MARSH, Rochester.

To *Camp Sevier*, Greenville, S. C., for duty, from *Army Medical School*, Lieut. HARRY W. ARNDT, Payneville.

To *Chicago, Ill.*, Northwestern University Medical School, for instruction, Lieut. BOTTOLE T. BOTTELFSON, Halstead, from *Jefferson Barracks*, Lieut. WALTER H. HALLORAN, St. Paul.

To *Fort Crockett*, Tex., for duty, from *Fort Leavenworth*, Capt. WINFIELD S. NICKERSON, Long Lake.

To *Fort McPherson, Ga.*, base hospital, from *Camp Doniphan*, Lieut. EDWARD J. ENGBERG, St. Paul.

To *Hoboken, N. J.*, for duty, from *Camp Grant*, Lieut. JOHN J. O'HEARN, Rochester.

To *Madison, Wis.*, University of Wisconsin, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion to his proper station, from *Camp Grant*, Lieut. JOSEPH D. WALLER, Wilmont.

Mississippi

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from *Army Medical School*, Lieut. RICHARD B. AUSTIN, Knox.

To *Camp Devens*, Ayer, Mass., from *New Haven*, Lieut. ELI E. FARMER, Dockery.

To *Manila, Philippine Islands*, Philippine Department, for duty, from *Camp Lewis*, Lieut. FRANK C. SMITH, Gloster.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to his proper station, from *Camp Jackson*, Lieut. REGINALD F. ANNIS, Stillmore.

Missouri

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from *Army Medical School*, Lieut. SAMUEL E. GASTON, Meta.

To *Camp Crane*, Allentown, Pa., base hospital, from *Camp Upton*, Capt. VIRGIL LOEB, St. Louis. For duty, from *Camp Wadsworth*, Lieut. JOSEPH L. HURTON, St. Louis.

To *Camp Doniphan*, Fort Sill, Okla., base hospital, from *Fort Oglethorpe*, Capt. RALPH E. NIEDRINGHAUS, St. Louis.

To Camp Hancock, Augusta, Ga., as sanitary inspector, from Fort Riley, Capt. WILLIAM J. LYNN, Kansas City. Base hospital, from Williamsbridge, Lieut. ZACHARIAN G. JONES, Kansas City.

To Camp Jackson, Columbia, S. C., for duty, Lieut. LOUIS E. PRINTY, St. Louis.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Riley, Lieut. FRED GASSER, Pierce City.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. FRANK A. ELDERS, Bloomsdale.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Capt. HUBERT B. BEEDLE, St. Louis; Lieut. HUGH J. WITTWER, St. Louis.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Mayo Clinic, Lieut. PATRICK McGENNIS, St. Louis.

To Hoboken, N. J., for duty, from Pittsburgh, Lieut. RICHARD S. BATTERSBY, Shelbyville.

To Lakewood, N. J., for conference, and on completion to New York City, and Allentown, Pa., for duty, and on completion to his proper station, Major FREDERICK W. BAILEY, St. Louis.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Dallas, Capt. FREDERICK C. SIMON, St. Louis; from Austin, Lieut. JOHN H. TIMBERMAN, Marston.

To Manila, Philippine Islands, Philippine Department, for duty, from Fort McHenry, Major HAROLD C. HERRICK, St. Louis; from Camp MacArthur, Lieut. JEROME L. RAWHAUSER, Greenville.

The following order has been revoked: To Camp Hancock, Augusta, Ga., as assistant to camp surgeon, from West Point, Lieut. ROY F. MILLS, Odessa.

Montana

To Blacksburg, Va., Virginia Polytechnic Institute, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion to his proper station, from Camp Lee, Lieut. FERRIS L. ARNOLD, Billings.

Nebraska

To Austin, Tex., Texas State University, for duty, from Waco, Lieut. CHARLES L. HOUSEL, Ansley.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Capt. OSCAR F. LANG, Falls City.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from Fort Riley, Lieut. LOYD H. FOCHTMAN, Cozad.

To Chicago, Ill., Northwestern University School of Medicine, for instruction and on completion to his proper station, from Fort Omaha, Capt. ROY CROOK, Winnetoon; from Jefferson Barracks, Lieuts. J. IRVIN LIMBURG, Walthill; JOHN L. LINN, Woha.

To Fort Des Moines, Ia., base hospital, from Fort Riley, Capt. HOMER DAVIS, Genoa.

To Manila, Philippine Islands, Philippine Department, for duty, from Camp Dodge, Lieuts. CLARENCE E. SMART, Alliance; CHARLES P. CHARLTON, Palmyra; RAYMOND B. McNAMARA, Wynet.

New Hampshire

To Camp Upton, L. I., N. Y., for duty, from Camp Sevier, Lieut. MAURICE A. STARK, Goffstown.

To Fort McPherson, Ga., for duty, from Cincinnati, Capt. JAMES B. WOODMAN, Franklin.

New Jersey

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. CHARLES W. TITUS, Newark.

To Camp Upton, L. I., N. Y., for duty, Capt. HARRY M. O'REILLY, Summit.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HENRY KLAUS, Jr., West Hoboken.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Lieut. ARTHUR J. ELLIS, Newark.

New Mexico

To Camp Wadsworth, Spartanburg, S. C., as member of a board examining the command for tuberculosis, from Camp Logan, Lieut. SIDNEY M. EDMONDSON, Clayton.

New York

To Baltimore, Md., each week for three months to inspect and give instruction to the enlisted men, and on completion to his proper station, Lieut. WILLIAM G. PHILLIPS, Jr., Brooklyn.

To Camp American University, Washington, D. C., for duty in the laboratory, from Camp Meade, Capt. JEAN R. OLIVER, New York.

To Camp Beauregard, Alexandria, La., as member of a board examining the command for tuberculosis, from Camp Logan, Capt. GILBERT W. CRISSEY, Mechanicville.

To Camp Crane, Allentown, Pa., for duty, from Camp Beauregard, Lieut. EDWARD P. FLOOD, New York; from Camp Devens, Lieut. ARTHUR P. STOUT, New York; from Camp Dix, Major SIDNEY R. BURNAP, New York; from Camp Gordon, Lieut. PHILIP L. TURNER, New York; from Camp Hancock, Lieuts. LEON E. DE YOE, ROBERT P. REYMOND, New York; from Camp Jackson, Lieuts. MERRILL N. FOOTE, WILLIAM K. PUDNEY, Brooklyn; FRANK L. MELENEY, New York; from Camp Lee, Lieut. BERNARD McD. KRUG, Warwick; from Camp MacArthur, Lieut. CHARLES T. OLCOTT, New York; from Camp Meade, Capt. FREDERICK W. BANCROFT, MARK H. WARD, New York; Capt. WALTER W. MOTT, White Plains; from Camp Pike, Lieut. WILLIAM E. CARROLL, New York; from Camp Sherman, Lieut. JAMES F. TRIMBLE, New York; from Camp Upton, Lieut. FREDERICK CHRISTOPHER, New York; from Camp Wadsworth, Lieuts. JAMES C. SHARP, Brooklyn; DIXON L. AUSTIN, KIRBY DWIGHT, New York; from Newport News, Capt. MORRIS R. BRADNER, Warwick; from Williamsbridge, Lieuts. THEODORE B. REED, WILLIAM B. RYAN, JR., New York.

To Camp Dodge, Des Moines, Ia., base hospital, from Mayo Clinic, Lieut. WM. P. SWEENEY, Saratoga.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. PAUL T. HARPER, Albany; CHARLES M. ANDERSON, Brooklyn; CARL TOMPKINS, Buffalo; JOHN RECCA, New York.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieuts. EDWIN PYLE, New York; HAROLD F. MORRISON, Tuxedo Park; from Fort McPherson, Lieut. JOHN C. HOLZBERGER, JR., Brooklyn.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. WILLIAM C. BUNTIN, New York; from Fort McHenry, Lieut. ADOLPH S. KRAMER, Brooklyn; from Newport News, Major EDWARD W. PINKHAM, New York.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieuts. REVERDY VAN W. ESTILL, CHARLES VEJVODA, New York. With the board examining the troops for cardiovascular diseases, Lieut. HENRY C. THACHER, New York.

To Camp Shelby, Hattiesburg, Miss., with the board examining the troops for cardiovascular diseases, from Camp Zachary Taylor, Capt. ROBERT L. LEVY, New York.

To Camp Upton, L. I., N. Y., for duty, Lieuts. BRUCE L. JONES, Long Island, SAMUEL ALTMAN, New York; from Army Medical School, Lieut. NATHANIEL CROST, New York.

To Fort D. A. Russell, Wyo., for duty, from Fort Logan, Capt. NOAH F. NORMAN, Watkins.

To Fort Oglethorpe for instruction, Lieuts. JULIUS KAUFMAN, Brooklyn; MORRIS H. NEWTON, Iliion; GERALD B. THAXTON, New York; from Hoboken, Capt. HAROLD L. HUNT, New York.

To Fort Riley, evacuation hospital, from Camp Gordon, Major CURTENIUS GILLETTE, New York.

To Fort Sam Houston, Tex., as assistant to the camp surgeon, from Camp Baker, Major JOHN T. SPRAGUE, Staten Island. As orthopedic surgeon, from Fort Oglethorpe, Capt. JAMES C. DAVIS, Rochester.

To Fort Slocum, N. Y., for duty, from Fort Oglethorpe, Capt. FRANCIS B. TRUDEAU, Saranac Lake.

To Hoboken, N. J., base hospital, from Scott Field, Lieut. WARREN P. KORTRIGHT, New York.

To Manila, Philippine Islands, Philippine Department, from Fort Cassell, Capt. SPENCER FRANKLIN, New York.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Lieut. LEWIS F. COLE, Waterville.

To report by wire to the commanding general, Eastern Department, for assignment to duty, Capt. FENTON B. TURCK, New York.

To Rockefeller Institute for instruction in laboratory work and on completion to Army Medical School, for duty, Lieut. FREDERICK W. PALMER, Buffalo. For instruction in the treatment of infected wounds, and on completion to Camp Wheeler, Macon, Ga., base hospital, Lieut. LOUIS S. KELLEY, Newark.

To Williamsbridge, N. Y., for temporary duty, from Camp Upton, Capt. GERHARD H. COOKS, New York.

The following orders have been revoked: To Camp Hancock, Augusta, Ga., as assistant to camp surgeon, from Camp Mills, Major ISAAC W. BREWER, Geneva. To Camp Lee, Petersburg, Va., for duty, Capt. NELSON W. JANNEY, New York. To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, Capt. GEORGE W. CONTERNO, New York. To Waynesville, N. C., for duty, from Camp Wadsworth, Lieut. ALBERT A. MENDEZ, Brooklyn.

North Carolina

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. JAMES W. DAVIS, Statesville.

To Hoboken, N. J., for duty, Lieut. MILES T. LONG, Newland.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Jackson, Lieut. CHARLES E. LYDAY, Albermarle.

To Rockefeller Institute for instruction in laboratory work, from Camp Greene, Capt. JOSEPH J. WAY, Waynesville.

The following order has been revoked: To Fort Oglethorpe for instruction, Lieut. ARTHUR E. GOUGE, Bakersville.

Ohio

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. BRADNER E. GORHAM, Kent.

To Camp Beauregard, Alexandria, La., with the board examining the troops for cardiovascular diseases, Lieut. CLYDE H. CHASE, North Baltimore.

To Camp Grant, Rockford, Ill., base hospital, from Columbus Barracks, Capt. EDMUND R. BRUSH, Zanesville.

To Camp Holabird, Baltimore, Md., for duty, from Camp Wadsworth, Lieut. ULYSSES M. BACHMAN, Cleveland.

To Camp Jackson, Columbia, S. C., for duty, Lieut. PAUL H. KREBS, Cleveland.

To Camp Lee, Petersburg, Va., for duty, from Fort McPherson, Lieut. JOHN H. FRENCH, Jeffersonville.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Oglethorpe, Lieut. HERMAN SHUBE, Cleveland.

To Camp Upton, L. I., N. Y., base hospital, from Army Medical School, Lieut. EDWARD C. COLDCAMP, Ironton. For duty, Lieut. CARROLL W. DE COURCY, Cincinnati; JOHN SLIVKA, Cleveland; from Camp Sevier, Lieuts. JESSE L. THOMPSON, Bristolville; JOSEPH B. MCHENRY, Hanoverton.

To Hoboken, N. J., for duty, from Camp Devens, Lieut. THOMAS MCLEROY, Mingo Junction; from Camp McClellan, Lieut. ROY JOLLEY, Richwood; from Camp Wheeler, Lieut. WILLIAM SHAPIRO, Toledo.

To Manila, Philippine Islands, Philippine Department, for duty, Capt. OLIVER H. PINNEY, Cincinnati.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Capt. GEORGE TYLER, JR., Ripley; Lieut. FRANK W. PILLIOD, Toledo.

The following order has been revoked: To Chicago, Ill., for orthopedic instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

Oklahoma

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Mill, Lieut. HARRY F. VANDIVER, Lahoma.

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. ROBERT L. MITCHELL, Vinita.

To Camp Wadsworth, Spartanburg, S. C., with the board examining the command for nervous and mental diseases, from Houston, Lieut. ROY K. GODDARD, Mounds.

To Fort Sam Houston, Tex., for duty, and on completion to his proper station, from Camp Bowie, Lieut. WILLIS K. WEST, Oklahoma City.

To Manila, Philippine Islands, Philippine Department, for duty, from Fort Riley, Lieut. REUBEN W. WILLIAMS, Anadarko.

Oregon

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. WENDALL J. PHILLIPS, Corvallis.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieuts. ALFRED E. KINNEY, Astoria; JOSEPH R. BAKER, Sheridan.

To Manila, Philippine Islands, Philippine Department, for duty, Lieut. CHARLES E. BATES, Salem.
To San Francisco, Calif., Letterman General Hospital, for duty, Capt. RICHARD H. WELLINGTON, Portland.
To Talmage, Calif., Mendocino State Hospital, for instruction, from Vancouver Barracks, Lieuts. KENNETH W. KINNEY, Astoria; CLARENCE U. SNIDER, Portland.
The following order has been revoked: *To Fort Riley for instruction, Capt. T. HOMER COFFEN, Portland.*

Pennsylvania

To Camp Crane, Allentown, Pa., base hospital, from Camp Meade, Lieut. ANDREW I. ROSENBERGER, Meadville. For duty, from McHenry, Lieuts. MARSHALL C. RUMBAUGH, Dorranceton; CHARLES A. PRYOR, Philadelphia.
To Camp Dix, Wrightstown, N. J., base hospital, from Newport News, Lieut. WM. WEISS, Philadelphia.
To Camp Dodge, Des Moines, Ia., with the board examining the troops for cardiovascular diseases, Capt. LAWTON M. HARTMAN, Jr., York.
To Camp Jackson, Columbia, S. C., for duty, Lieuts. FRANK E. FREEMAN, Philadelphia; JOSEPH A. BAIRD, Pittsburgh.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort McPherson, Lieut. WALTER M. BORTZ, Greensburg.
To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieuts. HENRY A. LAYE, Galetton; JACOB E. MARKS, Philadelphia; DAVID M. SHOEMAKER, Waynesboro; from Fort McPherson, Lieuts. ABE A. DATTNER, Kingston; FRANCIS C. O'MALLEY, Pittston.
To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. FRANK A. TRIPPE, Erie.
To Camp Shelby, Hattiesburg, Miss., with the board examining the troops for cardiovascular diseases, from Camp Zachary Taylor, Lieut. CHARLES W. MCCLURE, Bethlehem.
To Camp Upton, L. I., N. Y., for duty, Lieut. CLARENCE H. MILLER, Media.
To Cape May, N. J., for duty, from Camp Meade, Lieut. CLARENCE A. PATTEN, Philadelphia.
To Fort McPherson, Ga., for temporary duty, from Camp Sevier, Lieut. CHARLES E. G. SHANNON, Philadelphia.
To Fort Oglethorpe for instruction, Capt. BENJAMIN F. ROYER, Harrisburg; Lieuts. JOSEPH E. MAGEE, Carnegie; JOHN J. WOOLRIDGE, Clearfield; HARRY F. GACKLEY, Myerstown. War Prison Barracks, for duty, from Fort McPherson, Lieut. CHARLES E. PIKE, Philadelphia.
To Hoboken, N. J., for duty, from Camp Devens, Lieut. JAMES A. MUNSTER, Pittsburgh.
To Newport News, Va., for duty, from Army Medical School, Lieut. EVERELL C. CHADWICK, Smethport.
To New York City, Neurological Institute, for instruction, from Camp Dix, Lieut. JAMES E. DWYER, Polk.
To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Jackson, Lieuts. AUGUSTINE J. MULLIGAN, Mt. Alto; HARRY CHERASHORE, Philadelphia.
To Pittsburgh, Pa., as commanding officer of infirmary, from Camp Lee, Major EWING W. DAY, Pittsburgh.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Fort Oglethorpe for temporary duty, from Washington, D. C., Major JOHN S. RODMAN, Philadelphia. For instruction in bacteriology, and on completion to Army Medical School for duty, from Fort Oglethorpe, Lieuts. JOHN D. DONNELLY, Philadelphia; GUY S. VOGAN, Sandy Lake. For instruction in laboratory work, and on completion to his proper station, from Fort Oglethorpe, Lieut. OTHMAR P. BARTHMAIER, Philadelphia.
To Saltville, Va., for duty, from Fort Sloeum, Capt. CHARLES H. CLOUD, Philadelphia.
The following order has been revoked: *To Fort Oglethorpe, for instruction, Lieut. HORACE J. WILLIAMS, Philadelphia.*

Rhode Island

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. THOMAS C. WYMAN, Providence.
To Rockefeller Institute, for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. JOHN F. KENNEY, Pawtucket.

South Carolina

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Jackson, Lieut. CHARLES W. GENTRY, Greenville.

South Dakota

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. WALTER C. MOODIE, Elk Point.
To Manila, Philippine Islands, Philippine Department, for duty, from Camp Lewis, Lieut. FRANK C. SMITH, Yankton.

Tennessee

To Camp Beauregard, Alexandria, La., as member of a board examining the command for tuberculosis, from Camp Logan, Lieut. RICHARD M. LITTLE, Martin.
To Camp Dodge, Des Moines, Ia., base hospital, Lieut. EDWARD C. MATTHEWS, Trenton.
To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieuts. MARK M. JETTON, JOSEPH J. LIGON, Memphis.
To Camp Sevier, Greenville, S. C., for duty, from Fort Oglethorpe, Major EUGENE R. HOCHSTETTER, Jr., Chattanooga; from Army Medical School, MILTON C. WIGGINS, Paris.
To resume his duties as Medical Aide to the Governor of Tennessee, from the Surgeon-General's Office, Major WILLIAM D. HAGGARD, Nashville.
To Rockefeller Institute for instruction in laboratory work, Lieut. JOHN F. BINKLEY, Nashville.

Texas

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieuts. WILLIAM O. PADGETT, Graham; WILLIAM K. LOGSDON, Marlin.
To Camp Crane, Allentown, Pa., for duty, from Camp Shelby, Lieut. CHARLES H. WARREN, Gainesville.
To Camp Sheridan, Montgomery, Ala., with the board examining the command for nervous and mental diseases, from Fort McPherson, Lieut. CHARLES W. STEVENSON, Lorraine.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Fort Riley, Lieut. JOHN F. CRAWFORD, Tolar. Presbyterian Hospital, for instruction, and on completion to Camp Dodge, Des Moines, Ia., base hospital, from Fort Riley, Lieut. JAMES H. HAPPEL, Cleburne.
To Fort Oglethorpe for instruction, Capt. HOWARD R. DUDGEON, Waco.
To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. JEFFREY C. MICHAEL, Houston.
To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. JAMES R. DICKSON, Marshall; from Camp Baker, Lieut. ALBERT A. JACKSON, Mexia.

Utah

To Hoboken, N. J., evacuation hospital, from Camp Wheeler, Lieut. JOHN O. COOK, Sunnyside.

Vermont

To Camp Crane, Allentown, Pa., for duty, from Camp Upton, Major WILLIAM STICKNEY, Rutland.
To Camp Jackson, Columbia, S. C., for duty, Lieut. HUGH H. HANRAHAN, Rutland.
To Camp MacArthur, Waco, Tex., as sanitary inspector, from Plattsburg Barracks, Major EDWARD A. TOBIN, North Bennington.
To Camp McClellan, Anniston, Ala., base hospital, from Williamsbridge, Lieut. RAY B. THOMAS, Enosburg.

Virginia

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Fort Oglethorpe, Lieut. ARTHUR HOOKS, Blackstone.
To Camp Lee, Petersburg, Va., for duty, from Fort McPherson, Lieut. LANDON E. STUBBS, Gloucester.
To Camp Sevier, Greenville, S. C., base hospital, from Camp Meade, Capt. IRA HURST, Parksley.
To Camp Sheridan, Montgomery, Ala., as assistant to camp surgeon, from West Point, Major THOMAS R. MARSHALL, Ware Neck. Base hospital, Lieut. A. NULL OSBORNE, Clinch. For duty, Lieut. BOOKER LEE, Kents Store.
To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. WILLIAM L. POWELL, Roanoke.
To Rockefeller Institute for instruction in bacteriology and on completion to Army Medical School for duty, Lieut. MARION S. FITCHETT, Cape Charles.

Washington

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. JOHN A. BOWLES, Black Diamond.
To Camp Lewis, American Lake, Wash., base hospital, Capt. HENRY H. SLATER, Deer Park.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Riley, Lieut. JACOB S. SMITH, Bellingham.

West Virginia

To Camp McClellan, Anniston, Ala., base hospital, Capt. WAITMAN W. ORR, Bloomfield.
To Camp Sheridan, Montgomery, Ala., for duty, Lieut. JOHN E. CORKREAN, Cassaway.
To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Devens, Lieut. MILTON D. FLANARY, Charlestown.

Wisconsin

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. IRA R. SISK, Madison.
To Fort Oglethorpe for instruction, from Camp Pike, Lieut. WILLIAM W. GILLESPIE, Milwaukee.
To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. FRANK E. DARLING, Milwaukee.

Wyoming

To Charleston, S. C., for duty, from Army Medical School, Lieut. EDWARD T. GAULE, Moorcroft.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

FLORIDA

Antituberculosis Association Organized.—The Duval County Antituberculosis Association was organized at Jacksonville, May 4. Drs. William W. MacDonell, Robert H. McGinnis, Frederick J. Waas, James V. Freeman, Noble A. Upchurch, Mark B. Herlong, Joseph Y. Porter, Louis Stinson and Paul C. Perry were elected the board of directors.

Antituberculosis Activities.—At the annual meeting of the Florida Antituberculosis Association held recently in Jacksonville, a committee was appointed to formulate a state-wide policy. This includes the promotion of the organization and the maintenance of local tuberculosis associations and committees; the promotion of local public health nursing movements; local campaigns for instruction in county tuberculosis sanatoriums; public health instructions in the public schools through the "modern health crusaders"; the informing and educating of public opinion with reference to health problems, and the proper financing of this work by the use of Christmas seals and membership fees.

ILLINOIS

Held for Violation of Espionage Act.—Dr. Arthur G. Schroeder, Chicago, was arrested, May 22, on a federal warrant charged with violating the espionage act by encouraging youths of military age to evade the selective draft. He was released on bonds of \$2,000.

State Society Meeting.—At the sixty-sixth annual meeting of the Illinois State Medical Society, held in Springfield, May 21 to 23, the following officers were elected: president, Dr. Edward W. Fiegenbaum, Edwardsville; president elect, Dr. J. Warren Vander Slice, Chicago; vice presidents, Drs. Harry C. Blankmeyer, Springfield, and Clara P. Seippel, Chicago; secretary, Dr. Wilbur H. Gilmore, Mount Vernon (reelected), and treasurer, Dr. A. J. Markley, Belvidere (reelected).

IOWA

Public Health Service Man Made Health Officer.—Permission has been received from the Surgeon-General of the U. S. P. H. S., to allow Dr. William C. Witte, U. S. P. H. S., to act temporarily as health officer of Des Moines until a successor to Dr. Harley L. Saylor can be appointed.

State Medical Society.—At the sixty-seventh annual meeting of the Iowa State Medical Society held in Fort Dodge, May 8 to 10, Des Moines was chosen as the place of meeting for 1919, and a war committee consisting of Drs. William W. Pearson, Des Moines; Lee W. Dean, Iowa City, and Tom B. Throckmorton, Des Moines, were appointed to coordinate the work of the medical profession. The following officers were elected: president, Dr. William L. Allen, Davenport; vice presidents, Drs. William A. Rohlf, Waverly, and Evan S. Evans, Grinnell; secretary, Dr. Tom B. Throckmorton, Des Moines (reelected); treasurer, Dr. Thomas F. Duhigg (reelected), and editor, Dr. David S. Fairchild, Clinton.

LOUISIANA

Personal.—Dr. Henry W. E. Walther has been appointed junior associate in the surgical department, urologic division of the Touro Infirmary, New Orleans.

Work of State Health Board.—The fourth biennial report of the state board of health just issued places the death rate during the biennium at 12.5 per thousand. The report calls attention to the danger from venereal disease and urges the extension of laboratory facilities for a more thorough and general examination of water and milk, and the biologic specimens submitted by physicians, and preparation and free distribution of the antityphoid vaccine. It asks an appropriation of \$932,266 and an additional \$50,000 for the purpose of establishing clinical and municipal hospitals in municipalities.

To Give State Board Control of Drugs.—Dr. Oscar Dowling, Shreveport, president of the Louisiana State Board of Health, and Dr. Charles A. Rosewater, chief of the narcotic clinic of Newark, N. J., who has recently made a survey of Louisiana, prepared a bill to be submitted by Senator Brown, identical with the bill recently passed in New York state, which makes the narcotic problem a health problem and places the traffic under the control of the state board of health; considers the drug addict as a sick person; encourages physicians to treat such persons; shields the addict from exploitation by incompetent and unscrupulous persons, and makes the unlawful possession of narcotic drugs and hypodermic syringes a crime.

MARYLAND

Convalescent Camp Site Chosen.—A site on the Severn River, near Annapolis, has been selected for a camp for convalescents of the United States General Hospital No. 2, at Fort McHenry. In honor of Lieut.-Col. Harry S. Purnell, Berlin, the commanding officer at the hospital at Fort McHenry, the place will be named "Camp Purnell." It will be used during the summer months only.

Baltimore County Medical Association.—The anniversary dinner of the Baltimore County Medical Association was held, May 22, at the Hotel Rennert, Baltimore. Dr. J. Percy Wade, president of the association, presided. The other officers of the organization are Drs. Samuel J. Fort, secretary, and Alfred T. Gundry, treasurer, both of Catonsville. Lieut.-Col. Harry S. Purnell, commanding officer at the U. S. Army General Hospital No. 2, Fort McHenry, was present as a guest of the association.

Personal.—A feature of the twelfth annual commencement of the training school for nurses at the Sheppard and Enoch Pratt Hospital, Towson, held May 22, at the institution, was the presentation to the hospital of a portrait of Dr. Edward N. Brush, physician-in-chief and superintendent. The presentation was made by Dr. William Rush Dunton, Jr., senior assistant physician, and the portrait was accepted on behalf of the hospital by Dr. Charles H. Riley, president of the board of trustees.—By the will of the late Dr. Henry M. Wilson, Baltimore, his medical books were given to the Medical and Chirurgical Faculty of Maryland.

New Quarantine Regulations.—The health department has announced that it is no longer necessary to send all smallpox patients to quarantine for care and treatment, as in the past. Those in a position to be taken care of at their homes will be permitted to remain under strict quarantine regulations and the daily surveillance of health officials. Health Commissioner Blake made the announcement as a result of a case of smallpox in a large apartment house in northwest Baltimore. The patient was quarantined in his rooms and a detail of physicians vaccinated all persons who had come in contact with him as well as others living in the building.

MICHIGAN

Service Flag Unfurled.—A service flag displaying 126 stars was unfurled at the meeting of the Wayne County Medical Society, April 8.

License Revoked.—At a special meeting of the Michigan State Board of Registration in Medicine held Jan. 23, 1918, the license of Dr. Walter Moffat, Grand Rapids, was revoked on the ground that he had been convicted in the superior court of "procuring, aiding or abetting in procuring a criminal abortion."

State Society Meeting.—At the fifty-third annual meeting of the Michigan State Medical Society held in Battle Creek, May 7, 8 and 9, under the presidency of Dr. Andrew P. Biddle, Detroit, the following officers were elected: president, Dr. Arthur M. Hume, Owosso; vice presidents, Drs. William S. Shipp, Battle Creek; Carroll E. Miller, Cadillac; John L. Chester, Emmett, and Frank W. Garber, Muskegon. On the last day, the session of the society was held at Camp Custer, where a divisional review was given in their honor.

Personal.—Dr. Christopher G. Parnell, for three years head of the health department of Jackson, has resigned to accept the superintendency of the University Hospital, Ann Arbor.—Dr. Henry V. Tutton, Benton Harbor, was given a gold watch, chain and fob, from his boys of the Second Battalion of the Naval Militia, in appreciation of services rendered while a member of the examining board for the Navy.—Dr. Karl Greiner, Sparta, charged with writing a seditious letter to the *Medical World*, was released from custody, May 6, as it was shown that the article was written before June 15, 1917, when the new espionage law came into effect.

MINNESOTA

Hospital Burns.—The hospital of the Oliver Iron Mining Company at Carson Lake was destroyed by fire, May 16; no casualties resulted.

Southern Minnesota Physicians to Meet.—The midsummer convention of the Southern Minnesota Medical Association will be held at Winona, June 24 and 25.

Indicted for Sedition.—The district grand jury is said to have returned an indictment, May 11, against Dr. Arthur Brenken, Pine River, charged with sedition.

Relief Society Formed.—A special committee of the Hennepin County Medical Society met in Minneapolis, May 16, to consider how the society may be of service to the families of the sixty members who have entered the Army or Navy service.

Physician Wins Verdict.—Dr. Francis E. Murphy, Aitkin, who brought suit against Ambrose Casey and Thomas Kileen for assault, was given a verdict and \$11,000 damages by the jury, May 18. The plaintiff was health officer of Aitkin and was alleged to have been assaulted while placing a smallpox sign.

MISSOURI

Flag Donated to Hospital.—A large American flag donated to the State Hospital No. 4, Farmington, by Dr. William F. Kuhn, Kansas City, a former superintendent, waves daily in front of the administration building of the hospital by order of the present superintendent, Dr. Jesse L. Eaton.

Expects to Reopen Leeds Sanatorium.—Dr. Elmer J. Billick, the newly appointed health commissioner of Kansas City, assumed formal charge of his office, May 13. After an investigation of the situation, he expressed his opinion that the Leeds Sanatorium which has been in use for small-pox patients, will soon be reopened as a municipal tuberculosis hospital.

Personal.—The Shelby County Medical Society gave a banquet, May 23, at Shelbyville in honor of Dr. William Corson, who has just completed fifty years of active practice in his profession.—Dr. Hasbrouch De Lamater has been reappointed city health officer of St. Joseph.—Dr. Eugene L. Opie, St. Louis, has returned from active service in a British hospital in northern France.

A Memorial to Dr. Fitzsimon.—In memory of Lieut. William T. Fitzsimon, Kansas City, who was killed last September, when the German airplanes bombarded the Harvard University Hospital in France, the park commissioners of Kansas City have decided to erect a memorial in the form of a public drinking fountain which will bear an inscription relating the details of Dr. Fitzsimon's work and death.

Meeting of the Southeastern Association.—The southeast Missouri Medical Association held its forty-second annual meeting in Poplar Bluff, May 10, and elected the following officers: president, Dr. Alfred R. Rowe, Poplar Bluff, vice president, Dr. John H. Yount, Charleston; treasurer, Dr. William R. Goodykoontz, Caledonia; corresponding secretary, Dr. William S. Hutton, Farnfeldt, and recording secretary, Dr. Will K. Statler, Oak Ridge. Charleston was selected as the next place of meeting.

State Association Meeting.—The Missouri State Medical Association held its sixty-first annual meeting in Jefferson City, May 6 to 8, and elected the following officers: president, Dr. Milton P. Overholser, Harrisonville; vice presidents, Drs. Jefferson D. Brummall, Salisbury, John C. Matthews, Springfield, T. Guy Hetherlin, Louisiana, Scott P. Child, Kansas City, and John Isbell, Washington; secretary, Dr. Edwin J. Goodwin, St. Louis (reelected); treasurer, Dr. J. Franklin Welch, Salisbury; delegates to the American Medical Association, Drs. Arthur R. McComas, Sturgeon, Franklin E. Murphy, Kansas City, and Wilson J. Ferguson, Sedalia.

MONTANA

Hospital Contract Awarded.—The contract for the construction of the Sisters Hospital, Billings, has been awarded to a Helena firm for \$266,000.

Resigns After Long Service.—After thirty-one years of continuous service as physician in Fort Peck Indian Reservation, Dr. James L. Atkinson, Poplar, announces that he will resign, about July 1, and thereafter devote himself to private practice.

Society Will Protect Physicians in Military Service.—A special committee selected from members of the Montana Medical Association met in Helena, May 7, and discussed plans, whereby all districts of Montana will be sure of not being totally deprived of physicians during the time of the war.

State Nurses.—The Montana State Nurses Association met at Bozeman, April 25. Among the speakers present were Dr. James F. Blair, Bozeman, and Dr. William F. Cogswell, Helena, secretary of the state board of health. Letters were read from nurses at the front in France. Infantile paralysis was one of the topics discussed.

NEBRASKA

Hospital Notes.—Almost \$13,000 has already been subscribed for the new hospital at Fall City.—Bids have been asked for the erection of a new Lutheran Hospital at Beatrice, which is to be erected north of the present building at a cost of about \$125,000.

Personal.—Dr. Ernest T. Manning has been appointed health commissioner of Omaha, succeeding Dr. Ralph W. Connell, resigned.—Dr. Louis S. B. Robinson, for two years superintendent of the state tuberculosis hospital at Carney, has sent in his resignation, to take effect, June 1.—Dr. Olga F. Stastny, Omaha, has been accepted for foreign service and been notified to prepare to sail for Europe.—Dr. Artemas I. MacKinnon, Lincoln, has been appointed chief surgeon of the Orthopedic Hospital, Lincoln, succeeding Dr. Edwin C. Henry, Omaha, released to enter military service.

New State Officers.—At the fiftieth annual meeting of the Nebraska State Medical Association held in Omaha, May 6

to 8, under the presidency of Dr. Charles L. Mullins, Broken Bow, the following officers were elected: president, Col. John M. Banister, M. C., U. S. Army (retired), Omaha; vice presidents, Drs. Fred W. Buckley, Beatrice, and Artemas I. MacKinnon, Lincoln; secretary-treasurer, Dr. Joseph M. Aikin, Omaha (reelected); delegate to the American Medical Association, Dr. Joseph M. Aikin, Omaha; chairman of council, Dr. Henry J. Leinhoff, Lincoln; secretary of council, Dr. Anders P. Overgaard, Omaha. The association will meet next year in Lincoln.

NEW HAMPSHIRE

Medical Referee Appointed.—Dr. Walter A. Bartlett, Manchester, has been appointed medical referee of the Manchester district of Hillsborough County, succeeding Dr. Maurice Watson, Manchester.

New State Officers.—At the annual meeting of the New Hampshire Medical Society held in Concord, May 15 and 16, under the presidency of Dr. George C. Wilkins, Manchester, the following officers were elected: president, Dr. Charles P. Bancroft, Concord; vice president, Dr. Augustus W. Shea, Nashua; trustee, Dr. Herbert L. Smith, Nashua; councilors, Drs. George H. Saltmarsh, Lakeport, and Frederick von Tobel, Lebanon. The orations in medicine and surgery were delivered by Drs. James J. Walsh, New York City, and John T. Bottomley, Boston.

NEW YORK

Jenkins Society Election.—The annual meeting of the Jenkins Medical Society was held at St. Joseph's Hospital, Yonkers, May 9. Dr. Edward A. Spilsbury, Yonkers, was elected president; Dr. Frank A. M. Bryant, Mount Vernon, vice president, and Dr. George B. Stanwix, Yonkers, secretary.

Tuberculosis Hospital.—Three additional counties have started work on tuberculosis hospitals under the county hospital law. The Broome County institution will be located at Chenango bridge near Binghamton, the Rockland County Hospital in the neighborhood of Summit Park near New City, and the third hospital in Nassau County near Farmingdale.

State Society Officers.—The Medical Society of the State of New York held its one hundred and twelfth annual meeting in Albany, May 20 to 22, and elected the following officers: president, Dr. Thomas H. Halsted, Syracuse; vice presidents, Drs. James F. Rooney, Albany, and Marcus B. Heyman, Suffolk; secretary, Dr. Floyd M. Crandall, New York City, and treasurer, Dr. Frank van Fleet, New York City.

Medical Women Elect Officers.—At the annual meeting of the Women's Medical Society of New York State, held in Albany, May 21, the following officers were elected: Dr. Elizabeth Burr, Thelberg, Poughkeepsie, president; Drs. Edith R. Hatch, Buffalo, and Florence Staunton, Utica, and Sara J. McNutt, New York City, vice presidents; Dr. Ethel D. Brown, secretary, and Dr. Phoebe M. B. Van Voast, New York City, treasurer.

Public Health Laboratory Association Organized.—The New York State Association of Public Health Laboratories, founded in October, 1916, held its first annual meeting at Albany, May 22. Syracuse was decided on as the place for the next meeting, and the following officers were elected: president, Dr. Warren B. Stone, Schenectady; vice president, Dr. Joseph S. Lawrence, Albany, and secretary, Dr. Howard I. Davenport, Auburn.

Sterilization Unconstitutional.—The law enacted in 1912, creating a state board of examiners with power to sterilize by operation feeble-minded criminals and other defectives, has been held to be unconstitutional by Justice Rudd of the supreme court. The board of examiners created under the law examined about 200 persons and listed them as proper subjects for operation, but the attack on the constitutionality of the law has made it a dead letter since its enactment.

Personal.—Dr. Vilas G. Van Ornam has resigned as surgeon to the Semet-Solvay Company, Split Rock, to accept a similar position at a government ammunition plant at Perth Amboy, N. J.—In the city of Buffalo Dr. Douglas P. Arnold has been appointed director of infant welfare, Dr. Hugh J. McGee, medical school examiner; Dr. Nellie E. Kurtz, assistant medical school examiner; Dr. Christiana M. Greene, medical school inspector, and Dr. Albert J. Harris, assistant medical school inspector.—Dr. A. M. Cheny-Spofford has been appointed health officer of the city of Batavia, in the absence of her husband, Dr. Henry M. Spofford, who is in military service.

Medical Legislation.—At the recent session of the legislature, a number of measures of medical interest were enacted. Among them was the Sage-Adler bill creating a new state commission on the feeble-minded. The commission will consist of the secretary of the state board of charities, the physical supervisor of the state charities, and a medical chairman, all of whom are to be appointed. There were also enacted a law extending the duties of the hospital development commission, and providing for the reclassification and redistribution of the inmates of the various state institutions with a view to segregation, and for the establishment of separate wards for the feeble-minded; a law providing that New York City give the magistrates of the inferior courts power to remand feeble-minded female delinquents for determination of their mental condition; also, measures appropriating about \$3,000,000 for new construction work at institutions for the insane and feeble-minded. Two new state hospitals are to be built, one at Creedmoor on the outskirts of Brooklyn, and a psychopathic hospital in New York City. Appropriations were made for all these institutions and for the site of another new state hospital in the metropolitan district, to take the place of the abandoned Mohansic institution.

New York City

Prenatal Clinic Planned.—A new prenatal clinic has been opened by the Bowling Green Neighborhood Association at its headquarters, 45 West Street, Manhattan. This is an extension of prenatal work begun at this place in 1914, by the New York Milk Committee and turned over last year to the neighborhood association.

Dairy Exhibit to Promote Use of Milk.—The Dairymen's League, during the week of May 20, conducted an exhibit in the Grand Central Palace as a part of an educational campaign to further the use of milk as a food and thus to encourage the preservation of the herds and the dairy industry in the state. A number of food experts delivered addresses and gave demonstrations designed to show the value of milk as a food.

New Home for Bronx Hospital and Dispensary.—The board of directors of the Bronx Hospital and Dispensary have purchased the property on the southwest corner of Fulton Avenue and One Hundred and Sixty-Ninth Street, consisting of three buildings and twelve city lots. Alterations will be started immediately to make these buildings suitable for hospital and dispensary purposes. When they are completed, there will be accommodations for 100 patients in the hospital.

Suits Against Physicians.—The suit for \$25,000 brought by Dr. Edward W. Piper, Brooklyn, against the Brooklyn Rapid Transit Company for alleged false arrest, is said to have been decided by a jury in favor of the company, April 24.—Dr. Philip G. Becker, charged with conspiracy to violate the selective draft law by furnishing the drafted men with drugs which would cause them to be rejected, was discharged because of apparent physical unfitness. It is said that he was found not guilty, May 16.

Offer to Erect Big War Hospital.—Representatives of the Beth Israel Hospital have made a formal offer to the War and Navy departments to erect a \$1,250,000 hospital on the square block bounded by Second Avenue and Livingston Place between Seventeenth and Eighteenth streets. The plans provide for the accommodation of 500 patients. Both the War and the Navy departments have taken the offer under advisement. The funds for the construction of a fifteen-story hospital building are available, and as soon as the offer is accepted, work will be begun. For several years the Beth Israel Hospital Association has intended to erect a new building, and has now hastened the plans so that it may perform a patriotic duty by turning the building over to the government for such a period of time as the latter may wish to use it.

Civil Service Examinations.—The Municipal Civil Service Commission has announced the following examinations:

Medical superintendent, Grades 4 and 5.—Application will be received until June 11. Candidates must be citizens of the United States and residents of New York state, must be licensed to practice medicine in the state of New York, and must have had at least two years' administrative service in a hospital or the equivalent. Their duty will be to assist in large hospitals under the jurisdiction of the state of New York.

Pathologic chemist.—Applicants must be at least 21 years of age, citizens of the United States, residents of New York state, must possess the degree of M.D., Ph.D., or M.S. in chemistry, and must have had at least one year of experience as pathologic chemist in a laboratory of recognized standing. Salary, \$2,140.

For particulars concerning examinations, application should be made to the Municipal Civil Service Commission, New York City.

Personal.—Dr. Sophie Rabinoff is going to Palestine with the American Zionists' Medical Unit, to do child welfare work and pediatrics.—Dr. Charles H. Jaeger has been appointed assistant professor of orthopedic surgery in the College of Physicians and Surgeons in the city of New York.—Dr. S. Dana Hubbard has been appointed temporary head of the New York Board of Education, succeeding Dr. Charles F. Bolduan.—In the damage suit of Mrs. Mary Jennie Graham against Dr. Louis Jameson, in which \$5,000 damages were asked, the jury, May 13, is said to have awarded Mrs. Graham \$1,250.—Dr. Magnus T. Hopper, Brooklyn, has been selected as medical director of the Carson C. Peck Memorial Hospital, now being erected in Brooklyn at an expenditure of more than \$240,000. The medical staff of the hospital will be headed by Dr. Bruno W. Bierbauer, and the surgical staff by Dr. William Francis Honan.—Major Eugene Wilson Caldwell is reported to be critically ill from roentgen-ray burns at his home.

Investigation of Nursing Situation.—The public health committee of the New York Academy has just made public the result of a survey of the problems relative to the shortage of nurses. The findings state that it is estimated that in military service, 10 per cent. of the soldiers are constantly sick or wounded. Of an estimated force of 2,000,000 men, 200,000 would be constantly in need of nursing services and this would require about 25,000 nurses. Up to the present time, a few more than 9,000 have been enlisted. The specific recommendations of the committee are for the enlargement of training schools in hospitals for the enrolment of women in full courses rather than to become aids, and for no lowering of nursing standards. Army training schools are discouraged. Accredited civil hospitals in cooperation with the American Red Cross should undertake the training of nurses' aids for gratuitous service only. A further recommendation urges that the employment of nurses by civilian patients be curtailed as much as possible.

OHIO

Hospital Items.—The Orchard Hospital, Marion, owned by Dr. Elmer O. Richardson, was opened, May 15.—The new general hospital, Mansfield, was opened for inspection, May 14.

Trachoma Hospital Wanted.—Members of the Hempstead Academy of Medicine, Portsmouth, are petitioning the state health department to obtain an appropriation in the next legislature to establish a federal and state trachoma hospital in Portsmouth.

Personal.—It is reported that Dr. Frank L. Sargent, Ashtabula, is seriously ill with pneumonia.—Dr. Daniel C. Brennan, Akron, who has been ill with diphtheria, is reported convalescent.—Dr. Robert H. Butler was operated on for appendicitis on board the hospital ship *Mercy*, April 30.—Dr. Edward G. Reinert, Columbus, has been appointed a member of the state board of administration.

Fines and Penalties.—It is reported that Dr. William Steele, Massillon, was charged with the illegal selling of morphin, found guilty, May 16, and fined \$25 and costs for this offense, as well as \$50 and costs for using the wrong registration number on prescriptions. Also, his license to buy and prescribe narcotics was revoked.—A verdict of \$2,600 for alleged negligent treatment of a fractured leg, is said to have been awarded to Louis E. Shepherd, who charged malpractice against Dr. Lewis Baker, Dayton, May 8.

OKLAHOMA

Held for Helping to Evade Draft.—Dr. William E. Nichols, Tulsa, is said to have been placed under arrest, charged with furnishing drafted men with a drug which affected the eyes, and created symptoms which caused the drafted men to fail to pass the physical examination for military service. For this service he is said to have charged from \$75 to \$150. Dr. Nichols has been held on bonds of \$10,000.

State Society Meeting.—The Oklahoma State Medical Association held its twenty-sixth annual meeting in Tulsa, May 14 to 16, under the presidency of Dr. W. Albert Cook, Tulsa. The following officers were elected: president, Dr. Leonard S. Willour, McAlester; president elect, Dr. Lewis J. Moorman, Oklahoma City; vice presidents, Drs. Edward D. James, Miami, and H. Marion Williams, Oklahoma City, and Walter Hardy, Ardmore; delegate to the American Medical Association, Dr. Mahlon A. Kelso, Enid, and Leroy Long, Oklahoma City. Muskogee was selected as the next place of meeting.

PENNSYLVANIA

Philadelphia

Medical Recruiting Office.—A recruiting station for physicians has been opened in the department of health and charities, City Hall, under Lieut. John W. West, medical examiner for the Medical Reserve Corps.

Property Purchased for War Hospital.—The buildings of the divinity school of the Protestant Episcopal Church at Fiftieth Avenue and Woodland Avenue have been sold to the Mercy Hospital, a negro institution, which will occupy the site as a hospital for negro officers and soldiers. The sale involved \$120,000, and there are several buildings and 6 acres of ground. The war hospital will be directed by the Crispus Attucks Circle for War Relief, composed of leading negro physicians. The present buildings furnish accommodations for 200 beds, but it is intended ultimately to enlarge the institution to accommodate between 1,500 and 2,000 patients.

TEXAS

Personal.—Dr. Harold L. D. Kirkham has been elected secretary of the South Texas District Medical Association to serve until the annual fall meeting.—Dr. Alfred L. Ridings, Sherman, has been appointed county health officer of Grayson County.

New Society.—The physicians of Goose Creek met recently and organized a local medical society to be affiliated with the Harris County Society and elected Dr. S. P. Russell chairman, Dr. L. P. Dudley vice chairman, and Dr. Edward W. Neal Devers, secretary. The organization was named the Goose Creek Medical Society.

War Service Resolutions Voted Down.—At a special meeting of the Bexar County Medical Society, held in San Antonio, May 11, resolutions were voted down which pledged 5 per cent. of the gross monthly income of every member of the society not in the service, to a fund to be known as the "Bexar County Medical Society War Service Fund."

Public Health Association Meets.—At the annual meeting of the Texas Public Health Association, held recently in Austin, the following officers were elected: president, W. A. Bowen, Arlington; vice president, Drs. Elva A. Wright, Houston, and Beverly T. Young, San Antonio; secretary, Dr. James S. Rollings, Fort Worth, and treasurer, Dr. H. A. Wroe, Houston.

Railway Surgeons Hold Meeting.—The annual meeting of the Texas Railway Surgeons' Association was held in San Antonio, May 13, and the following officers were elected: president, Dr. William L. Brown, El Paso; vice presidents, Drs. William A. Durringer, Fort Worth; Samuel P. Cunningham, San Antonio, and Sam Webb, Dallas; secretary, Dr. William B. Thorning, Houston, and treasurer, Dr. Herschel F. Connally, Waco.

New State Association Officers.—At the fiftieth annual meeting of the State Medical Association of Texas, held in San Antonio, May 14, 15 and 16, Waco was selected as the next place for the annual meeting, and the following officers were elected: president, Dr. Selwyn P. Rice, Marlin; president elect, Dr. Robert W. Knox, Houston; vice presidents, Drs. Hugh L. Moore, Dallas; Herschel F. Connally, Waco, and Louis J. Manhoff, Aransas Pass. The councilors are Drs. Robert B. Homan, El Paso, first district; Joseph E. Dildy, Brownwood, fourth district; Cleve C. Nash, Palestine, eleventh district (reelected); John F. Bunkley, Seymour, thirteenth district; Andrew B. Small, Dallas, fourteenth district; vice councilor for the fifth district, Dr. Thomas Dorbandt, San Antonio. The delegates to the American Medical Association are Drs. Marvin L. Graves, Galveston, and Ira C. Chase, Fort Worth, and the alternates, Drs. Edward H. Cary, Dallas, and John H. Florence, Houston. Dr. John S. Turner, Dallas, was reelected trustee.

WASHINGTON

Physician Interned.—Dr. John Reitz, Tacoma, is reported to have been interned in Fort Lawton as an alien enemy.

Money for Health Campaign.—The common council of Tacoma has passed an ordinance appropriating \$5,000 from the general fund to pay special expenses of the health department.

Tri-State Meeting.—A meeting of the physicians of Washington, Oregon and Idaho will be held in Seattle, July 17 to 19. The Oregon and Idaho state associations will not hold separate meetings this year.

Personal.—Dr. W. Marvin Munsell, Grand View, has been appointed district surgeon of the Union Pacific system, covering that portion of the ground between Kennewick and Yakima.—Major James B. Eagleson, M. R. C., U. S. Army, Seattle, was a guest of honor at the meeting of the state club, Seattle, April 3. Major Eagleson is now on duty at Base Hospital No. 50, Palo Alto, Calif.—Dr. J. H. McDonald, Tacoma, underwent an operation at St. Joseph's Hospital in that city, April 6.—Dr. J. Mason Adams has returned to Seattle invalided after two years of service with the Canadian expeditionary forces in France.

WISCONSIN

Sanitary Department Organized.—Major Daniel S. McArthur, LaCrosse, acting under orders from the adjutant general of the state, has begun the organization of a sanitary department for the Wisconsin State Guard.

Wisconsin Surgeons Hold Meeting.—At the annual meeting of the Wisconsin Surgical Association held in Milwaukee, May 8 and 9, under the presidency of Dr. Horace M. Brown, Milwaukee, the following officers were elected: president, Dr. John F. Pember, Janesville; vice president, Dr. Dennis J. Hayes, Milwaukee; secretary-treasurer, Dr. Daniel Hopkinson, Milwaukee; regent, Dr. Horace M. Brown, Milwaukee, and vice regent, Dr. John van R. Lyman, Eau Claire.

Hospital News.—St. Mary's Hospital, Ladysmith, was open for public inspection, May 30. The building is three stories and basement in height, in the southwest corner of Ladysmith, on an eminence near the river.—The cornerstone for the Ashland General Hospital was laid, May 12, with impressive ceremonies. The principal address was given by Dr. John M. Dodd.—The addition to St. Joseph's Hospital has been completed at a cost of more than \$20,000 and is now occupied. The addition is 93 by 37 feet, and it is three stories in height and fireproof.—Dr. Charles S. Hayman and Jonathan C. Betz have purchased an interest in the Brookside Hospital, Boscobel. Dr. Edward H. Spiegelberg retains his interest in the institution.

Personal.—Dr. Charles O. Thienhaus, Milwaukee, who was ordered to be interned during the period of the war, because as an enemy alien he had gone outside the prescribed area, has been taken to Fort Oglethorpe, Ga., for internment.—Dr. Everett W. Maechtle, West Allis, was operated on for appendicitis in a hospital in Milwaukee, May 16.—Dr. Oscar Lotz, secretary of the Milwaukee County Medical Society, was presented with a silver tray, May 14, in appreciation of his services.—Dr. Lawrence H. Prince has resigned as medical supervisor of the public schools in Madison, to become superintendent of the state school for dependent and crippled children at Sparta, where he succeeds Dr. John F. Brown, who has gone to Kankakee, Ill., to accept the presidency of the Re-Use Knitted Gauze Company.—Dr. A. T. Rasmussen, LaCrosse, was operated on recently in Milwaukee for appendicitis.—Dr. Conrad W. Wilkowske, Chippewa Falls, is reported to be ill with pneumonia at Camp Upton, L. I.—Dr. Henry T. Brogan has been appointed health commissioner of Milwaukee.

CANADA

Queen's University Graduates.—Twenty-six medical students were graduated from the medical department of Queen's University, Kingston, Ont., May 22. The medal in medicine was won by Albyn A. Cauley, Lombardy, Ont., and the medal in surgery by Henry C. Connell, B.A., Kingston.

Personal.—Lieut.-Col. F. E. Birdsall, M.D., has taken over the command of the Kingston (Ont.) Military District.—Lieut.-Col. Kenneth D. Panton, Vancouver, B. C., who went to France with one of the earliest Canadian contingents and served in Flanders and Greece, has returned to England, where he has been given the command of the Canadian hospital at Eastbourne.—Lieut.-Col. Alexander J. MacKenzie, Toronto, after prolonged service overseas, has returned home. He has been ordered to Halifax to take over military matters in that region.—Major B. M. Luton, St. Thomas, Ont., a winner of the military cross, returned from overseas recently, and has been appointed commanding officer of the new military hospital at Fredericton, N. B.—Drs. Robert J. McMillan and Andrew D. Moorhead, Toronto, who went overseas about a year ago, are engaged in a military hospital at Havre, France.—It is understood that Lieut.-Col. Harold C. Parsons, Toronto, who went overseas three years ago with the University of Toronto Base Hospital, will soon return to

Canada and become a member of the hospitals inspection committee. Capt. William Goldie, Toronto, has obtained a year's leave of absence from the University of Toronto, and will take Dr. Parsons' place in the hospital at Basingstoke. —Dr. Alfred Thompson, Dawson, formerly superintendent of the Canadian Hospitals Commission, has again been returned as member of Parliament for the Yukon. —Dr. Frederick W. Luney, London, Ont., of the institute of public health, has been appointed pathologist of the Victoria Hospital in that city. Dr. W. F. Hodgetts has been placed on the active staff of the hospital, replacing Dr. Everett Young, who has gone to the Byron Sanatorium, and Dr. Freel, who has gone overseas. —There is great satisfaction in Canada at the announcement that Dr. Henri S. Beland, M. P., formerly postmaster-general of Canada, has been released as a prisoner of war in Germany. Dr. Beland had just been married to a Belgian woman when war broke out, and entered the Belgian Army Medical Corps. Subsequently, while he was in prison, his wife died, and he was refused attendance at her bedside. Her death was not told him until some days after her interment. —Dr. J. P. McCullough, Belleville, ophthalmic and aural surgeon to the British forces from 1915 to 1917, has opened an office in Toronto.

GENERAL

War Educational Meeting.—The National Education Association will meet this year in Pittsburgh from June 29 to July 6. The program, which has been sent out, shows that the papers and addresses will have a distinct bearing on the war.

Mail for the Expeditionary Forces.—The Postoffice Department authorizes the announcement that the Postmaster-General and the Secretary of War have agreed that mail for the American expeditionary forces in France shall be handled by the War Department.

More Army Nurses Needed.—On account of the urgent need of nurses for the Army and Navy, the American Red Cross will open a campaign, June 10, to recruit 25,000 registered nurses. The requirements for this service are that applicants must be at least 21 years of age, graduates of a recognized school for nurses and must have had at least two years of training in a general hospital. In states where registration is provided for by law, applicants must be registered.

War Hospital Problems.—A conference on war-time hospital problems will be held under the auspices of the war service committee of the American Hospital Association at the New York Academy of Medicine, New York City, June 3, at 10:30 a. m. Dr. Sigismund S. Goldwater is chairman of the committee. The tentative program will include discussions of income and expenditures, medical and surgical supplies, new constructions, labor supplies, medical and nursing service, the care of government patients, federal vocational boards, and the war risk insurance bureau.

FOREIGN

War-Time Economies.—The *Practitioner* reaches us this month with much less than its usual number of pages, but the type used has been reduced in size to correspond, so that it actually contains nearly as much reading matter as before. This has been done to meet the requirements of the government in regard to economy in paper.

Deaths in the Profession Abroad.—Lieut.-Col. H. Stewart of Dublin, aged 37, killed in action. —G. Elliston, for nineteen years financial secretary and business manager of the British Medical Association, aged 46. —V. H. Starr, surgeon in charge of the mission hospital at Peshawar, India, aged 35, was fatally stabbed by a fanatic, March 17. —J. M. Clarke, professor of pathology at the University of Bristol, aged 58. —H. Macnaughton-Jones, aged 73, professor of obstetrics at the University of Cork until he removed to London in 1883, where he occupied a prominent position in obstetrics and gynecologic work. He was honorary president of several of the international medical congresses of his specialty and president of the British section at the Petrograd international congress. Some of his works, notably those on diseases of women, have passed through many editions. —E. Mosny, lecturer on clinical medicine at the University of Paris and an authority on bacteriology and public hygiene, president of the Société de médecine publique et de génie sanitaire, aged 57. With Brouardel and Chantemesse he aided in publishing the *Traité d'Hygiène*, a twenty volume work.

MEXICO, CENTRAL AND SOUTH AMERICA

English and French in Medical Curriculum in Mexico.—The dean of the medical department of the Universidad Nacional de México has recently inaugurated courses in English and French as part of the medical curriculum.

Personal.—Dr. F. Ocaranza, professor of physiology at the Facultad de Medicina of the Universidad Nacional, Mexico, has been appointed secretary of the Facultad. He is at the same time secretary of the Academia de Medicina. —Dr. D. Orvañanos has been appointed inspector of laboratories in the Facultad de Medicina. —Dr. A. A. da Matta of Manaus, Brazil, was recently elected foreign corresponding member of the Academia. At meeting, Dr. J. C. Urueña presented a case of pityriasis rubra pilaris, the third that has been reported in Mexico, and Dr. E. Landa, a case of abdominal round cell sarcoma with metastasis. —Dr. R. Carrillo has been engaged by the *Universal*, a City of Mexico daily, to examine systematically the health of all its employees and give such treatment as may be needed.

LONDON LETTER

LONDON, May 7, 1918.

The Medical Examination of the Older Recruits

Under the recent military service act, medical boards will be called on to determine the physical fitness of men between the ages of 18 and 50 years, and in a few cases 55. In the case of the older men, between 43 and 50, now brought under medical review for the first time, the application of the accepted standards will require special care, and the following instructions have been issued by the government:

Grade 1. The older men will be placed in Grade 1 if they possess the full normal physical fitness to be expected of their age. Such men must not have any serious physical defect and must not suffer from progressive organic disease. They must be able to endure physical exertion involving a considerable degree of strain, and to undergo gradual physical training in order to fit them for military duty. The physical training for the older men in this grade will be carried out under special medical supervision.

Grade 2. The older men fit for Grade 2 will possess the normal physical fitness of their age. They must not suffer from progressive organic disease, and the physical defects that prevent such men from being placed in the higher grade must not be of such a nature as to diminish seriously their physical activity. They must be able to undergo a considerable degree of physical exertion of a nature not involving severe strain.

Grade 3. In this grade will be placed older men with marked physical disabilities or who show evidence of disease which is not active nor of a progressive character at the time of the examination. Although not fit to undergo military training, they may be called on to perform duty in military establishments under conditions approximating to their home life and surroundings.

Grade 4. In this grade will be placed those older men whose physical disabilities, owing to defects or progressive disease, are of such a nature as to render them totally and permanently unfit for any form of military service. The attention of the boards will, therefore, be especially given to the forms of physical disability which may become evident in the fifth decade, such as cardiovascular defects and emphysema. It is expected, however, that considerable numbers of men of this age will be found fit for military service, especially of the less arduous type.

Subject to military exigencies, the corps to which the War Office proposes to post older men are: (a) Combatant service: Home defense infantry, and garrison battalions at home and abroad. Royal field artillery, and royal garrison artillery at home. (b) Auxiliary service at home and abroad, such as Royal Army Medical Corps, Army Service Corps, as motor and horse transport, remounts and supplies; Army Ordnance Corps; Army Veterinary Corps; inland water transport and dock; railway troops; roads, and quarries. Such men will also be posted to the air force for duty with the squadrons.

Attack on Hospital Ship by German Submarine

It has now been proved conclusively that the British Hospital Ship *Guildford Castle* was attacked by a German submarine in the Bristol Channel on the afternoon of March 10, struck by a torpedo, and had a narrow escape from being sunk. At the time of the attack, 5:35 p. m., the *Guildford Castle*, which was carrying 438 wounded soldiers,

was flying a Red Cross flag of the largest size, her navigating lights were also showing, and the distinctive marks denoting the character of the ship were properly illuminated. No excuse can be put forward that these distinctive marks were in any way obscured by climatic conditions, for the weather was clear, with visibility of about 5 miles, and the ship, standing well out of the water, could be plainly distinguished as a British Red Cross hospital vessel. An official inquiry into the circumstances of the attack shows that two torpedoes were fired. The first passed close to the ship's stern from port to starboard. A minute afterward a second torpedo was fired and struck the ship a heavy, sharp blow on the port side abreast of the mainmast, causing her to vibrate considerably fore and aft. Happily the torpedo did not explode. The discipline on board the ship was excellent. There was no panic, and the patients were conducted to the boats very quickly. On arriving in port the vessel was drydocked, and expert examination of the hull proved that the ship was struck by a torpedo which did not explode. The torpedo apparently rebounded after first striking the vessel, and, returning, bumped along the ship's side until it was finally struck by one of the propellers, as one of the propeller blades was found to be marked and slightly bent. An examination of the marks on the hull of the ship showed that they were not compatible with the vessel's having struck a submarine or the submarine's having come into collision with the ship.

In view of the fact that the Germans sometimes deny that they have attacked hospital ships that have been sunk, the following admission is interesting. April 24, the German official message sent out through the wireless stations attempting to confute Sir Eric Geddes' statement in Parliament on mercantile losses contained this passage: "Lloyd George and Geddes falsify the losses of ships plying in the military service, ignoring so-called naval losses, auxiliary cruisers, guardships, hospital ships, and very probably also troop transports and munition steamers—that is to say, precisely that shipping space which is particularly exposed to and attacked by the U-boats."

Outbreak of Infective Ophthalmoplegia

A considerable number of cases of acute illness marked by ophthalmoplegia and other symptoms suggestive of botulism have occurred in London and in various parts of the country. It may be remembered that the form of food poisoning described in 1895 by van Ermengem under the name botulism (*botulus*, a sausage) were due to eating sausage or fish infected with the *Bacillus botulinus*, an anaerobic organism. The outstanding features of the cases are acute onset of incomplete double third nerve paralysis, with ptosis and diplopia. Pyrexia has been present in the majority of cases and delirium in some. The source of infection is obscure. In some, no food taken by the patients was under suspicion. In others, the condition has followed eating sardines or canned salmon. In the fatal cases, the length of the illness has varied from ten days to six weeks. Pathologic investigation is not yet complete. Sections of the medulla have shown infiltration with lymphocytes and chromatolysis of the cells of the basal nuclei. Thus far the *Bacillus botulinus* has not been identified. The chief medical officer of the Local Government Board has asked physicians to obtain specimens of suspected foods and communicate with the local health officers. In one case a gas-producing anaerobic gram-positive bacillus which so far resembles the *Bacillus botulinus* has been found. Possibly the outbreak may be connected with the greater consumption of canned foods under war conditions.

Scientific Report of War Bread

The bread now in use is prepared from grain milled to 80 per cent. with the addition of other cereals. After investigation, a committee of the Royal Society has issued a report on the following questions: 1. What gain, if any, in food value accrues from a rise in the milling standard from 80 to 90 per cent., and does the dilution of wheat flour with other cereals modify the food value of the bread? 2. What would be the effect on the health of the consumption of such breads? How far would such breads prove acceptable? Experiments were made with wheat flour, extracted to 80 and to 90 per cent. The analytic work was done in the biochemical department of the University of Cambridge and in the Physiological Laboratories of the universities of Glasgow and London. The diet consisted of 800 gm. of bread with butter, cheese, minced or potted meat, fruit jelly, milk and sugar, tea or coffee, and in one case beer was taken as a beverage. This dietary yielded about 3,680 calories a day.

The effects were remarkably uniform. Bread made from the 80 per cent. flour yielded for nutrition 96.1 per cent. of the energy contained in the diet; bread made from 90 per cent. flour, 94.5 per cent. The loss of energy with the second bread was greater (5.5 per cent.) than with the first (3.9 per cent.). The intestinal secretions were considered to contribute largely to this. The feces with the 90 per cent. bread were more bulky, and the coarser particles of this bread produced a greater stimulation of the secretion of the intestine. The increase in the bulk of the evacuation is not an evil, and in the case of many is even an advantage. As to the nitrogenous constituents, the average digestibility was 89.4 per cent. in bread made from flour extracted to 80 per cent., and 87.3 per cent. in that extracted to 90 per cent. In most of the cases there was a slight gain in body weight with both breads. Thus a greater proportion of the energy of the grain is available for human consumption when flour is milled at the 90 per cent. scale than on the 80 per cent. scale. The increase would extend the cereal supply of energy for the country for more than a month. Against this is to be set the loss of protein in the offal as food for pigs. Another set of experiments were made with bread made from flour consisting four fifths of wheat extracted at 80 per cent., and one fifth of maize. At first the flavor of the maize was commented on, and there was in some cases disturbance of digestion, attended sometimes with diarrhea, and more often with constipation; but these symptoms passed off. The general conclusion is that bread made with the addition of maize flour was as digestible as bread made without it, and it was well digested by children. The addition of maize made practically no difference in the utilization of energy and nitrogen. Observations were made at a canteen on the dietetic effect and on the palatability of bread made from flour containing four fifths of wheat extracted to 90 per cent., and one fifth of other permitted cereals (10 per cent. barley, made up to 20 per cent. with maize and rice, or rice alone). It was found to be palatable and never to cause indigestion.

Vital Statistics for 1916

The registrar-general's seventy-ninth annual report for the year 1916, which has just been published, is of unusual interest, because in that year the war existed long enough to affect the figures considerably. The birth rate was 20.9 per thousand living, and was the lowest on record. It was 4.6 below the average for the ten years 1905-1914 (which were practically unaffected by the war). On the whole, the reduction of natality, which amounted to about 12 per cent. on the figures for 1914, is less than might have been expected, and compares favorably with the experience of other belligerent countries. The civilian death rate was 14.4 per thousand living, and was slightly below the average of the decennium before the war. The rate of 1916 is considered to be the lowest recorded, provided allowance is made for the effect of enlistment on the population. The standardized mortality of males ordinarily exceeds that of females. Up to 1860 the excess was not more than 9 per cent.; but in 1916, in consequence of the war, the excess amounted to 32 per cent. The most remarkable feature is the low death rate in the first quinquennium of life. It was much lower than any previously recorded, and was less than half the rate prevailing in the concluding years of the last century. The all-age mortality from typhoid and from scarlet fever was the lowest on record, while diphtheria and influenza were more fatal than the average. But the death rate from tuberculosis showed a further advance on the high rate of 1915, although the increase did not extend to young children, the mortality under 5 years being the lowest hitherto recorded. Cancer was more fatal in 1916 than in any other year, and cerebrospinal fever continued to be abnormally destructive.

In view of the loss of life in the war the statistics of childhood are of unusual importance. The births in England and Wales in 1916 were in the proportion of 1,049 males to 1,000 females, against 1,033 to 1,000 in the preceding five years. This proportion is by far the highest recorded during the last half century. It certainly bears out the old view, regarded by some as a superstition, that war increases the proportion of male births because Nature endeavors to compensate for the loss of male life in warfare. Of the deaths at all ages, 41.1 per cent. were those of infants under the age of 1 year. These deaths correspond to a mortality rate of 91 per thousand births, the lowest ever recorded. It was below the average in the preceding decennium by 20 per cent. This decline was in part due to low diarrheal fatality, but the greater part of it is accounted for under other diseases less subject to climatic influences. The mortality in infants from tuberculosis was 2.39 per thousand births, much the lowest on record.

PARIS LETTER

PARIS, April 25, 1918.

Surgery of Wounded Nerves

At a recent meeting of the Société de chirurgie de Paris, Dr. Delagenière of Mans presented an interesting communication on the remote result of the surgical treatment of wounded nerves, comparing nerve suture, grafting and liberations from fibrous constrictions.

NERVE SUTURE AND GRAFTING

Among 245 cases followed for two and a half years, there have been 181 sutures in good condition with 120 excellent results, 41 fair or mediocre (slow regeneration, but defective and incomplete), and only 20 failures, a total of 88 per cent. positive results and about 70 per cent. excellent results. He asserted that a properly made suture is nearly always successful. The earlier the suture is done, the more rapid is the regeneration of the nerve; if the suture is done late, the regeneration is retarded. Delagenière has obtained excellent results even when operating as late as twenty-eight months after nerve division. Regeneration also seemed to take place more rapidly in cases of complete division with persistent fibrous tissue than when there was solution of continuity, because then the disorganization of the peripheral segment was greater. The nerves which regenerate best are the radial, musculocutaneous and external popliteal. The internal popliteal, the cubital and especially the median, regenerate more slowly, which is perhaps due to the considerable number of sensitive fibers which enter into the make-up of these nerves, and to the danger of deviation of the regenerated nerve fibers, the motor fibers going uselessly astray in the empty sheaths of the sensory fibers, and vice versa. When there is loss of much nerve tissue, success may be had by resorting to grafting, using a piece of the musculocutaneous nerve. Of nine cases noted by Delagenière, three were almost complete and six were more or less complete successes.

It is difficult to foretell the time when regeneration will occur because a number of factors must be taken into consideration. In the case of the radial, Delagenière has often seen complete regeneration occur as early as after four months, when the suture had been done early and under the best conditions; on the other hand, in the cases of the same nerve, when conditions were not so favorable, thirteen months and more had elapsed before regeneration had taken place. The length of nerve to be regenerated must always be taken into consideration.

NEUROLYSIS: LIBERATION OF THE NERVE

It is always much more difficult to form an opinion as to the value of nerve liberation. Delagenière has done comparatively few of these operations (113); it has seemed to him that the procedure does not, as a rule, yield results superior to nonintervention. Here, nevertheless, are the conclusions which he believes may be drawn: In cases of nerve lesions of the type of a simple paralysis and in cases of constriction by a fibrous band, liberation, when done early enough, always yields remarkable results, rapid and complete. In the cases of severe and extensive compression, signs of regeneration, until then absent, will appear after a free liberation. In the complex lesions, with neuromas and *chéloïdes nerveuses*, liberation is wholly ineffectual; Delagenière has many times changed his plan and performed a successful suture after such a liberation. In the neuritic cases with pain symptoms (causalgia), he has had some good results follow liberation, but, on the whole, very rarely; in nearly all the cases the liberation proved a failure.

On the contrary, emboldened by the almost constant success following nerve suture, he has for the past eighteen months, in cases of severe neuritis (seventeen cases) almost constantly divided and sutured the nerve. This technic has yielded excellent results.

Wounds of Vessels

At one of the recent meetings of the Société de chirurgie de Paris, Dr. Hartmann reported a series of observations made by Dr. Gatellier in 123 cases of ligation of blood vessels, including various arteries. Of this number, twenty ligations were made for ordinary lesions, not causing shock from hemorrhage. All terminated in a cure. In the remaining 103 cases, shock was present. Among these were ninety-six cures (eight following secondary amputation) and seven

deaths. So far as amputations are concerned, it must be noted that the outcome of a vessel injury depends on the artery involved. Following the ligation of a vessel of the arm, the popliteal artery and the posterior tibial vessels, the circulation is always reestablished without untoward incident; but in the case of other vessels the result is not always the same. Among five ligations of the axillary artery there were three secondary amputations (66 per cent.); in two cases of ligation of the iliac there was one amputation (50 per cent.); among eighteen femoral ligations there were three amputations (23 per cent.); among eleven ligations of the posterior tibial vessels there were two amputations (18 per cent.).

LIMITATIONS OF LIGATIONS

From these observations the conclusion may be drawn that a ligation which saves life does not always save the member. Therefore, Gatellier decided to improve on ligation. The opportunity soon presented itself in the case of a man who had received a wound high up in the popliteal space with ischemia of the leg and in imminent danger of rapidly occurring gangrene. In this case Gatellier had recourse to arterial intubation and obtained a reestablishment of the circulation in four hours.

Paralysis from Injury of Spinal Cord Without Lesion of the Dura

Dr. Georges Guillain, assistant professor à la Faculté de Médecine de Paris, and Dr. J.-A. Barré recently read a paper on this subject before the Société médicale des hôpitaux de Paris in which they showed that, independently of the cases in which a projectile of war injured the cord directly after having opened the dura mater, organic paraplegias of various types and various degrees of gravity are seen, from injury of the spinal cord from the mere passage of a projectile at a certain distance from the cord without even having injured the dura mater. He saw a considerable number of such cases during the offensive of the Somme; the mild cases had been evacuated to the interior, but he regretted to report that there were fifteen deaths. In these fatal cases vertebrae had been injured. There was either fracture of a spinous process at its base, or of a lamina, or the body of the vertebrae had been pierced. The most common medullary lesion was hematomyelia, either alone or accompanied by acute necrosis or myelomalacia. The blood effusion was sometimes limited to parts of one or two medullary segments, and sometimes involved six, eight or even ten segments. In several cases there was a bloody perimedullary or subarachnoid suffusion and an intradural or extradural hemorrhage. Sometimes, probably following an intradural hemorrhage, a loose meningomedullary symphysis of slight extent, had developed.

SYMPTOMS FROM CONCUSSION OF SPINAL CORD

The clinical picture of these various lesions was, in the main, of two types: (1) that of a total section of the cord (four cases); (2) that of a localized medullary lesion (eleven cases). The syndrome of a total section was characterized by the following symptoms: complete loss of motion and sensation of every kind, often loss of muscle tone, but sometimes normal at the beginning; abolition of the tendon reflexes; cutaneous plantar reflex in flexion with or without diffuse reactions; superficial cremasteric reflex often abolished at first but appearing after an attempt to induce the deep cremasteric reflex; cutaneous abdominal reflexes abolished; absence of *réflexes de défense* produced by pinching the skin of the back of the foot or by the maneuver of Pierre Marie-Foix; constant retention of the urine; disturbance of the temperature of the paralyzed members, and early or late bed-sores. Slight involuntary movements, almost continuous, of the toes were noted twice. These four patients survived for from three to five days.

The localized lesions manifested themselves by a paraplegia less uniform than that seen in the cases of total section; the tendon reflexes were abolished ten times in the eleven cases; the cutaneous plantar reflex was of a variable type, in extension, in flexion, or abolished, or different on the two sides, or transforming flexion into extension; as a rule, the cremasteric reflexes were present; the abdominal skin reflex was usually very weak or absent; the *réflexes de défense* were present in more than half of the cases. Sensation was conserved in a zone of variable height, particu-

larly in the region of the sacral nerves. Syringomyelic dissociation, which would be expected in the cases where hematomyelia is the principal lesion, occurred seldom and was doubtful. The maneuver of Lasègue was painful, even when there was extensive or total anesthesia of the legs; it is important to note this fact, because it alone is sufficient to show that the section is incomplete. Urine retention was the rule. These patients survived longer than did those who sustained a total section of the spinal cord; they all lived more than two months.

Guillain and Barré called attention to the fact that none of the patients who had a local lesion and who had died in their service had presented the syndrome of Brown-Séquard; they have been able to evacuate all the cases presenting the Brown-Séquard syndrome and many of them have been ameliorated. This difference in gravity between the lesions, even extensive, when they remain unilateral, and the bilateral lesions should be borne in mind.

Traumatic Shock

At a recent meeting of the Société de chirurgie de Paris, Dr. R. Picqué read a very interesting paper on this subject. On the basis of personal experience, he is convinced that immediate shock is a rare occurrence, aside from rapidly fatal hemorrhage, severe concussions and certain cases of poisoning with carbon monoxid generated in the sudden combustion of the explosives, to which not enough attention has been directed. As a matter of fact, shock is observed less often at the advanced posts than at the ambulances, and less often on the firing line than at the advanced posts. Shock is due mainly to hemorrhage and to subacute infection, particularly among the victims of many wounds. Therefore, from the standpoint of treatment, the intervention in the shock cases must be active; however, no more should be done than is consistent with getting good results. The technic followed by Picqué is as follows:

During the preparation of the patient, a combination of warming, serotherapy and the administration of cardiovascular tonics, his case is investigated thoroughly in order to catalog the nature of his injuries and determine the gravity of his case, both immediate and ultimate, and outline the treatment to be adopted. The examination of the blood-vessels is of first importance. This done, the intervention is proceeded with variously according as the patient has only a single wound or multiple wounds.

TREATMENT OF SINGLE WOUNDS

In the first instance, it is a question of a conservative intervention, done rapidly, according to the technic in general use today. But, whether after shock a primary suture should be done will depend on whether the surgeon will have time to make a satisfactory excision of the contused tissues, or the reconstructing of the normal anatomy of the region will prolong an operation which should, under the shock circumstances, be of short duration. In cases of excision, rather than perform in the traumatized area an atypical operation, able to leave behind it an infection, Picqué always carries out a dissection back to the healthy zone, immediately above the lesion, and amputates, after careful ligation of the principal vessels, under ethyl chlorid anesthesia. Having excised the traumatized tissue, the principal source of shock, transfusion is done if the blood pressure does not rise after a few hours. The donor might be prepared for the transfusion during the operating, if hemorrhage is so severe as to cast some doubt on the prognosis.

TREATMENT OF MULTIPLE WOUNDS

With multiple wounds, he distinguishes between the wounded presenting some predominant lesion and those who do not. In the former, the principal lesion should be operated on rapidly, while the accessory lesions, dissected and cleaned, are thoroughly disinfected with the expectation of doing a more complete operation later on. When the lesions are all in the same member, a careful analysis should be made to determine whether the intervention should be a conservative one or amputation. In the former case, intervention, necessarily, will be much more delicate, more laborious and prolonged than with excision. It requires the extraction of all projectiles, dissecting out rapidly all the tracts and antiseptizing provisionally. And then, good results may be obtained from the use of cytophylactics and antiseptics. While in the strict sense of the word, these do not kill all the bacteria, they will, at least, attenuate the virulence of the bacteria for a sufficient length of time to permit of an increase of the patient's resistance, and permit a more

thorough operation later. Blood transfusion does not, however, appear to be indicated in these cases.

SHOCK

Professor Quénu reported to the society Dr. Lacoste's experiences with 13 severely wounded soldiers, the injuries being limited to one member, who had all been treated by immediate amputation, within two to five hours, without a single fatality. These cases comprised 8 with a crushed leg; 2 with a crushed foot; 2 with crushed arm or elbow; and the hand had been torn off in one case. Thirteen amputations were done, 6 of the leg, 1 of the thigh, 2 of the knee, 1 Symes', 2 of the arm and 1 of the forearm. All these men were evacuated in good condition after a variable delay. All had had hemorrhage, but in spite of the anemia and bad general condition the operation was well supported. Therefore, Lacoste has come to agree with Quénu that a severe hemorrhage is not a contraindication to rapid amputation when this can be done early, and it is realized that there is no possible chance of conserving the member.

NATURE OF SHOCK

Lacoste's observations demonstrate anew the rarity of immediate shock even among cases with severe hemorrhages. Shock does not manifest itself until later, after several hours. Of course, its appearance is favored by the hemorrhage, and the existence of hemorrhagic shock cannot be denied, but usually it is of other origin. It is not a vasomotor inhibition, as has been claimed by some; still less a subacute infection, but a genuine chemical intoxication, of which it presents the entire set of symptoms. The intoxication takes its origin in the contused wounds involving large masses of muscle. Quénu admits that the crushing of a large mass of muscle liberates numerous protein substances, some of which are very toxic to the organism. The rapid disappearance of the shock following on the removal of the traumatic focus, favors the theory that the real cause of shock is located in that focus. On the other hand, the primary reunion, always aimed at and sometimes obtained, is good evidence that there had not been complete microbic evolution in the focus, and that the symptoms there must have been the result of chemical and not of bacterial intoxication.

Dr. Potherat's personal observations also confirm the rarity of immediate shock, as stated by Dr. Quénu. Having been in active service with an ambulance during a battle at the beginning of the war, there passed through his hands and those of his aids in the course of a few hours 600 recently wounded, none of whom presented shock phenomena, although a considerable number were severely wounded. Some of them had arm injuries of such extent that only a flesh or skin flap held the member attached; a cut of the scissors freed the member. Others had a leg crushed, with vast destruction of tissue; the blood flowed so abundantly that it could be collected in a basin placed on the litter carrying the wounded. But, in spite of all this, these wounded were not in a state of shock.

Marriages

LIEUT. WALTER EDWARD FOLEY, M. R. C., U. S. Army, Davenport, Iowa, now stationed at Camp Hancock, Ga., to Miss Ina Mary Gleason of South Haven, Mich., in Chicago, May 20.

LIEUT. STUART HOWARD BOWMAN, M. R. C., U. S. Army, Maquoketa, Iowa, now on duty at Camp Meade, Md., to Miss Bessie C. Moses of Auburn, N. Y., May 16.

LIEUT. JOHN VARDYMAN DILLMAN, M. R. C., U. S. Army, to Miss Luella Caroline Goodenough, both of Louisville, Ill., April 25.

LIEUT. L. J. SCHERMERHORN, M. R. C., U. S. Army, Stockton Calif., to Miss Eugenia Burns of San Jose, Calif., April 28.

LIEUT. JOHN FRANCIS BARTON, M. R. C., U. S. Army, to Miss Sandra Olson, both of Calumet, Mich., May 11.

P. A. SURG. REGINALD BUCHANAN HENRY, U. S. Navy, to Miss Jane Byrd Ruffin, at Norfolk, Va., April 30.

CHARLES MILLS HEROLD, Nitra, W. Va., to Miss Myra Boughton of Elyria, Ohio, May 7.

EUGENE W. MITCHELL, Salem, Ohio, to Miss Gladys Hildebrand of Louisville, Ky., May 15.

B. Q. DYSART to Miss Minnie B. Munnis, both of Granville, Ill., May 18.

Deaths

Major James Chew Johnston, M. R. C., U. S. Army, New York City; New York University, New York City, 1892; aged 48; a Fellow of the American Medical Association; a member of the American Dermatological Association; assistant professor of clinical medicine in Cornell University; pathologist to the New York Skin and Cancer Hospital; editor of the *Journal of Cutaneous and Genito-Urinary Diseases* from 1896 to 1902; dermatologist to the Cornell Dispensary; who suffered a general physical breakdown by reason of overwork, while on duty with a base hospital in France and was invalided home; died at his home, May 11.

Carl G. Viehe, Evansville, Ind.; New York Homeopathic Medical College, New York City, 1895; aged 48; a Fellow of the American Medical Association; surgeon to the Deaconess Hospital, Evansville; for several years president of the board of health of Evansville; while on his return from a trip to the Hawaiian Islands, was seized with an infection of the ear, followed by meningitis, from which he died in San Francisco, May 16. He was an officer of the Evansville City National Bank, and vice president of the O. H. Klammer Furniture Company.

Sylvester Demarest, Suffern, N. Y.; Bellevue Hospital Medical College, 1885; aged 56; a Fellow of the American Medical Association, and a member of the Erie Railroad Surgeons' Association; while driving in his automobile from Paterson, N. J., to Suffern, was struck by a train at a grade crossing at Glenrock, May 9, and died a few hours later from his injuries in the General Hospital, Paterson, N. J.

Stafford Potter Jones, Marinette, Wis.; Northwestern University Medical School, 1868; aged 74; a pioneer practitioner of Marinette; for many years health officer of the city; died at his home, May 11, from pernicious anemia. On April 23, the physicians of the city celebrated the fiftieth anniversary of Dr. Jones' practice in Marinette at St. Joseph's Hospital where the guest of honor was at that time a patient.

James Glasgow Heading, Port Royal, Pa.; College of Physicians and Surgeons, Baltimore, 1882; aged 58; a Fellow of the American Medical Association; director of the First National Bank of New Bloomfield, Pa.; who had been under treatment in a hospital in Philadelphia on account of disease of the kidney; died in that institution, May 13, after a surgical operation.

John Calvin Workman, Ordway, Colo.; Columbus (Ohio) Medical College, 1879; aged 62; formerly a member of the Colorado State Medical Society; at one time president of the Belmont County (Ohio) Medical Society, and president of the Crowley County Medical Society in 1914 and 1916; died in Rocky Ford, Colo., April 29, from nephritis.

Frederick Cecil Skinner, La Claire, Iowa; State University of Iowa, College of Homeopathic Medicine, 1898; aged 44; a member of the Iowa State Medical Society; who was in New York taking a special course in diseases of the eye, ear, nose and throat; died in the Post-Graduate Hospital, New York City, May 11, after a surgical operation.

Wylie Hamilton Forsythe, Louisville, Ky.; Hospital College of Medicine, Louisville, Ky., 1898; aged 44; formerly a Fellow of the American Medical Association; a member of the Kentucky State Medical Association; for several years a medical missionary in Korea; died at the home of his mother in Louisville, May 9, from sprue.

George W. Kugler, Hightstown, N. J.; Jefferson Medical College, 1885; aged 55; for many years a member of the medical staff of the Pennsylvania Railroad; died at his home, May 11, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent on account of ill health.

Martin Joseph Fleming, Brooklyn; College of Physicians and Surgeons in the City of New York, 1872; aged 71; formerly a Fellow of the American Medical Association; for several years a member of the visiting staff of Bellevue Hospital; a well known connoisseur of violins; died at his home, May 9, from influenza.

David Charles Davies, Pasadena, Calif.; Northwestern University, Medical School, Chicago, 1881; aged 84; formerly a member of the Medical Society of the State of California; at one time in the United States Consular service at Swanset, South Wales; died at his home, May 13.

Henry David Siegfried, Denver, Ill.; Keokuk (Iowa) Medical College, 1898; aged 46; formerly a Fellow of the American

Medical Association; while in an altercation with a tenant, May 3, was struck with a club, fracturing the skull, and died from his injuries a few hours later in Blessing Hospital, Quincy, Ill.

Roger Martin, Worsham, Va.; College of Physicians and Surgeons, Baltimore, 1887; aged 56; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia; who had been suffering for ten years from Landry's paralysis; died at Vulcan, Va., about May 6, from pneumonia.

A. A. Surg. Alan B. Cleborne, U. S. P. H. S., Savannah, Ga.; University of Virginia, Charlottesville, 1902; aged 39; formerly a member of the Medical Association of Georgia; on duty at the United States Marine Hospital, Savannah; died in that institution, May 13, while performing a surgical operation.

James Hardin Wood, Attalla, Ala.; Vanderbilt University, Nashville, Tenn., 1882; aged 60; a Fellow of the American Medical Association; president of the Etowah County Medical Society in 1914; local surgeon of the Southern and Alabama Great Southern railways; died at his home, in February.

Milan Daniel Baker, Norfolk, Neb.; University of Nebraska, College of Medicine, Omaha, 1903; aged 41; a member of the Nebraska State Medical Association; formerly coroner of Madison County; a veteran of the war with Spain; died at his home, April 27.

Horace S. Bowers, Neosho, Mo.; Kansas City (Mo.) Medical College, 1895; aged 51; a member of the Missouri State Medical Association and for many years secretary of the Newton County Medical Society; died at his home, February 23, from cerebral hemorrhage.

William Constantine Goodell, Philadelphia, University of Pennsylvania, Philadelphia, 1895; aged 55; a member of the Medical Society of the State of Pennsylvania; a specialist in obstetrics; died in the Orthopedic Hospital, Philadelphia, May 15, from heart disease.

Arthur Z. Barfield, Westhoff, Texas; Baylor University, Dallas, Texas, 1910; aged 38; formerly a Fellow of the American Medical Association; a member of the State Medical Association of Texas; died in a sanatorium at Cuero, May 8, from pneumonia.

Henry Edward Goddard, Brockton, Mass.; Dartmouth Medical School, Hanover, N. H., 1897; aged 65; a Fellow of the American Medical Association; owner and director of the Goodard Hospital, Brockton; died in that institution, May 12, from pneumonia.

Charles E. Gaines, Covington, Ohio; University of Louisville, Ky., 1894; aged 58; a member of the Ohio State Medical Association; for two terms coroner of Miami County; died in Grant Hospital, Columbus, Ohio, May 11, from diabetes.

George H. Morrill, St. Louis; Homeopathic Hospital College, Cleveland, 1861; aged 76; for many years a member of the staff of the St. Louis Children's Hospital; died at his home, April 26, from septicemia due to an infection of the neck.

Eugene M. Bishop, Wilkesville, Ohio; Starling Medical College, Columbus, Ohio, 1900; aged 42; a member of the Ohio State Medical Association; was found dead from heart disease, May 9, on the road between Hawk and Wilkesville.

Everett Amos Graves, Coatesville, Pa.; University of Pennsylvania, 1900; aged 42; a Fellow of the American Medical Association; visiting physician to the Coatesville Hospital; died at his home, April 28, from valvular heart disease.

Jean Isabelle Best Moore, Washington, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1901; aged 41; formerly a medical missionary in Cairo, Egypt; died at the Washington City Hospital, April 7, from pneumonia.

Orestes Morton Brown, Everett, Mass.; University of Vermont, Burlington, 1883; aged 62; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; died at his home, May 13.

William G. Drake, Bolivar, Mo.; Washington University, St. Louis, 1877; aged 73; a member of the Missouri State Medical Association; a veteran of the Civil War; died at his home, May 19, from chronic interstitial nephritis.

William Henry Hoag, Manhasset, N. Y.; College of Physicians and Surgeons in the City of New York, 1865; aged 78; major-surgeon of the 134th New York Volunteer Infantry during the Civil War; died at his home, May 13.

Joseph Tatum White, Freeport, Ill.; Missouri Medical College, St. Louis, 1888; aged 51; a Fellow of the American

Medical Association, and president of the Stephenson County Medical Society; died at his home, May 14, from lobar pneumonia.

William Selman Jenkins, Allentown, Pa.; Jefferson Medical College, 1890; aged 56; a Fellow of the American Medical Association; while on a fishing trip to Pocono Lake, died suddenly, May 11, from acute gastritis.

Bernard Samuel Jacobson, Baltimore; University of Maryland, Baltimore, 1916; aged 24; resident physician at the Hebrew Hospital and Asylum, Baltimore; died, May 16, from lymphosarcoma of the mediastinum.

Ephraim Morrison, Newton, N. J.; Bellevue Hospital Medical College, 1875; aged 65; a Fellow of the American Medical Association; president of the Merchants' National Bank, Newton; died at his home, May 11.

Wallace R. Flower, Ashtabula, Ohio; Western Reserve University, Medical Department, Cleveland, 1875; aged 66; died in St. Vincent's Hospital, Cleveland, about May 2, from carcinoma of liver and stomach.

William Aaron Gibson Agricola, Glascock, Ga.; University of Georgia, Augusta, 1874; aged 66; formerly a member of the Georgia Legislature; died in Sandersville, Ga., March 27, from disease of the kidney.

William Percy Gibbes, Frogmore, S. C.; Medical College of the State of South Carolina, Charleston, 1893; aged 64; formerly a member of the South Carolina Medical Association; died at his home, May 14.

William T. Speaker, Manson, Iowa; Northwestern University Medical School, Chicago, 1878; aged 66; a Fellow of the American Medical Association; died at his home, May 2, from carcinoma of the viscera.

Benjamin Franklin Wilson, Carbon, Texas (license, Judicial District Board, Texas, 1893); aged 51; a practitioner since 1891; a Fellow of the American Medical Association; died at his home, April 2.

William N. Porteous, Minneapolis; McGill University, Montreal, 1884; L.R.C.P. (Edin.), 1884; aged 62; a specialist on diseases of the nose and throat; died in Eitel Hospital, Minneapolis, May 15.

William L. Wallace, Kingstree, S. C.; Baltimore Medical College, 1883; aged 84; formerly a member of the South Carolina Medical Association; a Confederate veteran; died at his home, May 13.

Robert Hamilton Devine, Wahpeton, N. D.; Jefferson Medical College, 1897; aged 55; a member of the North Dakota State Medical Association; died at his home, May 4, from pneumonia.

Prather Buchanan Curlin, Hickman, Ky.; University of Louisville, Ky., 1902; aged 38; a member of the Kentucky State Medical Association; died at his home, May 18, from pneumonia.

Jacob A. Schneider, Concordia, Mo.; University Medical College, Kansas City, Mo., 1894; aged 62; died in the Research Hospital, Kansas City, April 4, from diabetes mellitus.

John A. Hutson, Bremen, Ga.; Atlanta (Ga.) Medical College, 1892; aged 54; formerly a member of the Medical Association of Georgia; died at his home, May 1, from heart disease.

Everett W. Gee, Richmond, Va.; Medical College of Virginia, Richmond, 1889; aged 52; a Fellow of the American Medical Association; died at his home, May 6, from heart disease.

Edgar B. Jones, Columbus, Ohio; College of Physicians and Surgeons, Baltimore, 1881; aged 62; formerly a Fellow of the American Medical Association; died at his home, May 3.

John Hardy Page, Baker, Ore.; Berkshire Medical College, Pittsfield, Mass., 1865; aged 80; a veteran of the Civil War; died at the home of a friend, April 30, from heart disease.

John Thomas Whitlock, Mount Vernon, Ill.; Missouri Medical College, St. Louis, 1890; aged 57; a Fellow of the American Medical Association; died at his home, April 30.

George G. Mallett, Caldwell, Ohio (license, Ohio, 1896); aged 55; a member of the Ohio State Medical Association; died at his home, April 26, from organic heart disease.

William Wakefield, Lake Benton, Minn.; University of Michigan, Ann Arbor, 1882; aged 72; was instantly killed, April 28, by being struck by a train at Lake Benton.

James Hickerson, Ronda, N. C.; Jefferson Medical College, 1856; aged 86; surgeon of U. S. Volunteers during the Civil War; died at his home, April 6, from senile debility.

Irene Robinson Pratt, Chicago; University of Illinois, College of Physicians and Surgeons, Chicago, 1901; aged 54; died at her home, May 15, following an operation.

Louis Frederick Frank, Milwaukee; New York University, New York City, 1879; aged 61; president of the Wisconsin Conservatory of Music; died at his home, May 12.

John Wesley Young, Richmond, Va. (license, Oklahoma, 1910); aged 53; formerly a practitioner of Lawton, Okla.; died in Richmond, March 6, from tuberculosis.

Solon Snethen Duggan, Eagleville, Tenn.; Vanderbilt University, Medical Department, Nashville, Tenn., 1884; aged 69; died at his home, May 5, from arteriosclerosis.

Rufus Lafayette Grogan, Murray, Ky.; Medical Department of the University of Tennessee, Nashville, 1895; aged 81; died at his home, May 4, from senile debility.

William Townsend Philips, Library, Pa.; University of Michigan, Medical School, Ann Arbor, 1884; aged 75; veteran of the Civil War; died at his home, May 2.

Jesse Langtry Black, Pittsburgh; Jefferson Medical College, Philadelphia, 1896; aged 51; a Fellow of the American Medical Association; died at his home, May 2.

Daniel W. Mudge, Leslie, Mich.; Hahnemann Medical College and Hospital, Chicago, 1881; aged 67; died at his home, April 29, from sarcoma of the intestines.

Eliab W. Capron, Lotus, Fla.; Albany (N. Y.) Medical College, 1855; aged 91; formerly a practitioner of Lansingburg, N. Y.; died at his home, May 2.

John A. Walls, Richmond, Ind.; Physio-Medical College of Indiana, Indianapolis, 1884; aged 69; died at his home, May 12, from cerebral hemorrhage.

Alfred William Linden Jackson, New York City; New York University, New York City, 1897; aged 56; died at his home, May 12, from septicemia.

Truman C. Campbell, Fairmont, Okla.; Beaumont Hospital Medical College, St. Louis, 1891; aged 67; died near Eva, Okla., April 12, from paralysis.

William J. McAlpin, Gurdon, Ark. (license, Arkansas, 1903); aged 82; a veteran of the Civil War; died at his home, April 21, from pneumonia.

Joseph Oliver Greenlaw, Artesia, N. M.; University of Nashville, Tenn., 1904; aged 44; died in New Orleans, February 27, from empyema.

Gilbert Daniel Furbee, Terra Alta, W. Va.; Maryland Medical College, Baltimore, 1905; aged 38; died at his home, May 3, from nephritis.

Jens Paulus Immanuel Pfeiffer, Bedford, Mass. (license, Massachusetts, years of practice); aged 76; died at his home, May 3, from paralysis.

Amasa Frank Lombard, Salt Lake City; University of Vermont College of Medicine, Burlington, 1885; aged 64; died at his home, May 1.

Aubrey J. Richardson, Pasadena, Calif.; Hahnemann Medical College and Hospital, Philadelphia, 1882; aged 58; died at his home, May 5.

Ion Marion Pfouts, Rittman, Ohio; Ohio Medical University, Columbus, 1898; aged 43; died at his home, April 23, from pneumonia.

James R. Claunch, Jonesboro, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 85; died, April 3, from paralysis.

Lynn B. Moore, Cotton Plant, Ark.; University of Louisville, Ky., 1881; died at his home, April 24, from cerebral hemorrhage.

John Fretts Detweiler, Uniontown, Pa.; Rush Medical College, Chicago, 1891; aged 57; died at his home, May 2, from pneumonia.

William H. Stover, Walkerville, Mich. (license, Ohio, 1896); aged 77; a veteran of the Civil War; died at his home, April 27.

C. E. Taylor, Cochran, Ga.; Louisville (Ky.) Medical College, 1876; aged 66; also a druggist; died at his home, May 8.

Francis Naulteus, Hastings, Neb.; University of Louisville (Ky.) Medical Department, 1894; died at his home, May 8.

Henry J. Parker, Clayton, Ill.; Missouri Medical College, St. Louis, 1870; aged 72; died at his home, May 6.

Freeman E. Wilson, Hanover, Mich.; University of Michigan, Ann Arbor, 1900; died, about March, 1918.

James H. McDonald, Puyallup, Wash.; American Medical College, St. Louis, 1877; aged 77; died, April 28.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MISBRANDED NOSTRUMS

Dr. Swan's Liver & Kidney Remedy.—The National Remedy Company of New York City manufactured a nostrum called "Dr. Swan's Liver & Kidney Remedy." This was analyzed by the federal chemists who reported that it contained about 5 per cent. alcohol, over 32 per cent. sugar, more than 8 per cent. glycerin with smaller amounts of sodium salicylate, strychnin and some laxative plant drug, together with indications of juniper. It was sold under claims that led the purchaser to believe that it was an effective remedy for diseases arising from a disordered condition of the liver, stomach and bowels, for dyspepsia, female diseases and malaria and for the cure of diseases of the kidneys, stone in the bladder, etc. The federal authorities held that these claims were recklessly and wantonly false and fraudulent. The company pleaded guilty and was fined \$25.—[*Notice of Judgment No. 4754.*]

Stuart's Calcium Wafers.—F. A. Stuart Co., Inc., Marshall, Mich., shipped in interstate commerce quantities of a nostrum labeled "Stuart's Calcium Wafers." Some of the claims made for the product were:

- "... the preparation is perfectly harmless."
- "Children may take it with freedom and their delicate organisms thrive with its use."
- "Containing no poisonous ingredients."
- "A perfectly safe remedy."
- "It can be safely used by any person, man, woman or child with the assurance that no possible injury can result from its use."

These claims with others were declared false and misleading, in that Stuart's Calcium Wafers were not harmless but "did contain a poisonous ingredient, to wit, strychnin." In addition, certain curative claims were made for the stuff, among which were:

- "For Eruptions Scrofula . . . Constipation Humor Liver troubles . . . And all disorders and symptoms arising from impure blood."
- "The most powerful blood purifier known."
- "Skin diseases are relieved when the blood is charged with this great eradicator."
- "Will infuse renewed energy and strength into the exhausted nerves."
- "Containing in concentrated form all the elements to repair nerve tissue and depleted blood."

These claims and others of similar tenor were declared by the federal authorities false and fraudulent in that "Stuart's Calcium Wafers" were "incapable of producing the curative and therapeutic effects claimed therefor." As no one appeared to claim the property, the court entered judgment of condemnation and forfeiture and ordered that it should be destroyed.—[*Notices of Judgment Nos. 4773, 4774, 4775 and 4782.*]

Turpentine Man's, or Tydings' Remedy.—Charles Tydings and Edith Tydings, copartners who did business under the firm name of Charles Tydings & Co., Ocala, Fla., shipped in interstate commerce a quantity of "Turpentine Man's or Tydings' Remedy." This preparation, according to the federal chemists, was a glucose sirup containing potassium iodid, alcohol, and traces of salicylic acid, phosphates, calcium and an alkaloid. The claims made that it would eradicate cancerous growths and cure salt rheum, catarrh, female diseases, etc., were declared false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. Misbranding was further alleged because the quantity or proportion of the alcohol in the nostrum was not declared on the label. The concern pleaded guilty and was fined \$5 and costs.—[*Notice of Judgment No. 4832.*]

Henry's Red Gum Compound.—This preparation was made by Henry L. McNulty, Norwood, N. Y. Government chemists reported that, in addition to large amounts of sugar and glycerin, the preparation also contained alcohol, chloroform and heroin. It was declared misbranded, first, because it failed to bear a statement on the label of the carton of the amounts of chloroform, heroin or alcohol in it; second, because the name was false and misleading in that it indicated to purchasers that the principal and active ingredient was red gum, a harmless medicinal agent, when in fact it did not contain red gum as its principal ingredient, but did contain heroin and chloroform, dangerous or habit-forming drugs. In addition, the government charged that the therapeutic claims made to the effect that it would cure all throat and lung diseases, croup, bronchitis, pneumonia and asthma were recklessly and wantonly false and fraudulent. McNulty pleaded guilty and was fined \$25.—[*Notice of Judgment No. 4831.*]

Athlophoros.—This product of the Athlophoros Co. was analyzed by government chemists and reported to consist essentially of a solution of glycerin, sodium salicylate, oil of cinnamon and water. The preparation was sold under the claim that it was an effective remedy for sciatica, gout and sick headache, "cleansing the liver and kidneys from irritating substances," that it was a cure for neuralgia and a specific for sick headache. These claims the government held were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. The company fought the case and attempted to prove by means of testimonials and "expert witnesses" that their claims were not fraudulent or false. The judge in summing up the case pointed out to the jury that as the concern was charged with making "false and fraudulent" claims, it was necessary not only that the government prove that "the so-called remedy is absolutely worthless as to its curative or therapeutic effect upon the ailments for which it is claimed" but also it must satisfy the jury beyond a reasonable doubt that the company had made these statements knowingly with a "wrongful motive for the purpose of deception." Evidently the government did both as the jury returned a verdict of guilty. The concern was fined \$25 and costs.—[*Notice of Judgment No. 4834.*]

Dr. Thacher's Cholera Mixture and Dr. Thacher's Amber Injection.—These preparations were sold by the Thacher Medicine Co. of Chattanooga. The "Cholera Mixture" was found to contain alcohol and morphin, in addition to a laxative drug, sugar and aromatics. It was declared misbranded because the correct amount of alcohol present was not stated on the label and it was falsely and fraudulently claimed to be an effective remedy for all cases of cholera, diarrhea, dysentery, etc., and as a remedy for ailments of teething children.

The "Amber Injection" was found to contain alcohol, opium and zinc sulphate to which acetic acid had been added. Apparently, the composition of this stuff varied, as examination of two samples showed different results. In neither case did the label bear the statement regarding the quantity or proportion of opium and alcohol as the law requires. Furthermore, it was falsely and fraudulently claimed that the stuff was a cure for gonorrhea, gleet, spermatorrhea, whites, etc. The company was fined \$75 and costs.—[*Notice of Judgment No. 4838.*]

Abbott Bros. Rheumatic Remedy.—This nostrum sold by Abbott Bros. Co., Chicago, contained 24 per cent. alcohol with 5 grains potassium iodid to each teaspoonful together with extracts of drugs such as sarsaparilla and dandelion. It was sold under the false and fraudulent claims that it was an effective remedy for rheumatism of every form and stage, for sciatica, for all "uric acid troubles" and for eczema and as a cure for sciatica, gonorrheal rheumatism, inflammatory rheumatism and Bright's disease. The jury, after due deliberation, declared the concern guilty and a fine of \$200 and costs was imposed.—[*Notice of Judgment No. 4842.*]

Correspondence

"VISUAL FACTORS IN EQUILIBRATION, ESPECIALLY AVIATION"

To the Editor:—In THE JOURNAL, April 13, 1918, in an editorial entitled "The Bárány Tests in the Examination of Aviators," you apparently set the seal of "editorial" approval to what seems to be a misrepresentation of the object and value of the Bárány tests in the examination of prospective aviators for the United States Army. The editorial was apparently based on conclusions drawn from several contributions which have recently appeared in medical literature; two of them, one by Dr. Fridenberg and the other by Surgeons Parsons and Segar, appeared in THE JOURNAL, April 6 and 13, respectively.

The portion of Fridenberg's article which you quote as authority, "It has been generally assumed that a normal labyrinth is sine qua non and the only essential for equilibration," is most unfortunate—unfortunate, because untrue. Through discussions with medical men and the perusal of literature generally, I am not aware that any such general assumption exists. Quite the contrary, all writers on and men familiar with the subject of equilibration distinctly emphasize the fact that it requires a harmonious cooperation of several special senses for the maintenance of normal equilibrium, namely, that of the visual sense, muscle sense and the kinetic-static or so-called vestibular sense. Thus, normal equilibration depends on a tripod, as it were; but whereas with the visual and the muscle-splanchnic sense equilibration is only a collateral function, the kinetic-static sense differs from them in that equilibration and orientation are its sole and only functions. The immediate effect from the loss of the visual sense is blindness and not loss of equilibration; similarly, a disturbance in the function of the muscle and splanchnic sense does not produce loss of equilibration per se, whereas, on the other hand, an affection of the kinetic-static mechanism, no matter how slight—a point of congestion in the labyrinth perhaps the size of the head of a pin—is immediately made manifest by gross equilibratory disturbances. These are facts that every observing physician has seen for himself. It is not assuming too much, therefore, to say that the kinetic-static or internal ear mechanism is the chief but by no means the sole organ of equilibration.

It is self evident that in order to guide an aeroplane safely one needs a perfect equilibratory equipment, that is, a perfect internal ear mechanism and a normal visual mechanism, as well as an unimpaired muscle and tactile sense. To say that the medical advisors of the U. S. Army are not aware of a proposition so obvious as this is to credit them with stupidity. All one need do is to refer to the examination blanks giving the outlines of the physical requirements for aviators in detail to see that they are perfectly aware of the fact that a blind man or one with poor visual or color sense acuity is not good material out of which aviators are made. The fact that careful and detailed examination of the eyes as well as of other special senses is undertaken as a matter of routine, with this addition, that in view of the importance of the internal ear and its intracranial pathways in the function of equilibration, most careful tests are performed in order to determine the integrity of this mechanism. The examination of this special sense is not made at the expense of any other special sense; it is simply an addition with the view of assuring the prospective aviator of a most perfect physical equipment for his work.

You also quote as "further evidence" the findings of Surgeons Parsons and Segar, namely, that in many cases the best ratings as aviators were obtained by men who had made the worst showing under the Bárány tests. In their contribution they have divided the fliers into three classes, "good," "average" and "poor," and have shown that the average nystagmus response of the good fliers was 24.2 seconds, whereas the average response of the poor fliers was 24.8 seconds. In other words, the poor fliers had on an average 0.6 second nystagmus longer than the good fliers. Assuming

this to be true, it argues nothing against the value of the turning chair in the examination of fliers for the simple reason that in their analysis there is not a single instance of a good flier with no nystagmus or poor nystagmus. The fact that some individuals with a normal nystagmus will not make good aviators is conformable to a very well known fact that many persons with nimble and perfectly jointed fingers and arms will not make excellent piano players. The reason is simple: In order to become a good piano player, one needs other qualifications in addition to nimble fingers; similarly, in order to become a good flier, one needs other qualifications in addition to a perfect equilibratory mechanism. Supposing one were to set out to train a hundred persons to become piano players or violinists, one would at least make certain when selecting the candidates that none with "stiff joints" entered the group, remembering all the time that not all perfect-jointed persons would turn out to be good musicians. The position of the Army board is very similar: In choosing candidates for its flying personnel, it wants to make certain that they are at least free from any apparent physical defects that would greatly handicap them in their work, remembering at the same time that many persons with physically perfect attributes may lack that additional something which utilizes good physical material and shapes it into the perfect product. The facts adduced, therefore, from the contribution of Parsons and Segar simply endorse the stand the Army is taking, namely, that no good fliers are likely to be produced from men who have a poor or impaired equilibratory mechanism.

You refer to the statement of Surgeon H. Graeme Anderson of the Royal Navy in which he says:

It has been assumed that sound equilibration and muscle sense is essential to flying, so that the aviator would be conscious of his position in space, realize at once any deviations therefrom, and correct these quickly. But in fog it has been found almost impossible to detect any deviation during flight. Time and again aviators coming out of the dark clouds or fog have found themselves flying one wing down, and it has been recorded that some have flown upside down without knowing it. Thus it is obvious that most of the impressions which control balance in flying come through the eyes.

It does not seem to be quite clear what he means when he says "but in fog it has been almost impossible to detect any deviation during flight." Does he mean deviation of the aeroplane from its true level? How, then, was this balancing accomplished? Surely not through the sense of sight: the eyes are of not much service in a fog. It must be, then, by means of the ears and muscle sense that equilibrium was maintained. The statement that it has been recorded that some have flown upside down without knowing it cannot be accepted in all seriousness. A captain and a major in the Flying Corps stationed at Essington, Philadelphia—pioneers in flying with the U. S. Army—definitely stated to me that such a thing is impossible; that when looping the loop or when performing any of the other aerial evolutions it is absolutely inconceivable and in their own experience impossible for a flier not to know when he is upside down. The surgeon's conclusions, then, that "it is obvious that most of the impressions which control balance in flying come through the eyes," are by no means so obvious.

In the experiment which Surgeon Anderson had carried out himself when he was taken up in an aeroplane blindfolded, he states that he was able to describe the position in space at various times, that is, he was able to do this during the climbing and flying with the right wing and with the first spiral downward to the right. He was blindfolded all the time. How could he do it unless the internal ear mechanism came to his aid? Surely any special sense that can tell the aviator this much is a definite asset to him, and the Medical Corps of the Aviation Service is not far amiss when it attempts to make certain that such a mechanism is normal before accepting a candidate for the Flying Corps. True, Surgeon Anderson in this experiment also states that he was not able to tell all the time all possible evolutions of the plane. We do not know if his vestibular mechanism is normal, as he was not examined in the turning chair: but assuming even that he is normal, it is simply in accord with our general knowledge that the eyes do play a rôle in equilibration and orientation, and no one realizes this better than

the personnel in charge of the Aviation Corps, as is evidenced by the exhaustive and thorough eye examination to which every applicant of the Flying Corps is now and always has been subjected.

Summing up, the status of the Bárány tests from the standpoint of the aviator amounts to this: The internal ear and its intracranial pathways have for their sole function equilibration and orientation; therefore, this mechanism is a most important unit in the entire "equilibrium complex" of an individual. Since perfect equilibratory function is so important to the aviator, common prudence would suggest that each one of the mechanisms concerned in this function be carefully examined. The internal ear mechanism receives particular attention since it is peculiarly adapted for sensing motion and secondarily, position. It is examined in the turning chair, in which different portions of the mechanism are tested. We start with the assumption that a normal mechanism will produce normal responses. These normal responses are (1) nystagmus of a certain type and duration, and (2) vertigo of a certain duration which is made manifest to the examiner objectively by past-pointing and falling. When turning in the chair fails to produce normal nystagmus, vertigo, past-pointing and falling, it is assumed that there must be a definite reason for it. It is not considered that "it just happened so," but is looked on as due to an impairment of the inner ear or of its intracranial pathways. Such a person would therefore start with a handicap and is disqualified.

The otologists of this country have rendered our government a distinct service by pointing out the importance of the vestibular apparatus in aviation. The ability to simplify and standardize the tests, so that large numbers of applicants can be easily examined, added largely to the feasibility of such an examination and should redound to their credit. It is to be regretted, therefore, that doubt and mistrust should be sown throughout the profession at large solely because of a lack of a thorough understanding of the subject.

LEWIS FISHER, M.D., Philadelphia.



To the Editor:—In his article on "Visual Factors in Equilibration, Especially Aviation" (THE JOURNAL, April 6, 1918, p. 991), it is apparent that Dr. Fridenberg has been under a misapprehension as to the character and scope of the physical examination of applicants for flying service. Let me first recommend that he secure Blank 609, A. G. O., which is the physical examination blank for these applicants. He will at once be struck by the fact that of the thirty-two items of this examination, the first twelve are solely concerned with a complete examination of the eye. On the other hand, he will be equally struck with the fact that only one item (No. 20) deals in any way with the internal ear balance mechanism. This, I think, will give him a different attitude toward the ideas of those concerned in the examination of applicants for this service, and will go far to reshape the impulse which prompted him to say, "It has generally been assumed that a normal labyrinth is the sine qua non and the only essential for equilibration."

It will also assure him that as far as concerns his views expressed immediately following this quotation, they are entirely in accord with the views of the Chief Surgeon of the Aviation Section, namely, "this would be a very one-sided point of view, and that there exist other important factors of equilibrium which should not be overlooked." His statement that the "visual factors particularly have been overlooked" is only indicative of his having been misinformed as to the scope of the examination. The same comment applies to the sentence immediately following, in which he warns against neglecting "other factors in balance and vertigo," etc.

In stating that the "labyrinthine tests refer, naturally, to rotational vertigo alone," and then proceeding to call attention to the fallacy of the "view that all vertigo is rotational and therefore labyrinthine," he evidences a most unfortunate misapprehension of the otologic concept underlying the vestibular test. This is so simple that its soundness seems difficult to question. It is conceived that the individual selected to undergo special training as an aviator should be determined to possess normal physical equipment; his bones and

muscles, cardiovascular, respiratory and gastro-intestinal apparatus should be normal; his intracranial and special sense equipment should be normal. One of the special senses to be subjected to scrutiny in this examination is the vestibular sense, the sole special function of which is perception of motion. We are in possession of information concerning the normal responses to tests of this special sense, and exactly so far as we are able to conduct such tests should we see to it that this special sense of motion perception should show as nearly a normal acuity as the special sense of light perception, which is required to show 20/20 visual acuity.

One of the means of ascertaining that normal acuity of vestibular perception is present is the rotating chair. In subjecting this motion-perceiving special sense to its normal stimulus, namely, motion, it was determined to be most practical to apply this stimulus by means of a rotating chair, as the application of motion in a linear direction, for the period of time and in the intensity necessary to elicit certain responses to a standard stimulus, would necessitate apparatus entirely too bulky to be susceptible of practical application under ordinary conditions of office examination. By making use of a rotational motion stimulus instead of a linear motion stimulus, it was possible to work out a standard means of applying a motion stimulus in certain definite quality and quantity in a manner, and by means of an apparatus, easily handled in an office. For this reason, the subject of the tests of the vestibular apparatus is made to experience rotational vertigo. The definition of this vertigo is "the sensing of motion not in accord with fact." In other words, stimulation of the end-organ of this apparatus is set up, and lasts for a certain standard length of time in the normal; during the continuation of the stimulus, if the sensing apparatus is intact, the subjective appreciation of the stimulus continues; since the subjective appreciation in the normal is both quantitative and qualitative, and since the form of stimulus has been rotation, the consequent subjective perception is a rotational motion, or is rotational vertigo.

Dr. Yandell Henderson, professor of physiology at Yale University, described to me a similar test of his vestibular apparatus which he underwent unexpectedly during an inspection trip in a deep mine in Yorkshire, England, in company with Professor Haldane and some others. They were subjected to a very rapid ascent, in an elevator, vertically upward for a considerable period of time, after which he experienced a disquietingly convincing sensation of falling vertically downward; whereas in reality his vertically upward trip was continuing, but at a markedly slower rate of speed, as he learned afterward to his relief. This is exactly the kind of test to which a man is subjected in the rotating chairs, except that the character of motion stimulating the vestibular end-organs was in this instance linear motion rather than rotational motion. Just as following the rotation to the right, during the period of the consequent stimulus of the vestibular apparatus, the subject experiences the sensation of motion of the same character, namely, rotational, but in the reverse direction, or to the left, so Dr. Henderson experienced, after an intense stimulus of linear motion in a vertical direction upward, the natural reactionary sensation of linear motion rather than rotational, and in the opposite direction, or downward. I hope I have made it clear that the only object of testing a man in a rotating chair is to determine the degree of accuracy of his perception of motion, both qualitative and quantitative, and that the matter of inducing rotational vertigo is purely incidental to the use of the rotating chair, as it constitutes the most practical and convenient form of motion-producing apparatus for tests of this kind.

In referring to labyrinthine diseases, Dr. Fridenberg gives evidence of having failed to take into account that type of disease which is far more common and of more practical importance in connection with the subject in hand than the suppurative or infectious type of labyrinthitis, namely, the toxic type. I need only to refer, in this connection, to a few of the case reports which we have of applicants determined to possess normal vestibular acuity of motion perception at the time of their admission into the service, and who later on developed mumps, with secondary specific eighth nerve

involvement, after the subsidence of which they showed a marked impairment of their acuity of motion perception.

I do not understand exactly how Dr. Fridenberg feels so certain that the possessors of dead labyrinths are not apt to try to fly, unless it be on the *a priori* grounds that the function abrogated in them is of considerable importance in flying. If I am correct in conceiving that he senses this importance of this function, it only goes to show that we, after all, are in accord in regard to the matter of appreciating the importance of the vestibular function to the aviator. I feel, indeed, that we are, because of what he proceeds to say, "In the first place, such defective labyrinths would have been detected in the course of instruction over the aviation field, or, at least, during the first trial flights." This statement could not have been made by a man who was not thoroughly in accord with the belief that the labyrinthine function is of great importance to the flier.

It is gratifying to note that his ideas concerning the possibility of explaining falls in flying machines coincide with those of the Chief Surgeon's Staff, as proved by his mention of other factors, such as the "effects of altitude and temperature on normal but susceptible organisms . . . and including, besides, cardiac syncope, embarrassed respiration or circulation, and panic fear." So much importance is laid on the possibility of these factors impairing the efficiency of the aviator in flying, that special cardiovascular, psychologic and physiologic departments have been established in the Medical Research Laboratory for the study of conditions which may constitute underlying factors in the development of these forms of danger to the flier.

In further mentioning the details of conditions which may give rise to vertigo and consequent loss of control solely attributable to visual perception—"viewing objects in rapid or irregular motion, such as storm driven clouds, waves, masses of water tumbling over a fall or pouring through a flume . . . irregular illumination and motion of objects alone . . . the common or field variety of 'movie' headache and dizziness . . . a swinging mirror," he again evidences being in complete accord with the views of the chief surgeon and his staff in perceiving the possibility of the aviator suffering disaster attributable to misinformation from visual illusions or unusual stimulations. In this connection, he has laid himself open to the charge of being inconsistent, however, since his article intones the importance and reliability of visual information concerning orientation of oneself in the air without sounding a note of warning against the ever present possibility of being brought to disaster by visual illusion or misinformation, and in the same article he states that "normal labyrinths merely supply the possibility of vertigo and false sensations of direction and space." It is equally true of all the special senses that sensory illusion and misinformation are always possibilities, and cognizance of the conditions apt to result in such illusions and misinformations should be very carefully taken in the effort to safeguard the aviator as fully as possible. It is manifestly as absurd to say "normal labyrinths merely supply the possibility of vertigo [which is only the sensing of motion not in accord with fact] and false sensations of direction and space," and that "one might even venture the paradox that the safest aviators would be those with dead labyrinths," as it would be to call attention to what he has just mentioned previous to this statement of the possibility of normal eyes being the medium of bringing to their possessor illusions or misinformation only, and to proceed with the observation that therefore the safest aviators would be those lacking eyes. It is unnecessary for him to assure me that this is not his thought, and I beg him to forgive me for even alluding to it; but I felt that it was worthy of mention in passing, since he had opened the subject, as quoted.

He asks the question, "Just how much of a handicap is a dead labyrinth for accurate and delicate balancing?"

I am fortunately in position to answer that question in his way: A series of examinations of the functional activities of the labyrinths of whirling dancers, head balancers, equilibrists, tight and slack wire performers, and various other circus and vaudeville stunt performers has

been made by numerous observers, and findings in these examinations are on record in the Medical Research Laboratory. In each case, these artists were found to be possessed of full normal vestibular acuity. It seems unnecessary to attempt to adduce arguments in favor of the desirability of the aviator, the whirling dancer, the equilibrist, and the like, possessing at least approximately normal sense organ equipment of the four special senses cooperating to furnish man with information concerning motion. It is difficult to decide which, if any, could be dispensed with without leaving him less adequately equipped to indulge in such delicate and accurate motor coordinations as are necessary to the successful execution of flying, balancing stunts and whirling dances.

I feel very strongly that Dr. Fridenberg's statement that "the body position is brought into correspondence with a *visually* sensed standard, in this case a vertical line," and that "if the standard chosen is false, if the line is not exactly vertical, error will be manifested," is not entirely correct. It is my profound conviction, and I find that it is also the conviction of others with whom I have discussed this point, that the correlation of all incoming information in the sensory and psychic sensoria of normal man would result in the discovery that the vertical visual sense standard was false, through the intermediation of deep sensibility sensing the direction of the pull of gravity, which would result in the normal individual being made aware of the falsity of the visually selected vertical standard by reason of its failure to be in accord with the deep sensibility information as to the direction of the pull of gravity, which is always vertically downward; and that subconscious correction would be made and error thus not be manifested, but avoided.

Among the subjects occupying the special attention of the Medical Research Board, in connection with the study of the physical welfare of the flier, is the special sense of deep sensibility, and the associated voluntary and involuntary motor coordinations and control of the body in accord with afferent impulses from this tract. Recognition was accorded long ago to the fact that this sense plays an important part in the execution of body movements and controls incidental to maintaining balance. In observing that "these factors . . . have been almost entirely neglected in favor of a one sided and exclusive attribution to the labyrinth of balance control functions," it is again apparent that we are in accord concerning our conception of the importance of things in general, and that Dr. Fridenberg is again the victim of unfortunate misinformation as to the scope of the work of the medical examiner of the Aviation Service (compare Tests 19 and 21, Blank 609, A. G. O.).

Particularly apropos is his quotation of the letter from an American aviator in France, describing his own sensations in flight when unable to see, and dependent on his labyrinthine balance sense:

While in the air at about 700 meters, some low hanging clouds blew down, enveloping me completely, and likewise losing me completely. For a half hour I wandered around vainly trying to get my bearings. . . . When you get into very thick clouds, it is impossible to tell whether you are in *ligne de vol*, that is, flying level, for there is no horizon visible to gage by. Frequently, an aviator will come out into clear space and find himself on the verge of a wing slip.

I cannot conceive any more convincing proof of the practical value of the service of the labyrinth and deep sensibility tracts than that contained in this quotation. This man was certainly deprived of any useful information coming along his visual tract during the time that he was utterly unable to see anything on account of the cloud. Yet, for half an hour he was able to wander around without meeting disaster, during which period he was thrown solely on the guidance of his balance senses. He certainly could not see, taste, smell or hear, or by touch feel where he was or in what position with relation to the pull of gravity he was, yet for half an hour some special sense succeeded in guiding him so safely that he avoided disaster. This seems to be eloquent testimony as to the practical value of normal balance senses.

Once more I find that Dr. Fridenberg and I are in accord concerning ideas as to visual requirements in his last paragraph. The question of hypersensitiveness to bright light,

sharpness of the sense of motion, especially at the periphery of the retina, photometric variations within normal limits, and a variety of other special examinations of the visual function are in process of study, and standards for the aviation service are being developed at the Medical Research Laboratory.

EUGENE R. LEWIS, M.D., Mineola, L. I., N. Y.
Major, M. R. C., U. S. Army.

UNFAVORABLE SALVARSAN REPORTS—VERBOTEN

To the Editor:—I sub tend a copy of a letter received day before yesterday. The letter is written on the stationery of O'Gorman, Battle & Vandiver, Attorneys and Counselors at Law, 37 Wall St., New York City:

May 22, 1918.

James C. Sargent, M.D.
Room 838, Wells Bldg.,
Milwaukee, Wis.

Sir:—We represent Mr. Herman A. Metz, President of the Farbwerke-Hoechst Co., distributors, under Federal License, of Salvarsan,

Mr. Metz directs us to call your attention to an article published over your signature in THE JOURNAL of the American Medical Association in its issue of March 30, 1918.

Mr. Metz directs us to inform you that the publication of this article and the statements therein were seriously damaging to the Farbwerke-Hoechst Co., and directs us to say further to you that he and the Corporation will hold you personally responsible for any repetition, oral or written, of the same or similar statements to the same effect.

He directs us to say further to you that the lot of Salvarsan received by you from the Farbwerke-Hoechst Company was tested before being sent you by Prof. Gies, by the United States Public Health Service and clinically in a New York hospital, and after the publication of your article ampules from the same lot were re-tested by the same parties and reported satisfactory, and that practically every physician who received some from the same lot made no adverse reports thereon.

Very truly yours,

(Signed) O'GORMAN, BATTLE & VANDIVER.

This I take to be a rather peculiar attempt at the solution of a scientific problem.

JAMES C. SARGENT, M.D., Milwaukee, Wis.

[EDITORIAL COMMENT:—A brief scientific article appeared in THE JOURNAL of March 30, 1918, by Dr. J. C. Sargent entitled "Toxicity of the American-made Arsphenamin (Salvarsan)." The article recorded untoward results following the injection of some Salvarsan made in New York by the former representative of the Farbwerke-Hoechst Co. of Germany. Dr. Sargent now receives the letter reproduced above. This attempt on the part of the Farbwerke-Hoechst Co. to control a scientific discussion of pharmacologic facts by intimidating physicians who would report facts that happen to be unfavorable to the product in which that concern has a proprietary interest will, doubtless, be appraised by American physicians at its face value. Possibly the Farbwerke-Hoechst Co. hold the Teutonic opinion that "Yankees" are "idiotic." They will find, however, that American physicians cannot be bulldozed into silence regarding the untoward effects of a proprietary remedy, even if that remedy did originate in Germany.]

Alcohol and Work.—Alcohol gives a sham sensation of added force and in reality decreases the ability to do work. Alcohol is the greatest cause of misery in the world, and as Cushman has put it, if alcohol had been a new synthetic drug introduced from Germany, its importation would long since have been forbidden. On the other hand, good beer makes poor food taste well. It also frequently leads to overeating. The cure for bad food is to have our daughters taught how to cook a decent meal. After that we can talk about prohibition. —Lusk, Food in War Time.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.
ARIZONA: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.
COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.
DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.
DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.
FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.
FLORIDA (Regular): Jacksonville, June 17-18. Sec., Dr. W. M. Rowlett, 812 Citizens Bk. Bldg., Tampa.
GEORGIA: Atlanta and Augusta, June 4, 5. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.
INDIANA: Indianapolis, June 13-15. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.
IOWA: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.
LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.
MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.
MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.
MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 17-19. Sec., Dr. George H. Jones, State House, Jefferson City.
NEBRASKA: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.
NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.
NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.
NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.
OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.
OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.
OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capital, Harrisburg.
RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.
TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.
TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.
UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.
WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.
WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.
WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Wyoming February Examination

Dr. H. E. McCollum, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, Feb. 6-8, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett Medical College	(1911)	75.9
University of Nebraska	(1904)	83.5
Ohio State University College of Medicine	(1917)	85.9
Vanderbilt University	(1887)	83.9

Starling Medical College (1881) *
* No grade given.

Massachusetts Service Examinations

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the special oral, practical and written examinations held for recent graduates eligible for war service, at Boston, Feb. 12-13, and March 12-13, 1918. The examinations covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Sixty-eight candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	.....	(1917)	82.5
Harvard University	(1918) 75.4, 76.3, 76.8, 77, 77.1, 77.6, 78.5, 78.9, 79, 79.3, 79.5, 79.5, 79.5, 79.6, 79.6, 79.7, 80.2, 80.5, 80.7, 80.7, 80.9, 81, 81.5, 81.5, 81.6, 81.7 81.9 81.9, 82.2, 82.5, 82.6, 82.9, 83.5, 83.7, 84, 84.2, 85.2, 89.5.		
Tufts College Medical School	(1918) 75, 75, 75.1, 75.7, 76.5, 76.6, 76.7, 77.3, 77.8, 78.4, 78.8, 78.8, 79, 79.1, 79.5, 79.6, 79.7, 80.3, 80.6, 80.7, 80.7, 81.1, 81.1, 81.5, 81.7, 81.9, 82, 82.7, 84.		

Massachusetts March and Special Examinations

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, March 12-14, 1918. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 63 candidates examined, 49, including 6 osteopaths, passed, and 14, including 6 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Columbian University	.....	(1893)	82
Rush Medical College	.....(1900)	84.6; (1904)	75
Bowdoin Medical School	.....	(1907)	75
Maryland Medical College	.....(1908)	75; (1911)	82
Boston University	.....	(1916)	75
College of Physicians and Surgeons, Boston	.....	(1910)	75.7
Harvard University	(1917) 82, 84.1; (1918) 79.7, 80.2, 81.5, 82.4, 83.4, 83.7, 83.8, 85.2, 85.3, 86.7, 87.		
Tufts College Medical School	(1917) 77.1, 77.5; (1918) 75, 75, 75.2, 77.3, 77.3, 78.2, 78.5, 78.7, 79, 79.5, 79.9, 80.2, 80.3, 81.2, 82.9, 83.1.		
Detroit College of Medicine	.....	(1895)	77.2
Washington University	.....	(1908)	81.1
Columbia College in the City of New York	.....	(1893)	82.8
Cornell University	.....	(1915)	85.8

College	FAILED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore	(1902)	66.2
College of Phys. and Surg., Boston	.....(1915)	65; (1916) 69.5, 70.6	
Tufts College Medical School	(1918)	67, 72.9
Meharry Medical College	(1915)	72.3
University of West Tennessee	(1916)	63.7

Dr. Bowers also reports that special examinations for war service were held at Boston, Jan. 17 and Jan. 29, 1918, at which three candidates were licensed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	.....(1916)	82.2; (1917)	82.5
University of Oklahoma	.....	(1917)	80

Minnesota April Examination

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the written, oral and practical examination held at Minneapolis, April 2-4, 1918. The examination covered 15 subjects and included 80 written questions. An average of 75 per cent. was required to pass. Sixteen candidates were examined, all of whom passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College	.....(1916)	86; (1918)	91
Harvard University	.....	(1918)	91
University of Minnesota	(1917) 84; (1918) 84, 85, 87, 88, 88, 89, 89, 89, 90, 92, 94.		
John A. Creighton Medical College	.....	(1917)	90

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago Homeopathic Medical College	(1900)	N. Dakota
College of Physicians and Surgeons, Chicago	(1905)	Arkansas
Kentucky School of Medicine of Louisville	(1898)	Indiana
Southern Homeopathic Medical College	(1902)	Maryland
Washington University	(1916)	Missouri

Rhode Island April Examination

Dr. Byron U. Richards, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, April 4-5, 1918. The examination

covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 6 candidates examined, 4 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	.....(1918)	84.7, 87.5, 88	
Tufts College Medical School	.....	(1918)	86.1

College	FAILED	Year Grad.	Per Cent.
Maryland Medical College	(1913)	77.2
Tufts College Medical School	(1918)	77.8

Social Medicine, Medical Economics and Miscellany

THE EVOLUTION OF THE BULLETIN OF THE CHICAGO HEALTH DEPARTMENT

W. A. EVANS, M.D.
CHICAGO

In 1903, a well known secretary of a state board of health, in conversation, spoke disparagingly of the bulletin of the Chicago Health Department. He thought it undignified. He did not approve of its bid for public attention. His own report was of the orthodox type—pages of tables of statistics.

The Chicago bulletin of the last ten years makes the bulletin of 1903 look very conservative, yet practically every health department is now issuing bulletins of the same general type as that issued by Chicago.

Chicago's gross death rate fell below 15 per thousand in 1900 and has remained below that line since. For cities situated geographically as Chicago and with approximately Chicago's distribution of population, a death rate persistently somewhat below 15 per thousand may be considered as on a normal level. It is not without significance that Chicago reached this level several years in advance of other cities with which it may properly be compared.

To my mind, a considerable part of this achievement is due to the fact that Chicago very early saw the advantage of going to the people through its health department bulletin and other publications. It will be of interest, therefore, to study the evolution of the bulletin.

In 1870, Dr. John H. Rauch gathered up the loose material relative to early health work in Chicago, publishing it in "Chicago's Sanitary History from 1833 to 1869." Since 1870, the health department has published an annual report, but it has frequently happened that several annual reports were combined in a single volume. These annual reports were statistical in character and were evidently intended solely for health departments and libraries. In 1911, a report comprising annual reports for 1907, 1908, 1909 and 1910 was issued. This report differed from the others in that it contained much of material for public education in addition to the charts, diagrams and tables found in preceding reports.

The annual reports, however, are of far less interest than the bulletin. The evolution of the latter publication is interesting from several standpoints. Outside of the annual report, the first periodical publication of the Chicago Health Department, the ancestor of the present bulletin, that I have been able to find was dated July, 1890. It is a four-page quarto publication. Its title was "Health Department, Condensed Statement of Mortality." Two pages were given to vital statistics, one to meteorological summary and one to the title. I have not been able to find any copies of numbers issued between July, 1890, and January, 1894.

The issue of January, 1894, was also a four-page quarto, the title being the same as that of July, 1890. The arrangement differed in that the lower half of the first page was given over to vital statistics, the lower half of the third page to a meteorological summary, and the fourth page to educational propaganda. The propaganda articles dealt with smallpox, water, milk and a few other subjects. There was a ward map of the city on this page. Page 2 and the upper part of page 3 were devoted to statistics. This arrangement of the bulletin continued through the year, except that the

contents of the fourth page gradually became statistical in character.

January, 1895, the title was changed to read, "Department of Health, City of Chicago, Bureau and Division Reports." During that year the bulletin was a two-page statistical report carrying nothing except vital statistics. The January and February, 1895, numbers had three pages of statistics showing the work of the different bureaus. One and a half pages were devoted to statistics of deaths, and the meteorological data reappeared.

In the March, 1896, number the educational page reappeared. In this number also we find charts, one of which showed the sanitary quality of the water supply by months, the other, the typhoid and diarrhea mortality rates.

In the May number, the fourth page was entitled, "Notes and Comments by the Assistant Commissioner." Dr. F. W. Reilly was the assistant commissioner. In August an effort was made to solve the midwifery problem. The fourth page of the bulletin gave the names and addresses of obstetricians willing to answer calls for assistance from midwives. In 1897, the same arrangement was followed. The June number contained an editorial on the "First Year's Work on Medical Inspection of Chicago Schools." By autumn, the bulletin had become a booster for "the healthiest large city in the world."

In 1898 the same plan was followed. The leading educational article in the July number was on "Development of Sanitary Science—the Daily Press as a Potent Auxiliary." In the fall of 1898, there was an epidemic of meningitis in Chicago. The October bulletin, in addition to the usual four pages of matter, had an additional four pages on meningitis.

In 1899, the arrangement continued the same, except that the space given to educational matter other than statistics was increasing, month by month. In June, 1899, the title was changed to read, "Department of Health, City of Chicago, Monthly Bulletin." The educational portion now occupied six pages and came first in the publication. This was followed by four pages of statistics. The August, 1899, number devoted four pages to an analysis of the water situation and demonstrated that the drainage canal was not lowering the level of the lake. After August, for the remainder of 1899, there did not appear to be any more educational matter carried in the bulletin. The publication consisted of only four pages of statistics and was entitled, "Bureau and Division Reports." The first numbered bulletin was that of December, 1899. It was numbered Vol. VI, No. 12.

The issues from January to September, 1900, inclusive, entitled, "Department of Health, City of Chicago, Bureau and Division Reports," consisted of four pages of statistical matter. The October number again consisted of two portions. The first, termed "Monthly Bulletin," was devoted to the housing problem, and was written by Dr. A. R. Reynolds, health commissioner. The December number also had a section entitled "Monthly Bulletin." It contained a study of self-purification of streams by Dr. Reynolds.

From January to July, 1901, the bulletin was issued in two parts, "the Monthly Bulletin," educational in purpose, and a separate "Bureau Reports," statistical in character. In the latter half of that year, the title "Monthly Bulletin" was retained, but the bulletins generally consisted of four quarto pages containing statistics, mostly vital statistics, and a few editorial comments. Chicago's rather famous vaccination creed appeared for the first time in this year.

The bulletin seems to have been wholly discontinued in 1902. July 5, 1902, a weekly statement under the title "State of Chicago's Health" was begun. It appeared in every Chicago English daily paper. It varied from a half column to two columns and carried mortality statistics, a short list of the causes of death, and some educational matter. Nov. 8, 1902, the title was changed to "State of Chicago's Health, Bulletin of the Health Department," No. 45.

This plan of a weekly article in the daily papers was continued throughout 1903 and 1904. The plan was to write the article at the end of the statistical week—Saturday noon—and send it at once to the Chicago *Record-Herald*. This paper set it up and furnished galley proofs to the other papers and to the

department. The department kept a file of its galley proofs. The data consisted of vital statistics and educational propaganda material. The matter was set in newspaper editorial type, and was arranged on a double column galley with the words "State of Chicago's Health" extending in large letters across the two columns.

Jan. 13, 1906, the bulletin became a four-page octavo pamphlet. The first page was given over to the title, "City of Chicago Bulletin of the Department of Health, Charles J. Whalen, Commissioner, 1906." The second page was headed, "State of Chicago's Health, Bulletin of the Health Department, week ended January 13, 1906, Vol. IX, No. 2." It contained two pages of educational propaganda material and a statement of mortality figures for the week, arranged on the short cause list. Most of these weekly bulletins consisted of two pages of printed matter, though by the spring of 1907, some of them had shrunk to one brief page. The plan followed in the department was to send the matter over to the *Record-Herald*, which set it up, furnished galley proofs to the other papers, and supplied the department with the matrix from which it printed its edition. The department paid messenger fees, cost of metal and a few incidentals.

Aug. 3, 1907, the bulletin underwent a most radical change. The title page of that number read:

Physicians and others interested in the Bulletin may have it sent free of charge to their respective addresses on receipt of request to that effect. Bulletin Chicago School of Sanitary Instruction, devoted to the dissemination of advice and information of the Department of Health, City of Chicago, W. A. Evans, Commissioner, Vol. I, New Series No. 1; Vol. X, Old Series, No. 31, August 3, 1907. Published every Saturday by the School of Sanitary Instruction. Application made at Chicago, Illinois, for entry as second-class matter.

Vol. I, No. 5, Aug. 31, 1907, changed the last item to read, "Entered at Chicago, Ill., as second class matter."

The money saved on postage was used to send out an increased number of copies of the bulletin. In 1907, the department of health was incorporated with the secretary of state as an educational institution. Since that time, the educational feature of its work has always been kept to the fore. As a rule, the issues of the publication in 1907 consisted of six pages. All the space was given to educational matter except that used for contagion, morbidity tables and the mortality statistics of the week arranged on the form of short list of causes of death, prepared by the United States Bureau of Vital Statistics.

Aug. 31, 1907, the title page first bore the following:

"Sanitary instruction is even more important than sanitary legislation," said the late Earl of Derby, himself eminent both as sanitary instructor and as sanitary legislator. This bulletin is intended for instruction in sanitary matters chiefly among the laity. Incidentally, it should help the profession by such popular education of its clientele in nontechnical phrase.

This was abbreviated, June 5, 1915, to read, "Sanitary Instruction is even more important than Sanitary Legislation."

March 7, 1908, the system of numbering was changed so that it read, "Vol. XI, Old Series No. 530," instead of "Vol. XI, Old Series No. 10," as it would have read, had the change not been made.

In the latter part of 1909, the bulletin began to be newsier and more gossipy. About this time the healthgrams for which it attained some reputation began to appear.

Sept. 30, 1911, the years old subtitle on the second page, "State of Chicago's Health" disappeared from the bulletin. In October, 1911, the title page was again somewhat changed. The offer of the bulletin free was dropped, as was the explanation of the purposes of the bulletin. It reads, "The Bulletin is issued every Saturday by the School of Sanitary Instruction. Entered as second class matter under act of July 16, 1894." The title occupied the upper third of the first page, and the reading matter the remainder.

Such are the steps in the evolution of the bulletin of the Chicago Health Department. This publication, which the press has supported and used for stories, has been a very important factor in elevating standards of health. Scoffed at a few years ago, it has served as a pattern for health department publications throughout the country. For this reason, its evolution is entitled to a place in medical history.

Book Notices

Medicolegal

Liability for Gangrene

(*Perry v. Rancourt et al. (Me.)*, 102 Atl. R. 233)

The Supreme Judicial Court of Maine overrules a motion by defendant Rancourt for a new trial after the plaintiff recovered a verdict against him of \$8,192.40 for alleged malpractice in the treatment of a fracture of what was described as the lower left leg, caused by a fall on a sidewalk. The court says the plaintiff alleged that the defendants did not use proper care and skill in reducing the fracture, but banded his leg and put on a plaster cast so tightly as to impair the circulation of blood in his leg and foot, and allowed the cast to remain on so long that the foot and leg became gangrenous and in so diseased a condition that, on account of the defendants' negligence, his leg had to be amputated at a point nearly up to the body. That the plaintiff's leg had to be amputated on account of the development of gangrene from some cause was conceded by everybody. The plaintiff contended that the evidence was sufficient to show that the gangrene resulted from the negligence and unskilful treatment of the defendants. The defendants combated that contention, not only on the ground that the treatment was proper but also on the theory that the bacillus, called a gas bacillus, which produced the gangrene in this case could not have been generated by continued pressure of the cast.

The contention of the defendants that they were not negligent as to the pressure of the cast and the length of time they kept it on the leg was purely a question of fact for the jury, and without quoting the evidence on this branch of the case at all, the court is of the opinion that the finding of the jury on this question cannot be disturbed. But the defendants said that, even if the cast was kept on the leg as claimed, it did not produce the gangrene which necessitated the amputation of the leg. They based this contention purely on the theory that the type of gangrene here found could not be produced by pressure. From the testimony of all the physicians, however, it was fully established that continued pressure sufficient to stop the circulation might produce gangrene. There was, moreover, before the jury a definite assignable cause for gangrene in the plaintiff's foot below the cast. Against this was presented the theory that the symptoms found in this case, namely, the appearance of gangrene above the cast, could not be produced by the pressure of the cast, but by a form of bacteria called the gas bacillus. The physicians, as usual in such cases, were in conflict in regard to the cause. The jury evidently believed in the facts, instead of the bug. The court cannot say that they were wrong.

The fact that the jury found a verdict against Dr. Rancourt only, could not be regarded as an adequate reason for setting aside the verdict. On the evidence, a finding that the other physician was acting in the capacity of an assistant could not be disturbed. As to negligence, it appeared that he warned Dr. Rancourt that he "was binding that pretty tight, and that probably he would have to remove it the next day."

The verdict was large; but the injury was also very great. The court cannot say the finding of the jury was excessive.

Remedies Relative to Mosquitoes and Malaria

(*Pruitt et al. v. Bethell (N. C.)*, 93 S. E. R. 945, *Chesapeake & O. Ry. Co. v. Catlett (Va.)*, 94 S. E. R. 934)

The Supreme Court of North Carolina, in the case of *Pruitt et al. v. Bethell*, affirms a judgment in favor of the plaintiffs, who asked for the abatement as a nuisance of a dam and pond on the defendant's land because they created conditions in which anopheles mosquitoes were bred in large numbers, which infected the plaintiffs and their tenants with germs of malarial fever. The court says that the defendant contended that a public nuisance cannot be abated in a civil action by a private individual, without showing some special damage to the plaintiff; that the state alone can abate a public nuisance in the absence of special damage to the individual, and pointed out that the jury had found that there was no damage shown

LECITHIN AND ALLIED SUBSTANCES. The Lipins. By Hugh Maclean, M.D., D.Sc., Lecturer on Chemical Pathology, St. Thomas' Hospital, London. Boards. Price, \$2.25 net. Pp. 206. New York: Longmans, Green & Co., 1918.

This is another member of the valuable series of Monographs on Biochemistry, which have constituted such an important contribution to the literature of biologic chemistry and the related sciences. That the war has not prevented its publication is a credit to the publishers, and indicates that our allies are not permitting the light of science to die out during the conflict. In this series the properties of fats in general have been covered by Leathes, the present volume developing the subject of its title, which Leathes had considered only briefly. The fact that apparently every living cell contains lecithin and other fatlike substances of this class is sufficient evidence that they are of vital importance in vital processes, and hence of prime interest to all interested in biologic process, whether as physicians or biologists. These substances are referred to in medical literature with growing frequency, and yet Maclean finds it necessary to state that little or nothing is known with certainty of their physiologic function. This indicates that time has failed to corroborate the innumerable hypotheses that have been advanced as to their rôle in biology, pharmacology and immunology.

This book emphasizes to the reviewer the hope that when the war is over, and time is available for the contemplation of more essential matters, some international council may be formed to secure a uniform nomenclature for that group of substances variously designated as fats, lipoids, lipins, etc. Even if our knowledge does not permit of perfection in selecting the proper names for each substance, let us at least agree on the labels we give them, and all use the same label for the same substance. Maclean's book adds further confusion to the nomenclature by arbitrarily applying the term "lipin" to certain substances in this group, although this term has been used by preceding writers in a totally different sense. No matter if the prevailing usage is open to criticism, the entirely arbitrary application of the same term to a more restricted class can lead to nothing but confusion, and is to be deplored, especially since this book, like the rest of the series, will be universally used as the best available source for up-to-date information concerning the subject it covers.

Physicians will be particularly interested in the discussion of the function of the lecithin group, toward which the author takes an extremely conservative view, even denying the generally accepted hypothesis that lecithin plays a part in the Wassermann reaction. As to their alleged chief functions, he says:

In practically every case it will be seen that the evidence adduced is capable of explanation in other ways than the one usually adopted, and on the whole it is not too much to say that the biological significance of the lipins is so far a closed book. There is hardly a statement made on this problem by one investigator, which is not contradicted by some other observer, and the whole subject, in so far as experimental difficulties permit, requires thorough reinvestigation. From the physical point of view the colloidal nature of the lipins is of importance in regulating certain processes in the cell; the presence of unsaturated fatty acids in the molecule is also suggestive, since the chemical reactivity of the molecule is thereby increased.

THE EXAMINATION OF MILK FOR PUBLIC HEALTH PURPOSES. By Joseph Race, F.I.C., City Bacteriologist and Food Examiner, Ottawa. Cloth. Price, \$1.75 net. Pp. 224. New York: John Wiley & Sons, 1918.

This volume is intended for those in charge of the examination of milk for the protection of the public health. It is not, however, a mere laboratory manual. In fact, some of the methods are given in a way that would be intelligible only to an experienced worker. There are excellent critical discussions of a variety of tests serviceable at times in a public health laboratory, as well as the various chemical and bacterial tests employed in routine work. The discussions of analytic methods are preceded by chapters dealing with the composition of milk. The book is noteworthy for its concise presentation of the problems arising in milk examination.

to the lands of the plaintiffs by reason of ponding water thereon. But it was without dispute that the plaintiffs suffered from malaria caused by anopheles mosquitoes, which were numerous, and it was alleged and was found by the jury that the breeding places were created by the defendant's dam, which was a nuisance, working harm to the rights of the individual citizens who were the plaintiffs. It was neither alleged, nor in proof, that the judgment of abatement by removing the dam was too drastic in that the same result could have been attained by the defendant's (as in New Jersey and elsewhere) systematically oiling the surface of the breeding places of the mosquitoes, caused by the dam; nor did the defendant offer to do this, nor request an alternative judgment permitting her to resort, in the first instance, to this method of abatement of the nuisance. Wherefore the judgment is affirmed.

In the Cattlett case the Supreme Court of Appeals of Virginia reverses a judgment that was rendered in favor of plaintiff Catlett for damages caused by the illness of the plaintiff and his family from malaria, which he alleged was occasioned by stagnant water in an old canal bed which a statute made it the duty of the defendant railway company so to drain as not to leave stagnant water, by which the health of the citizens along the line of the canal might be seriously affected. The court says that the evidence for the plaintiff did not go beyond proving by a preponderance of it that the water in the canal bed in 1915, prior to its drainage in August or September of that year, was the most favorable place for the production of mosquitoes. Such evidence also proved that the water in other places near by was favorable at such time for the production of a sufficient number of mosquitoes to have caused the malaria complained of, and that no legal conclusion of the whereabouts of the breeding place of the mosquitoes which caused the malaria complained of could be drawn from the fact that one place bred more than another. The evidence also established the fact that the year 1915 was one of unusually wet weather. The case turned on the question of whether there was any probative evidence in the case tending to establish that the breeding place of the mosquitoes that were the cause of the malaria complained of was the old canal bed. The question must be answered in the negative. In other words, the verdict of the jury in finding the fact in question was necessarily based on conjecture, guess or random judgment on mere supposition. It was urged in behalf of the plaintiff that the result of such a holding in this case would be to set at naught the requirement of the statute above mentioned that the defendant should so drain the old canal bed "as not to leave stagnant water by which the health of the citizens along the line of the canal might be injuriously affected." But the court does not so regard the case. The discharge of the duty in question could be fully enforced, if need be, by the appropriate remedy of mandamus.

Liability for Failure to Discover Foreign Particles in Wound—Standard of Care and Errors of Judgment

(*Mullinax v. Hord* (N. C.), 94 S. E. R. 426)

The Supreme Court of North Carolina finds no error in the record of this case wherein a judgment for \$500 damages was rendered in favor of the plaintiff for alleged malpractice in the treatment of a gunshot wound in his foot. The court says that if the complaint was too general in form, and the defendant wished to be apprised more particularly as to the negligent acts or omissions on his part, he should have asked that the pleading be made more definite or certain, in order that he would not be misled in answering it. The charge here was that the defendant failed to use proper skill, in that a few days after he left inflammation set in, and sup-puration ensued, to such an extent as to cause the plaintiff great pain, and that shots, cloth and leather were expelled from the wound by the effort of Nature to relieve itself of those foreign substances, and finally, that the toes of the plaintiff's foot were greatly twisted out of their natural shape and regular position, with resulting pain and inconvenience to him. If the defendant should have discovered

by a sufficiently careful examination that there were foreign particles in the wound, consisting of shots, or cloth and leather from the plaintiff's sock and shoe, and he failed to discover this because he did not exercise the proper care, the plaintiff could recover for any damage to him resulting proximately therefrom. Or if the defendant did know, or should have known, by the exercise of reasonable care, skill and forethought, that the wound was in such a condition as to require further attention from him, and he failed to give it, whereby the plaintiff was made to suffer, and his members became deformed and distorted, a condition which would not have arisen if proper care had been exercised, it would entitle the plaintiff to damages for the wrong. It is really the application of the ordinary principles in the law of negligence to a case requiring professional knowledge and skill in the performance of the duty which one person owes to another. A surgeon may possess a high order of learning and skill, and yet not use them at the proper time or in the proper way.

The law does not require of a physician or surgeon absolute accuracy, either in his practice or in his judgment. It does not hold physicians and surgeons to the standard of infallibility, nor does it require of them the utmost degree of care and skill of which the human mind is capable, but that, while in the practice of their vocation, they shall exercise that degree of knowledge and skill ordinarily possessed by members of their profession. But when a physician consents to treat a patient, it becomes his duty to use reasonable care and diligence in the exercise of his skill and the application of his learning to accomplish the purpose for which he was employed. He is under the further obligation to use his best judgment in exercising his skill and applying his knowledge. The law holds him liable for any injury to his patient resulting from want of the requisite knowledge and skill, or the omission to exercise reasonable care, or the failure to use his best judgment.

While it is true that physicians are not responsible for the errors of an enlightened judgment when good judgments may differ, they will be charged with errors, or should be, only when such errors could not have arisen except from want of reasonable skill and diligence. The law does not excuse an error of judgment if it occurs by reason of the surgeon's lack of that knowledge which he should possess in order to qualify him for the practice of his profession, or the negligent failure to exercise the requisite skill and diligence. It is seen, therefore, that a surgeon's duty in treating a wound of his patient is to be measured by both his skill and diligence.

It is said that, according to the great weight of authority in an action brought for the benefit of a child who has sustained injuries through the negligence of another, negligence on the part of the parents or those standing in their place will not be imputed to the child or bar a recovery by him.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.

Alpha Omega Alpha Society, Chicago, June 10.

American Association of Anesthetists, Chicago, June 10-11.

Am. Assn. of Industrial Physicians and Surgeons, Chicago, June 10-11.

American Climatological and Clin. Assn., Boston, June 5-6.

American Medico-Psychological Association, Chicago, June 4-7.

American Ophthalmological Society, New London, Conn., July 9-11.

American Proctologic Society, Chicago, June 10-11.

American Surgical Association, Cincinnati, June 6-8.

American Therapeutic Society, Richmond, Va., June 7-8.

Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.

Idaho State Medical Association, Seattle, July 17-19.

Maine Medical Association, Portland, June 4-6.

Massachusetts Medical Society, Boston, June 18-19.

Montana Medical Association, Butte, July 10-11.

Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-7.

New Jersey Medical Society, Spring Lake, June 25-26.

North Dakota State Medical Association, Fargo, June 19-20.

Oregon State Medical Association, Seattle, July 17-19.

Rhode Island Medical Society, Providence, June 6.

Southern Minnesota Medical Association, Winona, Minn., June 24-25.

Washington State Medical Association, Seattle, July 17-19.

Western Roentgen Society, Colorado Springs, June 27-28.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Ophthalmology, New Rochelle, N. Y.

May, 1918, **47**, No. 3

- 1 Eye in Nervous Disease. W. A. Holden, New York.—p. 221.
- 2 Case of Leukosarcoma of Iris, Treated by Radium. S. Gifford, Omaha.—p. 241.
- 3 Focal Infection as a Probable Cause of Exophthalmic Goiter. J. Dunn, Richmond, Va.—p. 248.
- 4 Return of Tension and Occurrence of Retrochoroidal Hemorrhage After Trachomatous. A. Knapp, New York.—p. 256.
- 5 Focal Infections of Eye from Intestinal Tract. J. G. Dwyer, New York.—p. 261.
- 6 Light Pupillary Reflex; Case of Unilateral Argyll-Robertson Pupil, in which Consensual Reaction Existed in Both Eyes. A. Lutz, Havana.—p. 266. To be concluded.

Archives of Pediatrics, New York

April, 1918, **35**, No. 4

- 7 *Baby That Cannot Take Milk. T. W. Clarke, Utica.—p. 193.
- 8 Differential Diagnosis of Enlargements of Cervical Lymph Nodes. R. S. Haynes, New York.—p. 226.
- 9 Work of Adolescent Clinic of Stanford University Medical School. A. E. Gates, San Francisco.—p. 236.

7. Also published in the *New York State Journal of Medicine*, April, 1918.

American Journal of Orthopedic Surgery, Boston

May, 1918, **16**, No. 5

- 10 *Problem of Disabled. R. Jones, England.—p. 273.
- 11 Fractures of Femoral Neck. Plea for Optimism in Treatment. S. J. Hunkin, San Francisco.—p. 291.
- 12 *Operation which, in Selected Cases of Infantile Paralysis of Long Standing, Causes Return of Power in Paralyzed Muscles; Report of Cases. C. Riely, Baltimore.—p. 300.
- 13 Wounds of Knee Joint. K. Emerson, England.—p. 311.
- 14 Pathology of Peripheral Nerve Injuries. S. M. Cone, England.—p. 319.
- 15 *Tendon Transplantation to Stabilize Hip Joint. R. M. Yergason, Hartford, Conn.—p. 323.

10. **Problem of Disabled.**—Jones is convinced that no ministry was ever created with greater responsibilities, or greater powers for good, than the British Pensions Ministry. It is in a position literally to save England after the war is won. As it has been decided that, for military reasons, soldiers after discharge and while they are undergoing training shall not be under army control, the Pensions Ministry has not the power to compel the pensioner to undergo training. It has certain powers which enable it to put pressure on the pensioner in order to enforce training and treatment. If treatment is refused, short of operation, the pension is reduced. Moreover, bonuses are given to men who train, in addition to their full pension, and if they are married separation allowance. Many pensioners will require treatment for two or more years. This treatment can be carried on while the man works or trains.

12. **Return of Power in Paralyzed Muscles.**—The operation described by Riely was not undertaken with the idea that muscle power could be restored, but as a means of mechanically aiding the patient in walking, and prevent the necessity of so much bracing. Incisions are made over the highest points of origin and over the point of insertions of the paralyzed muscle or muscles that allow the greatest deformity. Holes are drilled through the bones at these points, straight or curved, as the case requires. Then one end of heavy paraffined braided silk is passed through the hole at the origin and tied so that it cannot slip; the other end of the silk is threaded in a long bodkin-like carrier, which is passed into the muscle sheath on the side next to the skin and along the course of the muscle, out through the incision at the point of insertion. The instrument is then unthreaded and the silk passed through the hole in the bone at the point of insertion; the deformed part or parts being forced into a normal standing position, the string is drawn tightly and thoroughly tied. The incisions are closed, preferably by

subcutaneous sutures, and the cast applied with the deformity in an overcorrected position. In ten days the cast is removed, the sutures taken out, and the cast renewed with the overcorrected position retained. The second cast should be left on at least three, if not four months, as a shorter time seems not to be sufficient for the holes in the bones to heal thoroughly enough not to give way or leak. Where the muscle that is to be relieved has a tortuous course, it sometimes is necessary to make other incisions at the points of some of the curves where they are too sharp to let the cord carrier pass. These cords should be as many ply as the stress put on the normal muscle would require.

In applying casts after these operations, great care must be taken to shorten the distance between the origins and insertions of all overstretched paralyzed muscles, and to increase the distances between the origins and insertions of all relaxed paralyzed muscles. Strong tensions on contracted active muscles should also be avoided as much as possible. This can be done best by fixing the affected parts in positions of flexion, extension, adduction, abduction, or a combination of these, as the case requires. The operation still being in the experimental stage, Riely is still uncertain just when to clip or remove the strings, even after the deformity has been overcome and power regained. As a result of past experience, it is his opinion that, in most cases, it is safe and proper to delay this removal for three years. Removal, or clipping of the strings, is a very simple procedure.

15. **Tendon Transplantation to Stabilize Hip Joint.**—Yergason suggests the transplantation of the tendon of origin of the semimembranosus muscle. This strong, flat tendon is set free by blunt dissection, as far up as possible beneath the long head of the biceps and as far down as the point at which it joins the muscle belly. At this level it is cut across. The upper end of the wound is next retracted, the biceps being drawn inward and the gluteus maximus strongly upward. Well under the outer margin of the biceps, and a short distance below the tuber ischii, the tendon of the semimembranosus is again identified and set free. The freed and transected tendon is now drawn up from beneath the biceps and the dissection continued upward to the tuber ischii. Then two thirds the distance from the top of the great trochanter to the lower border of the insertion of the gluteus maximus, the bone is exposed through a small cut in the overlying tissues. At this point a hole is drilled through the gluteal ridge (postero-external border) of the femur, in an oblique direction, from without inward and upward. The hole so made is elongated downward to form a slit, the length of which should equal the width of the tendon it is to receive. The end of the freed tendon is drawn through the opening, pulled tight, turned back, and sutured to itself. The fleshy belly of the semimembranosus, or the remnant of its tendon, is fastened to the deep surface of the semitendinosus by two or three chromic catgut sutures, and tied gently. The deep fascia is sutured and the skin incision closed. A cast should be worn for at least one month, during which time no strain should be allowed to come on the tendon. A brace from the axillae to the knee may then be substituted and, by bending this slightly, the strain of the erect posture may be gradually shifted from it to the transplanted tendon.

Boston Medical and Surgical Journal

May 9, 1918, **178**, No. 19

- 16 Meningococcus Carriers; Preliminary Report from First Naval District. W. R. Redden, Chelsea.—p. 623.
- 17 With the Royal Army Medical Corps in France. M. A. Harrington, New York.—p. 631.
- 18 Hospitals and Vocational Training. R. P. Borden, Fall River.—p. 634.
- 19 Spontaneous Pneumothorax Complicating Pulmonary Tuberculosis. H. F. Gammons, Carlsbad, Texas.—p. 637.

Bulletin of Johns Hopkins Hospital, Baltimore

May, 1918, **29**, No. 327

- 20 *Results of Treatment in Pernicious Anemia. A. Bloomfield, Baltimore.—p. 101.
- 21 Tobacco Smoke and Pulmonary Tuberculosis. A. K. Krause.—p. 106.

20. **Results of Treatment in Pernicious Anemia.**—A series of fifty-seven cases is analyzed in detail by Bloomfield with

particular reference to the comparative value of various methods of treatment. Twenty-eight cases were treated by the older methods consisting essentially of rest in bed, diet, hydrochloric acid, and arsenic. Bloomfield points out that absolute rest in bed over considerable periods of time is the most important feature of this regimen. Arsenic and hydrochloric acid are apparently useless, unless the patient is kept quiet at the same time, and cessation of improvement or relapse has occurred not uncommonly as soon as active life was resumed, despite continued drug therapy. Arsenic was used in every instance in this series either in the form of Fowler's solution, sodium cacodylate, or arsphenamin. Analysis of the cases, however, yields no data of value as to its efficacy. Achlorhydria gastrica was uniformly present and hydrochloric acid was given usually both before and after meals. In a few instances gastro-intestinal disturbances, especially diarrhea, seemed to be relieved, but in most of the patients these symptoms disappeared quite rapidly with the progress of the remission apparently regardless of any symptomatic therapy. Twenty-six patients received transfusions of blood varying in number from 1 to 17. The largest amount of blood given to one patient was 8,700 c.c., the smallest amount was 300 c.c. The single transfusions varied in amount from 300 to 900 c.c. The citrate method and the Lindeman syringe method were used most often; in a few cases indirect transfusions of defibrinated blood were given, and in one case direct transfusion was used as a preliminary to splenectomy. Six patients (23 per cent.) died. Of the twenty-two cases not transfused and receiving only general therapy, five, or 22.7 per cent., died. Transfusion was of no value as an emergency measure, nor was the immediate mortality decreased by the procedure. Following the injection of 500 c.c. or more of blood there was usually an immediate increase in the blood count and hemoglobin.

Subjective improvement was often striking, the patient saying he felt better while the blood was being injected. Among the patients who were not transfused remission set in in the hospital eight times in twenty-eight admissions, a percentage of 28.5; in the patients given transfusion there were nineteen remissions in thirty-seven admissions, or 51 per cent. It seems that in patients who are not in a stage of the disease refractory to any form of treatment, remission has come on more often when transfusion has been performed. Furthermore, the amount of blood gained runs roughly parallel to the number of transfusions and the total amount of blood given. It seems rational, therefore, if transfusion is done at all, to be prepared to inject blood repeatedly if the patient shows a tendency to respond. Single transfusions in cases refractory to other therapy led to no improvement in this series. No relation between the amount of blood given and the duration of the remission is apparent. Thirteen of the patients receiving transfusion are now dead, four are alive, while the remainder could not be traced. It is clear from Bloomfield's analysis that there was no demonstrable prolongation of life in the cases in which transfusion was employed. The patients living longest were not the ones in whom remission followed transfusion.

An analysis of the course of symptoms shows no definite variation in the groups of cases treated by different methods. Splenectomy was performed in eight instances. In one, death from pulmonary embolus occurred nineteen days after operation. Six of the remaining patients are dead. In no case was the clinical picture essentially altered, and no unusual prolongation of life occurred. In twelve cases a thorough study of the nose, throat, sinuses, teeth, gastro-intestinal tract, and lower urinary tract was made for foci of infection and, when found, these were eliminated. All these patients finally received clean bills of health from the various specialists. Most of them were given transfusions and in one case splenectomy was also performed. In none was there any feature in the subsequent course to distinguish them from the group in which foci were not found, or if found were not treated, either as to total duration of life or extent and degree of remission. It is unlikely, therefore, that such foci of infection are the cause of pernicious anemia, although it seems wise to treat them for their own sake as well as for any possible general beneficial effects which may follow.

California State Journal of Medicine, San Francisco

May, 1918, 16, No. 5

- 22 Regulation of Practice of Medicine in California since 1914. H. E. Alderson, San Francisco.—p. 232.
- 23 Arthroplasty of Hip Joint, Murphy Method; Report of Four Cases. J. M. Burlew, Santa Ana.—p. 237.
- 24 Amebiasis; Its Radical Cure with Combined Emetin and Salvarsan Products. H. Gunn, San Francisco.—p. 240.
- 25 Acute Gastroduodenal Perforations. E. Butler, San Francisco.—p. 245.
- 26 Control of Epidemic Meningitis at U. S. Naval Training Station, San Diego. F. L. Kelly, Berkeley.—p. 247.
- 27 Treatment of Warts. D. W. Montgomery and G. D. Culver, San Francisco.—p. 250.
- 28 Nitrobenzol Poisoning. F. F. Gundrum, Sacramento.—p. 252.
- 29 Etiology and Symptomatology of Chronic Suppurative Otitis. A. B. Baer, San Francisco.—p. 253.
- 30 Prevention and Treatment of Localized Muscular Contractures. A. Gottlieb, San Francisco.—p. 254.
- 31 Arch Defects of Human Foot. E. H. Smith, San Francisco.—p. 256.
- 32 Gonorrhea in Women. W. E. Stevens, San Francisco.—p. 260.

Journal of Infectious Diseases, Chicago

May, 1918, 22, No. 5

- 33 Immunité et Anaphylaxie. J. Danysz, Paris.—p. 427.
- 34 Demonstration of Micrococci in Bones in Rickets and Scurvy. L. Jackson, Chicago.—p. 457.
- 35 *Bacteriology and Immune Reactions of Rubella (Measles) and Rubella (German Measles). R. Tunnicliff, Chicago.—p. 462.
- 36 *Toxicity of Pneumonic Lungs. C. Weiss, J. A. Kolmer and E. Steinfield, Philadelphia.—p. 469.
- 37 *Toxic Substances from Virulent Pneumococci and Pneumonic Lungs and Influence Thereon of Quinin and Urea Hydrochlorid, Ethylhydrocuprein Hydrochlorid, and Other Cinchona Derivatives. S. S. Cohen, C. Weiss and J. A. Kolmer, Philadelphia.—p. 476.
- 38 *Chemotherapy of Experimental Pneumococcus Infection. J. A. Kolmer and E. Steinfield, Philadelphia.—p. 492.
- 39 Leukopenia and Leukocytosis in Splenectomized Rabbits. C. W. Wells, Chicago.—p. 502.
- 40 Acid Production at Partial Oxygen Tension and Under Aerobic Conditions by Bacillus of Typhoid Dysentery Group. W. W. Oliver and O. C. Perkins, Brooklyn.—p. 507.
- 41 Differentiation of Paratyphoid Enteritidis Group. IV. E. O. Jordan, Chicago.—p. 511.
- 42 Influence of Oxidizing Substance (Sodium Iodoxybenzoate) on Catalase Value of Blood and Tissues. A. Arkin and E. B. Fink, Morgantown, W. Va.—p. 515.

35. **Bacteriology and Immune Reactions of Measles.**—The special points of interest in Tunnicliff's work were: the almost constant presence of a diplococcus in the blood of measles patients during the preeruptive and eruptive stages; its presence alone and in large numbers before the appearance of the eruption and alone also in a large proportion of cases at the height of the infection, and its presence at the same time in the throat, nose and eyes. Cocci similar to those found in these blood cultures were found in sections of the lung and kidney in one fatal case of measles; in the lung and bronchial lymph gland of another, and in the gangrenous tongue of a third. They appear singly, in pairs and chains. Some are found inside of leukocytes. The cocci in these sections varied considerably in size. Similar blood cultures were made from ten rubella patients. A fairly large diplococcus was observed in the anaerobic cultures in seven of these ten cases. A diphtheroid bacillus was isolated twice from anaerobic cultures. Throat smears and cultures on aerobic blood-agar plates from six cases showed diplococci similar to those isolated from the blood. Various immunity tests have been made with the cocci isolated from rubella and rubella to determine if any antibody reaction could be demonstrated. So far opsonins have been the only antibodies found in any appreciable amount. The serum of twelve measles patients was examined, in six only once as the eruption was beginning to fade, in six usually daily throughout the course of the disease. Four of these serums showed a negative phase of one, two, two, and five days' duration, respectively. A distinct rise in opsonins for the measles organism occurred in each case as the symptoms subsided and the eruption disappeared. This rise lasted from one to four days. The point of opsonic extinction for normal blood was 1:30; for measles serum 1:15 during the negative phase and from 1:60 to 1:340 during the rise. The various strains isolated from the blood, throat, nose, eye and ear of measles patients gave similar results.

36. Toxicity of Pneumonic Lungs.—Salt solution extracts of pneumonic lung in the stage of gray hepatization were found to be more toxic for animals than similar extracts of normal lung tissue. The method of extraction influenced the toxicity of both extracts. Lethal doses of extracts of both pneumonic and normal lung injected intravenously usually produced anaphylactic symptoms. Sterile extracts of pneumonic lung in dogs removed forty-eight hours after intrabronchial insufflation of virulent pneumococci, were more toxic than similar extracts of lung consolidated by intrabronchial insufflation of sterile aleuronat, and both were more toxic than extracts of equal weights of normal dog lung. The toxicity of extracts of normal and pneumonic lung is decreased by heating, drying and filtration through Berkefeld filters. Extracts of human pneumonic lungs in gray hepatization were frequently hemolytic for guinea-pig cells, whereas similar extracts of normal human and dog lungs and of dog lungs consolidated from intrabronchial insufflation of virulent pneumococci and sterile aleuronat, were generally nonhemolytic. The hemolytic activity of these extracts was neutralized by antipneumococcus serum as well as by normal rabbit serum; reduced by heating and drying, and usually completely removed by porcelain filtration. One extract of a human pneumonic lung in gray hepatization was found to partly neutralize the agglutinating activity of an antipneumococcus serum. The nature of the toxic and hemolytic substance or substances in extracts of pneumonic lung is unknown; it is probably allied with the protein fractions and may be partly responsible for the production of the various systemic symptoms of lobar pneumonia ascribed to toxemia.

37. Action of Quinin, etc., on Pneumotoxin.—The following summarizes the authors' work: Pneumococci when dissolved in sodium choleate liberate a preformed endocellular toxin which is lytic for erythrocytes. Different preparations of the pneumotoxin vary considerably in their toxicity for guinea-pigs, mice and rats. The hemolytic power of the pneumotoxin was inconstant and not always concomitant with the degree of toxicity. Quinin and urea hydrochlorid, ethylhydrocuprein hydrochlorid, and other derivatives of cinchona were found to exert no influence on either the toxicity or the hemolytic activity of pneumotoxin. Therapeutic doses of quinin bisulphate, quinin hydrochlorid and particularly quinin hydrobromid prolonged to a recognizable extent the lives of animals receiving one minimum lethal dose of pneumonic lung extract. Quinin and urea hydrochlorid and ethylhydrocuprein hydrochlorid had slight inhibitory effect on the hemolytic activity of the lung extracts when large, hemolytic doses of the drugs were used. Quinin hydrochlorid, quinin hydrobromid, quinin bisulphate, and hydroquinin hydrochlorid behaved in a reverse way, exhibiting marked inhibition in nonhemolytic doses and no inhibition in hemolytic doses. Neither pneumococcus protein nor pneumonic blood was found to have any neutralizing action on the toxicity of quinin salts for animals. Neither the clinically beneficial action of cinchona derivatives in the pneumonias nor the increased quinin tolerance of pneumonia patients receives elucidation from the experiments reported; the results being largely negative.

38. Chemotherapy of Experimental Pneumococcus Infection.—The ordinary soluble salts of mercury and numerous new mercurial compounds were found by Kolmer and Steinfield to be without appreciable effect in prolonging the lives of mice infected with a dose of Type I pneumococcus culture lethal within seventy-two hours. The results of their experiments indicate that ethylhydrocuprein hydrochlorid by subcutaneous injection in doses without protective value, usually increase the protective value of antipneumococcus serum Type I in a slight but definite manner in severe infections of mice and rats with homologous pneumococci. Several of the commoner compounds of quinin, as quinin and urea hydrochlorid, quinin bromid, and quinin chlorohydrosulphate, given subcutaneously in doses without any appreciable influence on severe and fatal pneumococcus infections, occasionally increase the protective power of antipneumococcus serum but to a lesser extent and less regularly than ethylhydrocuprein hydrochlorid. Ordinary salts of mercury subcutane-

ously did not increase the protective value of antipneumococcus serum; several new synthetic compounds of mercury were generally without effect on the protective power of the serum in severe experimental infections.

Kentucky Medical Journal, Bowling Green

May, 1918, **16**, No. 5

- 43 Surgical Management of Hypertrophy of Prostate. H. H. Grant, Louisville.—p. 193.
- 44 Precancerous Lesions. I. Abell, Louisville.—p. 198.
- 45 Precancerous State and Increase of Cancer. A. H. Barkley, Lexington.—p. 203.
- 46 Early Diagnosis and Treatment of Ectopic Gestation. C. A. Vance, Lexington.—p. 207.

Laryngoscope, St. Louis

April, 1918, **28**, No. 4

- 47 Index-Medicus and Digest of Otolaryngology, 1917.

Medical Record, New York

May 11, 1918, **93**, No. 19

- 48 Treatment of Tuberculosis. G. E. Bushnell, Washington, D. C.—p. 793.
- 49 Stammering. A. J. P. Pacini, New York.—p. 800.
- 50 Preliminary Report of Use of Ozonized Chlorinated Oil of Eucalyptus. J. T. Schell, Philadelphia.—p. 806.
- 51 Indigocarmine Used Intravenously for Locating Ureteral Orifices in Tuberculous Cystitis. S. P. Martin, Buffalo.—p. 808.
- 52 Treatment of Flatfoot. L. Mayer, New York.—p. 811.

Michigan State Medical Society Journal, Grand Rapids

May, 1918, **17**, No. 5

- 53 Oral Sepsis. C. T. Pankhurst, North Star.—p. 183.
- 54 Evolution of Nursing. E. I. Carr, Lansing.—p. 186.
- 55 Case of Cicatricial Ectropion Corrected by Plastic Operation. G. Slocum, Ann Arbor.—p. 189.
- 56 Case of Enormous Postoperative Ventral Hernia. L. L. Bottsford, Ann Arbor.—p. 191.
- 57 Syphilitic Paralysis of Fifth Cranial Nerve. C. D. Camp, Ann Arbor.—p. 194.

Military Surgeon, Washington, D. C.

May, 1918, **42**, No. 5

- 58 Gunshot Fractures of Long Bones of Extremities. H. Frost.—p. 505. To be continued.
- 59 Analysis of Problem of Infection. J. L. Stoddard and S. C. Harvey.—p. 518.
- 60 Shell Shock. E. K. Johnstone.—p. 531.
- 61 Few Civil War Hospitals. C. Wood.—p. 539.
- 62 *Study of Comparative Number of Successful Vaccinations by Cross Scarification and Incision Methods. E. D. Kremers.—p. 549.

62. Study of Successful Vaccinations.—Kremers' investigation has convinced him that the method of incision is the only vaccination method which should be used in the military and naval services. It should be the method of choice for all vaccinations. The cross scarification method gives a slightly higher percentage of primary "takes" than the incision method and a reduced higher percentage of total "takes" (revaccinations included) in unprotected persons. Of the total "takes" 87.1 per cent. were secured in 257 unprotected men by the incision method against 92.4 per cent. in 225 unprotected men by the cross scarification method. The percentage of "takes" secured by the incision method is sufficient when carefully done to prevent epidemics of smallpox. The slightly higher percentage of "takes" secured by the cross scarification method is offset by the increased number of infections which follow this method.

Minnesota Medicine, St. Paul

May, 1918, **1**, No. 5

- 63 Conservation of Hearing. H. Newhart, Minneapolis.—p. 161.
- 64 Tumors of Bladder and Their Nonoperative Treatment. W. F. Braasch, Rochester.—p. 168.
- 65 Treatment of Epidemic Cerebrospinal Meningitis. T. L. Birnberg, St. Paul.—p. 174.
- 66 Absolutely Necessary Microscopic Diagnosis. W. C. MacCarty, Rochester.—p. 178.
- 67 Physiology of Corpus Luteum. E. T. Hermann, Minneapolis.—p. 181.
- 68 Elephantiasis; Report of Case. A. N. Besssen, Minneapolis.—p. 185.

Missouri State Medical Association Journal, St. LouisMay, 1918, **15**, No. 5

- 69 Etiology of Alopecia Areata Neurotica. J. Grindon, St. Louis.—p. 145.
- 70 Recruiting for Navy. E. A. Brookes, St. Louis.—p. 148.
- 71 Fractures of Femur. J. McH. Dean, St. Louis.—p. 153.
- 72 Binet Tests and Problem of Feeble-minded. E. E. Liggett, Owsego, Kan.—p. 157.
- 73 Malta Fever; Report of Case. R. A. Woolscy, St. Louis.—p. 164.
- 74 Apparatus for Making Fluoroscopic Radiography. A. G. de Weal, St. Louis.—p. 166.

Modern Hospital, St. LouisMay, 1918, **10**, No. 5

- 75 Hotel Dieu of Blois. K. de Monclos, Paris, France.—p. 313.
- 76 New Building for Easton Hospital, Easton, Pa. W. S. Michler and S. S. Goldwater, New York.—p. 317.
- 77 Standards for Children's Hospital. S. McLean, New York.—p. 324.
- 78 Animal Foods, Their Composition and Fuel Value. J. P. Street, New Haven, Conn.—p. 329.
- 79 Nurses' Home of Norton Memorial Infirmary. A. Loomis and J. Hartman, Louisville, Ky.—p. 331.
- 80 How Great Clinic Works. J. A. Hornsby.—p. 333.
- 81 Cragmor Sanatorium, Colorado Springs. I. Morton, Colorado Springs, Colo.—p. 336.
- 82 Bookkeeping for Small Hospitals and Allied Institutions. H. K. Carter and C. A. Porter.—p. 341.
- 83 Volunteer in Outpatient Work. C. H. Smith, New York.—p. 344.

New Jersey Medical Society Journal, OrangeMay, 1918, **15**, No. 5

- 84 Treatment of Fibroid Tumors of Uterus with Radium. H. A. Kelly, Baltimore.—p. 145.
- 85 Electrodiagnosis in Industrial Accidents, War Wounds and Affections of Motor Apparatus. G. B. Massey, Philadelphia.—p. 146.
- 86 Treatment of Long Standing Suppurations in Arthritis and Osteomyelitis. E. Z. Holt, Atlantic City.—p. 149.

New Orleans Medical and Surgical JournalMay, 1918, **70**, No. 11

- 87 Medical Aspects of Gallbladder Disease. C. L. Eshleman, New Orleans.—p. 823.
- 88 Gastro-Intestinal Aspects of Gallbladder Disease. S. K. Simon, New Orleans.—p. 827.
- 89 Surgical Aspects of Gallbladder Disease. J. M. Batchelor, New Orleans.—p. 831.

New York Medical JournalMay 11, 1918, **107**, No. 19

- 90 Bacteriologic Study of Cigars. R. C. Rosenberger, Philadelphia.—p. 865.
- 91 Some Phases of Endocrinology. W. V. P. Garretson, New York.—p. 866.
- 92 The Unconscious. A. Stern, New York.—p. 869.
- 93 Diatheses in Children. A. Hymanson, New York.—p. 872.
- 94 How the Health Department May Aid in Diagnosis and Treatment of Meningitis. J. B. Neal, New York.—p. 876.
- 95 Relation of Carbohydrates to Protein Synthesis. N. W. Janney, New York.—p. 879.
- 96 Case of Tumor of Cerebellopontine Angle. E. D. Friedman, New York.—p. 884.
- 97 Immunization Against Colds. J. G. Dwyer, New York.—p. 885.

Oklahoma State Medical Association Journal, MuskogeeMay, 1918, **11**, No. 5

- 98 Some Frequent Obstetric Procedures—Conservative and Vicious. W. A. Fowler, Oklahoma City.—p. 143.
- 99 Antrum. W. E. Dixon, Oklahoma City.—p. 145.
- 100 Varied Topics of Surgical Interest. F. L. Watson, McAlester.—p. 148.
- 101 Tuberculosis of Kidney. D. N. Eisendrath, Chicago.—p. 150.
- 102 Eugenics. J. W. Lynes, Byron.—p. 153.

Surgery, Gynecology and Obstetrics, ChicagoMay, 1918, **26**, No. 5

- 103 *Management of Renal Tuberculosis; Report of Cases. H. G. Bugbee, New York.—p. 479.
- 104 Peptic Ulcer. J. B. Deaver, Philadelphia.—p. 489.
- 105 *Radium in Treatment of Certain Types of Uterine Hemorrhage and Uterine Fibroids. C. J. Miller, New Orleans.—p. 495.
- 106 Cystoscopic Study of End-Results of Various Forms of Cystocele Operations; Preliminary Report. L. Broun and R. M. Rawls, New York.—p. 502.
- 107 Disturbances of Acid Secretion Accompanying Ulcer of Stomach of Duodenum and Changes Following Operation. A. O. Wilensky, New York.—p. 506.
- 108 Perineal Hernia; Report of Cases and Review of Literature. A. V. Moschowitz, New York.—p. 514.
- 109 Hepatitis; Constant Accompaniment of Cholecystitis. E. A. Graham, Chicago.—p. 521.
- 110 Case of Hemorrhage Secondary to Nephrolithotomy. J. Frank, Chicago.—p. 538.

- 111 *Entrance of Air into Mediastinum During Operations on Base of Neck. C. G. Buford, Chicago.—p. 540.
- 112 Problems in Abdominal Surgery. T. J. Watkins, Chicago.—p. 543.
- 113 Fetal Death During Labor. C. B. Reed, Chicago.—p. 545.
- 114 Interstitial Pregnancy. Adenomyoma of Rectovaginal Septum; Report of Case. A. H. Curtis, Chicago.—p. 551.
- 115 Interilio-Abdominal Amputation; Report of Three Cases. W. W. Babcock, Philadelphia.—p. 554.
- 116 New Method of Tying a Surgical Knot. A. R. Grant, Utica, N. Y.—p. 559.
- 117 *Modification of Ahlfeld Method for Determining Maturity of Fetus in Utero. H. Thoms, New Haven, Conn.—p. 563.
- 118 Excision and Suture of Superficial Gunshot Wounds Under Local Anesthesia. S. Brock, France.—p. 565.
- 119 Case of Chorio-Angiogenesis. I. Ayora, Quito, Ecuador.—p. 568.
- 120 *Treatment of Cystocele and Uterine Prolapse During Childbearing Period. T. J. Watkins, Chicago.—p. 570.

103. **Renal Tuberculosis.**—Bugbee's analysis shows that while the active tuberculous process in the kidney has been arrested and walled off, still this is not the rule, the lesion being progressive. Even when arrested, a kidney the site of poorly drained cavities is a menace to the system. Therefore, nephrectomy for unilateral renal tuberculosis is the proper treatment. With the means at hand by which we can often make an early and accurate diagnosis of renal tuberculosis, and with statistics showing that 75 per cent. of the cases of unilateral infections are cured by nephrectomy, the tendency is to be too optimistic as to the future in these cases. They should all report regularly, be watched and treated as cases of general tuberculosis.

105. Abstracted in THE JOURNAL, July 14, 1917, p. 144.

111. **Entrance of Air into Mediastinum.**—In the treatment of this condition Buford feels that free ventilation of the room and oxygen are indicated, that possibly digitalis products are beneficial. In the graver cases venesection offers us more relief than anything else. If after venesection there is still no relief, incision of the anterior mediastinum has been recommended in somewhat parallel conditions. The wisdom of this is debatable because it is possible that instead of relieving tension more air might be admitted and the symptoms aggravated. This question needs to be settled by animal experimentation. If incised the edges of the wound should be kept apart by stiff rubber drains or other methods, but at no time should gauze be used for that purpose because its meshes fill with blood and soon plug the wound. It also remains to determine by experimentation what, if any, relief may be obtained by very slow aspiration of the anterior mediastinum through needle puncture.

117. **Modification of Ahlfeld Method.**—The modification of the Ahlfeld method proposed by Thoms may be described as follows: The patient is placed in the lithotomy position for the ordinary vaginal examination. The examination may be conducted either vaginally or rectally. If the head is high up and cannot be reached per rectum the vaginal route becomes necessary. If, however, the vertex can be palpated at all per rectum the rectal route becomes preferable not only on account of the lessened danger of infection but because the examining finger is in the extension of a line corresponding to the axis of the fetus in utero.

120. **Treatment of Cystocele and Uterine Prolapse.**—Briefly Watkins' procedure consists of a wide incision anterior to the cervix, free separation of the herniated part of the bladder, closure of the hernial opening by circular sutures, restoration and fixation of the urethrocele, and perineorrhaphy are essential features in the operation. Amputation of the cervix, trachelorrhaphy, plastic surgery on the broad ligaments, and vaginal fixation of the round ligaments are adjuncts which can be utilized as necessary.

Texas State Journal of Medicine, Fort WorthMay, 1918, **14**, No. 1

- 121 Full Term Ectopic Pregnancy with Operation Eight Months Later. E. Mathis, Austin.—p. 13.
- 122 Case of Osteitis Fibrosa Cystica, Involving Shaft of Right Femur and Right Tibia. R. L. Ramey, El Paso.—p. 16.
- 123 Why Not Circumcise Girl as Well as Boy? B. C. Eskridge, Houston.—p. 17.
- 124 Most Effective Treatment of Lower Extremity Deformities Due to Anterior Poliomyelitis. H. F. Connally, Waco.—p. 20.
- 125 Diagnostic Significance of Malnutrition in Gastric and Intestinal Disturbances. E. V. DePew, San Antonio.—p. 21.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

April, 1918, 12, No. 2

- 1 State Control of Tuberculosis. F. Kincaid.—p. 77.
- 2 Domiciliary Treatment of Tuberculosis. O. Holden.—p. 81.

Bulletin of Canadian Army Medical Corps, Ottawa

April, 1918, 1, No. 2

- 3 *War Edema (Kriegsodem) and Bilateral Parotid Enlargement. F. A. Park.—p. 18.
- 4 Liquid-Tight Closure and Treatment of Wounds. W. H. Taylor and N. B. Taylor.—p. 19.
- 5 Exercise in Treatment of Weak Feet. H. R. Smith.—p. 23.
- 6 Eye Injuries from Broken Eyeglasses. P. G. Bell.—p. 26.

3. War Edema and Bilateral Parotid Enlargement.—Park says that this is a condition so peculiarly German that to give it an English name would accuse us of want of chivalry. However and above this, to speak of the condition as "war edema" is incorrect; it is not war but purposeful underfeeding that is the primary cause. It is a famine edema, not a war edema. This disease occurred among the prisoners of all nationalities who were fed on German rations only. Kriegsodem is the result of underfeeding, especially in fat and protein. It can be cured easily in the early stages by sufficient food. When well established it is frequently complicated by colitis, when the mortality is high. The condition commences as slight edema of the feet and legs, disappearing when the patient is recumbent. Patients are seldom admitted to the hospital in this stage, although proper feeding with rest in bed would completely restore them in a few days. The usual type found in the hospital presents a massive edema of the feet, legs, thighs, and scrotum, with some puffiness under the eyes. Ascites is common. The patient is pale and dull; indeed, the appearance is strikingly like that of a case of glomerular nephritis. There is extreme muscular wasting and weakness. Dyspnea is only present on exertion, except when there is hydrothorax. The heart is slightly enlarged; the action is regular, but usually slow; the muscle tones are poor, and the second aortic sound is not accentuated. Blood pressure is low. There are commonly many moist rales in the lungs posteriorly, especially toward the bases. Complicated cases are afebrile. In the most serious cases there is a general anasarca, the chest and abdominal parietes are edematous, and all the serous sacs become filled with fluid. In one case Park removed 15,000 c.c. of watery fluid from the pleural sacs in a series of six punctures during two weeks. In a few cases paracentesis abdominis was done. Pericardium was common, but never extensive enough to require withdrawal.

Park also saw some twenty cases of a condition of enlargement of the parotid glands which was always bilateral. The enlarged glands were at no time hard or painful, but rather they were soft and doughy, the swollen regions being easily pushed between the finger and thumb. The condition was afebrile; in no uncomplicated case did Park encounter rise in temperature in association with it. It was never accompanied by orchitis, and it tended to persist indefinitely.

Indian Journal of Medical Research, Calcutta

January, 1918, 5, No. 3

- Laboratory Findings in Three Indian Cases of Cerebrospinal Fever. R. Knowles and V. B. G. Armytage.—p. 441.
- Case of Malaria Showing Atypical Parasites. F. W. Cragg and G. K. Naidu.—p. 458.
- *Intravenous Use of Quinin Acid Hydrobromid in Malaria. R. Knowles.—p. 463.
- Occurrence of Negri Bodies. J. W. Cornwall.—p. 478.
- Occurrence of Hyphomycetic Elements in Ulcers of Skin in Nineteen Cases. E. D. W. Greig and G. C. Maitra.—p. 481.
- "Critical Remarks" on "Study of Entamebic Cysts by Knowles and Cole." S. L. Brug.—p. 491.
- Prevalence of Bovine Tuberculosis in Punjab. G. Taylor.—p. 497.
- Simple, Rapid and Accurate Method of Classifying Statistical Data. A. G. McKendrick.—p. 510.
- Trematode Parasite of Anopheline Mosquitoes. M. B. Soparkar.—p. 512.
- Mouth Parts of Ochromyia Jejuna, Predaceous Muscid. F. W. Cragg.—p. 516.

- 17 Method of Feeding of Corizoneura (Pangonia) Longirostris Hardwick, with Description of Mouth Parts. J. L. Mitter.—p. 523.
- 18 New Larviparous Philematomyia (Philematomyia Indica, n. sp.). P. R. Awati.—p. 529.

9. Intravenous Quinin Acid Hydrobromid in Malaria.—Knowles claims that the intravenous administration of quinin in concentrated solution is the quickest and surest method of immediately cutting short a febrile attack of malaria. It appears to be a perfectly safe method, and is infinitely preferable to intramuscular injections from every point of view. It cannot, however, be relied on to exterminate the malarial parasite from the patient's system, and should be supplemented either at the time of that attack or subsequently by an oral course of quinin. The special rôle of the intravenous method is in bilious remittent fever, in algid or comatose cases in delirium, and in relapses in old standing malarial patients. In cases of malaria, hepatic deficiency is often a prominent feature, as shown by the frequency of the urobilin finding in the urine; while no matter how much quinin be given orally, gastric irritation may limit the amount which enters the circulation. Knowles, however, prefers its use as a routine measure during the febrile attack in all forms of malaria, either with or without simultaneous administration by the mouth. Even when no quinin can be given by the mouth the fever can be at once terminated by intravenous quinin; while other drugs are given orally to combat gastric and hepatic irritation. By the intravenous technic the drug reaches the circulation instantly in a known dose, its full force is at once exerted on the malarial parasites in the blood stream, while further, the excretion of drugs, after intravenous administration, is more rapid than after dosage by the mouth.

There is quite a sufficient volume of evidence now available to justify the routine and extended use of quinin intravenously. In many instances intravenous quinin can be depended on to save life. The most suitable solution is probably a 5 to 10 per cent. solution of the acid hydrobromid in normal saline, though further work is required on quinin urethane and colloidal quinin. For an adult five consecutive daily injections of from 7 to 10 c.c. are recommended. In a critical case a gram should at once be given intravenously. The injections should, so far as possible, be so timed as to coincide with the rising temperature or with the rigor. The method has been used in advanced pregnancy and also in a case of excessively severe dysmenorrhea without causing any distress to the patients.

Journal of Laryngology, Rhinology and Otology, London

April, 1918, 33, No. 4

- 19 Otorhinolaryngologic Service in Italy. W. S. Bryant.—p. 97.
- 20 Report on Diseases of Ear, Nose, and Throat in Egypt from 1915. J. W. Barrett.—p. 100.
- 21 Two Cases of Middle Ear Suppuration with Complications. J. K. M. Dickie.—p. 106.
- 22 War Injuries and Neuroses of Otological Interest. C. E. J. Phillipson.—p. 111.
- 23 Results of Series of Investigations Based on Examination of One Hundred and Ten Individuals with Regard to Time of Commencement and Duration of Nystagmus in Caloric Test. C. A. Swan and R. Lake.—p. 118.

Journal of State Medicine, London

January, 1918, 26, No. 1

- 24 *Management of Neurasthenia and Allied Disorders Contracted in Army. J. Collie.—p. 2.
- 25 Civil Sanitation and War. E. W. Hope.—p. 18.

24. Neurasthenia and Allied Disorders in Army.—Neurologic centers have been established both by the French and English war departments immediately behind the fighting line. Here quick returns are the order of the day. The atmosphere in which a shell shocked soldier is treated, Collie says, is second only in importance to the personality of those who are to treat him. In these front line neurologic centers the treatment is more intensive, but the feature which distinguishes it from those employed at home is that the cases are taken, as it were red-hot from the battlefield and are moulded by the strong will of those specially selected for their treatment. Frequently men are returned to the fighting

line in two or three weeks. There is a special shock hospital for each army area. They are placed near the clearing hospitals, and are staffed by specially selected medical officers under the superintendence of a neurologist of repute. Here the case is investigated thoroughly, and if it is found that the man is not likely to recover soon he is sent to a base hospital, from which in time he may be transferred to England. Numbers of the men treated at these special hospitals are found after one, two or three weeks' treatment to have sufficiently recovered to be transferred to a local convalescent camp, where attention is specially paid to them as convalescent neurasthenics. Appropriate exercises are prescribed, and later on football and competitive games of skill are encouraged. In these special shock hospitals definite data of the reflex responses and other phenomena are being collected. In the advanced stations for dealing with these functional conditions the percentage of cure is very high, and the duration of the conditions is remarkably short. An immense proportion of this class of case is curable. Failures depend on the stubbornness, lack of will power, or refusal of further treatment by the patient.

A thorough physical examination followed by a definite assurance that no organic disease is present is a good foundation for the cure of functional disease. Reeducation is the keynote of the treatment for shell shock. A healthy and invigorating environment is everything. Massage, electricity, persuasion, occupation, light graduated work, fresh air, good wholesome food, and above all a healthy outdoor environment are essential adjuncts. The psychotherapeutic method of treatment has been found by experience to be wonderfully effective, provided only it is in the right hands. Persuasive conversations should be systematically arranged for, in which the patient and physician can have quiet talks, so that the man is led by tact and guarded sympathy to lay bare what is, as it were, at the back of his mind. Nothing in the nature of so-called psychoanalysis is necessary. All patients should be isolated during the earlier part of their treatment. The calm restfulness of solitude has a peculiar effect in allaying irritability, and prevents morbid introspection. Isolation is not solitary confinement; a nurse is in frequent attendance. Electrical treatment for these cases is of value, but the stoutest advocates of this method will not deny that the effect is intimately associated with the mysteriousness of the electric current. Work in one form or another is the only salvation for those who are suffering from functional nerve disease.

In spite of the treatment afforded and the large number of cures effected, it is obvious that a very appreciable number of men have been so incapacitated by shell shock and kindred nerve injuries that they are not fit for any further military service and receive their discharge. There is a large residuum who have not yet recovered, who are wholly unable to earn a livelihood, and who obviously cannot recover without very specialized treatment. At the request of the Minister of Pensions Collie has undertaken the organization of homes of recovery in different parts of the country for the institutional treatment of ex-soldiers of this class. Two institutions, one accommodating 100 patients and the other fifty, have been opened, one in London and the other in Belfast, and a third is being arranged for in Manchester. The principal methods adopted in these remedial homes are: 1. An attempt is made to gain the confidence of the patient and teach him to believe that he will recover, and continuous and painstaking efforts are made to persuade him to adopt an optimistic frame of mind. 2. The application of the usual remedial methods, such as massage and electricity. 3. Outdoor work and recreation are insisted on.

Journal of Tropical Medicine and Hygiene, London

April 15, 1918, 21, No. 8

- 26 Some Experiments with Fruit of *Blighia Sapida* in Nigeria. A. Connal and W. Ralston.—p. 81.

Archives des Maladies du Cœur, etc., Paris

March, 1918, 11, No. 3

- 27 *Paroxysmal Tachycardia. L. Bard.—p. 97.
28 Paroxysmal Hemoglobinuria; Three Cases. L. Giroux.—p. 105.
29 Obliterating Arteritis. Carpentier.—p. 112.

27. **Disappearance of Murmurs During Paroxysmal Tachycardia.**—Bard reports two cases which warn that even the most pronounced of the orificial murmurs are liable to disappear during an attack of paroxysmal tachycardia, and thus mislead the examiner. Inorganic murmurs often accompany the continuous tachycardia with exophthalmic goiter, as also with simple nervous palpitations. But these inorganic murmurs do not belong to the habitual clinical picture of paroxysmal tachycardia. With this the heart beat is much faster than with ordinary tachycardias. He has witnessed the subsidence during the paroxysmal tachycardia not only of the signs of mitral stenosis but also the murmur of aortic insufficiency and even the murmur from perforation of the interventricular septum in an extremely characteristic case of Roger's disease. In examining the patient therefore, more than one examination is necessary, watching for attenuated signs of masked lesions. In one of the two cases described the man of 22 had no trace of a murmur during the several days of the paroxysm of tachycardia although he was known to have a perforation of the septum. In the other case the pronounced aortic murmur disappeared as the tachycardia set in.

Bulletin de l'Académie de Médecine, Paris

March 26, 1918, 79, No. 12

- 30 *Bread Made Direct from Grain. Leprince, Lecoq and Doléris.—p. 264.
31 *Malarial Tremor. H. de Brun.—p. 269.
32 Bacteriologic Findings in Epidemic of Bacillary Dysentery. F. Bezançon and others.—p. 275.
33 *Spots in Eggs. Martel.—p. 277.
34 Heart Complications of Smallpox. P. Teissier.—p. 280.
35 Welfare Work for Tuberculous Soldiers. L. Bernard.—p. 282.

April 2, 1918, 79, No. 13

- 36 *The Emotive Constitution. Dupré.—p. 286.
37 *Kala-Azar in Children in France. M. Labbé, Targhetta and Ameuille.—p. 288.
38 *Meningeal Hemorrhage in War Pathology. G. Guillaumin.—p. 290.

30. **Bread Made from Grain Without Grinding.**—See Par Letter, p. 1391.

31. **Malarial Tremor.**—De Brun relates that tremor is noted in nearly every case of secondary malaria in his service. The tremor sometimes is so intense that it interferes with the man's work as a draftsman or painter and with writing and playing an instrument, but usually it is too slight to attract attention. The tremor varies in its intensity; in two of his cases, exaggeration of the tremor warned of an impending malarial attack. In the majority of cases it seems to be the expression of a toxi-infection, but in others some organic lesion is evidently responsible.

33. **Spots in Canded Eggs.**—Martel is chief of the Service vétérinaire sanitaire, and he here reports bacteriologic studies of the spots seen in candling eggs. This does not reveal any change in color or taste, or slight infection of a fresh egg acquired during its development. But otherwise the findings with candling can be usually relied on.

36. **Autonomic Pathology of Emotivity.**—Dupré's views were summarized in de Fleury's article, of which an abstract was given, April 20, 1918, page 1194.

37. **Kala-Azar in Children.**—The two children presenting typical leishmaniosis were refugees from Serbia, but the disease had developed eighteen months after their arrival in France. They lived at Nice. The longest incubation known was in a 6 months babe. Leishmaniosis in dogs is known on the French coast of the Mediterranean.

38. **Meningeal Hemorrhages in War Pathology.**—Guillaumin emphasizes the danger of overlooking meningeal hemorrhages, especially with shell shock, etc. Besides the classic symptoms, headache, stiff neck, bradycardia, etc., meningeal hemorrhage should be suspected with cerebral excitation accompanied with mental confusion, a contralateral flexion reflex when pressure is applied to the femoral quadriceps, true defense reactions like those of the frog, pupil disturbance and massive albuminuria in some cases. There may also be a sallowness from the local hemolytic processes. The products of the hemolysis may exert further a toxic action on the nerve centers and nerve roots.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 8, 1918, 42, No. 5

- 39 Spontaneous and Recurring Chondrocostal Dislocation. J. Huber and P. Brian.—p. 131.
40 Traumatic Aneurysm in a Syphilitic. F. Ramond and L. Postina.—p. 132.
41 Cancer and Stones in Pancreas. J. Minet.—p. 135.
42 The Cerebrospinal Fluid in Beriberi. J. A. Sicard and H. Roger.—p. 137.
43 *Streptococci in Wounds. L. Ramond and C. Vergelot.—p. 142.

43. Improved Technic for Cultivating the Streptococcus.—Ramond and Vergelot comment on the importance of early detection of the streptococcus in war wounds as contraindicating primary suture. In 142 cases they found the streptococcus at 195 examinations, and invariably the course of the wound corresponded to what was anticipated from the presence of the streptococcus. The characteristic chains appear earlier and more certainly when Sacquépée's sodium albumin is added to ordinary bouillon. The streptococcus proliferates in this mixture before other bacteria, sometimes in three hours, and almost always in six, showing the typical chain-forms. Using three to five loops instead of one, while reducing the culture medium to 0.5 c.c., aids further in hastening the development of the culture. The Sacquépée sodium albumin is prepared by mixing white of egg with three times its volume of distilled water, stirring constantly but without beating to a froth. To 1,000 c.c. of this mixture is added 5 c.c. of a 10 per cent. solution of sodium. After distributing in tubes it is sterilized at 110 C. for twenty seconds. One part of this, mixed with four parts of ordinary bouillon, is distributed in tubes in the proportion of 1 c.c. of the fluid to a tube 1 cm. in diameter. About 0.5 c.c. of the fluid is inoculated with three to five platinum loops of pus or serous fluid. The tube is kept at 37 C. and examined under the microscope the third and sixth hours or oftener. Positive findings were obtained in three hours in 80 per cent. of the positive cases; in 90 per cent. in less than six hours, and in 99 per cent. by the next day. They always made parallel tests with other culture mediums.

Paris Médical

March 23, 1918, 8, No. 12

- 44 *Crippled Respiration. M. Labbé and L. Arié.—p. 226.
45 *Simple Technic for Transfusion of Blood. Rieux.—p. 229.
46 Focus of Autochthonous Malaria. P. Ravaut.—p. 232.
47 *Subacute Rat-Bite Disease. P. D'Halluin and J. Fiévez.—p. 234.

44. Crippled Lungs.—Labbé and Arié remark that the war has compelled us to regard the healing art from a new angle, namely, that we now have to consider first of all the future utilization of the man in military service and in civilian life later. They discuss here the men who are "lame," not in their legs, but in their respiratory passages. Before the war, these men sought easy, sedentary occupations, and their chronic bronchitis, suspicious apical findings or emphysema were not regarded as actual sickness; they merely wore a sash on their way to work, and attended to business as usual. Under the vicissitudes of military service they have to be sent again and again to the infirmary for bronchitis, etc. The anatomic lesions in these cases are so minute that the complaints seem out of all proportion to them, and appreciation of the actual functional capacity of the man is a difficult matter. Only the regimental physician, seeing the man under various conditions of walking, running, and other military exercises, is able to estimate what the man can actually stand. The regimental physician should always be consulted in these cases. A change of service to the heavy artillery or aviation work, relieving the men of marching and much carrying, may be all that is necessary for these "air passages cripples." With weakness and anemia, the auxiliary service may be preferable. The lesion in these cases is not progressing, and there is every chance that exercise will prove instead of aggravating the condition. With active tuberculosis, on the other hand, even smaller lesions call for dismissal from the service, as any overexertion is liable to increase or accelerate the progress of the bacillary lesion.

45. Transfusion of Citrated Blood.—Rieux has simplified the technic for transfusion; among other points, by using a car-needle to draw the blood without first exposing the

vein. This renders the procedure so insignificant that several donors can be tapped for the needed amount of blood, instead of taking it all from one donor.

47. Rat-Bite Disease.—The woman of 49 had been bitten in a finger by a rat, and the glands in the axilla and above the clavicle became enlarged, with attacks of fever recurring during six months, with neurasthenia and loss of appetite. Under scrotherapy (*sérum névrosthénique*), and 0.005 gm. sodium arsenate by the mouth, daily, the symptoms gradually subsided. The intervals between the febrile attacks were remarkably regular, practically always six and a half days, or multiples of this. Toward the last, urticaria developed; this does not seem to have been noted before in the European cases, but it is further proof of the identity of the disease in Europe and Japan. Quinin had absolutely no effect, and the recovery under two or three months of the arsenic may have been merely the self-limitation of the subacute infection. The disease is known after the bite of a weasel or ferret, and even from a mere sojourn in a rat infested environment (Dick and Rutherford).

Presse Médicale, Paris

March 18, 1918, 26, No. 16

- 48 *Tests of Resisting Power of Blood Corpuscles. A. Chauffard and J. Huber.—p. 141.
49 *Rôle of the Periosteum. R. Leriche and A. Policard.—p. 143.
50 Quinin in Capsules that Do Not Dissolve in the Stomach. P. Ravaut.—p. 146.
51 Syphilis in Natives of Morocco. Lacapère.—p. 146.
52 The Abuse of Milk in Children's Diet. J. Comby.—p. 150.

48. Resisting Power of Blood Corpuscles.—Chauffard and Huber tested with various isotonic salt solutions the blood corpuscles from forty-four persons. Their findings confirm anew the immense importance of the phenomena of osmosis in the life of the cells, and the folly of regarding isotonic solutions as physiologically interchangeable. Too many factors are involved, and even although the isotonic osmotic tension is a protection for the living cell, this protection is only relative, and injurious chemical action is always possible. Of all the solutions tested, freshly prepared Ringer's fluid seemed to be the least harmful for the cells.

49. Rôle of the Periosteum in Formation of Bone.—Leriche and Policard declare that the periosteum should be regarded as a physiologic entity rather than from the standpoint of anatomy. Correctly managed, we can almost create bone at will from the periosteum. The balance and coordination between bone and periosteum are like those between the derma and the epidermis. Repair of bone requires always the cooperation of bone tissue and of the neighboring soft parts: ♦It depends on the periosteum physiologically understood. There is no specific bone-producing layer between the bone and the fibrous stratum, and bone is not secreted, in the strict sense of the term. It forms by the junction of bone and the fibrous tissue, represented by the periosteum, the outer layer of the bone participating, as they show by microscopic views of newly proliferated bone. The new bone grows out like a tumor in the direction of least resistance, but there can be no bone growth from the periosteum unless the superficial layers of bone have been scraped off with the periosteum. In all cases of subperiosteal resection of bone, the detached periosteum appears as if covered with minute grafts, the grafts formed of vascularized bone scraps, the growth of which is limited by the fibrous tissue of the periosteum itself.

Progrès Médical, Paris

March 23, 1918, 33, No. 12

- 53 Lipolysis and Bacteriolysis of the Tubercle Bacillus in Oil Medium. E. A. Bossan and E. Le Moignic.—p. 99.
54 Apparatus for Treatment of Fractured Knee or Ankle. H. P. Achard.—p. 100.
55 Heliotherapy for War Wounds. H. Vignes.—p. 102.
56 Roentgen Findings in Posterior Malleolus. P. Japiot.—p. 104.

March 30, 1918, 33, No. 13

- 57 *Acquired Morbid Fear. P. Voivenel.—p. 107.
58 Cure of Hysterical Functional Disorders. M. Dide and R. Courjon.—p. 113.

57. Morbid Fear.—Voivenel presents arguments to show that a minute expert medicopsychologic examination should be provided when a previously brave and decided character

displays a tendency to cowardice after some wound or concussion or disease, or exceptional emotional stress. The court martial must accept the possibility of acquired pathologic fear.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 17, 1917, 47, No. 46

- 59 Sahli's Volume Bolometry as Tested on the Healthy. D. J. da Cunha.—p. 1537.
60 Indications for Roentgenotherapy. M. Steiger.—p. 1554.

April 6, 1918, 48, No. 14

- 61 Presence of Bacillus of Gas Phlegmon on Uniforms. B. Galli-Valerio.—p. 433.
62 Quinin and Urea Hydrochlorid as Local Anesthetic. Dumont.—p. 435.
63 War Gaseous Phlegmons. P. F. Nigst.—p. 438. To be continued.
April 13, 1918, 48, No. 15
64 *Paradoxical Ankle Reflex as Sign of Organic Disease. R. Bing.—p. 465.
65 *Operative Cure of Cancer at Junction of Esophagus and Cardia. E. Bircher.—p. 467.

64. **The Paradoxical Ankle Reflex with Organic Disease.**—Bing found the reflex described in fourteen out of nineteen cases of organic spastic paralysis, while it was never present in 200 cases of psychoneuroses or nonspastic paralysis or in the healthy. The leg of the reclining patient is placed as for eliciting the foot clonus, that is, with moderate flexion in hip and knee joints, and the leg is lifted from the bed. The examiner's hand brings the ankle into slight extension (dorsal flexion), slightly stretching the Achilles tendon. Then with a broad and heavy reflex hammer a blow is struck at any point along the line of the ankle between the tips of the internal and external malleoli. With positive findings, there is a strong contraction in the gastrocnemius muscle while there is plantar flexion of the foot, at least as pronounced as with the Achilles tendon reflex. It is immaterial whether the blow hits the tendon of the tibialis anticus, extensor hallucis longus, or extensor digitorum communis. With a negative response there is no spasmodic contraction of the muscle, or only a weak extension spasm (dorsal flexion). This reflex was associated with the Babinski reflex in seven cases, and with foot clonus in seven. In one case of cerebral syphilis and three of war wounds of the cortex, this paradoxical or inverted reflex was the only pathologic reflex phenomenon that could be elicited.

65. **Cancer at Junction of Esophagus and Cardia.**—In analyzing his two successful cases and previous mishaps in others, Bircher has become convinced that the abdominal route offers the only guarantee of success. It is possible to draw the esophagus down into the abdominal cavity for from 4 to 7 cm. Witzel has drawn it down for 10 and even 14 cm. Bircher sutured the esophagus to the stomach according to the principles of a gastric fistula, Kader or Witzel, covering the exposed esophagus completely with peritoneum. A fistula into the stomach enabled the patients to be given nourishment from the first. One patient is still in good health over a year since the operation. The other after a period of comparative health succumbed to his valvular disease. In a third case, all was going well till the tenth day when—contrary to orders—food was given by the mouth. Vomiting followed, and the wound around the gastric fistula tore open, with fatal infection. Necropsy in these two cases showed ideal healing of the suture between esophagus and stomach.

Annali d'Igiene, Rome

March, 1918, 28, No. 3

- 66 Bacteriologic Diagnosis of Diphtheria. M. Pergola.—p. 101.
67 Pseudo-Dysentery Bacilli. B. Maymone.—p. 111.
68 Utilization of Cold in Destruction of Body Lice. I. Di Pace.—p. 130.
69 Glanders in Felines. M. Carpano.—p. 138. Continuation.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 14, 1918, 39, No. 21

- 70 *Dulness Back of Liver as Sign of Typhoid. A. Campani and F. Bergolli.—p. 205.
March 17, 1918, 39, No. 22
71 *Insufficiency of the Liver and Insomnia. P. F. Arullani.—p. 215.

70. **Liver Dulness in Typhoid.**—Lesieur called attention recently to an area of subdulness at the base of the right chest, which he called retrohepatic subdulness, and claimed it to be an early sign of typhoid. He found it pronounced in 80 or 90 per cent. of 300 typhoid cases, and others have confirmed this finding. Piazza stated that the area of dulness over the liver in the back extends normally from 3 to 5 cm. toward the left, but in typhoid it extends 6 or even 8 cm. to the left. Campani and Bergolli found this sign only in 40.7 per cent. of 105 typhoid patients, while on the other hand it was found in other morbid conditions. The probable explanation for it is some congestion in the lung, from reduced tonus of the vessels, plus the disturbance in the circulation in the region from the enlarged liver. The right lung rests on the solid base of the congested liver.

71. **The Liver and Insomnia.**—Arullani reports the case of a man of 52 who was under treatment for rebellious and extensive eczema. He had suffered for two years from a tendency to insomnia, but nothing else pathologic was known except that the liver was enlarged and the urine contained urobilin. Comparison of the day and night urine confirmed that the insufficiency of the liver became more pronounced at night, a cerebral toxemia resulting, this explaining the insomnia. The eczema was also traceable to the liver insufficiency, as was proved by the complete recovery under treatment addressed to the liver. (The therapeutic measures are not mentioned.)

Policlinico, Rome

March 31, 1918, 25, No. 13

- 72 *Fate of Scraps of Metal in the Tissues. E. Calandra.—p. 293.
73 Congenital Displacement of Viscera. L. Coleschi.—p. 295.
74 Encysted Projectile below Diaphragm. C. Guarini.—p. 298.
75 Trochoscopy with War Surgery. A. Maffi.—p. 300.
76 A Year of War Roentgen Work. G. Benassi.—p. 303.

April 7, 1918, 25, No. 14

- 77 *Bacillary Diarrhea. M. Ghiron.—p. 317.
78 Technic for Sending Blood for Analysis. S. Scigliano.—p. 319.

72. **Fate of Metal Scraps in the Tissues.**—Calandra has noted small zones of sclerosis of a grayish color, as the relics of a small scrap of metal in the tissues. The metal has disintegrated, but the gray sclerosis may cast a shadow suggesting a foreign body. He urges the importance of removing all the scraps of metal, as this metalization of the tissues can do only harm.

77. **Bacillary Diarrhea.**—Ghiron describes a bacillus found in sixty cases of diarrhea, which he cannot class with any of the known types.

Riforma Medica, Naples

Jan. 12, 1918, 34, No. 2

- 79 *Epidemic Hemorrhagic Purpura. F. Giugni.—p. 22.
80 Ovariectomy in Severe Hysteria. N. Federici.—p. 30.

March 23, 1918, 34, No. 12

- 81 Traumatology of the Liver. E. Aievoli.—p. 222.
82 Scurvy or Hemorrhagic Diathesis? S. Fichera.—p. 224.

79. **Hemorrhagic Purpura.**—Giugni describes the endemic epidemic appearance of hemorrhagic purpura, suggesting scurvy, among the troops on the firing line in 1916. He compares the experiences in this line at various points, and discusses whether the mountain climate, the emotional stress acting on glands with an internal secretion, and defective diet may have brought on the disease, or whether we can accept as the cause the spirochete found by Siccardi in various hemorrhagic states.

Archivos Españoles de Pediatria, Madrid

March, 1918, 2, No. 5

- 83 *Malignant Endocarditis in Children. L. Morquio (Montevideo)—p. 129.
84 Scabies in Children. E. A. S. de Aja.—p. 145.
85 Abscess in Lung of Child. G. Gamero.—p. 157.

83. **Malignant Endocarditis in Children.**—Morquio analyzes three cases in two girls and one boy, 8 and 5 years old, with the necropsy findings in one. These cases emphasize anew the vague and confused clinical pictures in such cases, simu-

ating typhoid, etc. In each there was embolism, right hemiplegia and death with the clinical picture of septicemia. Acute rheumatism was known in two and typhoid in the third case. In one case the endocarditis developed with pain and swelling in the right knee and ankle. Then more joints became affected and heart symptoms developed, with fever and death in four months. In the second case, gastrointestinal symptoms were first noted in the previously healthy child, then the endocarditis symptoms, and death in two months. The youngest child had acute articular rheumatism or about a week. The mother then died of typhoid and the child developed right hemiplegia soon after, and a typhoid and endocarditic state, with death four months after the first warning symptoms of the acute rheumatism. No physician was called in until the mother's illness.

Brazil Medico, Rio de Janeiro

Feb. 9, 1918, 32, No. 6

- 86 Flagellated Intestinal Parasites of Mammals. G. Hasselmann.—p. 41.
87 Syphilis the Most Chronic of Diseases. (Que é curavel da syphilis?) O. de Freitas.—p. 41.

Prensa Medica Argentina, Buenos Aires

Feb. 28, 1918, 4, No. 27

- 88 *Experimental Nystagmus. R. Argañaraz.—p. 371.
89 Postpartum Displacement of Uterus. E. S. Castellano.—p. 378.
March 10, 1918, 4, No. 28
90 Associated Laryngeal Hemiplegia. R. D. de Sanson.—p. 387.
91 Myosis plus Enophthalmos and Ptosis of Lids. E. Meirelles.—p. 389.
92 Case of Cancer of Jaw. A. H. Roffo.—p. 391.
93 Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 396. Continuation.

88. **Experimental Nystagmus.**—Argañaraz induced nystagmus in rabbits by various means, including stimulation and destruction of the cortex, cerebellum or labyrinth. He compares the symptoms observed with the necropsy findings, and also with the findings published by others from similar research on dogs and other animals, birds and fish. The article is illustrated and the technic for the various procedures described.

Revista de la Asociacion Medica Argentina, Buenos Aires

January-February, 1918, 28, No. 158-159

- 94 Parovarian Cyst Simulating Cyst in Omentum. E. Albina.—p. 5.
95 *Tuberculosis in the Navy and Its Prophylaxis. J. G. del Castillo and A. S. Lopez.—p. 13.
96 *Hypersecretion in Parotid Gland. M. C. Escalada and J. M. Jorge, Jr.—p. 32.
97 History of Public Hygiene in Argentina. E. R. Coni.—p. 45. Continuation.
98 Modification of Anterior Gastro-Enterostomy. R. Finochietto.—p. 88.
99 The Balance of Fluids in Typhoid Fever. V. Hutinel and E. Beretervide.—p. 96.

95. **Prophylaxis of Tuberculosis in the Navy.**—Castillo and Lopez relate that vaccination against typhoid and preventive measures against venereal disease have been compulsory in the Argentine navy for nearly three years, but nothing special has been done for prophylaxis of tuberculosis, and yet the mortality from this is higher than in other navies and in the army. The mortality from tuberculosis in the army in 1915 was 2.36 per thousand, but in the navy, and preparatory institutions, it was 12.40 per thousand and in the enrolled men, 35 per thousand. Among the new recruits (*conscriptos*) it was 19 per thousand. For pulmonary tuberculosis alone in the navy, in the enrolled men, the figures were 4.75 and among the new recruits 9.30. In the navies of Germany, Great Britain and North America the figures were, respectively, 2.40; 3.20 and 2.30, and in the Argentine army 2.36. Analysis of the data shows that the sudden change of life and the excessive physical exercise to which the new recruits are subjected cause the flaring up of apparently extinct or latent tuberculous processes in the conscripts. An initial hemoptysis in the month after joining the force is certainly the work of the excessive physical exercise following on a previously sedentary existence. Others show brief periods of fever, evidently from the unaccustomed physical overexertion.

In prophylaxis, a six months' course of preliminary training in hygiene and gymnastic exercises might reinforce the defensive powers of those fit for the service, and weed out those with progressive lesions. The latter should not be returned at once to their homes, but special sanatoriums for the navy should be organized. The need for this has been long recognized by the medical officers of the navy, but no steps have been taken in the matter as yet.

96. **Unilateral Hypersecretion of Saliva.**—The parotid gland was much enlarged and the saliva spurted from the duct of Steno in a fine jet when the gland was compressed. The flow was so profuse that the man was unable to work, while he suffered constantly from thirst and headache. The flow of saliva during the night filled a basin. Under bromids the flow was transiently less profuse. On the assumption of reflex hypersecretion from irritation of the auriculotemporal nerve, this nerve was twisted until its finest fibers were torn. The technic was that applied by Leriche, Dieulafoy and Aigrot to reduce hypersecretion from various causes. The nerve was reached back of the condyle of the lower jaw. The operation was comparatively insignificant but proved a complete success, as also in two other cases with annoying hypersecretion with cancer in tongue or cheek.

Revista de Medicina y Cirugia, Havana

April 10, 1918, 22, No. 7

- 100 Direct Bronchoscopy, Esophagoscopy and Laryngoscopy. E. F. Soto.—p. 177.
101 *Myiasis of the Bladder. A. Mendez.—p. 185.
102 *Criminal Responsibility. R. de Castro.—p. 188.
103 Administration of Calomel to Young Children. C. M. Garcia.—p. 200.

101. **Myiasis of the Bladder.**—Mendez reports the case of a girl with a huge calculus almost filling the bladder. It was removed by a suprapubic incision, and larvae of the fly, *Lucilia macellaria* were found in the crevices of the calculus. There had been no appreciable symptoms from the myiasis, but the healing of the wound was delayed by severe hemorrhages.

102. **Criminology and Legal Medicine.**—De Castro discusses the reforms needed for the conceptions of modern penology and criminology.

Revista Medica Cubana, Havana

April, 1918, 29, No. 4

- 104 *Duodenal Alimentation. Pages and Ibañez.—p. 182.
105 Breast Nursing Imperative even if the Mother is Sick. T. Hernandez.—p. 189.
106 Model Certificate of Defunction. R. Carbonell.—p. 195.

104. Summarized when it appeared elsewhere. (Abstract 93, p. 1576.)

Revista de Medicina y Cirugia Practicas, Madrid

March 14, 1918, 118, No. 1498

- 107 *Radium Treatment of Cancer of Larynx. R. Botey.—p. 289.
108 Technic for Removal of Uterine Fibrosarcoma. V. Aza.—p. 292.

107. **Radium Treatment of Cancer of the Larynx.**—Botey gives an illustrated description of his method of radium intubation for malignant disease of the larynx. He expects to present at the coming national Spanish Medical Congress a detailed report of his experiences with this *intubacion radifera* during more than two years, to date. As a rule, patients with cancer of the larynx absolutely refuse an operation, while the sensitiveness of the larynx region, the reflexes set up so rapidly, forbid the direct application of radium such as has proved so successful in uterine cancers. He introduces the radium inside a small tube which fits into a tracheotomy tube, if stenosis requires a tracheotomy; if not, inside a tube something like an ordinary intubation tube. The radium tube is arranged with a lead shield so that the mucosa is protected everywhere except at the point of the cancer. Owing to the sensitiveness of the region, he gives small doses and only for 3, 6, 12 and 18 hours. Exacerbations, recurrence and metastasis are of course more frequent under radium treatment than after operative removal, but he has a number of apparent cures which justify the radium intubation treatment when radical removal is not possible.

Revista Medica del Uruguay, Montevideo

February, 1918, 21, No. 2

- 109 *Utilization of Anal Sphincter in Correction of Incoercible Vesico-Vaginal Fistulas. A. Turenne.—p. 41.
 110 *High Uremia. F. Cortabarría.—p. 59.
 111 *Drainage for Puerperal Endometritis. J. Infanzozzi.—p. 63.
 112 Appendicular Syndrome with Menstruation. H. Platero.—p. 71.

109. **Utilization of Anal Sphincter in Treatment of Vesico-vaginal Fistulas.**—Turenne reports a case of destructive vesicovaginal fistula for which he had done six operations—none giving more than brief temporary relief. Conditions were such that none of the ordinary procedures were applicable. He then implanted a Murphy button in the wall of the rectum and passed a retention catheter through it (Petzer No. 28) thus diverting the urine through the anal sphincter. The urethra and vulva were sutured to close them, as also the last traces of the external fistula. The woman has been on the operating table under an anesthetic nine times in all, but the news from her nearly a year since the last operation were that she has increased much in weight, the stools are normal and she can hold her urine for an hour or hour and a half, and there are no pains anywhere, no fever, and the urine is limpid; the only trace left of anything abnormal is that occasionally there is a little blood in the urine. An illustration shows the details of the simple intervention. The button and the catheter were removed on the tenth and fourteenth days. In conclusion, Turenne remarks that after the urine has been diverted in this way, attempts to close the vulva and vagina may fail again and again, as in this case, but with patience and perseverance this is finally accomplished. The anastomosis should be made close to the internal margin of the internal sphincter. The button is not necessary if one is an expert in plastic surgery of the inferior genital passages, but otherwise it materially simplifies matters. This method is indicated when there is extensive destruction of tissue, including the loss of the neck of the bladder.

110. **High Uremia.**—Cortabarría's patient was a woman under treatment for abortion. There was jaundice for six days, with vomiting, chills, and epistaxis, somnolency, and prostration, purulent lochia and irregular fever. The blood showed 2,140,000 reds; 46,000 whites, and 6.40 per thousand urea, which increased to 6.66 just before death. In the urine the figures were 7.04, 17.8 and 16.26 on corresponding days.

111. **Permanent Drainage for Puerperal Endometritis.**—Infanzozzi extols the fine results he has obtained in ten years of experience with puerperal endometritis draining the uterus with a glass drain left permanently in place, supplemented by instilling some antiseptic solution. For this he usually prefers 20 or 40 c.c. of glycerin containing 5 per cent. turpentine or creosote, introducing it with a syringe and catheter. Lately he has been applying the Carrel method which has the advantage of being more fluid and permitting introduction of 100 c.c. of the fluid. He denounces copious irrigation of the uterus as exposing to grave dangers, and also protests against the use of the curet for the same reason. Digital evacuation of relics of the pregnancy is effectual if well done or a shallow (Roman) spoon might be used. Rubber tubes get kinked or clogged; a glass tube answers the purpose better. The only danger with this treatment is that bacteria may be carried up from the vagina into the uterus, in introducing the tube, but this danger can be ward off with the appropriate precautions.

Semana Medica, Buenos Aires

Feb. 7, 1918, 25, No. 6

- 113 Vaccine Treatment of Diphtheria. IV. J. Mendez and L. A. García.—p. 145.
 114 Total Emasculation Necessary for Cancer of Penis. M. Mackintosh.—p. 152.
 115 *Pharmaco-Ethnology. J. A. Dominguez.—p. 154.
 116 *Buttermilk. E. Fynn.—p. 161.
 117 *Prophylaxis of Infectious Diseases at Buenos Aires. E. R. Coni.—p. 162.

115. **History of Drugs.**—Dominguez calls the customs and traditions in respect to drugs, pharmaco-ethnology. He traces its history through the ages from the mythology of ancient Greece to date, describing the use of herbs, incense and oils in rituals, etc., and the use of plants, grains and

herbs in the preparation of beverages and liquors. He enters into the details of the production of the native liquors of Central and South America, and mentions a drink used in Siberia made from the *Amanita muscaria*, a poisonous mushroom.

116. **Buttermilk.**—Fynn expatiates on the advantages of buttermilk in infant feeding at times. If the children dislike it, the intervals between feeding can be lengthened until they have more appetite; they usually learn to like it. He makes a practice of giving a castor oil purge before commencing the buttermilk, as otherwise the tendency to constipation that follows its use may cause absorption of toxins from the bowels. For infants over 15 months old, he gives it with 10 per cent. flour. At weaning he gives buttermilk associated with skimmed milk, gradually adding whole milk if all goes well. Dilution of whole milk with skimmed milk he has always found better than to dilute with water or gruels.

117. **Prophylaxis of Infectious Diseases at Buenos Aires.**—In this twenty-eighth instalment of his great work, "Buenos Aires caritativo y previsor," which has been running through twenty-one issues of the *Semana*, Coni tabulates the statistics since 1877 in regard to the death rate from infectious diseases. The total average in the first decade was 33.2; in the decade ending with 1916, it was only 6.6. Improvement is pronounced all along the line. The relative mortality from diphtheria and croup per ten thousand inhabitants has dropped from 91 to 16; of typhoid, from 59 to 23; of measles, from 17 to 10; of scarlet fever, from 8 to 3, and of whooping cough, from 11 to 6. The fact that all our prophylactic measures have weak links is confirmed by the severe epidemic of measles in 1915, with the unprecedented mortality of 358 deaths, far more than in any of the four previous decades. Diphtheria also was responsible for 402 deaths in 1915, nearly twice as many as in any year since 1886. Yellow fever, cholera and smallpox have been conquered. Yellow fever in 1871 killed 20,000 in three months out of a population of 80,000. Coni remarks that it is not enough to pass laws in regard to vaccination against smallpox. A personnel must be organized to enforce them. He describes how this has been done so effectually that there was only one death from smallpox in 1914, one in 1915 and none in 1916.

Siglo Medico, Madrid

February 23, 1918, 65, No. 3350

- 118 Jacksonian Epilepsy or Hystero-Epilepsy? F. G. Aguilar.—p. 142.
 119 Film Treatment of Severe Burns. M. de la Serna.—p. 143.
 120 Psoriasiform Parakeratosis. Sicilia.—p. 145.
 121 Vitamins in the Diet of the Laboring Classes. G. Pittaluga.—p. 145.
 122 *Foundlings' Asylums. E. M. Villapadierna.—p. 146.

122. **Foundlings' Asylums.**—Villapadierna comments on the large and increasing number of these asylums in Spain, and denounces them as bad from nearly every point of view. Instead of fostering the abandoning of children, efforts should be devoted to helping the mothers to keep and bring up their children, and compel the father to bear his share of the burden. The laws should facilitate the investigation of the paternity, as it is unjust for only one of the two parents of an illegitimate child to bear all the burden. He urges the organization of a society for protection of unmarried mothers.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 16, 1918, 1, No. 11

- 123 *Fat in the Urine. J. L. A. Peutz.—p. 728.
 124 Experiences with Wassermann Reaction as a Guide to Treatment of Syphilis. J. H. Pameijer.—p. 739.
 125 *Traumatic Dermoid Cysts. I. J. Van den Helm.—p. 746.
 126 *Scarlet Fever in Parturient. B. Veraart.—p. 748.

123. **Fat in the Urine.**—Peutz remarks that appreciable fat in the urine must be regarded as pathologic unless after ingestion of excessive amounts of fats. Brieger was unable to induce alimentary lipuria in numerous tests, and Peutz found no traces even of lipemia after subcutaneous injection of large amounts of finely emulsified fats. Alimentary lipuria is induced more readily in animals, especially in dogs.

minute quantities of cholesterol and lecithin found in urine constitute a physiologic lipuria. This seems to be increased in malaria and tuberculosis, and reduced with cirrhosis of the liver, and lipoiduria may be pronounced with chronic nephritis. A large content of fat acids was found in the urine in a case of phosphorus poisoning, and in a patient with hematuria. The distinction between lipuria, lipoiduria and chyluria has not always been sharply drawn by different writers. Chyliform changes may be produced in the urine by products from tumors, suppuration and infectious processes, a pseudochyluria, or there may be hematuria. The fat particles can be detected by the microscope, and are dissolved by ether, benzol, ligroin and chloroform, but are scarcely soluble in alcohol, and not at all in water. They also spot paper characteristically.

He discusses the possible causes of chyluria: obstruction of lymph vessels from within or without, obstruction from vasomotor influences, or from infectious processes. In the two cases he reports, the attacks of chyluria were always preceded by pain in the kidney region or side. There was rapid loss of flesh, but severe pulmonary tuberculosis in one case attributed to the emaciation. In the other case the man twenty years had been occasionally under treatment for what was supposed to be tuberculosis of the kidney, but in intervals his earning capacity was not much impaired. The chyluria in this case developed only at night, after he had been lying bent over, on his side, and it was always preceded by pain in the side. In a similar case reported by Magnus-Levy, the chyluria occurred only during cold weather and on reclining at night. If the man got up in the night and exercised, his urine cleared up to limpid again. The urine containing milk shows milk sugar, while no sugar, or only grape sugar, is found with chyluria. In treatment of chyluria, a course of antisyphilitic measures is often advisable, and always we can seek to improve the general condition and make up in the diet for the waste of albumin and fat in chyluria. We must do this even although this may intensify the chyluria. It may be possible, also, to give food of such a kind that it is taken up by the blood capillaries in the intestines, instead of the lymphatics. Subcutaneous injection of fat might also be tried, although to date we have no convenient and effectual method for supplying needed calories by subcutaneous injection of fat; olive oil is liable to entail painful infiltration which disappears only very slowly.

25. Traumatic Dermoid Cyst.—Van den Helm applies this term to tumors developing from implantation of particles of foreign matter into deeper tissues, either during an accident or in some operation. The mechanism is thus the same in the acquired, traumatic form as in the congenital. In both his cases the "implantation cyst" developed several years after a radical operation. The growth was removed under the diagnosis of atheroma; it was adherent to the scar tissue and to deeper tissue below.

26. Scarlet Fever and Umbilical Infection.—The child died the second day after an extremely rapid spontaneous death, the discolored umbilical cord explaining the fatality. The mother developed septic fever and died ten days after delivery. No cause for these tragic occurrences could be ascertained until an eruption of scarlet fever on one of the other children in the family, just before the death of the mother, explained the sepsis.

Hospitalstidende, Copenhagen

March 20, 1918, 61, No. 12

*Surgery of Arteries. J. Ipsen.—p. 353.
Roentgen Findings in Fractured Calcaneus during Life and After Death. T. Eiken.—p. 365.
Present Status of Benign Glycosuria. E. Jarløv.—p. 370.

27. Surgery of Vessels.—In the first of Ipsen's three cases, he resected a femoral arteriovenous aneurysm and implanted a section of the femoral vein, with excellent results. The lesion had developed after a pistol wound in the femoral region. In two other cases he opened the popliteal artery to extract an embolus. The first patient was a young woman who for years had presented symptoms of heart insufficiency and finally of embolism in the popliteal artery. There was

pronounced necrosis of tissues when the case was first seen, nine days after the embolism. Amputation seemed inevitable, but the leg turned reddish as the embolus was removed and under careful management the leg was saved. Although the embolus was of eleven days' standing, it had not become adherent to the vessel. The case teaches that much can be ventured even in old cases. In the second case there was thrombosis elsewhere, responsible for the fatal outcome a few days later.

Ugeskrift for Læger, Copenhagen

March 14, 1918, 80, No. 11

130 *Falling of Hair as Early Symptom of Syphilis. M. B. Pedersen.—p. 425.

131 Comparison of Arsphenamin Preparations. M. B. Pedersen.—p. 431.

March 21, 1918, 80, No. 12

132 Dyspepsia with Chronic Habitual Constipation. VI. T. E. H. Thaysen.—p. 467. To be continued.

133 Invagination by Meckel Diverticulum. A. Vangsted.—p. 480.

134 *The Death Rate and Causes at Copenhagen 1715. P. Heiberg.—p. 486.

130. Falling of the Hair an Early Sign of Syphilitic Meningitis.—Pedersen remarks that the modern diagnosis of syphilis is a "matter of punctures," but that puncture to obtain spinal fluid can sometimes be dispensed with as the behavior of the hair reveals pathologic conditions below. Cyranka and Gärtner have reported that the spinal fluid was found notably pathologic in all but two of thirty-five soldiers with alopecia leukodermica. Nineteen of the men had never been treated for their syphilis, which dated from two months to two years, while the others had been given more or less treatment. It was noted further that the Herxheimer reaction was unusually pronounced in men with patches of thinning of the hair, and that exceptionally vigorous specific treatment was required before it subsided. In three other cases (optic neuritis, general paresis and incipient tabes), with an interval of from two to six years since the infection, each had had patches of alopecia early in the disease. This indicates that the virus had attacked the meninges early. Pedersen reports a group of ten cases in which different manifestations of syphilis—acquired, in all probability, less than five months before—were accompanied by a general falling of the hair. This sign of injury of the meninges was observed before the spinal fluid presented pathologic findings, with two exceptions. In another group of ten patients the falling of the hair occurred in irregular patches, along with other manifestations of syphilis. The infection dated mostly from six to nine months; in none from less than three months. The spinal fluid findings were positive in all but two who had been given extra energetic treatment. Pedersen concludes from these experiences that syphilitic meningitis occurs more frequently along with irregular patches of thinning or falling of the hair than with any of the other clinical manifestations of syphilis. Hence syphilitics showing even a suggestion of a "mangy" appearance of the scalp should be given particularly vigorous treatment, and be kept under close and prolonged supervision, and the spinal fluid should be examined at the close of the first year of treatment, unless symptoms on the part of the central nervous system call for this earlier.

134. The Causes of Death at Copenhagen in 1715.—An official report with this title and the date has recently been found among the state papers of Denmark. Nearly fifty different causes of death are listed for the total 2,265 deaths during the year, to a population of about 50,000. The list includes 58 stillborn and 141 newborn children, and 239 deaths from diseases of the chest; 82 from consumption; 632 from smallpox; 364 from "stroke" (convulsions) mostly in children; 189 general debility; 21 from dropsy; 2 from epilepsy; 72 from "fever"; 85 from "violent fever", and 108 from old age. Only 7 deaths from violence are recorded, and 5 from accidents during the year. One fatal case each of periodical insanity, melancholia, and hernia is reported; 9 persons were executed, and the death of 30 is ascribed to scurvy. Four years before the date of this report was the great plague year, which reduced the population from 66,000 to 44,000.

THE WAR SERVICE OF THE MEDICAL PROFESSION

A SURVEY INCLUDING THE NAMES OF CIVILIAN PHYSICIANS IN MILITARY SERVICE AND A TABULATION OF STATISTICS BY COUNTIES AND STATES

The same principle that requires each state or community to furnish its quota of men for the Army should also apply in securing physicians for the Medical Reserve Corps. To determine to what extent the various parts of the country had met this responsibility, the American Medical Association last winter compiled a list, by states and counties, of the physicians who had accepted commissions in the Medical Reserve Corps. This first survey was completed in March, and the matter down to and including Maryland was published in the American Medical Association *Bulletin*. It was the intention to publish the rest of this survey in the next issue of the *Bulletin* without delay. However, as the preliminary survey included only physicians who had accepted their commissions up to January, 1918, and therefore was not up to date, the War Committee of the American Medical Association directed that this preliminary survey be revised and completed to date of publication so far as possible. The War Committee, believing that all physicians should have this information, decided to publish it in THE JOURNAL, rather than in the *Bulletin*, the regular circulation of which is limited to the presidents and secretaries of the component county and constituent state associations.

Another reason for this action by the War Committee was the receipt of Surgeon-General Gorgas' letter¹ of April 3, requesting the cooperation of the American Medical Association. The Surgeon-General stated: "The additional increase in the Army during the next few months will probably necessitate the service of 5,000 physicians who as yet have not made application for a commission in the Medical Reserve Corps . . . it is estimated that the Medical Reserve Corps will need a steady increase of at least 2,500 applicants a year during the continuance of the war." Paragraphs five and six of his letter read:

"5. It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.

"6. To this end the department desires the closest cooperation and assistance of the American Medical Association, its officers and its allied organizations, believing that through its organizations the additional increment to the Medical Reserve Corps can be most satisfactorily obtained and the necessary increment for replacements be secured without in any way depriving any community of physicians whose services are necessary to its welfare and without depriving any manufacturing or other concern of its medical personnel when such personnel cannot be spared."

It is very desirable that physicians should be familiar with the information contained in the survey in order that they may better help in carrying out effectively the sentiments expressed in paragraphs five and six of the Surgeon-General's letter. All the data concerning each state are assembled in a table accompanying the matter for the state. These tables make it possible at a glance to determine the important facts regarding each county: the area, population, total number of physicians, number of physicians under 45 and under 55 years of age, number of women physicians, total number of physicians in the county, number of physicians in the county society, and the number and names of physicians who are already under commission in the Army or in the Navy. The last column of the table is the most important one. It lists the number of physicians in the federalized National Guard, as well as commissioned medical officers in the Reserve Corps of the Army and the Navy. It does not include the regular Medical Corps of either the Army or the Navy; those who have been commissioned but have not yet accepted their commissions; or those who

1. THE JOURNAL A. M. A., April 13, 1918, p. 1100.

re serving as contract surgeons. It must be borne in mind, therefore, that this last column of the table does not include those who have made application for commission, or even those who have been awarded a commission unless that commission has been accepted. At the present writing, May 24, there are many pending applications.

The preparation of this survey has been a difficult undertaking. Undoubtedly the data are not perfect: some names may have been included that should not have been; more likely, some have been omitted that should have been included. We ask our readers, and especially county secretaries, to check over the Honor Roll and the tabular data covering their particular county, and to send corrections or comments to Dr. A. R. Craig, Secretary of the American Medical Association, 535 N. Dearborn Street. It is urged that this be done promptly, so that a corrected and amplified survey may then be made available to the component societies of every state. This survey for component societies will be in the form of a list of registered physicians for the territory covered; on it will be indicated not only those physicians who have accepted commissions, but also those who have made application for commission, those to whom commissions have been granted but who have not yet accepted them, etc. Those coming within the age limits for the Medical Corps and the Medical Reserve Corps of both the Army and Navy will also be indicated.

In addition to the table in each state, a similar table will be found at the end of the survey covering the whole country. This latter table, besides assembling the totals for each state, shows the percentage of the medical profession already commissioned in each state.

We may estimate that in addition to the Regular Corps, a total of 30,000 medical officers will be required for the present year—27,500 for the Army, and 2,500 for the Navy. The number of physicians in the United States, according to the new American Medical Directory now on the press, is 146,500. Hence it will take between 20 and 21 per cent. of the total number of physicians of the country to supply the 30,000. This means as a minimum one in five. To supply one out of every five physicians to the Government, if managed rightly, ought not to be a severe strain on our profession. There are many communities and industrial centers that can not spare any physician; on the other hand, there are many that can easily spare two out of five. This is especially true of large cities.

Finally, the purpose of this survey is to make available to physicians in every community of the country information which may assist them in determining whether or not their locality is meeting its obligation in providing the needed number of physicians for military duty. The county societies naturally are best qualified to pass on the actual needs of the civilian population of their territory, as well as to furnish information relative to the personnel of the profession. For evident reasons the county society may not always be able to decide who should and who should not volunteer. Such problems can sometimes be better worked out through the cooperation of the county society with the War Committee of the state association and of the American Medical Association. With the state and county organizations cooperating, there is little doubt that each state will be able to supply its quota without serious hardship on either the civilian population or individual members of our profession.

NOTE.—Many names were added after the Honor Roll was in page form. These are inserted under the respective counties but out of alphabetical arrangement. *They are in italics.*—ED.



MEDICAL ASSOCIATION OF THE STATE
OF ALABAMA

Officers 1918-19

I. L. Watkins, President.....Montgomery
Henry S. Ward, Vice President.....Birmingham
E. B. Ward, Vice President.....Selma
Henry C. Perry, Secretary.....Montgomery
J. U. Ray, Treasurer.....Woodstock
S. W. Welch, State Health Officer.....Montgomery

Councilor Districts

First District.—Choctaw, Clarke, Marengo, Mobile, Washington and Monroe Counties.

Second District.—Baldwin, Butler, Conecuh, Covington, Crenshaw, Escambia, Montgomery, Pike and Wilcox Counties.

Third District.—Barbour, Bullock, Coffee, Dale, Geneva, Houston, Henry Lee and Russell Counties.

Fourth District.—Calhoun, Chilton, Cleburne, Dallas, Shelby and Talladega Counties.

Fifth District.—Autauga, Chambers, Clay, Coosa, Elmore, Lowndes, Macon, Randolph and Tallapoosa Counties.

Sixth District.—Greene, Sumter, Tuscaloosa, Hale and Perry Counties.

Seventh District.—Blount, Cherokee, Cullman, DeKalb, Etowah, Marshall and St. Clair Counties.

Eighth District.—Colbert, Jackson, Lauderdale, Limestone, Madison and Morgan Counties.

Ninth District.—Jefferson County.

Tenth District.—Fayette, Franklin, Lamar, Marion, Pickens, Walker and Winston Counties.

HONOR ROLL

Baldwin County

BAYOU LABATRE—Harry Reginald Cogburn. DAPHNE—George Washington Kiehnhoff. FAIRHOPE—Claude George Godard; Samuel Holt Hodgson. MAGNOLIA SPRINGS—Eugene Park Cowgill. PERDIDO BEACH—Henry Goldthwaite. ROBERTSDALE—Julius Franklin Peavy Jr.

Barbour County

CLAYTON—Daniel Bascom Faust. EUFAULA—John Mac Bell; Joe W. Fenn.

Bibb County

BELLE ELLEN—Robbins Nettles. BLOCKTON—Homer Wilson Allgood; Elisha Baker Smith. CENTERVILLE—William M. Peters. WEST BLOCTON—Nuckols Thornton Davie.

Blount County

BLOUNTSVILLE—Foster Gaines Finley.

Bullock County

FITZPATRICK—Joel Clifford Griswold; Hugh Farrior McLaurine; Lucien Montague Tompkins. MIDWAY—Howard Payne Rankin. UNION SPRINGS—James Luther Bowman; Bryant Benjamin Edwards; John Roy Oswalt.

Butler County

FOREST HOME—Conrad Wall. GREENVILLE—Mack C. Hawkins.

Calhoun County

ANNISTON—George Alonzo Cryer; Fred Douglas Jackson; Samuel Sellers Underwood; John McIntire Whiteside; Leroy Hammond Woodruff. PIEDMONT—James Patrick Vansant.

Chambers County

LAFAYETTE—Raymond Brock Ramage. SHAWMUT—Alfred Clinton Smith.

Cherokee County

CEDAR BLUFF—William Sparks McElrath. CENTER—William Asberry Sewell; Samuel Carter Tatum; William Briggs Tatum.

Chilton County

CLANTON—Arthur Johnson; Samuel E. Johnson. THORSBY—Columbus Morgan Woolley.

Choctaw County

YANTLEY—Herbert Lament Phillips.

Clarke County

FULTON—Benjamin Franklin Adams. JACKSON—John R. Armistead. SALITPA—Leon Victor McVay. THOMASVILLE—Ralph Moselay Kimbrough. WHATLEY—John Cooper Godbold Jr.

Clay County

ASHLAND—Alexander Wilson Graves.

Cleburne County

HEFLIN—John Ralph Morgan.

Colbert County

TUSCUMBIA—Louis Willoughby Desprez; William Meredith Pierce.

Conecuh County

BELLEVILLE—Percy Bradley Skinner. EVERGREEN—Kossuth R. Cammack.

Coosa County

GOODWATER—Llewellyn Herndon Ledbetter. KELLYTON—Artice Edward Culbertson.

Covington County

GANTT—William Martin Blair.

Crenshaw County

BRANTLEY—J. Glenn Gilchrist; Samuel Wilson Horn. DOZIER—Thomas Walter Taylor. LUVERNE—Emmette Eugene Pollard.

Cullman County

CULLMAN—Edward Dudley McAdory; Rufus Alva Culpepper. GARDEN CITY—T. H. Sudduth.

Dale County

ARITON—Hillie Robert Dykes; Albert David McFadden.

Dallas County

SELMA—William Wilkes Burns; Drayton Howard Doherty; Clarence Couch Elebash; Milner Hubbard Eskew; Wm. Dale Harper; Ferdinand Jackson Herbert; James Kenan; Monroe A. Maas. MARION JUNCTION—Jos. Glenn Donald.

ALABAMA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commiss'd in
Autauga.....	584	44.9	21,589	1,660	13	1	5	11	12	12
Baldwin.....	1,595	56.9	21,816	779	28	1	16	20	14	14
Barbour.....	912	30.4	32,728	1,090	30	..	19	26	27	27
Bibb.....	634	21.8	25,926	894	29	..	20	26	20	20
Blount.....	649	28.2	21,456	933	23	..	12	18	12	12
Bullock.....	610	29.0	20,196	961	21	..	14	18	16	16
Butler.....	763	33.1	31,417	1,365	23	..	15	20	18	18
Calhoun.....	630	10.6	42,210	715	59	..	34	42	39	39
Chambers.....	588	22.6	38,612	1,485	26	..	10	20	26	26
Cherokee.....	577	33.9	20,226	1,189	17	..	7	10	11	11
Chilton.....	729	31.6	28,053	1,219	23	..	13	21	13	13
Choctaw.....	932	40.5	18,736	814	23	..	16	21	14	14
Clarke.....	1,216	40.5	33,321	1,110	30	..	16	21	26	26
Clay.....	614	25.5	23,857	994	24	1	9	18	19	19
Cleburne.....	568	47.3	13,516	1,126	12	..	4	9	9	9
Coffee.....	678	24.2	29,876	1,067	28	..	16	26	18	18
Colbert.....	618	24.7	26,598	1,063	25	..	10	16	17	17
Conecuh.....	849	53.0	24,294	1,518	16	..	13	15	15	15
Coosa.....	655	40.9	16,992	1,062	16	..	7	13	14	14
Covington.....	1,042	37.0	44,372	1,584	28	..	21	26	27	27
Crenshaw.....	618	22.8	25,974	962	27	..	16	20	13	13
Cullman.....	763	23.1	35,964	1,089	33	..	16	27	25	25
Dale.....	563	22.5	25,467	1,018	25	..	16	23	15	15
Dallas.....	957	17.7	53,401	988	54	..	16	47	43	43
DeKalb.....	786	20.1	31,693	812	39	..	18	34	24	24
Elmore.....	622	24.8	29,810	1,192	25	..	15	17	20	20
Escambia.....	957	45.5	24,413	1,162	21	..	13	18	20	20
Etowah.....	542	10.2	47,685	899	53	..	29	35	38	38
Fayette.....	643	30.6	17,792	847	21	..	13	18	12	12
Franklin.....	647	26.9	21,454	893	24	..	11	18	23	23
Geneva.....	578	11.5	30,915	618	50	..	13	37	28	28
Greene.....	635	70.5	22,717	2,524	9	..	13	8	6	6
Hale.....	646	34.0	27,883	1,467	19	..	9	8	11	11
Henry.....	560	31.1	24,684	1,371	18	..	12	10	8	8
Houston.....	579	12.8	38,204	849	45	..	25	38	37	37
Jackson.....	1,140	39.3	34,678	1,195	29	..	17	21	20	20
Jefferson.....	1,135	2.4	289,293	626	462	..	323	403	293	293
Lamar.....	601	21.4	18,512	661	28	..	15	20	16	16
Lauderdale.....	694	20.4	34,130	1,003	34	..	19	25	12	12
Lawrence.....	700	41.1	23,341	1,373	17	..	12	14	11	11
Lee.....	632	22.5	33,626	1,500	28	..	14	21	11	11
Limestone.....	596	19.8	30,161	1,005	30	..	13	19	14	14
Lowndes.....	739	36.9	31,894	1,595	20	..	10	16	13	13
Macon.....	614	27.9	28,184	1,281	22	..	14	20	11	11
Madison.....	811	19.3	49,478	1,178	42	..	23	33	33	33
Marengo.....	966	31.1	41,097	1,325	31	..	18	22	19	19
Marion.....	743	29.7	19,684	787	25	..	14	19	17	17
Marshall.....	602	16.2	32,395	875	37	..	24	30	28	28
Mobile.....	1,226	8.7	59,201	458	129	2	74	110	72	72
Monroe.....	1,012	44.0	34,873	1,516	23	..	16	21	15	15
Montgomery.....	801	7.3	29,700	272	109	..	64	90	68	68
Morgan.....	587	14.6	44,039	1,100	40	..	25	35	28	28
Perry.....	737	52.6	45,534	3,252	14	..	7	12	10	10
Pickens.....	875	27.3	25,531	797	32	..	21	26	25	25
Pike.....	671	18.1	32,012	865	37	..	19	30	26	26
Randolph.....	590	23.6	26,853	1,074	25	..	14	19	21	21
Russell.....	655	46.7	25,937	1,852	14	..	6	12	10	10
St. Clair.....	645	23.8	21,656	802	27	..	17	23	19	19
Shelby.....	806	38.3	29,331	1,396	21	..	18	13	12	12
Sumter.....	908	32.4	28,699	1,025	28	1	18	22	17	17
Talladega.....	755	14.8	39,488	774	51	..	27	44	44	44
Tallapoosa.....	763	42.3	32,025	1,779	18	..	15	10	9	9
Tuscaloosa.....	1,346	17.9	55,888	745	75	..	62	63	43	43
Walker.....	777	13.8	45,663	815	56	..	25	39	46	46
Washington.....	1,087	90.5	16,876	1,406	12	..	7	8	11	11
Wilcox.....	896	23.5	33,810	897	38	..	23	32	32	32
Winston.....	630	45.0	15,263	1,090	14	..	12	10	10	10
Totals.....	51,279	20.3	2,307,304	913	2,525	5	1,568	2,046	1,706	3

1. Includes Birmingham, population 174,108; physicians 309 [M.R.C. 77]
2. Includes Mobile, population 56,536; physicians 95 [M.R.C. 18].
3. Includes Montgomery, population 42,531; physicians 92 [M.R.C. 14]

DeKalb County

COLLINSVILLE—H. Lamar McWhorter.

Elmore County

TALLASSEE—Edmund Rushin Lett; Joseph Marion Weldon. EAS TALLASSEE—Robt. Harold Coker.

Escambia County

ATMORE—Alfred Pellar Webb. BREWTON—Middleton H. Hagoo FLOMATON—Floyd Lamar Abernethy.

Etowah County

ALABAMA CITY—Robert A. Burns. ATTALLA—Guy Edward Stewart GADSEN—Thomas Young Greet; Hartsford Lee Ison; Lemuel Bradford Nicholson; John Shahan.

Fayette County

FAYETTE—William W. Long.

Franklin County

RED BAY—Zadoc Lorenzo Weatherford.

Geneva County

GENEVA—Charlie Hick Chapman. HARTFORD—Frank Walker Young. SAMSON—Benjamin Jefferson Lewis; F. V. Mcriwether.

Greene County

FORKLAND—Julian Keith Lagare.

Hale County

AKRON—William Leslie Waites.

Houston County

DOTHAN—Henry Beechum Burdeshaw; Percy O. Chaudron; Woodfin Lady Page; Thomas Merlwether Barnett; John Arthur Keyton.

Jackson County

BASS STATION—Walter Willis Rosser. HOLLYWOOD—George Earl fe. LARKINSVILLE—Albert S. Zimmerman. SCOTTSBORO—Hugh yd; Charles David Mason. SWAIM—James Houston Sentell. WOOD- LLE—Rayford Hodges.

Jefferson County

BESSEMER—James Howard Blue; Hugh Earle Conwell; Clyde Neville armon; Carl A. Harris; John Howard Hays; Velpeau Hill Ragsdale; elus Lamar Terry; Solon Westcott Wright. BIRMINGHAM—John Clifton Anthony; Robert F. Ashworth; James bblus Bean; William R. K. Beck; William Henry Beddow; Alvin nest Belden; James H. Blackwell; Ollie Paxton Board; Henry Boxer. Eldridge Tracy Brown; Robert Turner Brown; John Turpin Callaway; illiam Russell Callen; Andrew Crozler Cameron; Paul Lee Cocke; hn Cochran; Maurice Herbert Cohn; Koscuisko W. Constantine; odie Ezra Cunningham. William Cecil Dabney; Edgar William Daly; John D. Dickson; Wes'ey rl Drennen; Harry Clay Edmundson; Wm. Elbert Faris. Frank Gaines Grace; Grover Cleveland Hamilton; Henry Pierce Hanna; arlton Sidney Harris; Seale Harris; Joseph Walter Hughes; Rufus ckson; William Jordan. Thomas Knight Lewis; John McPherson Lowrey; Cabot Lull Jr. Thomas Vannoy Magruder; Claude Cooper McClean; James Somer- le Mc Lester; Isaac Michlin; Grover Eugene Murphy; Claude Dewey ers. Marcus Pinson Neal; Robert Nelson; Michael McCormick Nolan; yd Noland; George A. O'Connell; Earl Emmett Pate. Gaston Wilder Rogers; Mack Rogers; Walter Francis Scott; John le Sherrill; Harry Moody Simpson; Emmitt Clarence Siniard; Lewis mond Sorrell; Octavius Manlius Spencer; Mitchell Porter Stiles. Sidney Johnston Vann; Alfred Augustus Walker; Groesbeck F. Walsh; les Abnerathy Watkins; Clarence Cicero Wiley; Luther Elgin Wilson; rman Isaac Wood; Sterling Chase Wood; Leo Clement Wood. BIRMINGHAM—Alto Leon Kelley; Jerome Meyer; E. Laurence ott. CARDIFF—Hiram O. Barker. ENSLEY—Alvin Ethelbert Cowan; liam D. Fonville; Robt. G. Lovelady; William Jesse Robins; Chas. nest Tedder. FAIRFIELD—Burr Ferguson. FLAT TOP—John W. tts. PORTER—Hathaway J. Denman. WYLAM—Rosecoe Conkling ewart.

Lamar County

Paul Tidence Young.

Lauderdale County

FLORENCE—Leon Cleero Ellis. ROGERSVILLE—Jullus Orville Belue.

Lee County

AUBURN—Isham Kimbell. LOACHAPOKA—Orlando Velpeau Langley. ELIKA—John Felix Jenkins; Gilmer H. Moore.

Limstone County

ATHENS—Andrew Lewis Glaze Jr.; John Frederick Hughes; John ncis Taylor. BELLE MINA—Joseph Jewett Pettus. ELKMONT—erd Vernon Mayhall.

Lowndes County

LAYNEVILLE—George Clark Marlette; Wm. Llewellyn Staggers.

Macon County

NOTASULGA—Charles E. Williams. TUSKEGEE—Robert Henry ward.

Madison County

FURLEY—Benjamin Emmett Graham. HUNTSVILLE—Richard Walk- Bolling; William Richard Rousseau. MADISON—Irvine White Patton. NEY—William Clifton Hatchett.

Marengo County

DEMOPOLIS—William Thompson Cocke; Thos. Caldwell Savage.

Marion County

PELIKA—Edwin C. Thomas.

Marshall County

ALBERTVILLE—Isaac L. Dowdy; Jesse Albert Goode. BOAZ—uman Sherley Cooley. GUNTHERSVILLE—Robert Foster Fennell. RTON—Henry Grady Waddell.

Mobile County

HUNCHULA—Jesse McCampbell Reed. BAYOU LABATRE—George eton Kilpatrick. GRAND BAY—Robert Bruce Dodson; Mannie anza Fort. IOBILE—James Howard Agnew; James Monroe Allison; Burton syth Austin; Eugene DuBose Bondurant; Robert Dwight Brown; bert Phalon Cole; H. H. Forcheimer; Toxey Daniel Haas; Thomas aniel Harris; Francis Marion Inge; Carl Thomas Jones; William gates; William A. Padgett; Mercer Rowe; John O. Rush; Edward unions Sledge; Eugene Thames. MT. VERNON—Arthur McCluney eden; Otis W. Little; Monte Leroy Moorer. SPRING HILL—Cecil bert Ross. IOBILE—Lawrence Bryant Farrior. PRINGVILLE—Duke Constantine Bradford. THEODORE—Howard S. Walker.

Monroe County

ERDUE HILL—Wm. E. Broughton; Samuel S. Gaillard.

Montgomery County

COPE HULL—Fred Crenshaw. MONTGOMERY—James Norment Baker; Samuel A. Billing; Freder- Boswell; John Decatur Durden; Robert Goldthwaite; James Robert gler; Thomas Brannon Hubbard; Harry Toulmin Lay; Julius Wat- s McCall; Wm. Rasbury Rankin; Richard C. Rush; B. D. Smith; es Lee Smith; Charles Alston Thigpen. RAMER—Clanton R. Athley.

Morgan County

LBANY—Frank P. Pettey. DECATUR—Deo V. Darden.

Perry County

ARION—Edward Swann. SPROTT—Robert B. Pryor. UNIONTOWN rank White McCorkle.

Pickens County

ARROLLTON—Hugh Willson Hill; Thomas Luther Zuber.

Pike County

BRUNDAGE—James Frank Bean. TROY—James W. Beard; Robert B. Beard; James Y. Hamil; Gilbert Alfred Rhodes; John Gillis Sanders; H. M. Weedon.

Randolph County

ROANOKE—John Willlam Hooper.

Russell County

HURTSBORO—Francis Gustavus Hendrick. SEALE—John Prather.

St. Clair County

ASHVILLE—David Calhoun Williams. SPRINGVILLE—Ernest Charles Hagood.

Sumter County

BELLAMY—Robert Eugene Hale. COATOPA—Ernest Abram Moore. EMELLE—Austin Francis Jefferson Boyd. EPES—James Kearney Miller. GAINESVILLE—Robert Ellyson Harwood. LIVINGSTON—Marion Tabb Davidson; John Perkins Scales. WARD—Walter Earl Allen. YORK—George Guy Oswald.

Talladega County

CHILDERSBURG—Moses Eason Sherer. RENFROE—Albert G. Slms; James Anthony Slms. SYLACAUGA—French Heed Craddock. TALLA- DEGA—Frederle W. Boyd; Dunean Patterson Dixon; Elisha Henry Jones; Bishop Billings Warwick.

Tallapoosa County

ALEXANDER CITY—Larcus B. Allen; James O. Griffin; Thomas Hezekiah Street. CAMP HILL—Lewis Herschel Hamner; W. Theo. Langley. DADEVILLE—Joseph Todd Banks.

Tuscaloosa County

BUHL—James Lawrence Booth. ECHOLA—George Washington Hall. NORTHPORT—Edward Cleveland Hagler. SQUAW SHOALS—William Forest Youmans.

TUSCALOOSA—Alston Fltts; Robert Emmett Dixon; Lonnie Woodfin Grove; Toombs Lawrence; Joseph Alston Maxwell; Maxwell Moody; Andrew Battle McKenzie; James Henry Somerville Jr.; Daniel Webster Ward.

Walker County

BURNWELL MINES—James Herman Phillips. JASPER—James Hay- wood Davis.

Washington County

CHATOM—William Edward Kimbrough Jr.

Wilcox County

CAMDEN—John Paul Jones; Thomas Warburton Jones. FURMAN—James Devote Perdue; Ross Clair Speir. GASTONBURG—Horace Van de Voort.

ARIZONA MEDICAL ASSOCIATION

Officers 1917-18

William A. Holt, President.....Globe
W. Warner Watkins, First Vice President.....Phoenix
A. J. Murrieta, Second Vice President.....Jerome
W. W. Wilkinson, Third Vice President.....Phoenix
C. E. Yount, Secretary.....Prescott
R. D. Kennedy, Treasurer.....Globe

Councilor Districts and Officers

Middle District—Roy Thomas, Councilor, Phoenix.
Southern District—E. R. McPheeters, Councilor, Clifton.

ARIZONA									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo- men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Apache.....	11,379	1,422.3	9,853	1,231	8	4	7	3	2
Cochise.....	6,170	118.6	53,089	1,020	52	1	43	47	31
Coconino.....	1,823	140.2	10,041	772	13	7	11	1	2
Gila.....	4,683	167.2	22,993	821	28	24	24	17	6
Graham.....	6,508	271.1	11,707	1,950	6	1	4	2	2
Greenlee.....			18,894	1,049	18	1	14	17	15
Maricopa.....	8,891	94.5	44,731	475	94	4	50	74	57
Mohave.....	13,390	1,217.2	4,026	366	11	7	9	5	3
Navajo.....	10,300	858.3	13,399	1,116	12	10	10	4	6
Pima.....	9,505	339.4	28,751	1,026	28	1	15	21	20
Pinal.....	5,380	413.8	9,968	766	13	7	12	6	1
Santa Cruz.....	1,229	136.5	8,387	931	9	7	7	5	..
Yavapai.....	8,150	291.0	17,598	628	28	1	15	23	17
Yuma.....	9,987	907.9	10,351	941	11	1	7	8	6
Totals.....	97,395	294.2	263,788	797	331	9	211	274	189

HONOR ROLL

Apache County

CARRISO—Robert W. Bell. ST. JOHNS—Thomas Jefferson Bouldin.

Cochise County

BISBEE—Morris Dabko Cohen; Robert Ferguson; Ralph Eugene Herendeen; Edward John Richstein; Francis Eppes Shine; Thomas Wat- kins.

DOUGLAS—W. A. Christensen; Jerome McKain Leonard; Adolphus A. McDaniel; Wm. Mann Randolph; Frederick Thompson Wright. JOHN- SON—George Conrad Snyder. BENSON—Ernest Brent Thompson.

Coconino County

LEUPP—Basll Augustlne Warren. WILLIAMS—Rlehard McClellan Francis.

Gila County

GLOBE—Walter Willam Horst; Roderick D. Kennedy; Charles Theo- phile Sturgeon. MIAMI—John Elmer Bacon; Frederick F. Miller; Theron Hart Slaughter.

Graham County
SAFFORD—Geo. Scott Martin; Willis Elton McWhirt.

Greenlee County
CLIFTON—Fred Oscar Lien; Charlton Jay.

Maricopa County
BUCKEYE—Franklin Leeds Leister. MESA—Joseph M. Greer. PHOENIX—James Henry Bryant; Henry Justin Felch; Francis Frederick Malone; Grant Stafford Monical; Charles B. Palmer; William Henry Sargent. KOMATKE—Albert Rowland Warner. SALT RIVER—Spencer Draper Whiting. VERDE—Wm. Craig Judd.
PHOENIX—Roy Eccles Thomas.

Mohave County
KINGMAN—Albert Llewellyn Tilton. MCHAVE CITY—Wm. D. Petit. OLDTRAILS—Carlisle Benjamin Wiley.

Navajo County
KEAMS CANON—Lee Henry Curran. TOREVA—Martin Robert Reiber. WHITE RIVER—Roger V. Parlett. WINSLOW—Roscoe G. Bazell; Charles Lynn Hathaway; Jacob Leroy Prichard.

Pima County
AJO—Austin Charles Wright. TUCSON—Joel Ives Butler; I. E. Huffman.

Pinal County
SUPERIOR—Lawrence Dale Dusch.

Yavapai County
PRESCOTT—Harry T. Southworth. SELIGMAN—Francis Huston Cartmell; C. E. Yount.

Yuma County
YUMA—Leon Jacobs; Hilary Dunham Ketcherside; Roy Raymond Knotts.

ARKANSAS MEDICAL SOCIETY

Officers 1917-18

Wm. Breathwit, President Pine Bluff
H. A. Strond, First Vice President..... Jonesboro
E. F. Ellis, Second Vice President..... Fayetteville
W. W. York, Third Vice President..... Ashdown
Clinton P. Meriwether, Secretary..... Little Rock
William R. Bathurst, Treasurer..... Little Rock

Councilor Districts and Officers

First District.—Crittenden, Clay, Craighead, Greene, Lawrence, Mississippi, Poinsett and Randolph Counties. J. H. Stidham, Councilor, Hoxie.

Second District.—Cleburne, Fulton, Independence, Izard, Jackson, Sharp and White Counties. J. C. Cleveland, Councilor, Bald Knob.

Third District.—Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis and Woodruff Counties. H. H. Rightor, Councilor, Helena.

Fourth District.—Ashley, Bradley, Chicot, Cleveland, Desha, Drew, Jefferson and Lincoln Counties. J. M. Lemons, Councilor, Pine Bluff.

Fifth District.—Calhoun, Columbia, Dallas, Lafayette, Ouachita and Union Counties. Foster Jarrell, Councilor, Huttig.

Sixth District.—Hempstead, Howard, Little River, Miller, Nevada, Pike, Polk and Sevier Counties. J. H. Weaver, Councilor, Hope.

Seventh District.—Clark, Garland, Grant, Hot Springs, Montgomery, Saline and Scott Counties. J. E. Jones, Councilor, Sheridan.

Eighth District.—Conway, Johnson, Faulkner, Perry, Pulaski, Yell and Pope Counties. Earl H. Hunt, Councilor, Clarksville.

Ninth District.—Baxter, Boone, Carroll, Marion, Newton, Searcy, Stone and Van Buren Counties. Leonidas Kirby, Councilor, Harrison.

Tenth District.—Benton Crawford, Franklin, Logan, Sebastian, Washington and Madison Counties. J. T. Clegg, Councilor, Siloam Springs.

HONOR ROLL

Arkansas County

DE WITT—Arthur Gibbon Kelley.

Benton County

BENTONVILLE—Kenneth Bowles Huffman. * GARFIELD—Guy Hodges. GENTRY—Raphael William Steele. ROGERS—Ray Ralph McHenry. SILOAM SPRINGS—John Lewis Smiley.

Boone County

EVERTON—Burpee Cooper. HARRISON—Nim Lon Barker; Alexander Crump Kirby.

Bradley County

WARREN—Josephus Johnston Sherrill.

Carroll County

EUREKA SPRINGS—Henry Pace; James Emory Phillips; Albert Evans Tatman. GREEN FOREST—Fred Raines Morrow; Erton E. Poynor.

Clark County

AMITY—Fred Somervell Watson. ARKADELPHIA—Cyrus C. Brown; Julius Sheppard Moore; Charles Kennard Townsend.

Clay County

PIGGOTT—Claude Wilson Drace. RECTOR—Moses Cline Hughey; Walter Oling Parrish. SUCCESS—Richard Calvin Lynch; Martin Van-Buren Waddle.

Cleburne County

HEBER SPRINGS—Horace E. Ruff.

Columbia County

MAGNOLIA—Hugh E. Longino.

Conway County

MORRILLTON—Fred Bearden.

Craighead County

BAY—Hugh LaFayette Raines. JONESBORO—Floyd Clardy; Luther Mace Lile; Wm. Hubert Moreland; James Wilson Ramsey. MONETTE—Ira Wall Ellis.

ARKANSAS									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society
Arkansas.....	1,000	37.0	18,388	681	27	..	12	20	11
Ashley.....	940	27.6	29,307	861	34	..	21	23	16
Baxter.....	586	36.6	11,185	699	16	..	6	9	2
Benton.....	876	15.6	34,688	617	56	1	17	36	26
Boone.....	608	19.6	14,318	461	31	..	15	17	16
Bradley.....	659	26.3	18,071	722	25	..	13	17	8
Calhoun.....	629	44.9	10,883	777	14	..	5	8	3
Carroll.....	641	26.7	16,829	701	24	1	13	16	14
Chicot.....	607	21.6	27,431	979	28	..	13	26	11
Clark.....	882	15.4	25,437	446	57	..	20	28	9
Clay.....	654	16.7	29,386	753	39	..	26	28	12
Cleburne.....	596	27.0	13,563	616	22	..	7	15	1
Cleveland.....	603	40.2	14,838	989	15	..	6	10	6
Columbia.....	785	23.7	26,185	793	33	..	14	26	9
Conway.....	563	21.6	24,886	957	26	1	13	20	6
Craighead.....	687	12.4	33,555	610	55	..	35	38	23
Crawford.....	593	20.4	25,892	892	29	..	11	18	8
Crittenden....	582	23.2	28,227	1,129	25	..	19	23	9
Cross.....	619	30.9	16,226	811	20	..	10	13	1
Dallas.....	679	30.8	13,426	610	22	1	12	17	10
Desha.....	747	37.3	18,021	901	20	..	13	16	9
Drew.....	847	30.2	23,792	849	28	..	19	23	17
Faulkner.....	651	15.1	25,845	601	43	..	18	29	14
Franklin.....	606	22.4	23,004	852	27	2	11	19	13
Fulton.....	625	52.0	12,193	1,016	12	1	4	7	..
Garland.....	631	4.8	34,781	296	131	1	69	99	62
Grant.....	637	39.8	10,705	669	16	..	4	9	5
Greene.....	561	16.5	28,870	849	34	..	20	27	21
Hempstead....	727	18.1	31,339	783	40	..	14	24	16
Hot Spring....	613	34.0	16,681	926	18	..	12	14	8
Howard.....	602	25.0	18,958	789	24	..	11	16	6
Independence..	762	18.5	26,397	643	41	..	19	25	18
Izard.....	583	25.3	15,331	666	23	..	10	17	4
Jackson.....	634	18.6	27,236	801	34	..	25	28	15
Jefferson.....	903	10.7	61,320	730	84	1	47	63	31
Johnson.....	675	20.4	21,341	646	33	1	13	23	17
Lafayette.....	525	23.8	14,946	679	22	..	18	13	7
Lawrence.....	592	13.1	22,562	501	45	..	15	32	20
Lee.....	601	25.0	27,786	1,157	24	..	9	20	11
Lincoln.....	571	35.6	16,380	1,020	16	..	13	13	7
Little River...	546	18.8	13,597	468	29	1	14	20	8
Logan.....	726	15.0	30,173	628	48	..	21	33	21
Lonoke.....	794	17.6	31,954	710	45	..	21	30	19
Madison.....	836	41.8	16,056	802	20	..	4	14	6
Marion.....	646	53.8	10,203	816	12	..	7	5	2
Miller.....	623	19.4	21,012	656	32	..	11	15	14
Mississippi....	792	16.5	40,748	807	48	..	33	43	23
Monroe.....	603	18.9	22,164	1,385	16	..	11	15	13
Montgomery..	891	52.4	13,346	785	17	..	8	13	1
Nevada.....	620	25.8	21,342	889	24	..	17	21	9
Newton.....	846	76.9	10,612	964	11	..	4	6	1
Ouachita.....	733	30.5	22,417	934	24	..	15	20	12
Perry.....	552	21.2	10,940	420	26	..	12	14	5
Phillips.....	692	15.0	38,625	839	46	..	29	39	25
Pike.....	601	24.0	14,217	568	25	..	9	15	2
Poinsett.....	721	30.0	17,001	708	24	..	15	19	4
Polk.....	846	30.2	17,216	614	28	1	11	18	8
Pope.....	828	18.4	26,580	590	45	..	23	32	12
Prairie.....	675	29.3	15,296	665	23	1	7	16	6
Pulaski.....	747	3.1	106,083	453	234	4	139	196	15
Randolph.....	654	21.0	20,322	652	31	..	14	21	7
Saint Francis.	628	20.2	26,483	854	31	..	16	25	16
Saline.....	775	36.9	17,112	814	21	..	9	16	10
Scott.....	970	38.8	15,520	620	25	..	10	15	..
Searcy.....	673	30.5	16,894	767	22	..	7	16	7
Sebastian.....	531	5.4	63,478	644	97	..	48	62	43
Sevier.....	572	22.8	16,818	672	25	..	12	16	13
Sharp.....	609	60.9	11,688	1,168	10	..	8	7	2
Stone.....	611	87.2	9,563	1,366	7	..	2	4	1
Union.....	1,048	30.8	36,728	1,080	34	..	27	30	12
Van Buren....	730	38.4	15,179	798	19	..	6	11	..
Washington...	953	17.3	33,889	616	55	1	17	34	26
White.....	1,037	19.3	31,281	590	53	..	20	34	23
Woodruff.....	577	24.0	22,781	949	24	..	16	22	14
Yell.....	955	22.2	28,930	672	43	..	18	27	5
Totals.....	52,525	20.3	1,776,475	6,867	2,587	18	1,282	1,849	887

1. Includes Little Rock, population 55,158; physicians 186 [M.R.C. 46

Crittenden County

EARL—Samuel McAlister Mauney; Herbert Shirley Watson. PROCTOR—Thomas Wilson. SEYPPPEL—Henry Pender Ledford. TURRELL—Flo Webb.

Desha County

DUMAS—Alphonso Isom; Wm. Golladay O'Neal. McGEHEE—R. Newman Brown.

Drew County

MONTICELLO—James Milton Best; Edward Ralph Cotham; Marde Yates Pope. PLANTERSVILLE—John Samuel Wilson.

Franklin County

BRANCH—Wm. J. King.

Fulton County

MAMMOTH SPRINGS—Arch Sylvester Chapman.

Garland County

HOT SPRINGS—John William Rush; John Graydon Cullins; Maur Farvish Lautman; William Kate Smith; Frederic Earl Diemer; Allen Prichard; Harry Morris Strachan; Grayson Emery Tarkington; Le Thompson; Henry King Wade.

Greene County

PARAGOULD—Erasmus S. Baker; Frank Lawrence Castleberry.

Hempstead County
HOPE—Victor K. Allen; Robert Ellis Weaver.

Hot Springs County
DONALDSON—Morgan C. Berry.

Independent County
BATESVILLE—Charles Garland Hinkle.

Jackson County
TUCKERMAN—Oscar Aden Jamison.

Jefferson County
HUMPHREY—Thomas Dobbins. PINE BLUFF—John Short Jenkins; F. Lieberman; William Thomas Lowe; J. William Scales; Loren Wallin.

Lafayette County
LEWISVILLE—Joseph R. Smith. STAMPS—Carland A. Ellis.

Lawrence County
RICHWOODS—Wm. Henry White. WALNUT RIDGE—George Maxey Atkins.

Lee County
HAYNES—William Robert Haynie. MARIANNA—Mac McLendon.

Lincoln County
VARNER—Anthony Claudius Thiolliere.

Little River County
WILTON—Arley Doyné Cathey.

Logan County
BOONEVILLE—Forrest P. Baker; Austin R. Hederick. DRIGGS—Itton William Laudrum. SCRANTON—Arless A. Blair; Everett Newton Jr.

Lonoke County
CABOT—Paschal Josephus Park. ENGLAND—Cap. J. Carter.

Marion County
RUSH—Sherod A. Drennen.

Miller County
TEXARKANA—Theron Earle Fuller; William Hibbetts; Perry Crittenden Williams; Edwin Berry Buchanan.

Mississippi County
BARFIELD—Cinc'nnatus Hine Miller Mason; Wheeler Scott McCall. ASSETT—Oscar Barksdale. BLYTHIEVILLE—Wm. Thomas Polk; Max erton Usrey. CLEARWATER—Amos Elmer Robinson. OSCEOLA—ibur Russell Harwell; William Joplin Sheddian.

Monroe County
CLARENDON—Matt Francis Huston; Philip Emerson Thomas Jr. DOLLY GROVE—Paul Edward Johnson.

Ouachita County
CAMDEN—Braxton Victor Powell.

Perry County
APLIN—Ervin L. Matthews. CASA—Hugh C. Brooks.

Phillips County
HELENA—James William Butts; Aris Joseph Samuel Davidson; Hington Cox. MARVELL—Robert Cam Meadors; George Edward Penn. BASH—George Washington Eubanks. WEST HELENA—Henry Wat- s Allen Lee.

Poinsett County
EPANTO—Chas. Elbert Byler.

Polk County
LENA—Ehner Ellsworth Holt.

Pope County
ATKINS—Arthur Ceberry Haney. RUSSELLVILLE—James Fred Hays.

Prairie County
LOOKOUT—Garfield B. Morre.

Pulaski County
ARGENTA—Martin Barlow; Lincoln Humphreys; William Elvage Mc- n. FORT LOGAN H. ROOTS—John M. Hewitt. LITTLE ROCK—William Franklin Ball; Edwin Page Bledsoe; Sterling Bond; Henry Lawrence Gardiner. John G. Cullins; William Allaire Dashiell; Edward Owens Day; Robert Wiley Eubanks. Wayne Neal Freemyer; Dewell Gann Jr.; Davis Wolf Goldstein. Alfred Gilliam Hearn; Hugh B. Henry; Sherman Booker Hickman; mer A. Higgins; Shelby Boone Hinkle; Glen McK. Holmes. Alvin Leonard Jobe; Roscoe Conklin Kory; Dee C. Lee. Guy Arnold McCormack; Martin P. McNeil; Clinton P. Meriwether; hur Lee Mobley; Henry E. Mobley; Robert B. Moore; Nolie Mumey; Rick Murphy; Mahlon Dickerson Ogden. Lee Vallette Parmley; Feaster LeGrand Proctor; Ernest Whitfield thro. Nicholas William Riegler; Wallace Dickinson Rose; Scott Clark nels. Hector Phillp Sheets; William Anderson Snodgrass; Alvin Weil Strauss. Francis Vinsonhaler; Perry V. Wagley; Fay Powell Washington; Asa Watson; James R. Wayne; Raymond Clyde Wolfe; Geyer Chauncey od. COTT—John Bridger Wells.

Randolph County
PKEAN—Marshall Allen.

Saline County
LAUXITE—Robert H. Bryant; Homer Scott. BENTON—Sidney R. wford. HASKELL—Boulanger Gwaltney.

Searcy County
MARSHALL—Isaac Strlman Butler.

Sebastian County
ONANZA—Rufus Francis Parks. FORT SMITH—Carl Sperry Bun- dt; Walter G. Eberle; Miles Everett Foster; Arthur Franklin Hoge;

Constant P. Wilson Jr. HARTFORD—George McKellar; Horace Porter Routh. MANSFIELD—Jolin Royston Brown.

Sevier County
LOCKESBURG—James Fleming Musser.

St. Francis County
COLT—Newman Burgess Burch. FOREST CITY—David Oliver Bridge- forth. HUGHES—Edward Wesley Pollard. WIDENER—Woodbye Albert Winter; Ernest Darnall.

Union County
HUTTIG—Foster Jarrell. WESSON—James Wiley Slaughter.

Van Buren County
CLINTON—Robt. Marvin Hunter. SHIRLEY—James Fletcher Poe.

Washington County
ELM SPRINGS—Horace William Graves. EVANSVILLE—Bert Cecil Hiner. FAYETTEVILLE—Donald Ray Wilson. SPRINGDALE—Otto Christian. WINSLOW—Thos. Ellsberry Gray.

White County
BEEBE—W. H. Ablington; Bernie F. Jungkind. EL PASO—W. H. Bruce. JUDSONIA—Wylie Robert Felts. SEARCY—Samuel T. Tapscott Jr. WEST POINT—James Madison Wellborn.

Woodruff County
GREGORY—Frank Carroll Maguire.

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Officers 1918-19

Cornelius Van Zwaluwenburg, President.....Riverside
John H. Graves, First Vice President.....San Francisco
Ferdinand Stabel, Second Vice President.....Redding
Saxton T. Pope, Secretary.....Butler Bldg., San Francisco

Councilor Districts and Officers

C. G. Kenyon, Chairman, San Francisco.
Councilors at Large.—H. A. L. Ryfkogel, San Francisco; O. D. Ham- lin, Oakland; Rene Bine, San Francisco; Geo. H. Kress, Los Angeles; J. C. Yates, San Diego; G. G. Moseley, Redlands.
First District.—San Diego, Riverside, Orange and San Bernardino counties. C. Van Zwaluwenburg, Councilor, Riverside.
Second District.—Los Angeles, Ventura, Santa Barbara and Kern counties. E. C. Moore, Councilor, Los Angeles.
Third District.—San Luis Obispo and Monterey counties. T. C. Edwards, Councilor, Salinas.
Fourth District.—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus counties. Geo. H. Aiken, Councilor, Fresno.
Fifth District.—Santa Clara, San Mateo, San Benito and Santa Cruz counties. P. T. Phillips, Councilor, Santa Cruz.
Sixth District.—San Francisco County. C. G. Kenyon, Councilor, San Francisco.
Seventh District.—Alameda, Contra Costa, San Joaquin and Calaveras counties. E. N. Ewer, Councilor, Oakland.
Eighth District.—Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Inyo, Lassen, Modoc, Mono, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Yolo and Yuba counties. Jas. H. Parkinson, Councilor, Sacramento.
Ninth District.—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Sonoma, Solano and Trinity counties. A. W. Hoisholt, Councilor, Napa.

HONOR ROLL

Alameda County

ALAMEDA—Wilfred F. Beerman; James Kish Hamilton Jr.; William Tappen Lum; Leland O. W. Moore; Herbert Piercey Nottage.

BEREKELEY—Warren Barrett Allen; Edward Cline Bull; John W. Callnon; Harvey Philip Charles; Mendel Cohn; James Gordon Cumming; Samuel Robert Downing; Henry Stone Forbes; Harry Emerson Foster; Fredk. Parker Gay; Harry Newton Kierulff; Robert Thomas Legge; Arthur Merrill McIntosh; Albert Mauson Meads; Ernest Howard Pape; Wibur Augustus Sawyer; Walter Reese Scroggs; Richard Watts Soper; Herbert Sedgewick Thomson.

HAYWARD—Charles John Harbeck. LIVERMORE—Paul Egan Dolan; Clifford W. Mack.

HAYWARD—Howard Charles Crum.
OAKLAND—John Peter Byrnes; Wilfred E. Chambers; Cornelius Thomas Devine; William Lawrence Dunn; Henry M. Fine; Louis Alliston Frary; Channing Hall; Gordon Battelle Hamilton; John Theodore Kergan; Alva Frank Maine; Herbert Arthur Makinson; Donald Murdock McRae; William Patton Milliken; Vaclav Horace Podstata; Alvin Powell; John Morse Rehfish; Bruno Francis Sandow; Melvin Arthur Shade; Don D. Weaver.

SAN LEANDRO—Gail Fehrenson; Wm. R. Leahy; William C. Lynch; Clarence Alfred Wills.

Amador County

IONE—George Giles Hawkins.

Butte County

GRIDLEY—Elmer Ellsworth Martin. OROVILLE—Frank Moore Whiting.

Contra Costa County

BYRON HOT SPRINGS—James Milton Smithwick. HERCULES—Frank Paul McManus. MARTINEZ—John L. Beard; Earl Berton Fitzpatrick. PITTSBURGH—Selby Harold Marks. RICHMOND—Clark L. Abbott; William James Caesar; Irwin B. March; Walter Charles Smallwood.

El Dorado County

PLACERVILLE—Luther M. Leisenring.

Fresno County

FOWLER—Henry Ehlers. FRESNO—William Lanier Adams; Harry Judge Craycroft; William Walter Cross; Kenneth Jamison Staniford; Peter Arthur Tobin; Donald Payson Webster. KERNAN—David E. Arnold; John Hugo Schaeffer

Glenn County

ORLAND—Dale L. Martin; Frank Hay Lawson.

CALIFORNIA									
County	Area, Square Miles	Sp. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
¹ Alameda.....	732	1.1	330,758	626	528	54	210	378	248 47
Amador.....	601	50.0	9,086	757	12	..	7	11	3 1
Butte.....	1,722	45.3	34,734	914	38	3	17	21	11 2
Calaveras.....	1,027	128.3	9,171	1,146	8	..	3	6	2 ..
Colusa.....	1,140	162.8	8,000	1,142	7	..	4	5	2 ..
Contra Costa..	714	15.1	42,000	893	47	2	23	37	32 9
Del Norte.....	1,024	512.0	2,424	1,212	2	..	1	1	2 ..
Eldorado.....	1,753	219.1	7,492	936	8	..	3	7	4 1
Fresno.....	5,950	44.7	103,245	777	133	8	61	101	69 9
Glenn.....	1,259	96.8	8,648	665	13	1	4	6	9 2
Humboldt.....	3,634	86.5	38,787	923	42	1	12	35	31 4
Imperial.....	4,089	107.6	22,286	586	38	3	20	33	21 3
Inyo.....	10,019	834.9	8,871	739	12	1	7	10	3 2
Kern.....	8,003	131.1	53,215	872	61	3	30	50	37 9
Kings.....	1,159	165.5	20,872	2,981	7	..	14	16	8 1
Lake.....	1,278	117.1	5,526	502	11	..	1	7	1 2
Lassen.....	4,531	566.3	5,014	626	8	..	10	7	4 1
² Los Angeles....	4,067	2.6	747,816	411	1,549	122	935	1,129	798 220
Madera.....	2,112	176.0	9,831	819	12	1	5	10	5 ..
Marin.....	529	13.0	37,985	1,151	33	1	18	25	18 8
Mariposa.....	1,463	444.3	3,956	1,318	3	..	..	3	.. ..
Mendocino.....	3,453	111.3	26,458	853	31	2	16	22	18 2
Merced.....	1,995	68.7	19,479	671	29	9	12	11	5 3
Modoc.....	3,823	637.1	7,005	1,167	6	..	5	4	1 3
Mono.....	3,030	3030.0	2,042	2,042	1	..	1	1	.. ..
Monterey.....	3,330	104.0	27,624	834	32	5	10	18	19 2
Napa.....	783	12.2	22,244	897	56	5	13	25	16 2
Nevada.....	974	88.5	14,955	1,359	11	..	7	10	10 1
Orange.....	795	9.0	45,195	525	86	2	29	51	38 6
Placer.....	1,395	45.0	20,025	678	31	2	15	19	13 4
Plumas.....	2,594	235.8	5,699	519	11	..	6	9	4 1
Riverside.....	7,240	99.6	46,957	594	79	7	26	54	42 10
³ Sacramento....	983	5.9	83,784	507	165	3	60	97	73 14
San Benito.....	1,392	135.6	9,068	824	11	..	4	10	2 ..
San Bernardino	20,157	140.7	77,711	539	144	22	49	92	63 18
⁴ San Diego.....	4,221	57.0	82,288	1,112	74	20	89	44	40 38
⁵ San Francisco..	43	0.03	471,023	379	1,241	126	710	910	638 214
⁶ San Joaquin....	1,448	14.5	61,882	618	100	4	40	64	61 7
San Luis Obispo	3,334	101.0	21,387	648	33	1	15	23	17 4
San Mateo.....	447	12.4	37,162	1,032	36	4	39	56	19 5
Santa Barbara.	2,740	45.6	34,164	569	60	2	20	36	35 8
Santa Clara....	1,328	7.8	100,563	592	170	22	59	110	69 19
Santa Cruz.....	435	19.7	29,517	655	45	5	14	29	22 5
Shasta.....	3,858	183.7	20,088	956	21	..	7	16	11 1
Sierra.....	923	154.6	4,156	831	5	..	2	6	2 1
Siskiyou.....	6,256	208.5	20,142	671	30	1	13	25	20 1
Solano.....	822	23.3	30,053	859	35	2	30	31	21 5
Sonoma.....	1,577	22.5	55,630	794	70	7	29	50	39 6
Stanislaus.....	1,456	29.0	31,990	639	50	6	20	34	27 4
Sutter.....	608	67.5	6,650	738	9	..	3	4	3 ..
Tehama.....	2,893	160.7	11,697	647	18	2	2	11	9 2
Trinity.....	3,166	633.2	3,301	660	5	..	1	5	3 3
Tulare.....	4,856	95.2	47,896	939	51	3	30	38	37 6
Tuolumne.....	2,190	183.0	9,979	831	12	1	2	7	7 1
Ventura.....	1,878	60.5	21,252	685	31	..	11	24	21 7
Lolo.....	1,014	46.1	14,150	643	22	2	8	13	15 1
⁷ Yosemite.....	..	..	..	..	1	..	1	1	.. ..
Yuba.....	639	53.2	11,080	923	12	1	6	8	7 3
Totals.....	155,652	28.8	3,038,322	926	5,396	446	2,956	3,698	2,736 728

Alpine county has no physicians within its territory and is not listed in this table.

1. Includes Berkeley, population 54,879; physicians 119 [M.R.C. 17], and Oakland, population 190,803; physicians 325 [M.R.C. 19].
2. Includes Los Angeles, population 475,367; physicians 1,333 [M.R.C. 165], and Pasadena, population 43,859; physicians 130 [M.R.C. 15].
3. Includes Sacramento, population 64,806; physicians 108 [M.R.C. 13].
4. Includes San Diego, population 51,115; physicians 190 [M.R.C. 33].
5. Includes San Francisco, population 448,502; physicians 1,239 [M.R.C. 210].
6. Includes Stockton, population 34,508; physicians 65 [M.R.C. 5].
7. Yosemite National Park.

Humboldt County
EUREKA—Thomas Robert Petch; Carl Wallace. FERNDALE—Francis Marion Bruner; Greg Hoskins.

Imperial County
CALEXICO—George Newlove; Walter Leon Elis. EL CENTRO—Charles Stanford Brooks.

Inyo County
BIG PINE—John Royal Buckingham. LONE PINE—Mark Angle Williamson.

Kern County
BAKERSFIELD—George Marion Bumgarner; Clarence William Kellogg; Malcolm Yeaman Marshall; Liva Charles McLain; Homer Rogers; Joseph Kent Smith. McFARLAND—John Nelson Blood.
McKITTRICK—Samuel Bryan Degman; Julius R. Hamilton.

Kings County
HANFORD—Budd Robbins.

Lake County
BARTLETT SPRINGS—Reuben H. Hunt.
LAKEPORT—Ernest Clarence Griner.

Lassen County
MADELINE—Lynn Carl Smith.

Los Angeles County
ARTESIA—Edward Henry Diehl. BURBANK—Harry X. Cline. COVINA—Wallace Allison Reed. CULVER CITY—Robert Maxwell Jones; Bryant Robert Simpson. DOWNEY—David Burdette Zbinden. EL MONTE—Joseph Saylin. GARDENIA—Francis Belmont Dwire. GLENDALE—

John Warren Bardill. GLENDORA—Harrie Chamberlin. HAWTHORNE—Allan Napier Kerr. INGLEWOOD—Louis Nels Anderson. LA MANDA PARK—Owen Melville Harrah. LANKERSHIM—Elliott Plummer Smart. LONG BEACH—Robert Metcalf Dodsworth; Harry H. Heylman; Lee De Scott; Charles Henry Miller; Roderick Hoffman Shippey; George Tupper.

LOS ANGELES—Charles Blackstone Adams; Eliot Alden; Albert Allen; Carlton Stewart Allen; Samuel Mitchell Alter; Francis Xavier Ammann Jr.
LeRoy Harrison Bailey; Claudius Ballard; Fred J. Barnet; Winfield Lincoln Bartow; Samuel G. Bay; Wendell P. Blake; William Otis Blanchard; Phil Boller; Karl Marx Bonoff; Frederick A. Bonthuis; Fred Phelps Bowen; William B. Bowman; John Ira Boyer; Walter Vernon Brem; Hersel Eugene Butka; Lawrence J. Butka; Oliver William Butler Ralph L. Byrnes.
John Carling; Ray Alden Carter; William James Chambers; Albert Charlton; Guy Cochran; Frederick Amasa Coler; Clare Pattee Conroy; James R. Cowan; Edward Rockford Cox; Egerton L. Crispin; Philip John Cunnane; Thomas B. Cunnane.
William Hardy Daniel; Bertram Charles Davies; Charles W. Decker. Frank Raymor de la Vergne; Karl Lyonel Dieterle; Robert Black Dimon; Clarence Wythe Dodge; Wallace Dodge; Normand F. Dorn.
Joseph Gamewell Evans; John Eugene Fahy; Fred Durfee Fairchild; D. C. Farnsworth; Abraham Feldman; John C. Ferbert; James Tucker Fisher; William Vane Chalmers Francis; David Fredericks; Chas. E. Freedman; Donald J. Frick; Lowell Chester Frost; Dudley Fulton.
Hiram Gallagher; Charles Louis Garvin; Albert Carl Germann; James Peter Gillis; Albert Sidney Gough; William Lewis Grant.
Robert Kels Hackett; Ralph Hagen; James Sprunt Hall; George Louis Alexis Hamilton; Roy Wallace Hammack; Lasher Hart; Truston Mitchell Hart; Miles Aiken Heffelfinger; James Walter Heustis; Robert Burns Hill; Walter Martin Holleran; Foster Miller Hull; Daniel Louis Humfreville; George Graham Hunter.
Clarence Edward Ide; John Curtis Irwin; Nilton D. W. Jeffs; Simon Henry Jesburg; Louis Josephs; Guy Leslie Kay; Walter P. Keene Henry Sheridan Keyes; Walter Christian S. Koebig; Harry Haynes Koons; Walter Eber Leonard; Fred Ellsworth Lettice; L. R. Linhart; Lorenzo Foster Luckie; Earl Lane Lupton; Jerre G. Lynch.
Lloyd Russell Mace; Chester Lea Magee; Harry George Marxmiller Norman M. McClelland; Clark Loring McClish; Wm. Raymond McDannell James Henry McLaughlin; Thomas R. McNab; Frank W. Miller; James Lewis Miller Jr.; Egbert Earl Moody; Edward Clarence Moore; J. Ross Moore; Wayland Augustus Morrison; Lewis B. Morton.
William H. Olds.
Paul Alfred Opp; Thomas James Orbison; Thomas William O'Reilly Arch Marty Paulson; Arthur Lewis Peter; Giles Scammon Porter Russell Warren Prince; Carl Wheeler Rand; Fred Sylvester Ray; George William Reyer; William W. Richardson; Edwin Jules Riche; Paul Brand Roen; Roy Frederick Ruth.
Arnold E. Saverein; George Frederick Schenck; Arnold Max Scholz Joseph L. Schwartz; Paul Kibbe Sellow; John Russell Shea; Bernard Shelton; Leon Shulman; Fred Cazeaux Shurtleff; Rea Smith; Albert Soiland; James Steinberg; Charles Gaskill Stivers; Byron Polk Stookey Leonard Stovall; John Swancott; Bret Albert Swartz; Percy Edward Swift.
Robert L. Tebbett; Emil Francis Tholen; Frank Thomas; James Thornton; Delos Packard Thurber; Frank M. Trout; Kenneth Beymer Turner; Arthur Maurice Tweedie.
Jean J. A. Van Kaathoven; Harry Voorhees; George Phillips Waller Jr.; Frederick Beall West; Sydney Vatele West; Charles Green Wharton; Sandford Blanding Whiting; James Thomas Whittaker; Edwin Hardin Wiley; Clair Wilson; John Cree Wilson; Charles Stephen Young

LOS ANGELES—Charles Frederick Curtis; William Allan Swim Stephen Yerkes Van Meter; Asa George Woodward.

MONROVIA—Francis M. Pottenger; Lewis Durkee Remington. NORWALK—Preston Stanley Kellogg; Charles E. Sisson. OCEAN PARK—Oscar Anderson.

PASADENA—John H. Breyer; Joseph Dayton Condit; Frank Moore Connor; Henry Ambrose Hoyt; Robt. K. Macklen; Fitch C. E. Mattison Samuel Jones Mattison; Alva Dutton Stearns McCoy; Edwin Harbaugh McMillan; James Ross Reed; Levi Lore Riggan; William Humes Roberts Henry Howard Sherk; Robert L. I. Smith; Edward Everett Tredway PATTON—Emil William Meyer.

POMONA—Dumont Dwire; Homer Carlton Seaver. SAN GABRIEL—Oto David Chamley. SAN PEDRO—Reuben H. Hunt; Wm. Day Moore SANTA MONICA—John A. Balsley; Hugh King Berkley. SAWTELLI—August Benjamin Hromadka; George Anderson Fielding. SOLDIERS HOME—Kay Walter Karras. SOUTH PASADENA—Russell Ross Burt Fred Detmar Northup. VENICE—Arthur Cooper Smiley. WHITTIER—Horace Plummer Wilson.

ALHAMBRA—James Archibald Keown.
SOLDIERS HOME—Walter D. Bishop.

Marin County
FORT McDOWELL—Eugene L'Hommedieu Swift. Richard Carl Dienst MILL VALEY—Oscar Park Stowe; Lemuel Alfred Anthony. SAN QUENTIN—John Edwin Paulson. SAN RAFAEL—Rafael Gabriel Duffey James Stone Waid. SAUSELITO—Allen H. Vance.

Mendocino County
ALBION—Homer Holsinger Wolfe. WILLITS—Raymond Arthur Babcock.

Merced County
LOS BANOS—Fred F. Sprague. MERCED—Edwin Ray Fountain Daniel Webster Zirker.

Modoc County
ALTURAS—Walter Edwin Coppedge; Alexander Gibson. EAGLEVILLE—Milo Russell Kennedy.

Monterey County
PACIFIC GROVE—Frank Russell Hart. SALIVAS—William Rollin Reeves.

Napa County
CALISTOGA—Cyril Ettrick Lewis. OAKVILLE—Samuel Chester Leonhardt.

Nevada County
GRASS VALLEY—Paul D. Barnes.

Orange County
FULLERTON—William Harold Wickett. GARDEN GROVE—Oscar Olie Young. HUTINGTON BEACH—John Edwin McKillop. ORANGE—Willis Henry Hall; Martin Passmore Hamrick. SANTA ANA—Frank E. Winter.

Placer County

ALTA—Robert Carnahan Kirkwood. COLFAX—Henry Thomas Rooney. COLN—Orra Crosby Hyde; Frank Edward McCullough.

Plumas County

FORTOLA—Samuel McCoy Sproat.

Riverside County

BLYTHE—Frank Alexander Lowe. CORONADO—Robert Smart. RIVER-
DE—Bon O'Driscoll Adams; Arthur Leon Brown; Wendell A. Jones;
George Carl H. McPheeters; William Wallace Roblee; William Donald
Lph; George Hamilton Trevelyan; Clark Deniko Fanton.

Sacramento County

SOLSOM—Myer Jacob Wahraftig. SACRAMENTO—Clarence Lavan
tner; Howard McDougall Cameron; Joseph William Crawford; A. B.
penbrock; Nathan George Hale; Marion Reginald King; Edward S.
zeaux; Arthur Lee Munger Jr.; Orris Reid Myers; James H. Parkin-
; James Roe Snyder; Warren Willis Strange; Eldridge C. Turner.
LNU T GROVE—Ernest Everett Wilson.

San Bernardino County

OMA LINDA—Alton De Forest Butterfield; Charles William Harrison;
d E. Herzer. NEEDLES—Arthur Edward Boland. ONTARIO—
Charles Andrew Warner. PATTON—Emil William Meyer; Victor Parkin.
PLANDS—Charles Edward Ide. SAN BERNARDINO—Louis Milton
; Thomas Richard McHugh; John Herman Meyer; Henry William
ls; Ralph Merle Smith; Colin Campbell Owen; Gilbert Roy Owen.
ONA—Homer Richard Evans. UPLAND—John B. Craig.

San Diego County

BALLBROOK—John C. Graffin.
EMON COVE—Morton William Fraser; Robert Bruce Montgomery.
DA VISTA—John Peachay Jones.
SAN DIEGO—Alfred Edward Banks; Arthur N. Bobbitt; Alfred Byars;
s S. Carter; James F. Churchill; Vernon G. Clark; Gordon Courte-
; Francis Jordan Dingeman; Joseph Foster Grant; Maynard Cald-
Harding; Gilbert Franklin Harris; Arthur John Holeton; Ruth-
Richard Irones; Robert S. Irvine; James Albert Jackson; Lyell
Kinney; Thomas C. Little; Harry Clifford Loos; Allyn Claude
gee; Thomas B. McCowan; Frederick W. Muller; Bernard O'Neill;
eph Andrew Parks; Thomas C. Pounds; William R. Ream; Fred-
ck J. Smlth; Frank W. H. Taylor; Robert W. Thomas; Paul Wege-
h; Andrew Benj. Wessels; Thomas F. Wier; Arthur John Wilkinson;
George Barrow Worthington.
ECATE—Edward H. Jordan.

San Francisco County

LCATRAZ—Herbert William Yemans. FORT MILEY—Justus M.
eate. SAN FRANCISCO—Le Roy Chas. Abbott; Henry Abraham; Ber-
n F. Alden; Frederick Emerson Allen; Ewald H. Angermann; Frank
more.
Walter Isaac Baldwin; Nathan Powell Barbour; Hans Barkan; George
Barnett; Shadworth O. Beasley; Joseph L. Bell; Gustav Julius Ber-
er; Elbridge John Best; William Archdall Boyle; Frank Philip
ndel; Frank J. Breslin; Joseph Richard Brown; Frederick Bryant;
ham A. Bryant; Sterling Bunnell; Edmund W. Butler.
awkins Cadwallader; Erwin Julian Casper; Donald Cass; Paul
ehun; Joseph Henry Catton; William Chamberlain; John F. Chap-
; Ernest Dwight Chipman; William Redwood; Price Clark; Ernest
nton Cleary; Herbert Jacob Cohn; Orrin Simeon Cook; Chas. Alfred
lg; Lloyd Benjamin Crow; Charles Cross.
Arthur Lee Davis; William B. Deas; John Paul Degnan; Victor
ecole; Richard L. Dowdall; Hiram B. Duncan; George Michael
ne.
arl Eames; Leo Eloesser; Leonard Wheeler Ely; Frank S. Emmal;
hael Henri Etcheverry.
arold Ernest Faber; Ernest Henry Falconer; Walter Wallace Fenton;
ce Ffoulkes; Roy L. Fielder; Arthur Lawrence Fisher; Thos. J.
on; Cuthbert Merwin Fleissner; Howard Webster Fleming; Harold
ustus Fletcher; Paul J. Flory; Meyer Bernard Fractman; Marius
re Francoz; Jule B. Frankenheimer; John Percival Frizell.
ederick Mears Gedney; Clain Fanning Gelston; Edward Joseph
dalla; Morton Raymond Gibbons; Arthur C. Gibson; Frank Robert
ard; Cosmos Andrew Glover; Arthur Goettsch; Louis Jean Ernest
guet; Jonathan Green; Earl Norman Greenwood; Charles Francis
fin.
ylvan Lewis Haas; John George Harrington; Chester S. Harris;
est Downing Hatch; Harrison Morton Hawkins; George Kramer
zog; Albion W. Hewlett; Harold P. Hill; Frank Munson Hillyer;
Haight Hoag; Herman Verplanck Hoffman; Laurence Harold
man; Thomas G. Holmes; Henry Wells Horn; Louis Phillippe Howe;
ert Cravens Howe; Walter A. Howell; George Rucian Hubbell;
mas Eugene Hunt; Thomas W. Huntington; Robert Koehler Hutch-

thomas G. Inman; William John Jackson; Emil O. Jellinck; Smith
nberger Johnson; Walter S. Johnson.
Joseph James Kavanagh; William Elwin Kay Jr.; William John Kerr;
ene Sterling Kilgore; Lester Kimberlin; Frederick W. Kroll; Boyd
Krout; Harry P. Krummes.
arry L. Langenecker; Charles Nelson Leach; Claude Clay Leaver-
Cory Childs Lewyard; T. B. W. Leland; Charles Gabriel Levison;
lerick Clinton Ledwith; Melville Hammond Long; Thomas Sherman
g.
George Jewett McChesney; Horace Hoagland McCoy; Albert B. McKee;
ur Clinton McKenney; Raymond B. McNamara; Albert H. McNulty;
on Edgar Miller; A. J. Minaker; Harry S. Moore; William Leander
re; Charles Espey Mordoff; Norman D. Morgan; Joseph Mora Moss;
on A. Muller; William Everett Musgrave; Stanley L. Myre.
oward Christian Naffziger; Robert Reid Newell; Alfred James Nor-
; Archibald Angus Norton; Earl William O'Donnell; Harry R. Oliver.
y Harvey Parkinson; Charles Arthur Pauson; Robert Allen Powers;
el David Prince; Harry Jerome Pruett; George William Purcell;
ence Quinan.

y Marlon Read; Frank Blackhead Reardan; Alfred C. Reed; Arthur
ry Reinstein; John Jacob Richstein; Emmet Rixford; John Wirt
inson; Thomas Bryan Roche; Joseph Henri Denis Roger; Louis
ld Roncovieri; Howard Edwin Ruggles; Russell Colquhoun Ryan.
William Ashford Sampson; Walter F. Schaller; Herman J. Schlageter;
les E. Schwartz; Martin Joachim Seid; Leon Gross Seidenfeld;
le Everett Shedd; Harry Mitchell Sherman; George Franklin Shiels;
Wilson Shiels; John Jacob Smith; John Bostwick Spalding; Otis
Spalding; Henry Augustus Stephenson; William E. Stevens; Stanley
man; John Phillip Strickler; Harrison W. Stuckey; Robert Porch
r.

Pleasant Addition Taylor; Wallace Irving Terry; Phillip M. Thomas;
Wm. Benbow Thompson; Tilton Edwin Tillman; George Perkins Tolman;
Frank Pixley Toppling; Charles Lee Tranter; Ronald B. Tupper.

Benjamin H. Vlan; Gabriel J. J. Vischl; Albert B. Vogel; Henry
Lewis Wagner; Calvin Albert Walker; Julian L. Waller; William Wal-
lace Washburn; Alanson Weeks; Emmett LeRoy Wemple Jr.; Jas. L.
Whitney; Glover B. Wilcox; Harry D. Williams; Robert B. Williams;
Walter H. Winterberg; Julian M. Wolfsohn; John Homer Woolsey;
Harold Walgrove Wright; Harold Zimmerman; Elmo Russell Zumwalt.

SAN FRANCISCO—Mervyn Heller Hirschfeld; Ray Wright Rosson;
Harry Travis Summersgill; James A. Young.

SAN LEANDRO—William H. Leahy.

San Joaquin County

SAN JOAQUIN—Lester E. Tretheway. STOCKTON—Ambrose Earl
Edgerton; William Friedberger; L. J. Schermerhorn; Hudson Smythe;
Norman E. Williamson. TRACY—Sydney Ernest D. Plnnlger.

San Luis Obispo County

PASO ROBLES—Alvin Hillis Wilmar. SAN LUIS OBISPO—Roy
Milo Cox; Byron Young Miller; Paul Kinsley Jackson.

San Mateo County

BURLINGAME—Herbert Seth Anderton; Henry Stevens Kiersted.
SAN MATEO—Wood Carson Baker; Walter C. Chidester; Albert Cohen.

Santa Barbara County

GUADALUPE—John Henry Frankltn. SANTA BARBARA—Rexwald
Brown; Phillip S. Chancellor; Gilbert Van Tassell Hamilton; Charles
Lynn Morris; Harold Sidebotham; Alexander C. Soper.

SANTA MARIA—Lambert B. Coblenz.

Santa Clara County

AGNEW—Glenn E. Myers. LOS ALTOS—Wladimir Feodor De Nied-
man. LOS GATOS—George Moulthrop Hubbell. MAYFIELD—Franklin
Monroe Seibert.

PALO ALTO—Herlwyn Ruggles Green; Henry Power; Harry Badger
Reynolds; Benjamin Thomas.

SAN JOSE—Thomas Loftin Blanchard; Charles Benjamin Hare; Henry
D. Hubbard; Frank H. Paterson; Charles Maynard Richard; Lester
Charles Scully. SARATOGA—George Waldo Burgess. STANFORD UNI-
VERSITY—Jaime de Angulo; William Freeman Snow; Herbert Rowell
Stolz. SUNNYVALE—George Peter Hall.

Santa Cruz County

DAVENPORT—Bartholomew Gattuccio. SANTA CRUZ—Ben Howard
Bush; William Joseph Hosford; Charles Hadden Parker; Alfred Liles
Phillips.

Shasta County

REDDING—Ernest Dozler.

Sierra County

ALLEGHANY—John Gustav Norman.

Siskiyou County

MONTAGUE—Charles Pius.

Solano County

BENICIA—Francis Marion Wall. DIXON—Otto Philip Floreth; Henry
E. Morrison. VACAVILLE—Humphrey P. Palmer. VALLEJO—
Edward August Peterson.

Sonoma County

ELDRIDGE—Fred Otis Butler. PETALUMA—James Garfield Ander-
son; John Thomas O'Brien; Stuart Zeno Peoples. SANTA ROSA—
Jackson Temple. SEBASTOPOL—Lafayette J. Wilson.

Stanislaus County

MODESTO—Robert W. Brace. OAKDALE—Bert Lee Doane; Cecil
Ephraim Smith; J. Audley Young.

Tehama County

CORNING—Alonzo Des Moines Snyder.
RED BLUFF—Frank L. Doane.

Trinity County

TRINITY CENTER—Wm. Arthur Rowell.
WEAVERVILLE—David Blackstone Fields; Llewellyn George Petch.

Tulare County

EXETER—Alexander David McLean; Pernier Albert Mix. LINDSAY—
Gordon Adams Clapp; Herbert Ronald D. Shoemaker. PORTERVILLE—
Harry Josiah Willey. WOODLAND—Fred Ross Fairchild.

Tuolumne County

SONORA—George Chauncey Wrigley.

Ventura County

OJAI—Jerome Tewksbury Gardner. OXNARD—Ralph Washburn
Avery; Frank Joseph Tillman. SANTA PAULA—Gavin Shearer Herbert;
Benjamin Eugene Merrill. VENTURA—Ralph W. Homer; William
Joseph Lewis.

Yolo County

DAVIS—Charles Edward Schoff.

Yuba County

CAMPTONVILLE—Frederick King Lord. MARYSVILLE—Everett
Edwin Gray; Fred Boyd Tapley.

COLORADO STATE MEDICAL SOCIETY

Officers 1917-18

Edward Jackson, President Denver
Peter Hanford, First Vice President Colorado Springs
J. H. Bush, Second Vice President Sterling
B. B. Blotz, Third Vice President Rocky Ford
Chas. Trueblood, Fourth Vice President Monte Vista

Councilor Districts and Officers

First District.—Boulder, Larimer, Grand, Weld, Logan, Sedgwick, Phil-
lips, Morgan, Washington and Yuma Counties. J. A. Matlock, Longmont,
and M. R. Fok, Sterling, Councilors.

Second District.—Gilpin, Clear Creek, Jefferson, Denver, Arapahoe, Adams, Douglas and Elbert Counties. Horace G. Wetherell, Denver, and J. W. Amessee, Denver, Councilors.

Third District.—Park, Teller, Fremont, El Paso, Lincoln, Kit Carson, Cheyenne, Crowley, Custer, Pueblo, Otero, Kiowa, Bent, Prowers, Huerfano, Las Animas and Baca Counties. W. H. Swan, Colorado Springs, and E. A. Elder, Denver, Councilors.

Fourth District.—Delta, Mesa, Lake, Ouray, Montrose, Chaffee, Rio Grande, Summit, Garfield, Eagle, Rio Blanca and Routt Counties. H. S. Henderson, Grand Junction, and Samuel French, Meeker, Councilors.

Fifth District.—Gunnison, Pitkin, Saguache, Costilla, Conejos, Mineral, Archuleta, Hinsdale, San Juan, La Plata, Montezuma, Dolores and San Miguel Counties. A. R. Pollock, Monte Vista, and Edgar Hadley, Montrose, Councilors.

COLORADO										
County	Area, Square Miles	Sp. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total No. Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	
Adams.....	1,262	105.2	11,905	992	12	1	3	7	1	1
Alamosa.....	800	72.7	6,340	576	11	..	6	10	5	2
Arapahoe.....	842	64.8	13,740	1,056	13	1	8	9	..	1
Archuleta.....	1,220	406.7	4,167	1,389	3	1	1	2	1	..
Baca.....	2,552	638.0	3,799	949	4	1	..	..	1	..
Bent.....	1,526	1526.0	6,499	6,499	1	..	9	..	..	..
Boulder.....	764	10.9	36,742	524	70	..	35	44	45	6
Chaffee.....	1,083	57.0	8,012	421	19	1	11	17	6	6
Cheyenne.....	1,777	592.3	6,012	2,004	3	1	1	2	..	..
Clear Creek.....	390	55.7	5,001	714	7	..	1	6	1	1
Conejos.....	1,393	174.1	7,835	979	8	..	4	8	3	1
Costilla.....	1,771	295.2	5,056	842	6	..	2	5	2	1
Crowley.....	1,400	155.5	5,501	611	9	1	2	4	4	2
Custer.....	747	373.5	1,947	973	2	..	1	2	2	..
Delta.....	1,201	42.9	19,673	702	28	..	12	21	14	7
Denver.....	58	0.08	268,439	393	682	59	271	436	325	74
Dolores.....	1,043	521.5	642	321	2	..	..	..	..	..
Douglas.....	845	211.5	3,243	810	4	..	1	3	1	..
Eagle.....	1,620	270.0	2,985	497	6	..	4	4	2	..
Elbert.....	1,857	371.4	6,958	1,177	5	..	3	4	3	..
El Paso.....	2,121	15.9	51,874	390	133	5	63	96	87	18
Fremont.....	1,557	70.8	20,039	910	22	..	6	18	13	2
Garfield.....	3,107	172.6	13,287	738	18	..	6	14	10	2
Gilpin.....	132	44.0	4,131	1,043	3	..	2	3	..	1
Grand.....	1,866	373.2	2,679	535	5	1	3	3	2	1
Gunnison.....	3,179	264.9	6,309	525	12	..	4	5	3	1
Hinsdale.....	971	971.0	646	646	1	..	..	1	..	..
Huerfano.....	1,500	88.2	16,914	996	17	..	10	15	10	2
Jackson.....	1,632	544.0	1,410	470	3	..	1	1	..	1
Jefferson.....	838	52.4	17,825	1,114	16	2	10	9	3	2
Kiowa.....	1,798	1798.0	4,502	4,502	1	1	1	..	..	..
Kit Carson.....	2,159	196.3	11,791	1,071	11	..	4	7	4	..
Lake.....	371	45.7	10,600	1,177	9	..	2	4	9	1
La Plata.....	1,851	132.2	13,581	970	14	..	5	12	1	1
Larimer.....	2,629	67.4	35,174	901	39	2	16	26	30	2
Las Animas.....	4,809	104.3	42,257	918	46	..	21	37	26	5
Lincoln.....	2,570	285.5	9,558	1,062	9	..	3	8	2	1
Logan.....	1,822	113.9	14,115	882	16	..	9	12	10	..
Mesa.....	3,163	93.0	31,633	930	34	1	13	21	20	5
Mineral.....	866	866.0	1,239	1,239	1	..	..	..	1	..
Moffat.....	3,834	766.8	2,458	491	5	..	3	4	..	1
Montezuma.....	2,051	410.2	6,467	1,093	5	..	4	4	..	..
Montrose.....	2,264	141.5	14,491	905	16	3	9	12	9	1
Morgan.....	1,286	71.4	14,182	787	13	..	9	15	9	2
Otero.....	2,067	62.6	21,035	637	33	1	13	21	16	1
Ouray.....	519	74.1	3,514	502	7	..	3	5	..	1
Park.....	2,212	737.3	2,492	830	3	..	1	2	1	2
Phillips.....	688	106.3	4,343	723	6	..	4	5	2	..
Pitkin.....	1,019	203.8	4,566	913	5	..	2	4	..	..
Prowers.....	1,630	81.5	13,719	685	20	1	9	13	16	3
Pueblo.....	2,433	26.7	65,198	716	91	4	43	64	61	11
Rio Blanco.....	3,223	805.7	3,801	950	4	..	3	4	2	1
Rio Grande.....	898	74.8	8,373	697	12	..	4	8	9	2
Routt.....	6,967	409.8	7,949	467	17	..	7	12	4	4
Saguache.....	3,133	284.8	4,383	398	11	1	4	9	6	..
San Juan.....	453	75.5	3,589	596	6	..	4	5	4	..
San Miguel.....	1,288	143.1	4,700	522	9	1	3	8	2	1
Sedgwick.....	531	106.2	4,586	917	5	..	3	4	2	..
Summit.....	649	216.3	2,003	667	3	..	2	2	2	..
Teller.....	547	36.5	14,351	956	15	..	8	14	9	2
Washington.....	2,521	315.1	8,036	1,004	8	1	1	7	2	..
Weld.....	4,022	55.1	55,504	760	73	3	37	51	31	6
Yuma.....	2,367	197.2	11,373	948	12	..	9	15	2	..
Totals.....	119,785	70.9	1,014,178	750	1,689	99	739	1,164	841	185

1. Includes Denver, population 253,161; physicians 682 [M.R.C 74]
2. Includes Colorado Springs, population 32,344; physicians 115 [M.R.C. 18]

HONOR ROLL

Adams County

HENDERSON—Albert West Metcalf Jr.

Alamosa County

ALAMOSA—Charles L. Orr; John Dewi Davies.

Arapahoe County

ENGLEWOOD—Hubert Grieger.

Boulder County

BOULDER—Glaister H. Ashley; William A. Jolley; Joseph Brenald Salberg. LONGMONT—Samuel Byrd McFarland; Vivian Russell Pennock; Willard Justin White.

Chaffee County

BUENA VISTA—Victor B. Ayers; Angus MacLennan. SALIDA—Carleton Orr Booth; Frank Nicholas Cochems; C. Rex Fuller; Charles Stephen Phalen.

Clear Creek County

SILVER PLUME—William Elizabeth Drisdale.

Conejos County

ANTONITO—Archibald Joseph Chisholm.

Costilla County

BLANCA—Walter Wallace Covell.

Crowley County

ORDWAY—James Edgar Jeffrey. SUGAR CITY—Chas. H. Waxha

Delta County

CEDAREDGE—Louis Clifton Bolton. CRAWFORD—Oscar Allen Duncan; Winfield Scott Cleland. DELTA—Earlscourt Grant Shaffer. HOTCHKISS—W. Claude Copeland; Walter Haines Lewis. PAONIA—Augustus Frederick Erich.

Denver County

DENVER—Kenneth Dayton Allison Allen; John W. Amessee; James I. Arnell; William M. Bane; Amos Llewellyn Beagler. Alpha J. Campbell; Benjamin William Carlson; Fred H. Carpenter; Augustine Santini Cecchini; Phillips Maurice Chase. Edward Francis Dean; Albert Warner Dewey; Ray Lawrence Driscoll.

William A. Epstein; Harold Emerson Farnsworth; Harry Silsby Finne. Wm. Chris Finnoff; Wm. Donaldson Fleming; Harmon Lonzo Fowler. Harold Gould Garwood; John Crittenden Gorsuch; William West Grant Josiah Newhall Hall; John Claudius Herrick; Joseph Robinson Hood; Thomas Mayes Hopkins; Walter Kendrick Hotchkiss; Louis Houghton Ranulph Hudston.

Clarence B. Ingram Jr.; Walter Addison Jayne; Samuel Fosdick Jones. Claude C. Keeler; Julien C. Kennedy; Wallace Caw Kent; Robert Levy; Lawrence Kirby Lunt; George Bennett Lewis; William Benjamin Lewis; George Lingenfelter; Thomas F. Long; Oliver Lyons. Harold George Macomber; Arthur Jackson Markley; Eugene Mattie Arthur McGugan; Francis Hector McNaught; Charles Walter Melton Charles F. Milligan; Arthur James Offerman; George E. Orsborn. Robert G. Packard; Joseph William Pecony; Cyrus Long Pershir Cuthbert Powell; Charles Andres Powers; Miller E. Preston.

William Roberts; Reuben Schachet; William Alexander Sedwick; Harry Summers Shafer; Arthur William Stahl; Joseph Manning Stelner; Elbert Byron Swerdfeger. Robert E. Talbot; Alexander Bismarck Terrell.

Dell W. Van Gilder; Lewis Marshall Van Meter; Orville D. Westcott Horace G. Wetherill; William Whitridge Williams; Nicholas Anders Wood; Robert Lupinski Zaegel.

El Paso County

COLORADO SPRINGS—Lloyd Raymond Allen; George William Bancroft; James Horace Brown; Louis Gordon Brown; Burnett "A" Filmer; Alexis Mador Forster; Omer Rand Gillett; Henry Williamson Hoagland; Tom Ray Knowles; Philip Albert Loomis; Alexander Covington Magruder; Edgar Marcella Marbourg; Lewis Hugh McKinnie; George Laird Shaffer; Charles F. Stough; Will Howard Swan; Gerald Bertram Webb.

COLORADO SPRINGS—Frank Lowndes Dennis.

Fremont County

CAÑON CITY—Hart Goodloe. FLORENCE—Amon Vardry Hutton

Garfield County

GLENWOOD SPRINGS—William W. Frank. GRAND VALLEY—Frank Henry Miller.

Gilpin County

BLACKHAWK—Clarence Mauritz Ford.

Grand County

KREMMLING—Justin John Young.

Gunnison County

SOMERSET—James Richard Earle.

Huerfano County

IDEAL—Jesse DeClifford Wilson. STRONG—Aubert Durnell.

Jackson County

WALDEN—Charles H. Fischer.

Jefferson County

GOLDEN—John Frederick Howard; Earl Wallace Kemble.

Lake County

LEADVILLE—Franklin Joseph McDonald.

La Platte County

DURANGO—Alek Franklin Hutchinson.

Larimer County

FORT COLLINS—Curtis A. Atkinson; Albert Whipple Rew.

Las Animas County

SEGUNDO—Ortus Fuller Adams. SOPRIS—Arthur Ernst Gill. TRINIDAD—John R. Espey; Caleb W. Presnall; Edward John Scannell.

Lincoln County

HUGO—Charles Lieber.

Mesa County

GRAND JUNCTION—Charles Wesley Reed; James Melville Shleifer; Frank Noble Stiles; Arthur George Taylor. PLATEAU CITY—William Victor Watson.

Moffat County

CRAIG—Morrow Duncan Brown.

Montrose County

OLATHE—Charles Edwin Lockwood.

Morgan County

FORT MORGAN—Robert Craig Bowie; Elwyn R. Clarke.

Otero County

LA JUNTA—Harvey Ellsworth Hall.

Ouray County

OURAY—Lawrence Clark Cook.

Park County

FAIR PLAY—Frank Dunkle.

Prowers County
HOLLY—Milton Augustus Broemser. **LAMAR**—Clyde Thomas Knuckey; Elbridge Likes.
Pueblo County
PUEBLO—Eldridge S. Adams; Leon Block; Eugene Harold Brown; Harold T. Low; Joseph Francis Snedee; Thomas H. Stoddard; Charles Walker Streamer; John William Thompson; Phillip Work.
PUEBLO—William Henry Halley; Hubert Work.
Rio Grande County
DEL NORTE—Arthur Blaine Gjellum; Harry C. Miller.
Rio Blanco County
MEEKER—Harry Blsmarck Sobernheimer.
Routt County
OAK CREEK—Forest Charles Kraeaw. **STEAMBOAT SPRINGS**—Frank Jay Blackmer; Horace C. Dodge; William Kernaghan.
San Miguel County
PLACERVILLE—James Willboarn Sylvester Cross.
Teller County
VICTOR—Harry George Thomas; Charles Edward Elliott.
Weld County
GREELEY—Oscar Francis Broman; Walter Fremont Church; Edwin Inslow Knowles. **JOHNSTOWN**—Orien Ashbury Grantham. **MILLIKEN**—Carl Campbell Fusen. **STONEHAM**—Floyd Clinton Turner.

CONNECTICUT STATE MEDICAL SOCIETY
 Officers 1917-18
 Charles J. Bartlett, President.....New Haven
 Mas. B. Graves, Vice President.....New London
 ushman A. Sears, Vice President.....Portland
 E. Lane, Secretary.....New Haven
 seph H. Townsend, Treasurer.....New Haven
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 Wm. H. Garmalt, New Haven; Walter R. Steiner, Hartford; Patrick Cassidy, Norwich; Frank W. Stevens, Bridgeport; Seldom B. Overek, Pomfret; Elias Pratt, Torrington; Geo. N. Lawson, Middle Haddam; omas F. Rockwell, Rockville.

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Airfield.....	631	1.6	314,000	844	372	10	272	333	229	54
Hartford.....	729	1.7	307,000	717	428	14	320	326	251	72
Hitchfield.....	925	10.3	75,009	843	89	1	40	62	51	12
Middlesex.....	369	4.9	48,467	646	75	6	33	59	53	10
New Haven.....	603	1.1	411,000	817	503	16	200	391	355	87
New London.....	659	5.0	102,000	778	131	12	55	81	66	13
Holland.....	494	1.4	27,872	995	28	..	11	18	17	4
Windham.....	500	9.4	49,456	933	53	4	17	29	33	9
Totals.....	4,820	2.8	1,334,864	795	1,679	63	948	1,299	1,055	261

1. Includes Bridgeport, population 48,434; physicians 169 [M.R.C. 29].
2. Includes Hartford, population 108,969; physicians 265 [M.R.C. 50].
3. Includes New Haven, population 147,095; physicians 266 [M.R.C. 45], and Waterbury, population 84,745; physicians 93 [M.R.C. 19].

HONOR ROLL
Fairfield County
BETHEL—Homer Franklin Moore.
BRIDGEPORT—Frederic J. Adams; Charles Lincoln Banks; Lewis George Beardsley; Abraham Bernstein; Fessenden Lorenzo Day; Edward Cholas DeWitt; Henry Campbell Dixon; George B. Garlick; Owen Mes Groark; Charles Piekhardt Haller; George Waller Hawley; Henry Lambert; Daniel H. Lawler; Charles Joseph Leverty; John Gabriel Connell; Ewald Edward Olsson; Daniel Cleveland Patterson; Laurence Poole; John T. H. Powers; Robert Douglas Roller Jr.; Douglas James berts; Charles H. Sprague; Edwin Severance Stenberg; Frank W. evens; Clifton Clark Taylor. **DANBURY**—David Chester Brown; hard M. English; Howard D. Moore; William Martin Stahl.
FAIRFIELD—William Thomas Nagle. **GEORGETOWN**—William Cham- on Deming. **GREENWICH**—Thomas Joseph Bergin; Fritz Carleton de. **NEW CANAAN**—Fenwick Beekman; Edwin Saxton Bennett; mond J. O'Shaughnessy; Ralph Lewis White. **NOROTON HEIGHTS**— rold Eliphalet Hoyt. **NORWALK**—George E. Cram; Frederick James rison; George M. Muren. **SHELTON**—Charles Seavers Smith. **SOUTH RWALK**—Robert Earnest Perdue. **SPRINGDALE**—Frederick Eugene ckton. **STAMFORD**—Halgasoon Kruger Kaprielian; Daniel P. Platt; ward Everett Rowell Jr.; William Earl Smith. **WESTPORT**—Frank rold McLaury.
BRIDGEPORT—Marcus Carl Beck; Benjamin Brooks Finkelstone; an Stanley Nickum; Bartholomew Charles Pasuth.
Hartford County
BRISTOL—Ralph Augustus Richardson; Edward Barker Sanborn; eph I. Weisard. **EAST HARTFORD**—Edward Hamilton Truex. **GRAN-** —Vincent Joseph Irwin Jr.
HARTFORD—Harold A. Baneroft; Julian Lee Birdsong; Richard Black- re; Anthony W. Branon; Philip Dibble Bune; Freeman Pell Clason; x Chlman; Ansel Granville Cook; William Patrick Daly; William yer; William J. Fay; William Henry Flynn; Arthur Sheldon Grant; n Bagg Griggs; Abraham Benjamin Gross; Walter Fairbank Hume; aman Max Hurwitz; James Eldor Hutchison; Raymond Francis Kircher; ur Bernard Landry; Franklin Lyman Lawton; Edward McDermott; es Patrick McManus; James Raglan Miller; William Thomas Owens; n William Parker Jr.; Ulrie Plante; William Franelis Reardon.

Frank Joseph Ronayne; Alfred Merriman Powley; John Carter Rowley; John Francis Sagarino; Harry Arthur Seigall; Robert Syhoff Starr; Ivan Reed Stldger; Wm. Myron Stockwell; Henry Farnum Stoll; Eugene Joseph Therrien; Harold Thomas; Paul Waterman; Stanley Burnham Weld; Donald Breekinridge Wells; Edward Joseph Whalen; Otto George Wiedman; Frank Emery Wilson; James Cornelius Wilson; Robert M. Yergason. **KENSINGTON**—Matthew Hammond Griswold. **MANCHESTER**—Joseph Ambrose Higgins; LeVerne Holmes. **NEW BRITAIN**—George Henry Dalton; James Franelis Faulkner; Raymond W. Lewis; Waterman Lyon. **PLAINVILLE**—Lawrence Hubbard Frost. **SOUTHINGTON**—William Radley Miller. **SOUTH MANCHESTER**—Edward Bartlett Allen; Clarence Charles Burlingame. **SUFFIELD**—Russell Barber Street.
HARTFORD—James Francis Rooney; Theodore Leroy Story; Hart- well Greene Thompson.
NEW HAVEN—William Patrick Burke; Carl Wm. Henze; Bernard Francis Gilchrist; Bernard C. Marantz.
WEST HAVEN—Wm. Michael O'Connell.
Litchfield County
CANAAN—John Geikie Adam. **COLEBROOK**—Gilbert Horrax. **LITCH- FIELD**—Nelson Lloyd Deming; John Esten Kellar Jr.; Charles Henry Turkington. **MARBLEDALE**—Marmaduke Hamilton Denslow. **TERRY- VILLE**—Richard John Lawton; Harold Burton Woodward. **TORRINGTON**—Wallace Ellsworth Hoffman; Herbert Charles Oelshlegel. **WEST CORNWALL**—Robert James Grand-Lienard.
ROMFORD—Samuel Clark Harvey.
Middlesex County
CLINTON—Graham Ormond Wellman. **ESSEX**—Frederick Barton Pradeen. **HIGGANUM**—Leonard Joseph Loewe. **MIDDLETOWN**—Arthur Burr Coleburn; Carl C. Harvey; Ernest Harold King; Daniel Andrew Nolan; Francis Joseph O'Brien; John Ignatius Wiseman. **PORTLAND**—Charles Brigham Chedel.
New Haven County
ANSONIA—Fred Francis Armstrong; Cornelius Stephen Conklin; James Frank McNish. **BRANFORD**—Charles William Gaylord. **DERBY**—Herbert Alfred Roberts; Elmer Thomas Sharpe; Michael J. Sheehan. **HAMDEN**—Walter Sidders Lay. **MERIDEN**—John B. Healey; Thomas Patrick Murdock; Raymond Vincent Quinlan; Thaddeus Stamslaus Sklad- zien; David Parker Smith; Louis Frederiek Wheatley. **MIDDLETOWN**—Harold Lester Burr. **MILFORD**—Carlton Kellog Heady. **NAUGATUCK**—David C. Bull; Michael Francis Claffey; Arthur B. Dayton.
NEW HAVEN—Harold S. Arnold; William S. Barnes; Eugene M. Blake; Samuel Henry Braude; Karl Benjamin Bretzfelder; John W. Clurehman; James F. Cobey; William Francis Collins; Charles W. Comfort Jr.; Fred Walter Comstock; Harry Albert Conte; Herman Porter Davidson; Robert Lee Elliston; John Marshall Flint; James A. Gettings; James Cowan Greenway; James Aloysius Harten; Joseph Alton Holgen Jr.; James Albert Honeij; John G. Hugo; Frederie Henry Hynes; Simon Bretzfelder Kleiner; Arthur J. Logie; Lloyd Leslie Maurer; William Chas. McGuire; William H. Morris; John A. Murphy; Abraham Lewis Olshansky; Donald Wallace Porter; Alexander Louis Prince; John Recca; Orville Ferrest Rogers Jr.; Thomas H. Russell; Robert F. Scholl; William Lawrence Sheahan; Jeremiah Barrett Sullivan; Raynham Townsend; Alexander C. Thompson; Rex Edward Van Duzen; William Francis Verdi; Arthur Weed; Arthur Isadore Weil; Herman Robert White; Milton Charles Winternitz.
NORTH HAVEN—Gould Shelton Higgins.
WALLINGFORD—James D. McGaughey; Mark Thomas Sheehan; Wal- lace Nathaniel Sweet.
WATERBURY—Henry G. Anderson; Walter Lewis Barber Jr.; Augus- tin Averill Crane; John Sinclair Dye; John Edward Farrell; Jacques Henry Green; Thomas F. Healey; Andrew Joseph Jackson; Edward Harry Kirsehbbaum; George Arthur Leonard; Arthur Francis McDonald; James Lignori Moriarty; Raymond James Quinn; Raymond Harrison Ryder; Egbert Livingston Smith; George Milton Smith; Harry Aaron Solomon; Edmund Spicer; Edwin R. Webber. **WATERVILLE**—Edward John Godfrey. **WEST HAVEN**—Ralph D. Clark.
WATERBURY—Sidney Collingwood Dalrymple.
New London County
COLCHESTER—Edward Joseph Howland. **GROTON**—Edmund Latham Douglass. **MYSTIC**—William Henry Gray. **NEW LONDON**—George Philip Cheney; Walter Landon Douglass; Joseph M. Ganey; Harry Mower Lee; Winthrop Essex McGinley; Thomas Soltz. **NORWICH**—John S. Blackmar; John William Callahan; John Daniel Donovan; William Thomas Driseoll.
Tolland County
ELLINGTON—Edward Alfred Brace. **MANSFIELD CENTRE**—Wil- liam Edward Cramm. **MANSFIELD DEPOT**—John Francis Hackett. **ROCKVILLE**—Elliott Harrison Metealf.
Windham County
DANIELSON—Frank Paige Todd. **POMFRET CENTER**—Frederick Grosvenor Goodridge. **PUTNAM**—Edward Franklin Perry. **WILLMAN- TIC**—Charles Albert Jenkins; William P. S. Keating; Louis Irving Mason; Owen O'Neill; Fred Morse Smith.
DANIELSON—James Robertson Knowles.

DELAWARE STATE MEDICAL SOCIETY
 Officers 1917-18
 Geo. W. K. Forrest, President.....Wilmington
 R. G. Paynter, First Vice President.....Georgetown
 James Martin, Second Vice President.....Milford
 William A. LaMotte, Secretary.....Wilmington
 Samuel Rumford, TreasurerWilmington
 Councilors
 Newcastle County, Peter W. Tomlinson, Wilmington; Sussex County, James Beebe, Lewes.
HONOR ROLL
Kent County
DOVER—William Clements Behen; George I. McKelway. **HARRING- TON**—Joseph Bringham.
New Castle County
CENTERVILLE—John W. Crossan. **DELAWARE CITY**—Walter Wln- throp Ellis. **NEW CASTLE**—Robert Ray Roth.
WILMINGTON—Joseph M. Barsky; Bruce Henry Beeler; Ira Burns; Edward Thomas Crossman; James A. Draper; Abram Joseph Gross; Mark

B. Holzman; Bernard Allen Jenkin; Edwin Harvey Lendernan; Bernard Joseph McEntee; Herman Simmons Miller; John Henry Mullen; John Burton Rutherford; Meredith I. Samuel; James Guie Spackman; William Henry Speer; Victor Duke Washburn.
NEWARK—John H. W. Ayers.

DELAWARE									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Committed in M.R.C., etc.
Kent.....	617	16.2	32,721	861	38	13	21	12	3
New Castle.....	435	2.8	152,666	998	153	5	81	69	22
Sussex.....	913	14.5	49,432	784	63	..	26	22	7
Totals.....	1,965	7.7	234,819	924	254	5	120	103	32

1. Includes Wilmington, population 93,161; physicians 126 [M.R.C. 18].

Sussex County

BACONS—Walter A. Bacon. DELAWARE BREAKWATER—George G. Hart. LAUREL—John R. Elliott. LEWES—Richard Clarence Beebe. MILFORD—William Marshall Jr.; Willard Richardson Pierce. SEAFORD—Harrison Martin Manning.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

Officers 1917-18

G. Wythe Cook, President.....Washington
C. M. Beall, First Vice President.....Washington
M. H. Prosser, Second Vice President.....Washington
H. C. Macatee, Recording Secretary.....Washington
J. L. Thompson, Corresponding Secretary.....Washington
Chas. W. Frazoni, Treasurer.....Washington

Councilors

J. B. Nichols, Washington; L. H. Reichelderfer, Washington; E. G. Seibert, Washington; J. L. Thompson, Washington; John Van Rensselaer, Washington; Jos. S. Wall, Washington; Wm. P. Carr, Washington; J. W. Chappell, Washington; Francis R. Hagner, Washington.

DISTRICT OF COLUMBIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Committed in M.R.C., etc.
Washington.....	60	0.05	369,282	300	1,230	64	817	951	641

HONOR ROLL

WASHINGTON—Roy Delaplaine Adams; Samuel S. Adams; Samuel Allen Alexander; James Henry Allen; Charles L. G. Anderson; Horace Edward Auringer.

Howard Wilson Barker; Wilfred M. Barton; Charles Bell; Leonard P. Bell; Victor E. Belinger; Carroll Edward Bingman; Frank Lee Biscoe; Harry Aloysius Bishop; Rudolph H. Bloom; Boyce Richardson Bolton; Daniel LeRoy Borden; John Wesley Bovee; John Chester Brady; Scott Dudley Breckinridge; Joseph Hammond Bryan; Herbert J. Bryson; William R. Buchanan; John Woolfolk Burke; James Augustine Cahill Jr.

J. E. Campbell; Claude Carlisle Caylor; Francis M. Chisholm; Arthur George Compton; Richard Lloyd Cook; Samuel LeCount Cook; Wellington Watson Cooper; Sidney Charles Cousins; Clyde B. Covey; Oliver Clemence Cox; Samuel Clifford Cox; Charles Brown Crawford; Lemon Dow Cruise; Arthur Leo Curtis; Austin Maurice Curtis Jr.

Moses H. Darnall; Ralph Harold Davis; William Thornwall Davis; John Henry Digges; John Dunlop; Hubert Fairleigh Dunn; Joseph Francis Dyer.

Lewis Charles Ecker; Leonard Harrison English; William Gage Erving; Nathan Sherwood Ferris.

Melville Bendheim Fischer; Thomas M. Foley; Carroll H. Francis; Walter A. Frankland; Homer G. Fuller.

Fielding H. Garrison; Augustus Clagett Gray; Eric Steel Green; Charles I. Griffith; C. C. Groff.

Carlton Daniels Haas; Arthur Joseph Hall; Custis Lee Hall; Thomas V. Hammond; Norman Watkin Harris; James W. Hart; Henry Hayes; Joseph M. Heller; Samuel Carl Henning; Daniel Lee High; Edwin Richard Hodge; Abram B. Hooe; James Spencer Hough; William James Howard Jr.; Jarrett Matthew Huddleston; William B. Hudson; Howard Hume; William Henry Huntington; Charles W. Hyde.

Paul Bowen Alden Johnson; Stuart C. Johnson; Edward Barton Jones; Thomas Edward Jones.

Howard F. Kane; Jos. J. Kaveney; Adam Kemble; James Philip Kerby; Harry Hyland Kerr; James Joseph Kilroy; Harry Clifton King; Millard Knowlton.

Willard Mercer Lane; Christopher Columbus Lathers; Edwin Henry Lee; Kenneth D. Legge; Julius C. LeHardy; Louis Charles Lehr; Richard M. Little; William Houston Littleplace; Charles R. Luce; Marcus Ward Lyon Jr.

Henry C. Macatee; Andrew M. MacDonald; John Joseph Madigan; William J. Manning; Charles C. Marbury; William Berry Marbury; William G. Marks; Eli Kennerly Marshall Jr.; Ulysses Grant Baldwin Martin; Charles Edward Maxwell; Charles Francis McGuire; James George McKay; Arthur Bandcroft McKinney; William Frank McLaughlin; Joseph Aaron Mendelson; William Campbell Miller; James Fernandis Mitchell; Albert John Molzalin; Thomas Verner Moore; William Gabell Moore; John Francis Moran; Francis Patterson Morgan; James D. Morgan; William G. Morgan; Roy Thomas Morris; Samuel Nelson Moskowitz; Joseph Mundell.

Lester Neuman; John L. Norris; William Harrison Norton; William Francis O'Donnell; Dillon Garrett O'Neil.

Albert Elwood Pagan; Edward Mason Parker; Henry Pickering Parker; William Francis Patten; Franklin Burche Pedrick; Ivy Albert Pelzman; John Burr Piggett; Orlando J. Posey; Dana C. Post; Daniel Webster Prentiss; Harry Martin Price; Paul Stirling Putzki.

Charles Edward Ralph; Buchner Magill Randolph; Luther H. Reichelderfer; Fritz August Reuter; Eugene Clarence Rice Jr.; Charles W. Richardson; James J. Richardson; Charles D. Riker; Albert Ridgely Charles Sumner Robbins; Arthur Felis Roche; Louis Charles Rosenberg Frank K. Ryan.

Guy Stark Saffold; David Gentner Sampson; Henry F. Sawtelle George Joseph Schirch; Harry L. Schurmeier; Edward Grant Seibert John Hunter Selby; Lucien Conway Smith; Merrill C. Sosman; Joseph D. Stout; John B. Spencer; Robert Young Sullivan.

John Allen Talbott; David W. Tastet; John Daniel Thomas; Edgar Dor man Thompson; Albert Perkins Tibbets; Joel Adams Tilton; Henry Wood Tobias; Grafton Dent Townshend.

John Van Rensselaer; Walter Van Sweringen; George Tully Vaughan Jose Rosado Villamil; Lewis Albert Walker; Byron Alexander Watson Clarence F. Weaver; Walter Augustine Wells; Albert Wenzell; William Glendorf Wetmore; Charles Wheatley; Leroy M. White; William Whitmore; Elmore Cornelius Wiggins; Virgil Blackstone Williams; Prentiss Wilson; William H. Wilmer.

Harry C. Yarrow; Joseph W. Zigmand; Arthur Morris Zinkhan; Paul Hudson Zinkhan.

WASHINGTON—Dorrell Ghio Dickerson; Edwin M. Hasbrouck Joseph James Kinyoun; James Burnett Laughlin; Frederick Michael Nolan; Geo. Samuel Reiss.

FLORIDA MEDICAL ASSOCIATION

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H. C. Dozier, First Vice President.....Ocala
D. A. McKinnon, Second Vice President.....Marianna
Henry Hanson, Third Vice President.....Jacksonville
Graham E. Henson, Secretary.....Jacksonville

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Second District.—Liberty, Franklin, Gadsden, Jefferson, Wakulla and Leon counties. F. F. Ferris, Councilor, Apalachicola.

Third District.—Columbia, Taylor, Lafayette, Hamilton, Madison and Suwanee counties. Councilor, W. C. White, Live Oak.

Fourth District.—Duval, St. Johns, Clay and Nassau counties. Gerr R. Holden, Councilor, Jacksonville.

Fifth District.—Lake, Sumter, Citrus, Hernando and Marion counties E. Van Hood, Councilor, Ocala.

Sixth District.—Pascoe, Hillsborough and Pinellas counties. Thos Truelsen, Councilor, Tampa.

Seventh District.—Brevard, Volusia, Orange, Osceola and St. Luc counties. Davis Forster, Councilor, Hawks Park.

Eighth District.—Levy, Alachua, Bradford, Baker and Putnam counties A. H. Freeman, Councilor, Starke.

Ninth District.—Bay, Calhoun, Holmes, Jackson and Washington counties. J. S. McGeachy, Councilor, Chipley.

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HONOR ROLL

Alachua County

CAMPVILLE—George Washington Sherous. GAINESVILLE—William J. Buck; Allen Graham; William H. Pickett; George Clarence Tillman MELROSE—Johnson Nichols McCartney. MICANOPY—Orion U. Feaster Edgar Barsillai Howell.

Bay County

FOUNTAIN—James Lee Pennington. MILLVILLE—James Montgomery Nixon. PANAMA CITY—William Davis Cawthorn.

Bradford County

STARKE—Albert Howard Freeman. WORTHINGTON—James Olive Phillips.

Brevard County

MELBOURNE—Leon Herbert Martin. TITUSVILLE—Bennett Axford Burks.

Broward County

DANIA—Thomas Edwin Parrish. FT. LAUDERDALE—Robert S Lowry.

Calhoun County

BLOUNTSTOWN—Gordon Turner Crozier. PORT ST. JOE—Baldwin Shields Stuits.

Citrus County

CRYSTAL RIVER—Joseph Max Irwin.

Columbia County

FORT WHITE—William Eugent Whitlack. LAKE CITY—John P. Long Dwight Dray Rivers

Dade County

CLEARWATER—John Roy Hawkins. LARKINS—Grover Cleveland Franklin. MIAMI—Wm. Stanley Gramling; Henry Harrison Greene Eugene Keene Jaudon; Thomas Luther Lowrie.

De Soto County

ARCADIA—Henry P. Bevis. BOWLING GREEN—Murdoch Lee Crum GARDNER—Jonathan Sebastian Coker. NOCATEE—Charlton Cash Whittle. PUNTA GORDA—David Norman McQueen; James Arche Smith. WAUCHULA—Joseph W. Taylor.

Duval County

JACKSONVILLE—Albert E. Acker; Samuel Aronovitz; Frederic Greene Barfield; Edward Grant Birge; Herbert O. Black; John Ben Black; John Elliott Boyd; Turner Ziegler Cason; Henry Boylston Corde Jr.; Theodore Gaillard Croft; Gaston Day; Walter P. Dey; Stanle Erwin; T. S. Field; Julian Eugene Gammon; Robert Ernest Gilbert Drew R. Handley; Henry Hanson; Herman Hirsch Harris; Graham Edward Henson; Edward Jelks; Charles Leitner Jennings; Charles L. Kennon; Louis Mixson Limbaugh; James A. Livingston; Robert Drysdale May; William George McKay; Albert Clarence McKenzie George Milner Mitchell; John Kirk Norwood; James Buchanan Parra more; Archie Rosco Parrott; James D. Pascoe; Claus Alfred Peterson Harry Alexander Peyton; Harper Lane Proctor; Shaler Arnold Richar

FLORIDA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total No. Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Alachua.....	1,262	30.7	35,808	873	41	..	24	37	23	8
Baker.....	587	195.6	5,260	1,753	3	..	2	3	..	..
Bay.....	1,500	65.2	16,622	722	23	..	12	16	11	3
Bradford.....	539	31.7	17,810	1,047	17	..	11	15	12	2
Brevard.....	1,025	51.2	8,250	412	20	..	12	14	9	2
Broward.....	1,200	133.3	6,026	669	9	..	5	7	2	12
Calhoun.....	1,192	99.3	9,167	763	12	..	7	10	1	2
Citrus.....	620	124.0	7,709	1,541	5	..	4	4	2	1
Clay.....	617	123.4	7,775	1,555	5	..	4	5	1	..
Columbia.....	792	49.5	18,123	1,132	16	..	10	11	7	3
Cuola.....	2,733	54.6	29,707	594	50	2	20	38	28	6
De Soto.....	3,754	85.3	25,249	573	44	..	20	36	19	7
Duval.....	786	4.2	111,089	600	185	3	136	162	91	45
Escambia.....	657	10.7	45,122	739	61	..	40	52	35	18
Flagler.....	Note 2				2	..	..	1	..	..
Franklin.....	541	108.2	5,523	1,104	5	..	5	5	3	1
Gadsden.....	540	30.0	27,238	1,513	18	..	11	15	8	3
Hamilton.....	528	58.6	12,736	1,415	9	..	7	7	..	..
Hernando.....	497	62.1	6,787	848	8	..	4	6	2	..
Hillsborough.....	1,329	11.7	90,669	802	113	1	69	87	60	20
Holmes.....	458	37.2	15,068	1,883	8	1	8	7	..	1
Jackson.....	965	30.1	37,551	1,173	32	..	24	29	19	1
Jefferson.....	585	53.1	17,951	1,637	11	..	7	9	5	1
Lafayette.....	1,244	207.3	8,319	1,386	6	..	6	6	..	2
Lake.....	1,047	32.7	13,604	425	32	2	13	19	11	6
Le.....	4,031	268.7	9,670	644	15	1	8	9	2	2
Leon.....	715	37.6	20,407	1,074	19	..	8	15	8	6
Levy.....	1,143	103.9	12,633	1,143	11	..	6	9	4	2
Liberty.....	823	137.1	5,973	995	6	..	3	5	1	2
Madison.....	719	44.9	18,185	1,136	16	..	7	12	6	3
Manatee.....	1,337	46.1	18,354	632	29	4	11	18	9	7
Marion.....	1,647	44.5	29,454	796	37	..	18	28	21	8
Monroe.....	1,100	84.6	24,159	1,858	13	..	10	11	10	4
Nassau.....	630	63.0	11,160	1,116	10	..	3	7	..	..
Nakloosa.....	1,250	113.6	6,352	577	11	1	6	11	2	..
Neeshobee.....	Note 4				3	1	..	3	2	..
Orange.....	1,250	34.7	24,752	687	36	1	17	24	15	2
Osceola.....	1,773	Note 4	13,020	..	7	2	5	6	4	2
Palm Beach.....	3,048	Note 4	11,473	..	24	1	14	18	4	..
Polk.....	767	85.2	10,452	1,161	9	..	7	8	3	1
Pinellas.....	275	4.7	21,089	363	58	3	23	35	29	9
Polk.....	1,507	30.7	42,518	685	62	1	31	46	25	11
Putnam.....	752	44.2	17,044	1,002	17	1	7	10	4	..
St. John.....	966	Note 2	16,158	..	21	..	11	16	9	3
St. Lucie.....	1,395	Note 4	10,321	..	12	1	8	7	4	1
Santa Rosa.....	1,546	154.6	21,034	2,103	10	..	9	9	7	2
Seminole.....	310	20.6	10,075	671	15	..	8	12	7	2
Sumter.....	583	72.8	7,832	979	8	..	6	8	5	2
Swanee.....	692	32.9	21,559	1,026	21	..	16	18	11	3
Taylor.....	1,064	106.4	12,195	1,219	10	..	6	9	..	2
Volusia.....	1,256	Note 2	23,611	..	43	1	16	25	18	5
Wakulla.....	602	200.6	8,682	2,894	3	..	..	1	..	..
Walton.....	1,382	115.1	12,973	1,081	12	1	8	8	7	..
Washington.....	1,435	143.5	11,075	1,107	10	1	5	9	2	..
Totals.....	59,396	46.2	1,031,372	803	1,283	29	738	998	568	213

. Includes Jacksonville, population 73,137; physicians 175 [M.R.C. 42].
. Flagler county was recently formed from parts of St. John and Volusia counties. The 3 counties have 1 physician for every 33.7 square miles and for every 602 people.
. Includes Tampa, population 51,521; physicians 93 [M.R.C. 17].
. Okeechobee county was recently formed from parts of Osceola, Palm Beach and St. Lucie counties. The 4 counties have 1 physician for every 1 square miles and for every 756 people.

; Carey Pegram Rogers; Wm. Riley Schnauss; Elijah Thomas
lers; Raymond C. Turk; Howard Crawford Von Dahm; Albert
rison Wilkinsen.
ANAMA CITY—John Marion Whitfield. LAKE CITY—Daniel Benj.
lams.

Escambia County

ENTURY—Neece Lewis Gachet; John Samuel Turberville. MUSCOGEE
obert Hardy Trammell. PENSACOLA—Allen Monte Ames; James
ry Bickerstaff; Fritz A. Brink; Herbert Lee Bryans; Thomas Jesse
ey; Clinton Willoughby D'Alemberte; Hyman Max Ginsberg; John
ting Hargis; Frank Petty Hixon; Stephen Russell Mullory Kennedy;
iel McMillan; Joseph Arnold Mixon; David C. Thompson. PINE
REN—William Arthur Clark. WALNUT HILL—Herbert Arent Mc-
re.

Franklin County

PALACHICOLA—Frank Fenton Ferris.

Gadsden County

BATTAHOOCHEE—Ralph N. Greene. QUINCY—Harry Bernard Mc-
n. REDDICK—Robert Donald Ferguson.

Hillsborough County

T. DADE—John K. Hereford. PLANT CITY—John Walker Alsobrook;
es Wilhite Crum. TAMPA—Chadbourne A. Andrews; Robert Edgar
lwin; Andrew Robeson Bond; Fay A. Cameron; Leland F. Carlton;
Bailey Coon; Lester Julian Efrd; Eugene Stamford Gilmer; John
lday; Thomas R. Jones; William Jesse Lancaster; Leonard G. Larner;
Donald MacRae; Raymond B. McClaws; Earle H. McRae; Lucian
ard Mitchell; J. Brown Wallace.

Holmes County

BATTAHOOCHEE—John D. Gable.

Jackson County

ARIANNA—Daniel C. Campbell.

Jefferson County

ONTICELLO—James Ragan McEachern.

Lafayette County

ALTON—Walter Joseph Baker; Percy Herbert Brigham.

Lake County

CLERMONT—Joseph Haskell Chiles; John Alfred Newham. LETS-
BURG—Tucker Lucas Randolph. SORRENTO—Shores Erastus Clinard;
Osmer Lionel Callahan. TAVARES—Sanford Carl Colley.

Lee County

BOCOGRANDE—George Elliott Atwood. FORT MYERS—Henry Elliott
Parnell.

Leon County

MICCOSUKEE—Edgar Eugene Strickland. TALLAHASSEE—George
Humphrey Gwynn Jr.; Humphrey Wilson Gwynn; John Kent Johnston;
Otis Gilben Kendrick; Frederick Clifton Moor.

Levy County

WILLISTON—Grover C. Freeman. OTTER CREEK—Robert Francis
McLeod.

Liberty County

HOSFORD—Kenneth McCaskill Davis; Sterling Edwin Wilhoit.

Madison County

GREENVILLE—Loren A. Greene; Angus James Smith. MADISON—
Eustace Long.

Manatee County

BRADENTOWN—Samuel G. Hollingsworth. MYAKKA CITY—Frank
R. Haura. PALM BEACH—Owen Hill Kenan. PALMETTO—MacMiller
Harrison; Bedford Eugene Vaughan. SARASOTA—John Halton; Fred-
erick William Schultz.

Marion County

CITRA—Everard Blackshear. DUNNELLON—Robert Creswell Black.
McINTOSH—Adam Clark Walkup. OCALA—Wallace P. Crigler; Henry
C. Dozier; Frank Elmer McClane; Harry Farlin Watt.
WEIRSDALE—Wincc A. J. Johnon.

Monroe County

KEY WEST—Frank E. Artaud; George Rochefoucauld Plummer;
Joseph Y. Porter Jr.; William R. Warren.

Orange County

ORLANDO—Harold M. Beardall; Milne Barker Swift.

Osceola County

KISSIMMEE—Hugh St. Clare Geiger.

Pasco County

TRILBY—Harvey Otis Byrd.

Pinellas County

CLEARWATER—James W. Davidson; Lucian Brown Dickerson. PASSA-
GRILLE—Claude Vernon Gautier. ST. PETERSBURG—Morton H.
Asline; Ludlow Lambdin; John William McClane; George Merrill Ran-
dall. TARPON SPRINGS—Ralph Dollahan Murphy; Willie Joseph Vinson.

Polk County

BARTOW—Heber Peacock Newman; Knowles Gittings Oglesby. HAINES
CITY—Holden E. Cline. LAKE LAND—Ralph Duffy; John D. Griffin;
William Rowan Groover; William Benjamin Moon; Willis Herman Wat-
son. MULBERRY—Paul Lewis Goss. NICHOLS—Walter Philip Dick-
inson; Alex M. C. Jobson.

Santa Rosa County

PACE—John Calvert Holley. MILTON—Zebulon V. Johnston.

Seminole County

SANFORD—Thomas Albert Neal; Ralph Edwin Stevens.

St. John County

ST. AUGUSTINE—James Burnie Griffin; Maurice Eby Heck; Jacob
John Spencer.

St. Lucie County

FORT PIERCE—Benjamin Leland Whitten.

Sumter County

BUSHNELL—Roscoe Conkling Hubbard. OXFORD—Roy H. Bryant.

Suwanee County

LIVE OAK—Archie Cowan Watson. WELLBORN—George Sterling
McClellan.

LIE OAK—William C. White.

Taylor County

BLUE CREEK—George William DuPree. LOUGHRIDGE—Ralph James
Greene.

Volusia County

DAYTONA—J. E. Rowlings; Roy Howe. DE LAND—Robert Fairleigh
McDaniel; John MacDiarmid.
NEW SMYRNA—Roy Roswell Niblack.

MEDICAL ASSOCIATION OF GEORGIA

Officers 1917-18

Eugene E. Murphey, President.....Augusta
R. D. Little, First Vice President.....Thomasville
E. C. Thrash, Second Vice President.....Atlanta
Wm. C. Lyle, Secretary-Treasurer.....Augusta

Councilor Districts and Officers

First District.—Burke, Jenkins, Screven, Bullock, Effingham, Tattnall,
Bryan, Chatham, McIntosh and Liberty counties. A. J. Mooney, Coun-
cilor, Statesboro.

Second District.—Calhoun, Dougherty, Early, Baker, Mitchell, Miller,
Decatur, Thomas, Worth, Colquitt, Grady and Tift counties. C. K.
Sharp, Councilor, Arlington.

Third District.—Taylor, Macon, Terrell, Schley, Sumter, Dooley, Lee,
Stewart, Clay, Quitman, Crisp and Randolph counties. V. O. Harvard,
Councilor, Arabi.

Fourth District.—Carroll, Heard, Coweta, Troup, Meriwether, Harris, Talbut, Muscogee, Marion and Chattahoochee counties. H. W. Terrell, Councilor, La Grange.

Fifth District.—Douglass, Fulton, DeKalb, Rockdale and Campbell counties. W. L. Champion, Councilor, Atlanta.

Sixth District.—Fayette, Henry, Spalding, Butts, Pike, Upson, Monroe, Jones, Bibb, Clayton, Crawford and Jasper counties. J. O. Elrod, Councilor, Forsythe.

Seventh District.—Dade, Walker, Catoosa, Whitefield, Murray, Chattooga, Gordon, Floyd, Bartow, Polk, Haralson, Paulding and Cobb counties. E. M. Bailey, Councilor, Acworth.

Eighth District.—Franklin, Hart, Madison, Elbert, Clarke, Oglethorpe, Oconee, Wilkes, Morgan, Greene, Walton, Putnam and Newton counties. W. E. McCurry, Councilor, Hartwell.

Ninth District.—Fannin, Union, Townes, Rabun, Gilmer, Lumpkin, White, Habersham, Pickens, Dawson, Hall, Banks, Cherokee, Forsythe, Jackson, Milton, Gwinnett and Stephens counties. L. C. Allen, Councilor, Hoschton.

Tenth District.—Taliaferro, McDuffie, Lincoln, Hancock, Jefferson, Richmond, Wilkinson and Baldwin counties. J. A. Price, Councilor, Milledgeville.

Eleventh District.—Appling, Jeff Davis, Irwin, Coffee, Wayne, Brooks, Clinch, Echols, Ware, Charlton, Pierce, Camden, Glynn, Berrien, Lowndes, Ben Hill and Turner counties. J. G. Tuten, Councilor, Jesup.

Twelfth District.—Dodge, Emanuel, Houston, Johnson, Laurens, Montgomery, Pulaski, Telfair, Toombs, Twiggs and Wilcox counties. E. T. Coleman, Councilor, Graymont.

GEORGIA									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Appling.....	604	60.4	12,318	1,231	10	..	8	8	1
Bacon.....	300	75.0	5,505	1,376	4	..	4	4	..
Baker.....	357	119.0	8,899	2,966	3	..	2	3	..
Baldwin.....	307	9.5	18,781	586	32	..	21	29	7
Banks.....	222	22.2	11,755	1,175	10	..	4	7	6
Barrow.....	115	7.1	17,346	1,084	16	..	10	14	3
Bartow.....	471	39.2	28,719	897	32	..	12	23	2
Ben Hill.....	256	13.0	11,863	523	19	..	8	14	11
Berrien.....	735	24.5	22,772	759	30	..	22	29	7
Bibb.....	277	2.6	61,152	576	106	1	50	87	65
Bleckley.....	450	45.0	11,302	1,130	10	..	4	8	2
Brooks.....	514	20.5	27,646	1,105	25	..	14	23	11
Bryan.....	431	86.2	7,125	1,425	5	..	3	4	1
Bulloch.....	887	38.5	26,464	1,150	23	..	10	20	10
Burke.....	956	41.5	27,268	1,185	23	..	14	17	11
Butts.....	203	13.5	14,222	948	15	1	7	12	9
Calhoun.....	284	16.7	12,837	755	17	..	9	15	7
Camden.....	711	142.2	7,705	1,541	5	..	2	3	..
Campbell.....	213	17.7	11,863	988	12	..	7	11	3
Candler.....	390	65.0	8,454	1,409	6	..	4	5	..
Carroll.....	492	10.4	33,977	722	47	..	25	36	30
Catoosa.....	169	33.8	8,179	1,635	5	..	2	3	1
Charlton.....	905	452.5	5,547	2,773	2	..	2	2	..
Chatham.....	370	2.9	85,859	676	127	1	81	110	69
Chattahoochee.....	218	43.6	5,586	1,117	5	..	1	2	..
Chattooga.....	328	19.2	14,087	828	17	..	8	12	5
Cherokee.....	429	22.5	17,696	931	19	..	10	15	1
Clarke.....	114	2.5	27,334	621	44	1	17	36	22
Clay.....	203	22.5	9,246	1,027	9	..	4	6	3
Clayton.....	142	12.9	11,077	1,007	11	..	7	10	..
Clinch.....	961	137.3	8,424	1,203	7	..	4	6	2
Cobb.....	353	8.6	31,123	759	41	..	22	31	19
Coffee.....	901	27.3	21,953	665	33	..	23	28	13
Colquitt.....	529	16.0	24,281	735	33	..	20	30	21
Columbia.....	350	35.0	13,551	1,355	10	..	5	9	1
Coweta.....	470	13.4	31,590	902	35	..	19	24	14
Crawford.....	319	106.3	8,310	2,770	3	..	2	3	1
Crisp.....	277	13.8	16,423	821	20	..	11	17	12
Dade.....	186	46.5	4,139	1,034	4	..	1	3	1
Dawson.....	216	208.0	4,686	2,343	2	..	3	2	..
Decatur.....	823	24.9	33,487	1,014	33	..	24	29	15
DeKalb.....	272	8.0	28,064	825	34	1	18	29	10
Dodge.....	431	20.5	24,619	1,172	21	..	14	16	12
Dooly.....	397	20.8	20,554	1,081	19	..	10	15	9
Dougherty.....	342	14.2	17,755	739	24	..	13	22	16
Douglas.....	208	20.8	9,105	910	10	..	5	8	1
Early.....	524	30.8	20,527	1,207	17	..	8	14	10
Echols.....	362	362.0	3,382	3,382	1	..	6	1	..
Effingham.....	448	44.8	11,166	1,116	10	..	5	8	6
Elbert.....	361	13.8	27,334	1,051	26	..	16	23	13
Emanuel.....	935	28.3	25,140	761	33	..	21	29	19
Evans.....	350	43.7	9,639	1,204	8	..	4	7	5
Fannin.....	401	40.1	13,568	1,356	10	..	5	8	6
Fayette.....	234	16.5	11,587	724	16	..	6	10	..
Floyd.....	502	10.6	39,380	837	47	..	24	34	22
Forsyth.....	247	27.4	12,224	1,358	9	..	7	9	2
Franklin.....	279	13.9	20,126	1,006	20	..	11	18	16
Fulton.....	183	0.3	226,557	418	542	5	359	446	231
Gilmer.....	440	55.0	9,237	1,154	8	..	3	5	3
Glasscock.....	170	28.3	4,780	796	6	..	1	3	1
Glynn.....	439	24.3	16,745	930	18	..	8	12	3
Gordon.....	375	11.4	17,132	658	26	..	14	23	12
Grady.....	444	40.3	21,379	1,943	11	..	9	10	7
Greene.....	416	26.0	19,949	1,246	16	..	10	12	4
Gwinnett.....	491	12.9	26,982	710	38	..	24	34	11
Habersham.....	290	17.0	11,398	670	17	..	13	12	9
Hall.....	437	12.1	29,364	815	36	..	15	27	15
Hancock.....	530	33.1	19,854	1,240	16	..	10	10	7
Haralson.....	284	14.2	14,676	733	20	..	4	12	8
Harris.....	501	38.5	17,886	1,375	13	..	6	9	1
Hart.....	261	20.0	17,474	1,344	13	..	7	11	9
Heard.....	258	36.8	11,197	1,599	7	..	5	6	..
Henry.....	324	19.0	20,894	1,229	17	..	11	13	4

GEORGIA - continued									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society
Houston.....	585	34.4	24,316	1,430	17	..	8	14	2
Irwin.....	378	31.5	10,461	871	12	..	11	12	7
Jackson.....	433	16.6	24,846	955	26	..	10	17	19
Jasper.....	321	24.6	17,661	1,358	13	..	9	9	6
Jeff Davis.....	300	42.8	6,050	864	7	..	3	4	3
Jefferson.....	720	37.8	23,692	1,246	19	..	10	12	13
Jenkins.....	342	33.0	11,520	1,280	9	..	5	6	6
Johnson.....	292	15.3	18,983	720	19	..	6	11	10
Jones.....	377	37.7	13,103	1,310	10	1	6	8	4
Laurens.....	806	16.7	42,502	885	48	..	29	40	19
Lee.....	326	40.7	12,653	1,581	8	..	3	7	1
Liberty.....	936	85.0	12,924	1,174	11	..	7	8	..
Lincoln.....	291	36.3	9,852	1,231	8	..	4	7	1
Lowndes.....	482	13.0	27,648	747	37	..	21	34	17
Lumpkins.....	280	140.0	5,444	2,722	2	..	1	2	..
McDuffie.....	287	35.8	10,706	1,337	8	..	2	5	5
McIntosh.....	470	94.0	6,442	1,288	5	..	3	4	..
Macon.....	369	26.3	15,688	1,120	14	..	8	10	5
Madison.....	284	14.2	19,497	974	20	..	6	15	12
Marion.....	360	45.0	9,147	1,143	8	..	5	5	6
Meriwether.....	486	14.1	26,523	757	35	..	15	24	9
Miller.....	253	31.6	9,202	1,150	8	..	8	8	4
Milton.....	145	24.1	7,585	1,264	6	..	5	5	..
Mitchell.....	548	20.7	27,477	1,056	26	..	15	22	12
Monroe.....	584	53.0	20,450	1,859	11	1	8	8	7
Montgomery.....	591	39.4	19,638	1,309	15	..	13	13	10
Morgan.....	390	22.9	22,565	1,327	17	1	9	13	1
Murray.....	342	38.0	10,593	1,177	9	..	5	8	..
Muscogee.....	235	3.8	40,891	670	61	1	34	50	34
Newton.....	262	10.4	19,699	787	25	..	12	17	4
Oconee.....	172	15.6	12,928	1,175	11	..	5	9	5
Oglethorpe.....	504	38.7	19,263	1,481	13	..	5	8	3
Paulding.....	324	32.4	14,967	1,496	10	..	4	8	6
Pickens.....	231	28.8	9,332	1,166	8	..	5	7	6
Pierce.....	605	50.4	12,282	1,023	12	..	8	12	6
Pike.....	307	13.9	20,028	910	22	..	13	18	12
Polk.....	317	11.3	21,916	782	28	..	11	18	10
Pulaski.....	463	35.6	14,705	1,131	13	..	7	8	4
Putnam.....	261	45.1	14,195	1,774	8	..	4	6	4
Quitman.....	144	72.0	4,594	2,297	2	..	2	1	..
Rabun.....	377	75.4	5,562	1,112	5	..	4	4	..
Randolph.....	412	18.7	20,297	922	22	..	9	16	12
Richmond.....	319	2.7	62,645	540	116	2	69	95	69
Rockdale.....	119	19.8	9,938	1,656	6	..	1	5	1
Sehley.....	154	38.5	5,213	1,053	4	..	2	3	2
Serevens.....	794	30.5	20,202	777	26	..	10	17	6
Spalding.....	209	9.5	21,270	966	22	..	12	17	13
Stephens.....	166	11.8	10,941	781	14	..	9	13	9
Stewart.....	411	27.4	13,437	895	15	..	8	10	7
Sumter.....	456	13.4	31,193	916	34	..	22	28	14
Talbot.....	312	27.4	11,696	1,063	11	..	6	9	2
Taliaferro.....	212	26.5	9,388	1,173	8	..	2	5	4
Tattnall.....	642	32.1	18,569	928	20	..	8	15	16
Taylor.....	340	30.9	11,563	1,051	11	..	6	9	7
Telfair.....	373	20.7	15,627	868	18	..	13	15	7
Terrell.....	322	14.0	24,178	1,051	23	..	14	21	13
Thomas.....	530	13.9	33,517	882	38	..	18	31	17
Tift.....	243	13.5	11,487	638	18	..	13	15	12
Toombs.....	393	21.8	11,206	622	18	..	11	16	10
Towns.....	181	36.2	3,932	786	5	..	1	4	..
Troup.....	435	8.7	27,851	557	50	..	23	39	24
Turner.....	231	17.7	10,075	775	13	..	11	13	9
Twiggs.....	314	31.4	12,210	1,221	10	..	5	8	..
Union.....	324	54.0	6,918	1,153	6	..	2	4	..
Upson.....	317	31.7	12,757	1,275	10	..	7	9	16
Walker.....	432	16.0	20,905	774	27	..	12	17	16
Walton.....	370	12.3	25,286	842	30	..	17	24	3
Ware.....	804	23.6	28,860	848	34	..	22	26	16
Warren.....	404	80.8	12,148	2,029	5	..	3	4	2
Washington.....	669	21.5	28,174	908	31	..	15	19	21
Wayne.....	764	47.7	15,710	981	16	..	10	14	10
Webster.....	302	75.5	6,151	1,537	4	..	3	4	4
Wheeler.....	280	35.0	9,071	1,133	8	..	5	7	..
White.....	245	35.0	5,110	730	7	..	..	5	..
Whitefield.....	283	14.8	16,973	893	19	..	13	16	2
Wilcox.....	403	23.7	13,486	791	17	..	10	15	8
Wilkes.....	458	28.6	25,320	1,582	16	..	11	15	6
Wilkinson.....	472	39.3	10,078	839	12	..	7	8	1
Worth.....	651	24.1	19,148	709	27	1	14	23	10
Totals.....	60,610	17.3	2,875,205	837	3,436	17	1,956	2,757	1,571

Berrien County

ADEL—LeRoy Hutchinson. ALAPAHIA—Thomas Ralph Moye. NASHVILLE—Guy S. Selman. RAY CITY—Francis Marlon Burkhalter; Lawrence S. Rentz.
ADEL—Ethridge James Hall.
NASHVILLE—William Carl Rentz.

Bibb County

MACON—Ernest Corn; Melton Downie Council; Charles C. Harrold; as. C. Hinton; John Parkham Holmes; Walter Richard Holmes Jr.; George Lawson Johnson; George Yellott Massenburg; Linton Cobb McEe; Thomas Primus Moore; John Armistead Selden; John Monroe Man; Rupert Hope Stovall; Fred Leland Webb.

Bleckley County

DOCHIRAN—Chapman Q. Dykes; Wm. Chas. Williams Jr.

Brooks County

MORVEN—John F. Burkhalter. QUITMAN—James F. Arthur; Leigh A. Smith; Hugh Wesley Wade; Wm. L. Wilkinson.

Bullock County

STATESBORO—Herbert Bradley Kennedy.

Burke County

GIRARD—Louis Bartow Royal. WAYNESBORO—Heber Jones Morton.

Butts County

JACKSON—Roy Autustus Gunter.

Calhoun County

ARLINGTON—Cyrus Koscusko Sharp. MORGAN—Jesse Homer Hendry.

Camden County

KINGSLAND—Arthur Bernheim Prince.

Campbell County

FAIRBURN—Reuben Thornton Camp; Charles Harry Harvey; C. S. rriam.

Carroll County

ARROLLTON—Sam Brock; Ira Clifton Hinkle Garst; Glen B. Mul. TEMPLE—John Riley Turner.

Chatham County

SAVANNAH—James Malone Bryant Jr.; John William Daniel; Daniel nman Edwards; George Lewis Fuquay; Gordon Lewis Groover; Wm. ustus Harris; Lee Howard; John P. Jones; Needham Lawton Kirk- d; George Herrmann Lang; Lawrence Lee; Thomas Claude Love- e; Charles Clayton Middleton; William B. Orear; Harry Rubin; ndes Walton Shaw; Everett J. Stothart; Lloyd B. Taylor; DeLamar ner; Thomas M. Vorbrinck; William Herman Myers.

Clarke County

THENS—Edward Merriman Coleman; Dan Hughes Dupree; Fred gilas Harris; William Alfred Harris; Farris Lucius Jackson; Andrew aulay Jones; Jack Herbert Swafford; Harold Irwin Reynolds.

Clinch County

OMERVILLE—Leland H. Dame.

Cobb County

ARIETTA—Warren E. Benson; Leslie Lenton Blair; Wm. M. J. er. ACWORTH—William Clayton Humphries.

Coffee County

ROXTON—Cleveland Ward Findley. DOUGLAS—Gordon Burns; John Smith. NICHOLLS—Jefferson Pafford. WEST GREEN—Warren Lee l. WILLACOOCHIEE—Henry T. Corbitt; Searle Bewley Gillespie.

Columbia County

ARLEM—Albert Byron Martin.

Coweta County

EWNAN—Raymond Holmes Carter; Myron Hall Farmer; Joseph Peniston. SENOIA—James Mercer Tribble.

Crisp County

RABI—Walter Arthur Miller.

Decatur County

AINBRIDGE—Mortimer A. Ehrlich; Sigo Ehrlich; Joseph Howard in; Leonard Wannbacher Willis.

De Kalb County

ECATUR—James Fling Pitman. LITHONIA—Claude Alexander nd. STONE MOUNTAIN—Virgil Waite Osborne. AKHURST—William Parks Phillips.

Dodge County

ASTMAN—Ferdinand Herrmann.

Dooly County

ENNA—Carl Wilton Lupo.

Dougherty County

BANY—John A. White.

Douglas County

UGLASVILLE—Ralph Emerson Hamilton.

Early County

AKELY—Phillip Hamilton Fitzgerald; William O. Shepard.

Elbert County

LDWATER—Thomas H. Galnes. ELBERTON—Albert S. Johnson; am J. Matthews; Benjamin B. Mattox. MIDDLETON—Homer Mel- Daniel.

Emanuel County

NEZ—William Gordon Herrington. OAK PARK—John Walton Dur- STILLMORE—Rufus Elliott Graham. SUMMIT—Clinton Remis

Floyd County

ME—Burton Paul Bradley; Joseph Harry Mull; George Barker ; Wm. Augustus Dean.

Franklin County

CANON—Benjamin F. Bond; John Hudson Terrell Jr. COLUMBUS— F. L. Crosby Jr. LAVONIA—William Wallace Cornog.

Fulton County

ATLANTA—William N. Adkins; Emmet B. Anderson; Mell Aycock; Edgar G. Ballenger; Forrest M. Barfield; Joseph Rex Barfield; Hugh I. Battey; Thomas Richard Beech; John Davies Blackburn; Wm. Clarke Blandford; Roy Blosser; Frank Kells Boland; Montague Lafitte Boyd; Harry B. Bradford; Albert Ferguson Brawner; Walpole C. Brewer; Stephen Treadwell Brown; Arthur Davis Browne; Allen Hamilton Buncce; Edwin S. Byrd; Jesse L. Byrd.

James T. Calloway; Iverson C. Case; Ernest Stewart Colvin; John Hightower Cooper; Moses Bernard Copeloff; James C. Corry; Zachary Stuart Cowan; Hansell Crenshaw.

Leo Paul Daly; Richard Randolph Daly; Edward Campbell Davis; Thomas Callihan Davison; John Fletcher Denton; John Sebastian Derr; Charles Edward Downman; Murdock S. Euen.

Charles Cowdrey Fitts; John Baker Fitts; James Quitman Folmor; Charles Glenville Giddings; Edgar Hill Greene.

James Gustin Hall; John Howard Hall; Francis Young Harrington; Stephen T. Harris; Henry W. S. Hayes; John Carswell Hind Jr.; Joseph H. Hines; Frederick Grady Hodgson; Cornelius F. Holton; Jesse L. Howell.

Thomas F. Jackson; William Andrew Jackson; Sidney Hughes Jacobs. Lewis Jasper Keeling; Luther Hilliard Kelly; Claud Thomas Key; Marcus Klausman.

Charles Edward Lawrence; Arnold H. Lindorme; Rankin Robert Lowery.

Daniel Nichola Matheson; James Arren McAllister; James Calhoun McDongall; Henry Martin McGee; James Patton McGee; Floyd W. McKae; Jesse Littleton Meeks; Oscar Lee Miller; Lewie Hudson Muse.

Homer Erwin Nash; Job C. Patterson; James Edgar Paullin; Mark P. Pentecost; Weldon Edwards Person; Marion C. Prautt.

Andrew F. Quillian; Frank P. Raiford; Homer L. Redd; Charles Mal- lory Remsen; James William Roberts Jr.; Stewart Ralph Roberts; Her- bert Jerome Rosenberg; Dunbar Roy.

Henry Clifford Sauls; Edgar DeWitt Shanks; Harvey W. Snyder; John Wilson Somerville; Thomas H. Stewart; Cecil Stockard.

Northern Orr Tribble; John W. Turner; Wilborn Arthur Upchurch; Charles Belle Upshaw.

Charles Edward Waits; Barney Oldfield Weinkle; Carlton Juan Well- born; Carroll Mulkey West; Lee Wilbert Wiggins; Cleo Duke Wilder; Evans B. Wood; Louis Tompkins Wright; Lucius Featherstone Wright; Luther T. Young; Wm. Walter Young. COLLEGE PARK—Kinsey E. Foster. SANDERSVILLE—Fred Bangs Rawlings.

ATLANTA—John Wesley Burney; Miller Bone Hutchins; Edwin Napoleon Maurer; Cyrus Warren Strickler; Wm. Fall Wiggins.

Gilmer County

ELLIJAY—Clarence Goolsby Cox.

Glascock County

AGRICOLA—William Aaron Gibson Jr.

Grady County

WHIGHAM—Leon E. Brawner.

Gwinnett County

GRAYSON—Chas. Henry Dickens. LAWRENCEVILLE—Chalmers Hin- ton; Daniel Claude Kelly; Adrian Dallas Williams.

Habersham County

ALTO—Robert Edwin McClure. CORNELIA—David Harrison Gar- rison.

Hall County

GAINSVILLE—Henry G. Banister; Horace Edmund Crow; Cleveland Davis Wheelchel.

Hancock County

DEVEREUX—Wilbur Moate Scott. POWELTON—Oma Ernest Hern- don. SPARTA—Richard Binion.

Haralson County

BUCHANAN—Eugene F. Sanford.

Hart County

HARTWELL—Wm. Edgar McCurry; Albert Owen Meredith.

Heard County

FROLONA—John Rodney Manly.

Henry County

HAMPTON—Wm. Hall Lyday.

Houston County

BYRON—Henry Jackson Peavy Jr. FORT VALLEY—Virginias Lynn Brown; Roy Clayton Smisson.

Irwin County

MYSTIC—Henry P. Lyon. OCILLA—William S. Armor.

Jackson County

JEFFERSON—Jesse Hope Campbell.

Jasper County

MONTICELLO—William Augustus Williams.

Jefferson County

STAPLETON—Lucius Pierce Farmer.

Jenkins County

MILLEN—Mark Edward Perkins.

Laurens County

DUBLIN—Thomas Jos. Blackshear; Ovid Hugh Check; John Wm. Edmonson; Charles Augustus Hedges; Landrum J. Page; Sidney Walker.

Lowndes County

VALDOSTA—Carl Ellis Dunaway; Frank Bird; Claude Goldwin Scruggs; William David Sloan; Thomas Harding Smith.

Macon County

MONTEZUMA—Homer G. Lightner.

Madison County

DANIELSVILLE—Walter Reynolds McCoy.

Marion County
BUENA VISTA—Ruben Shirley O'Neal.

McDuffie County
DEARING—James Roseoc Sams. THOMSON—Clifford Loomis Bartlett.

McIntosh County
DARIEN—Stewart McBryde; Charles Jefferson Woods.

Meriwether County
BULLOCHVILLE—Robert Harley McDonald. GAY—William Phelps Ellis. MANCHESTER—Oscar Wilson DeV Vaughan.

Miller County
COLQUITT—Buford Cosby Bird.

Milton County
ALPHARETTA—George Carter Brooke.

Mitchell County
CAMILLA—Erie Thornton Newson; John McGregor Spence; John Calvin Turner Jr. SALT CITY—David P. Belcher.

Monroe County
FORSYTH—Guy W. Williams.

Montgomery County
SOPERTON—Eugene H. Thompson.

Morgan County
MADISON—James Harold Nicholson. RUTLEDGE—Grover Cleveland Gambrell.

Muscogee County
COLUMBUS—Henry Wells Brooks; Roland Lee Brooks; Paul Hopkins Christian; A. Nathan Dykes; Roscoe Felix Johnson; James Henry McDuffie Jr.; John Darley Odom; Clifford Augustin Peacock. MIDLAND—William Franklin Jenkins. COLUMBUS—Willis Pope Jordan.

Newton County
COVINGTON—David Halsey Parliament.

Oconee County
BOGART—Chester Overton Middlebrooks. WATKINSVILLE—William Monroe White.

Pierce County
BLACKSHEAR—John Wesley Oden; Donald T. Rankin. ZIRKLE—Spencer Atkinson Kirkland.

Pike County
MILNER—Kenneth Stovall Hunt. ZEBULON—Claude Hutcheson Sullivan.

Polk County
CEDARTOWN—Wm. Allen Chapman; Henry M. Hall. ROCKMART—Joseph Harrison Robinson.

Randolph County
CUTHBERT—Whitfield Walker Crook; Lucius Kennedy Patterson.

Richmond County
AUGUSTA—Hinton J. Baker; James Harvey Butler. Thomas Davies Coleman; John F. Cremens; William D. Cutler. Thomas Lyles Davis; Robert C. Eve; William Talmage Freeman; Jesse Ansley Griffin; Lexius Henson Harper; William Gordon Hunter. Nathaniel Hawthorne Lang; Samuel Lichtenstein; William Clifton Lyle. Henry Holcombe Malone; Wm. Harris Mathis; James A. McGarity; Henry M. Michel; Francis Xavier Mulherin; Eugene E. Murphy; Theodore E. Oertel; Isaac Jefferson Parkerson; Robert Lewis Rhodes; Joseph Righton Robertson. Henry William Shaw; David Marion Silver; Oscar Smith Spivay; Robert Hendrix Stanley; William Manning Tappan; George A. Traylor; Walter Whitney; Everard Ausley Wilcox. HEPHIZIBAH—Robert Emmett Corley.

Screvrens County
MEARS—Frank Mims. SYLVANIA—John C. Cail; George Henry Fag-gart; Alton Bowie Reddick.

Spalding County
EXPERIMENT—Wm. S. Howard. GRIFFIN—Augustus Frye; William C. Miles; Edwin Raphael Anthony Jr.

Stewart County
LUMPKIN—Milton Walton.

Sumter County
AMERICUS—Herschel Aticus Smith; Earl Hugh Verne. PLAINS—Bowman Joel Wise.

Talbot County
BOX SPRINGS—Alvah Willie White. TALBOTTOM—William Camp-bell Douglass; Thomas Ennis Pugh.

Tattnall County
COBBTOWN—Homer Bowen. COLLINS—Algernon Columbus Colson.

Taylor County
CHARING—James Murray Cook. REYNOLDS—James A. Fountain.

Terrell County
DAWSON—Lucius Lamar. SASSER—Henry Lonzoek Akridge.

Thomas County
PAVO—John Miller Beggs; Elmer E. Mansfield. THOMASVILLE—William W. Jarrell; Edwin Lawrence Lawson; Henry McIntosh Moore.

Tift County
OMEGA—Marcus LaFayette Webb. TIFTON—Edwin Rutherford Sear-boro; Carl Belmont Welch. TY TY—Carl Shepard Pittman.

Toombs County
NORMANTOWN—Solomon Youmans.

Troup County
LA GRANGE—Wallace Henderson Clark; Wm. Hugh Hadaway. WEST POINT—James Dean DeLamar.

Turner County
DAKOTA—Frank Willingham Rogers.

Twiggs County
JEFFERSONVILLE—Smith W. Ray.

Walker County
CHICKAMAUGA—Chauneey L. Chase; Horace Frank Stiltner. FLIN-
STONE—Hampton Morgan Barker. LAFAYETTE—Robert Mitch-
Coulter.

Walton County
CAMPTON—Jesse Judson Everett. MONROE—William Tandy Ra-
dolph. SOCIAL CIRCLE—Walter Eugene Mobley; Harry Lee Upsh-

Ware County
WAYCROSS—James J. Beaton; Paul Peyton Lane; Benjamin H. M-
chew; Francis Clifford Nesbit; Robert Carroll Walker; Chester Anders-
Witmer.

Warren County
CAMAK—Earl Kilpatrick Lazenby. WARRENTON—Alton Wal-
Davis.

Washington County
SANDERSVILLE—Thomas Byron King; George S. McCarty.

Whitfield County
TILTON—Egbert Marrayd Townsend.

Wileox County
PITTS—Hanser Ashford Dorsey.

Wilkes County
WASHINGTON—George Washington Kelly; Olando Samuel Wood.

Wilkinson County
GORDON—Claude Brantley Brookins.

Worth County
OAKFIELD—Charley Kendrick Wall. SYLVESTER—James J. Crur-
ley; Walter Kenneth Stewart.

IDAHO STATE MEDICAL ASSOCIATION

Officers 1917-18

Wm. F. Smith, President.....BO
Oscar C. Carssow, Vice President.....Lewis
Ed. E. Maxey, Secretary-Treasurer.....Bo

IDAHO									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society
Ada.....	1,136	23.7	41,884	831	48	3	25	39	22
Adams.....	2,870	2870.0	6,700	6,700	1	..	1	..	..
Bannock.....	3,179	113.5	24,746	834	28	1	22	24	14
Bear Lake.....	942	117.7	8,223	1,028	8	..	7	8	4
Benewah.....	1,450	145.0	4,500	450	10	1	6	8	1
Bingham.....	4,116	316.6	13,604	1,046	13	1	6	10	3
¹ Blaine.....	6,120	Note 1	10,933	..	6	..	5	5	2
² Boise.....	3,469	3469.0	13,100	13,100	1	..	1	1	..
Bonner.....	3,129	260.7	15,813	1,318	12	..	4	9	10
Bonneville.....	4,000	363.6	19,370	1,761	11	..	9	11	2
Boundary.....	2,950	983.3	4,893	1,231	3	..	2	2	2
³ Butte.....	..	Note 3	..	..	3	..	..	3	..
¹ Camas.....	..	Note 1	..	..	3	..	..	3	2
Canyon.....	1,283	44.2	24,100	831	29	..	13	20	7
Cassia.....	2,611	217.6	9,763	813	12	..	11	11	7
Clearwater.....	2,500	625.0	9,068	2,267	4	..	2	3	3
Custer.....	4,589	1529.7	3,695	1,232	3	..	3	3	..
Elmore.....	2,665	533.0	6,610	1,322	5	..	3	4	..
Franklin.....	1,360	240.0	7,500	1,500	5	..	4	4	3
Fremont.....	6,006	750.7	12,167	1,521	8	..	8	8	1
Gem.....	1,280	256.0	7,172	1,434	5	..	3	4	2
Gooding.....	942	157.0	7,536	1,256	6	..	4	6	1
Idaho.....	11,012	734.1	14,766	984	15	..	4	10	1
Jefferson.....	3,800	542.8	7,711	1,101	7	..	4	5	1
Kootenai.....	2,043	120.2	30,319	1,783	17	..	11	13	3
Latah.....	1,128	51.3	22,735	1,033	22	..	12	15	11
Lemhi.....	4,867	973.4	5,764	1,153	5	..	3	3	1
Lewis.....	1,200	100.0	6,130	511	12	..	4	9	2
Lincoln.....	3,283	364.8	6,754	750	9	..	7	9	2
Madison.....	1,100	220.0	9,545	1,909	5	..	4	5	1
Minidoka.....	2,300	383.3	6,338	1,056	6	..	6	6	1
Nev. Peree.....	3,844	147.8	27,742	836	26	2	13	18	15
Oneida.....	2,665	533.0	7,750	1,550	5	..	2	4	1
Owyhee.....	7,883	1972.0	4,219	1,055	4	..	2	3	3
³ Payette.....	..	Note 3	..	..	8	..	..	6	3
Power.....	2,600	433.3	7,750	1,292	6	1	5	5	2
Shoshone.....	2,579	128.9	16,464	823	20	..	16	18	6
Teton.....	950	316.6	3,502	1,167	3	..	2	3	..
Twin Falls.....	1,888	52.4	23,232	649	36	..	19	32	15
³ Valley.....	..	Note 3	..	..	2	..	1	1	..
Washington....	2,871	163.0	7,479	440	17	..	9	15	2
Totals.....	83,303	185.5	418,577	999	449	9	262	366	156

1. Blaine county includes Camas county. These two counties toge-
have 1 physician for every 680 square miles and 1 for every 1,215 per
2. Includes Boise, population 31,741; physicians 42 [M.R.C. 6].
3. These three counties were made from parts of other counties,
no information is available as to the counties from which they
taken.

HONOR ROLL

Ada County

BOISE—Charles Brersford Callard; Ralph Falk; Ernest Ellsw
Laubaugh; Edward Ernest Maxey; Fred Allen Pittenger; Maurice H
Taillman.

Adams County
NEW MEADOWS—Robert Theodore Whitteman.

Bannock County
ANKOM—James Fuller Miller. POCATELLO—Leo Francis Castle; William Forrest Howard; Francis Herbert Poole; Francis Palmer Richard; Lyde Tennyson Smith; Charles Henry Sprague; Frank M. Sprague. ODA SPRINGS—Ellis Kackley.

Bear Lake County
PARIS—Julius Leo Arntzen; Charles Otto Moore.

Benewah County
ST. MARIES—Robert Stanley Kneeshaw; Owen Dale Platt.

Bingham County
BLACKFOOT—Frank William Mitchell; Walter E. Patrie.

Blaine County
BELLEVUE—Austin George Byrd. HAILEY—Erwin Warner Kleiman.

Bonner County
HOPE—C. S. Moody. LACLEDE—Claude Warren Williams. PRIEST RIVER—Jesse William Ingram. SANDPOINT—O. F. Page.

Boundary County
BONNERS FERRY—Samuel Thompson Faucett.

Camas County
FAIRFIELD—DeWitt Price Higgs.

Canyon County
CALDWELL—Fern Morton Cole. NAMPA—Clyde Emil Watson. PARMA—Donald S. Numbers. PAYETTE—Junious E. Crouch.

Cassia County
BURLEY—George Cooper.

Custer County
MACKAY—Roy Earl Mason.

Franklin County
PRESTON—Curtis Bland. WESTON—Roy Woodney Quick.

Fremont County
ST. ANTHONY—Jesse D. Louis.

Gem County
EMMETT—William Hitchcock Tukey.

Idaho County
GRANGEVILLE—Carl Wilson Slusser.

Kootenai County
HARRISON—Frederick William Didier. POST FALLS—Jesse Rees Richard. ST. MARIES—Raymond David MacRae.

Latah County
JULIAETTA—Ray Thurman Laughbaum. MOSCOW—Joseph Aspray; Frank Lee Barrows; Charles L. Gritman; Johan Christian Wiik; Warren H. Carithers. TROY—James Macpherson McColl.

Lewis County
NEZ PERCE—Charles May Anderson. WINCHESTER—Elton Bane Rogers.

Lincoln County
JEROME—Edward Douglas Piper. RICHFIELD—George G. Fitz.

Nez Perce County
LEWISTON—Frederick T. Harris; Louis J. Perkins; Edgar L. White.

Oneida County
MALAD CITY—William Wesley Brothers; James Marion Kerns.

Owyhee County
BRUNEAU—James Curtis Bartlett.

Power County
ROCKLAND—Vonando Green Logan.

Twin Falls County
BUHL—George Borand Randall. CASTLEFORD—Theo. E. Schwarz. VIN FALLS—Duncan Lorne Alexander; John Francis Coughlin; C. A. High; Charles Weatherbell.

Washington County
CAMBRIDGE—Simeon Hopper. WEISER—C. Carrol Conant.

ILLINOIS STATE MEDICAL ASSOCIATION

Officers 1917-18

Mer B. Cooley, President.....Danville
W. Fiegenbaum, President-Elect.....Edwardsville
P. Sloan, First Vice President.....Bloomington
die B. Adair, Second Vice President.....Chicago
H. Gilmore, Secretary.....Mt. Vernon
J. Markley, Treasurer.....Belvidere

Councilor Districts and Officers

First District.—Jo Daviess, Carroll, Ogle, Stephenson, De Kalb, Boone, Henry, Kane and Winnebago counties. Emil Windmueller, Councilor, Rockstock.
Second District.—Woodford, Livingston, Grundy, Kendall, La Salle, Bureau, Whiteside, Lee, Putnam and Marshall counties. Edwin S. Gillespie, Councilor, Wenona.
Third District.—Lake, Cook, Du Page, Will and Kankakee counties. D. Pence, Councilor, Chicago.
Fourth District.—Schuyler, Stark, McDonough, Fulton, Hancock, Henderson, Warren, Knox, Peoria, Henry, Mercer and Rock Island counties. August H. Arp deceased, Councilor, Moline.
Fifth District.—Sangamon, Menard, Mason, Logan, Tazewell, McLean, Witt, Ford and Iroquois counties. C. S. Nelson, Councilor, Springfield.

Sixth District.—Madison, Jersey, Macoupin, Greene, Morgan, Scott, Cass, Brown, Pike, Adams and Calhoun counties. C. D. Center, Councilor, Quincy.
Seventh District.—Piatt, Macon, Christian, Moultrie, Shelby, Montgomery, Bond, Fayette, Effingham, Clinton, Marion and Clay counties. Chas. F. Burkhardt, Councilor, Effingham.
Eighth District.—Champaign, Vermilion, Douglas, Edgar, Coles, Clark, Cumberland, Jasper, Crawford, Richland and Lawrence counties. Cyrus E. Price, Councilor, Robinson.
Ninth District.—St. Clair, Monroe, Randolph, Washington, Perry, Jackson, Union, Alexander, Polk, Pulaski, Jefferson, Franklin, Williamson, Johnson, Massac, Saline, Hamilton, Wayne, Hardin, Gallatin, White, Edwards and Wabash counties. Frank C. Sibley, Councilor Carmi.

ILLINOIS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
¹ Adams.....	842	8.0	64,588	615	105	3	48	73	66	10
Alexander.....	226	7.5	25,191	839	30	..	11	20	23	3
Bond.....	388	16.9	17,801	773	23	2	7	10	12	2
Boone.....	293	11.7	15,481	619	25	2	9	14	19	2
Brown.....	297	16.5	10,397	577	18	..	5	9	12	..
Bureau.....	881	13.3	46,063	697	66	1	28	45	35	8
Calhoun.....	256	18.3	8,610	615	14	..	7	9	4	2
Carroll.....	453	14.6	18,035	581	31	1	13	20	22	2
Cass.....	371	12.7	17,480	602	29	..	10	15	19	3
Champaign... 1,043	9.4	54,900	494	111	4	48	77	80	12	..
Christian.....	700	13.5	35,909	600	52	2	28	20	24	6
Clark.....	493	13.7	25,517	708	36	1	14	18	19	6
Clay.....	462	14.4	18,661	583	32	..	15	15	9	1
Clinton.....	483	17.9	25,033	926	27	..	18	23	14	5
Coles.....	525	10.3	34,787	682	51	1	28	39	25	7
² Cook.....	933	0.2	2,818,751	497	5,667	421	3,195	4,577	3,024	920
Crawford.....	453	9.1	31,421	628	50	1	24	39	30	6
Cumberland... 353	25.2	14,281	1,020	14	..	4	10	8	2	..
Dekalb.....	638	13.3	34,697	722	48	2	27	32	29	2
Dewitt.....	415	13.8	18,906	630	30	..	15	23	20	7
Douglas.....	417	10.9	19,951	525	38	1	15	30	27	7
Dupage.....	345	5.1	37,252	556	67	10	37	41	27	12
Edgar.....	621	11.1	27,336	448	56	2	22	33	28	8
Edwards.....	238	14.9	10,049	628	16	1	4	9	7	2
Effingham.... 511	13.8	20,055	542	37	..	20	31	33	3	..
Fayette.....	729	24.3	28,082	936	30	1	10	18	11	3
Ford.....	500	21.7	17,096	743	23	1	14	15	15	1
Franklin.....	445	6.9	30,517	476	64	2	35	46	27	7
Fulton.....	884	10.4	51,993	511	85	3	36	58	48	6
Gallatin.....	338	21.1	14,628	914	16	..	5	10	13	..
Greene.....	515	13.5	22,363	588	38	1	17	28	30	3
Grundy.....	433	18.8	24,180	1,051	23	2	12	18	13	2
Hamilton.....	455	22.7	18,227	911	20	2	10	10	9	3
Hancock.....	780	14.2	30,638	556	55	..	25	39	23	5
Hardin.....	185	15.4	7,015	584	12	..	4	8	3	..
Henderson.... 376	23.5	9,724	607	16	..	10	10	11	1	..
Henry.....	824	13.5	42,968	704	61	4	24	46	41	1
Iroquois..... 1,121	20.0	35,543	634	56	3	31	39	39	2	..
Jackson.....	588	11.5	36,071	707	51	1	26	39	34	10
Jasper.....	508	25.4	18,157	907	20	1	11	13	9	2
Jefferson.... 603	14.0	29,825	693	43	..	18	28	31	7	..
Jersey.....	367	18.3	13,954	697	20	..	7	13	9	3
Jo Daviess... 623	28.3	22,657	1,029	22	..	12	19	19	2	..
Johnson.....	348	15.1	14,331	623	23	1	8	13	13	..
³ Kane.....	527	3.2	101,402	615	165	12	76	111	90	16
Kankakee.... 668	9.0	43,376	586	74	1	42	55	47	12	..
Kendall.....	324	23.1	10,777	769	14	..	10	12	11	2
Knox.....	711	8.3	48,018	588	86	5	44	52	51	10
Lake.....	455	5.9	70,060	909	77	3	45	55	49	16
La Salle..... 1,146	9.4	91,851	752	122	6	57	78	84	16	..
Lawrence.... 358	10.2	27,141	775	35	..	15	23	18	7	..
Lee.....	742	18.1	27,750	676	41	2	14	30	30	3
Livingston... 1,043	16.0	40,465	623	65	1	31	48	39	12	..
Logan.....	617	10.8	31,335	549	57	3	21	39	27	10
McDonough... 588	11.3	26,887	517	52	2	20	38	37	5	..
McHenry.....	620	12.4	34,515	690	50	1	22	31	37	10
McLean..... 1,191	9.2	68,127	528	129	4	40	89	85	20	..
⁴ Macon.....	585	5.6	61,618	592	104	5	40	61	56	14
Macoupin.... 860	12.5	56,837	823	69	1	29	44	50	9	..
Madison.....	737	6.2	108,207	909	119	2	61	93	94	21
Marion.....	569	9.5	38,485	641	60	2	25	41	34	7
Marshall.... 396	17.2	15,679	725	23	..	13	16	13	4	..
Mason.....	555	20.5	17,377	543	27	2	15	18	16	3
Massac.....	240	13.3	14,994	833	18	..	6	14	12	2
Menard.....	317	16.7	12,796	673	19	..	11	15	16	2
Mercer.....	540	16.4	19,723	597	33	..	15	21	20	3
Monroe.....	389	24.3	13,503	856	16	..	9	11	12	..
Montgomery.. 689	11.7	38,576	653	59	..	26	40	47	11	..
Morgan.....	576	7.7	34,420	485	75	6	28	47	57	9
Moultrie.... 338	16.1	14,630	696	21	..	6	13	11	3	..
Ogle.....	756	17.2	27,864	633	44	1	18	27	31	1
⁵ Peoria.....	636	3.2	108,756	546	199	10	86	153	115	23
Perry.....	451	18.0	23,735	949	25	1	10	16	18	4
Piatt.....	451	14.1	16,376	543	32	1	16	21	19	4
Pike.....	786	15.1	28,622	569	52	3	17	32	38	4
Pope.....	385	38.5	11,215	1,121	10	..	6	8	2	2
Pulaski.....	190	8.6	16,450	747	22	..	10	15	12	1
Putnam.....	173	19.2	9,615	1,068	9	..	5	7	5	1
Randolph.... 587	14.0	29,935	712	42	..	19	27	21	1	..
Richland.... 357	14.9	15,970	665	24	1	12	17	7	2	..
Rock Island.. 424	3.4	81,466	662	123	9	62	89	78	17	..
⁶ St. Clair.... 663	3.8	144,092	837	172	6	84	116	95	15	..
Saline.....	399	6.0	36,422	551	66	1	28	42	27	7
⁷ Sangamon.... 876	4.7	105,206	562	187	4	98	140	121	30	..

1. Includes Quincy, population 36,764; physicians 71 [M.R.C. 6].
2. Includes Chicago, population 2,447,034; physicians 5,301 [M.R.C. 868].
3. Includes Aurora, population 33,613; physicians 69 [M.R.C. 8].
4. Includes Deatur, population 38,526; physicians 84 [M.R.C. 12].
5. Includes Peoria, population 70,732; physicians 170 [M.R.C. 21].
6. Includes East St. Louis, population 72,105; physicians 91 [M.R.C. 10].
7. Includes Springfield, population 59,468; physicians 137 [M.R.C. 26].

ILLINOIS—continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 35	Members of Co. Society	Commis'd in M.R.C., etc.
Schuyler.....	432	20.6	14,852	707	21	1	8	14	9	1
Scott.....	249	19.1	10,067	774	13	..	5	7	10	..
Shelby.....	772	16.4	31,693	674	47	..	18	32	18	5
Stark.....	290	12.6	10,098	439	23	2	7	16	12	5
Stephenson....	559	8.5	38,198	578	66	4	26	40	46	7
Tazewell.....	647	13.2	34,614	706	49	2	12	32	33	3
Union.....	403	8.9	21,856	485	45	1	10	28	25	5
Vermilion.....	921	6.1	87,018	568	153	1	65	109	98	18
Wabash.....	220	10.5	16,613	791	21	..	11	15	14	3
Warren.....	546	14.0	23,431	600	39	1	14	27	25	3
Washington....	561	20.0	18,759	669	28	..	10	17	16	2
Wayne.....	733	23.6	25,697	828	31	1	13	19	20	1
White.....	507	12.4	23,052	562	41	1	8	19	19	4
Whiteside.....	679	12.3	34,507	627	55	2	25	38	33	5
Will.....	844	8.1	91,383	878	104	4	51	79	51	9
Williamson....	449	7.3	57,727	916	63	..	26	44	36	12
Winnebago....	529	4.5	74,326	629	118	4	55	89	80	12
Woodford.....	528	22.0	20,506	854	24	..	14	17	21	3
Totals.....	56,043	5.1	6,265,789	574	10,909	596	5,530	8,151	6,213	1,533

8. Includes Danville, population 31,554; physicians 82 [M.R.C. 11].

9. Includes Joliet, population 37,472; physicians 67 [M.R.C. 6].

10. Includes Rockford, population 53,761; physicians 103 [M.R.C. 9].

HONOR ROLL

Adams County

CLAYTON—Elvin Otis Brown. LIBERTY—William Elmer Mercer. LORAIN—Ralph Edgar Potter. MENDON—Adelbert M. Austin.

QUINCY—John William Earel; Robert William Eaton; Thomas Blackburn Knox; Frank Russell Morgan; Walter Davis Stevenson; George C. Stimpson.

Alexander County

CAIRO—William Sidney Brown; Charles L. Weber. McCLURE—Clyde Earl Duncan.

Bond County

GREENVILLE—William Lee Hall. OLD RIPLEY—Charles Hunt Powell.

Boone County

BELVIDERE—Alden Alguire; Wallace A. Belsey.

Bureau County

ARLINGTON—Grant Brayton Bushee. BUDA—John Fletcher Taylor. LADD—Joel Edwin Toothaker. LA MOILLE—William Henry Creede. PRINCETON—Oliver Josephus Flint. SPRING VALLEY—Morris Finkelberg. WALNUT—Guy Viri Forney. WYANET—Richard Herrick.

Calhoun County

BACHTOWN—Frederick William Fiedler. KAMPSVILLE—Zoda D. Lumley.

Carroll County

MT. CARROLL—Samuel Phillip Colehour Jr. SAVANNA—Joseph Benjamin Schreiter.

Cass County

BEARDSTOWN—Roy Henry Garm; Frank Oliver Kunz; Walter Spalding Mix.

Champaign County

CHAMPAIGN—Frank A. Beardsley; John C. Dallenbach; James Hugh Finch; John Neal Hoffmann; Harry Cullen Kariher; Clarence David McKinney; Earl DeWitt Wise. HOMER—Joseph Brayshaw; Elsa Franklin Tate. PENFIELD—Clifford Charles Wehn. PESOTUM—James Francis Hilgenberg. URBANA—Clyde Deene Gulick.

Christian County

KINCAID—Richard J. Miller. OWANECO—George Anderson Tankersley. PALMER—Jesse Pickrell Simpson. PANA—Albert Lee Alderson. TAYLORVILLE—Samuel Beck Herdman; Dwight Franz Morton.

Clark County

CASEY—Owen Clark Foster. MARSHALL—Stephen Campbell Bradley; Percy Parker Haslitt; Roscoe Addison Mitchell; James John Rose. MARSHALL—Hubert Morton English.

Clay County

LOUISVILLE—John Vardeman Dillman.

Clinton County

CARLYLE—John Quince Roane. WILLIAM OSCAR WARREN. KEYESPORT—John Logan McAlister. NEW BADEN—Benjamin Casper Clifford Schuell. SHATTUC—Orvil O'Neal.

Coles County

CHARLESTON—Walter Clinton Bisson; John Franklin Henderson; Gerry Brown Dudley. HUMBOLT—Frank Herbert Deane. MATTOON—Rufus James Coultas; Ralph Edward Kleckner; Bruce Downing Parrish.

Cook County

BARRINGTON—Carl V. Arthur Weichelt. BLUE ISLAND—William Holland Byford; Robert James.

CHICAGO—Donald Putnam Abbott; Charles Adams; Russell E. Adkins; Esek Albert Aisenstadt; Charles Burton Alexander; Laurie Lee Allen; Thomas Dyer Allen; Thomas Grant Allen; Walter H. Allport; George C. Amerson; August Anderson; Frank Arthur Anderson; George Herman Anderson; Leland Hurd Anderson; Frank Taylor Andrews; Harry Samuel Arkin; Benedict Aron; George Howard Artz; Harvey Combs Asher; John Paul Ashworth; Reuben Jay Atwood; Samuel Axehrad.

Alfred Stanion Bailey; Jesse O. Bailiff; Hillier L. Baker; H. Baranick; Carl L. Barnes; Alexander H. Barnett; Edwin Judge Barnett; Irving F. Barnett; Channing W. Barrett; William Fred Bartelt; Eric Kline Bartholomew; Herman Harry Bassler; Hyman William Bau; August H. Bauer; William L. Baum; Phillip M. Bedessen; Bernard Benkendorf; John Milton Berger; Robert S. Berghoff; Clifford Edward Bergin; Joseph Soldye Berkowitz; William Franklin Bernart; Harry Bernard Bernhardt;

Frederic Atwood Besley; Ralph Boerne Bettman; Tom Finley Beveridge; Stephen Biezis; Frank Billings; Rufus W. Bishop; Paul Black; Paul Morse Blackburn; Edward S. Blaine; Gustavos M. Blech; Henry Stevel Bleese; Walter Lawrence Blomgren; James Henry Bloomfield; Bernard Joseph Bolka; Jesse F. Boone; Clarence Henry Boren; Walter Elme Bourque; George Douglas Brand; Sylvester Alonzo Brenza; Gilbert E. Brereton; Harry D. Brickley; Arthur Shaw Bristow; Leon George Brackett; Lewis Wine Bremberman; James Andrew Britton; Louis L. Brodsky; Charles B. Bromberg; Overton Brooks; Thomas C. Brooks; John Thomas Brosnan; Aubrey K. Brown; Frederick Irvine Brown; Ralph Crissman Brown; Sanger Brown; Frank Earle Browning; Edward Arthur Brucker; Edmund G. Brust; Edward Buckman; George Eno Burdick; Alexander Walter Burke; Alexander William Burke; Charles Augustus Burkholder; William J. Butler; Theodore Fred Butzow; Arthur Frederic Byfield; Maurice William Kirby Byrne.

Archie Byron Calvin; Thomas D. Cantwell; Joseph Almarin Capps; Francis Vincent Carberry; Hayes William Carlin; Herbert Chapman Carothers; Ralph Waldo Carpenter; Thomas Albert Carter; Emor L. Cartwright; Eugene Cary; Frank Cary; French S. Cary; Charles Prows Chaffin; Earl R. Chamness; Harrison Gerald Champlin; Frank A. Chapman; Eugene Joseph Chesrow; Joseph Paul Chiasson; Clarence Robert Chouinard; Henry Christiansen; Edward Albert Christofferson; Ola Herman Christoffersen; Frank Spooner Churchill; Eugene G. Clancy Carl Wesley Clark; Elbert Clark; Floyd Marion Clark; Peter S. Clark; William Arthur Clark; Festus Claybon; Blaine Wilson Claypool; Charles F. Clayton; Herman C. Clayton; Joseph Patrick Cleary; Oscar Clift Lloyd Brandon Clinton; Hiram Bryan Cloud; Ralph Benjamin Cobb Michael Milton Cody; Mayer S. Coffier; Mandel A. Isaac Cohen; Lazarus Cohler; Charles W. Colebaugh; James Patrick Collins; Lorin Cone Collins; Sidney Beeson Conger; Arthur Charles Conrad; George Asbury Conroy; Francis James Conroy; Bernard P. Conway; Homer Perciva Cooper; Norman Copeland; Edward Augustine Corcoran; John Webster Cornell; Franklin Joseph Corper; Charles A. Costello; Thomas Cottrell Roy H. Cox; Alexander Righter Craig; Thomas Stanley Crowe; William Robert Cubbins; Carey Culbertson; Malcolm Cunningham; Louis T. Curry; Arthur Hale Curtis; William Cuthbertson; Irwin Herbert Cutler Lloyd David Cutting; Leo Matthew Czaja.

Thomas L. Dagg; Elmer Olaf Dahl; George Lawrence Alfred Dale; Leon Eugene Dallwig; John Earle Damron; John Dryden Davenport Vernon C. David; Ray H. Davies; Raymond Evan Davies; Carl Henry Davis; George Gilbert Davis; Nathan Smith Davis III; Frank Deacon Calvin Morgan DeBeck; William De Boer; James T. Degau; Edward Vincent Del Beccaro; Abraham Lincoln Desser; George Frederick Dick Spencer Cornelius Dickerson; Frank Santo Di Cosola; Victor Pete Diederich; Andrew Jackson Dinsmore; Phillip Schuyler Donane; John Milton Dodson; Edmond James Doering; Maurice Doktorsky; John Edward Dolan; Edward Frank Dombrowski; Harry J. Dooley; William A. N. Dorland; Alexander Aloysius Drill; Emilus C. Dudley; Frank Thomas Duffy; Royal Wade Dunham; Harry Coleman Dunlavy; Harry Joseph Dwyer.

Frank B. Earle; Lewis Kent Eastman; Roscoe Conklin Eaton; Tall John Echerer; Charles Patt Eck; John William Eckstein; Samuel Martu Edison; Alfred Theodore Eide; Daniel Nathan Eisendrath; Joseph Eisenstaedt; Charles D. Eldred; William Tupper Elliott; Raymond Frank Elmer; Lynn W. Elston; John F. England; Samuel S. Epstein; John Eterno; Arthur Morgan Evans; John Henry Evans.

Emanuel Montague Fainer; George Franklin Farman; Patricienne J. H. Farrell; John Favill; Roy Ralph Ferguson; James Henry Field; Ephraim K. Findlay; Thomas Francis Finegan; Victor Finsand; Anton John Firtik; Morris Fishbein; Eric Franklin Fisher; Frederick Alfred Fisher Hart Ellis Fisher; William Burnham Fisk; Robert Emmett Flannery Samuel Clifton Fleming; Clarence Wallace Flint; James Lennon Foley Thomas P. Foley; Max Lyon Folk; Alexander William Fordyce; Claud R. G. Forrester; Earle Bloodgood Fowler; Edson Brady Fowler; Charles Moses Fox; Edward Francis Fox; John Sebastian Fox; Frank Fre Fraider; Chetwynd Mair Franchere; Frank Dolg Francis; Jacob Frank F. O. Frederickson; Horatio Putnam Freeman; Carl Freund; Stanto Abeles Friedberg; Joseph Friedman; Isaac Jacob Frisch; Horace I. Frost; John Garfield Frost; Kendall Phelps Frost; Herbert H. Frothingham; William Fuller; Neil Eugene Funk.

Fred William Gaarde; Michael Archangle Galgano; Michael L. Gallagher; William J. Garard; Herbert Thomas Garrison; Wesley Emmet Gatewood Jr.; Harry Gauss; Robert J. Gay; John Joseph Gearin; Maurice F. Geelan; William Henry Gehl; Arthur Henry Geiger; Raymond Horace George; Jesse Robert Gerstley; Willis Stanley Gibson; John Gervas Goggin; Julian Jerry Golombowski; Maurice Louis Goodkind; Jacob Abraham Goodman; James K. Gordon; Harry Searle Gradle; Evan Ambrose Graham; John Francis Grant; Grant Judson Gray; Jesse Troy Grayston; Frederick Robin Green; Thomas Stephen Green; Philip Greenburg; Richard Frederick Greening; Louis Alexander Greensfelder Robert Scott Gregg; Patrick Joseph Griffin; Evan Henry Montgomery Griffiths Jr.; George (Duro) Guca; Nordahl Osmund Gunderson; Spencer DeWitt Guy.

Millard Wilson Hall; Ernest K. Hallock; Albert Edward Halstead Walter Wile Hamburger; James Lloyd Hammond; Reuben Caldwell Hanchett; Arthur R. Hansen; Oscar Amadeus Hansen; Theodore Loren Hansen; Oliver Cromwell Hargreaves; Carleton A. Harkness; LeRoy Harold Harner; Roy W. Harrell; Charles Francis Harris; Urban Bunyo Harris; Jacob R. Harry; Perry Vernon Hartman; Basil Coleman Hya Harvey; James Alexander Harvey; Arthur Henry Hauber; Lorens Ade Haug; Austin Albert Hayden; Daniel Bernard Hayden; Daniel Francis Hayes; Francis Todd H'Doublar; William Andrew Heap; Daniel Hayes; Harry Malcolm Hedge; Gordon Egan Hein; Alvin George Helwig Robert Houston Henderson; Karl Johan Henriksen; William John Henry Carl Bernhard Herrmann; William Eugene Hervey; Julius Hays Hess; Clarence J. Hicks Jr.; William J. Hickson; John Higginson; David H. Hillis; Edwin Frederick Hirsch; Edwin Walter Hirsch; J. C. Hoar Julius Henry Hoelscher; Harry Richard Hoffman; Leo George Hogan Thomas Aldhelm Hogan; Edmond Arthur Holberg; Alvin Ambrose Holden; William Henry Holmes; Lewis Andrew Hopkins; Percy E. Hopkins; David Alfred Horner; John Allan Hornsby; William Henry Howard; William Welles Hoyt; Timothy Stephen Huggard; Albert Herman Hundermark; James Edward Hunter; Sherman Rogers Hurlbut; Clayton James Hyslop.

Ernest Edward Irons; Harry Theobus Isacowitz; William Israelson. A. Dudley Jackson; Clarence Augustus Jacobson; Guy Herbert Jacobson; Vernon Meadows Jared; Joseph Francis Jaros; Martin Bushnell Jelliffe; Edward Lealand Jenkinson; Frank Joseph Jirka; Edward William Johannes; Henry C. Johannes; Carl John Johannesson; Anderson R. Johnson; Russell Martin Johnson; Joseph Andrew Johnston; Lou Campbell Johnston; Alfred Edward Jones; Harold Eldred Jones; Yng Joranson.

Joseph Charles Kaczkowski; Frank S. Kadlec; Jacob V. Kahn; Albert B. Kanavel; Robert Emmett Keating; Harry Katz; David Henry Kelle John Edward Kelly; James William Kelly; Joseph Aloysius Kelly; Ra

mond Martin Kelly; George Allen Kelso; James Arthur Kennedy; Raymond Brandt Kepner; Ellis K. Kerr; Albert Belcham Keyes; Charles Samuel Kibler; W. Ivan Kling; Robert Roscoe Kirkpatrick; Robert William Kispert; Peter Gad Kltterman; Henry Herman Kleinpell; Robert Frederick Knoll; Herman Carl Koch; Summer L. S. Koch; Irvin S. Koll; George John Korby; Miecslaus Jeronime Kostrzewski; Constantine John Koursoumis; Leon Paul Kosaklewics; Sigurd Herbert Kraft; Jacob Carl Kraft; John Charles Matthew Krasa; Otto Anthony Kreml; Guy Edward Krollek; Gerard Nicholas Krost; Carl Emil Krugmeier; Henry Kruse; Stephen Francis Kubala; Charles Sonck Kubik; Ralph Henry Kuhns; Max Mandel Kulvinsky.

Elzear La Mothe; Henry George Lamp; Max Lampert; George Milton Landau; Maxwell Lando; Francis Lane; Henry William Lang; Earl Kemmer Langford; Harvey Louis Langlois; Lorenzo Brown Lapsley; Cyril James Larkin; William Raphael Larkin; Milton Jay Latimer; John M. Lavin; James F. Lawson; Thomas Maurice Leahy; Joseph Joessel Lebovitz; William George Lee; Cornelius A. Leenheer; Clarence Wilbur Leigh; Samuel Brody Leiser; Henry George Lescher; Daniel Harold Levinthal; Nathan David Leviton; Phillip Lewin; Dean DeWitt Lewis; Henry F. Lewis; Karl Lewis; Leonard W. Lewis; Leland Stanford Light; Ottis Like; Charles Elder Lindsay; Claude Allen Link; Anthony Joseph Llinowlecki; Lewis Hertz Lippman; George U. Lipshulch; Harvey Thomas Little; Wilbur Grant Little; Gilbert Martin Loewe; William Hoffman Gardner Logan; Otto Lohman; Lester Lemuel Long; Vernon L. Looney; LeCount Rochambeau Lovellette; Charles Hubart Lovewell; Frank Smith Lower; Nelson Horatio Lowry Jr.; John Harry Luezak; August H. Lueders; Gottlieb Adolph Lurie; Frank Benedict Lusk; Andrew J. Lyons.

Melbourne Mabree; William Patterson MacCracken; Edward Joseph Maedonald; Cleveland Charles MacLanc; Samuel W. MacLin; Ira Joseph Magee; Paul Budd Magnuson; Russell Burton Main; Harrison W. Maltby; Milton Mandel; Samuel Morris Marcus; David Edmond Markson; Lawrence Matthew Marley; Hartley Farnham Mars; Albert Martin; Franklin H. Martin; Harry Gilbert Martin; Leon Wade Martin; George Shrader Mathers; Laurence H. Mayers; Lewis Linn McArthur; Selin Walker McArthur; Ralph Rowland McCarthy; William Bernard McCauley; Thomas Scott McClanahan; John Hancock McClellan; George Wilford McCrary; John Joseph McDermott; Duncan Brown McEachern; Albert Edwin McEvers; Wilmer Delavergne McGrath; John Edward McGuigan; John W. McGuire; Michael Francis McGuire; Wm. Aloysius McGuire; C. Hugh McKenna; James Joseph McKinley; Ira McKinney; Guy Marshall McLean; James Eugene McMeel; Raymond W. McNealey; Arthur Francis McQuaid; Albert Baptiste McQuillan; Max Louis Mendel; Frederick Menge; Llewellyn Merrill; Frank Waldo Merritt; Arthur Ray Metz; Jacob Meyer; Karl Albert Meyer; Edw. Frank Micke; Earl Bert Miller; Edwin M. Miller; Fred E. Miller; Fred M. Miller; Geo. Henry Miller; Joseph Leggett Miller; Theodore Earl Miller; Max Jacob Minker; John Milton Mitchell; Bronislaus John Mix; Charles L. Mix; Harland Edgar Mize; Frank Mock; Harry Edgar Mock; Frederick William Moeller; Walter Carl Mohr; Charles Louis Mohr; Albert H. Montgomery; Adelbert Montague Moody; Beveridge Harshaw Moore; John Harris Moore; Manuel Garrido Morales; Edw. A. Morris; Ashley Baker Morrill; Nelson Case Morrow; Edward Campbell Morton; Samuel Mordecai Morwitz; George Warner Mosher; Eli B. Moss; Ellis Van Order Moulton; George H. Musselman.

Walter Herman Nadler; William Davison Napheys Jr.; William Daniel Napiantek; Vivian John Neale; Ole S. Neseth; Leon Newman; Roscoe Max Nicholson; Samuel Daniel Nixon; William L. Noble; Harry Sims Norton; Frank John Novak Jr.; Benjamin Newton Novy; Payson L. Nusbaum.

John Francis Oates Jr.; Albert John Oehner; John C. O'Connell; John Thomas O'Connell Jr.; Thomas Philip O'Connor; Arthur White Ogden; Claude Harris Ogden; Leonard B. E. Oliver; Paul Oliver; John Gabriel O'Malley; Thomas J. O'Malley; John Hoff Opitz; Harry D. Orr; John William O'Shea.

Rollo Kirk Packard; Charles Evart Paddock; Lester J. Palmer; Bennett Rowland Parker; Charles Herbert Parkes; Jacob Paskind; Dorsey E. Payne; Meyer Samuel Pedott; John Pellettieri; Clyde Dale Pence; John Rawson Pennington; Nelson Mortimer Percy; Irving Perrill; Howard Samuel Perry; Chester Moore Peters; Ralph Waldo Peterson; Harry Michael Peterson; Peter Gustav Peterson; Dallas B. Phemister; Frank Marion Phifer; Roland Hodge Phillips; William Joseph Phickett; Norval Harvey Pierce; Thaddeus S. Pierzynski; Louis William Pijan; Isadore Pilot; Maurice Charles Pincuffs; Charles Irwin Pitte; Samuel C. Plummer; Louis John Pollock; Paul Griffith Pomeroy; Darwin Brayton Pond; Irving Angel Porges; Hans A. Poulsen; George Nathaniel Pratt; Roscoe Wellington Pratt; Robert Bruce Preble; James Frederick Presnell; Louis Jacob Pritzker; Ambler Caskie Pruner; William Allen Pusey.

Wm. Joseph Quigley; Frank John Quirk. Maurice J. Rabbits; Harold Alfred Ramser; Thomas Pollock Ranney; Henry A. Rasmussen; Edward Harold Rategan; Thomas Harold Reagan; Torrance Reed; Walter Kellogg Reed; Chas. Henry Reinhardt; Herman Reinsch; Sheppard Remington; Chas. Curtis Rentfro; Frederick Talmage Rice; William Peter Rice; John Ridlon; Frederick Jackson Riley; Wm. Joseph Riley; George J. Rivard Jr.; Harry Robenstein; Charles M. Robertson; Thomas J. Robeson; Edward Tracy Robinson; Russell Dean Robinson; John A. Robinson; Lawrence Howard Roblee; Leonard Field Roblee; Alexander Sands Rochester; Roy Thomas Rodaway; Buell S. Rogers; Daniel Weston Rogers; Harry Chas. Rolnick; Edmond Carl Roos; Louis Rose; Harold Alvin Rosenbaum; Lambert William Rosenbaum; Sol Rosenblatt; Phillip S. Rosenblum; Max Rosentiel; Vergil Alvin Ross; David B. Rotman; Joseph E. Rowan; Paul Hoyland Rowe; Carlton L. Rowell; Maurice Rubel; George Rubin; Louis Rudolph; William Hall Rupert; Wm. Rupp; Eugene Alphonsus Rush; Albert Freeman Ryan; Carl Gustaf Rydin; Edwin Warner Ryerson.

Walter L. Sachtleben; Robert Salem Salk; Charles F. Sanborn; Abel P. M. Sandahl; Geo. Edward Sanders; Frank Joseph Schick; Oswald F. Schiffli; Emil Arnold Schlageter; Erwin Rudolph Schmidt; Carl Henry Schnaer; Sydney Sigfried Schocet; Charles Joseph Schoenfeld; Charles Schott; Otto Julius Schott; Frank E. Schram; George Henry Schroeder; Herman C. Schumm; Stephen Andrew Schuster; Fred E. Schwartz; Sylvio A. Sciarretta; Orlando Frank Scott; Francis Joseph Scully; Leon Steidler; Robt. Arnot Sempill; Francis Eugene Seneat; Walter Scott Siewerth; William Joseph Siegler; Clarence Edward Sidwell; Edward Gerald Sepple; Emanuel John Senn; Harry Sere; John Louis Seveik; Henry Shacoff; Morris Siegel; Warren P. Sights; Dwight C. Sigworth; Willis Irving Silverstein; George Henry Simmons; Fredk. William Slobe; Arthur Atwell Small; Charles Porter Small; James Craig Small; Clarence Earl Smart; Edgar Allen Smith; Fred M. Smith; Lester Alvin Smith; Geo. Oliver Solem; Harry Samuel Solomon; Kellogg Speed; Henry Albert Stalb; Nicholas Cornelius Stam; Mont Voet Stanley; John Earl Stanton; Samuel Cecil Stanton; Daniel A. K. Steele; Pierre Abel Steele; Samuel Stein; Andrew V. Stephenson; Robert Becket Stephenson; Jacob Stern; Charles A. Stevens; Randolph O. Stites; Frank Lee Stone; Claire Leroy Straith; Walter L. Stranberg; Herbert Willis Strass; David C. Straus; Jerome Frank Strauss; Sidney Strauss; Edward Jones Strickler; Charles

Klaus Stullk; William Harold Stutsman; George F. Suker; Ralph Chas. Sullivan; Samuel Sullivan; Thomas J. Sullivan; Walter J. Sullivan; Charles Joseph Swan; Harold Swanberg; Harry Theodore Swanson; John Steele Sweeney; Winfield Carey Sweet; William J. Swift; Bion Claude Syverson.

Edwin Robert Talbot; George Calvin Tallerday Jr.; George Tarnowsky; William Henry Taylor; Adolph Maurice Teixler; Rudolph Gabriel Tenerowicz; Frederick Cleveland Test; Louis Thexton; William John Thompson; William M. Thompson; Harvey David Thornburg; John Norton Thorpe; Robert Tigay; David Duke Todd; Adolph Dahl Tollefsen; Gerhard John Torell; Richard Torpin; Paul Scoville Traxler; Sidney Newton Trockey; Edward Patrick Troy; Francis E. Turgasen; Luther Lloyd Turner; Henry Irving Twiss.

Henry Johnson Ullman; Leon Unger; Oliver Edmund Van Alyca. Harry Eugene Vander Bogart; Albert Vander Kloot; John Francis Von Paing; Robt. Throop Vaughan; Page T. Vaughan; Arthur Nathaniel Vaughan; Karl L. Vehe; Walter Verity; Italo Volini; Walter Franz von Zelinske.

Guy R. Walker; Herbert Walker; Sydney Walker; Frank Xavier Walls; John H. Walls; Arthur Mansfield Washburn; Willard H. Waterous; Henry Joseph Way; John Lester Webb; Anthony Thos. Weber; Ralph W. Webster; Anders Johann Weigen; Paul B. Welch; Frank Monroe Weldy; Edward Franklin Wells; Alfred Carl Wendt; Arthur William Wermuth; Henry Oscar Wernicke; Allen A. Wesley; John Frank West; Daniel George Weymouth; Clarence Loyd Wheaton; Warren Overton Wheelock; James R. White; Wm. Richard Whitley; Theodore Martin Wiersen; Milton Arthur Wiese; William H. Wilder; Chas. Raymond Wiley; William Champness Williams; Charles Spencer Williamson; Ralph G. Willy; Jacob Wilford Wine; Walter Fritz Winholt; John Paul Woitalewicz; Harry D. Wolff; Casey A. Wood; Herbert Booth Woodward; George William Woodnick; Thomas A. Woodruff; Rollin Turner Woodyatt; William Henry Woolston; Eugene Pierson Wright; Bert Isadore Wyatt; Hulet Judson Wyckoff.

Geo. Frederick Yates; Frank Walls Young; Chas. Benj. Younger; Norman Zella.

CHICAGO—John Martin Axelsson; John Willey DeVry; Chris Eugene Emery Gatewood; Mark Allen Gier; Vincent Gino; Russell Dorr Herold; David Holden; Gustave Walfrid Lawson; Frederick Douglass Mazon; Francis Daniel McNertney; Golder Lewis McWhorter; Joseph Moles; William Kline Murray; Brooks, Jesse, Musselwhite; Yorge John Nyvall; Clifford Spencer Powell; Thomas Hubert Renn; Sidney Mitchell Roberts; Ira Boyd Robertson; John Slicka; Harry Stack Sullivan; George Lyle Venable; Charles Downes Wilkins.

CHICAGO HEIGHTS—George William Cusick. CICERO—Anthony H. Bennewitz; Frank Joseph Kotalik; Florian George Ostrowski; Louis Savitsky; Charles Joseph Tierney. EVANSTON—William Graham Alexander; Stephen V. Balderston; Frederick Christopher; Eugene William Fiske; Hugh M. Fogo; Joseph Lawrence Hagan; Placido R. V. Hommel; Benjamin Harrison Huggins; Albert H. Roler. GLENCOE—Fred Pascoe Patton; Frank Reinsch; Harry Dunlap Wiley. HARVEY—Irving William Steiner.

HOMEWOOD—George William Scupham; James F. Wharton. HUBBARD WOODS—Frank Chatfield Farmer. LA GRANGE—Raymond Edward Hillmer. MELROSE PARK—William Fred Scott; George Curtis Shockey; Roy Davis Short. MT. GREENWOOD—Robert Cornelius Murphy. OAK FOREST—Arthur S. Campbell; Taylor Wilson Funkhouser; Samuel H. Richman; Oliver Rufus Spalding; John W. Turner. OAK PARK—Arthur K. Baldwin; Carl Herman Bartling; Burton Wayne Bivings; Clarence Edward Frybarger; Clarence Pinkney Harris; Wm. Chas. Meacham; Arthur Kern Spiering; John Wesley Tope; Chester Warren Trowbridge; Herbert G. Vaughan. PARK RIDGE—John Ogden Gaston. RIVERSIDE—Marcus Hatfield Hobart. WILMETTE—Bernard Montrose Conley; Herbert V. Mellinger. WINNETKA—Frank Wickes Blatchford; Edw. Michael Mikkelsen.

MELROSE PARK—Oliver Morton Holliday.

Crawford County

FLAT ROCK—Luther Byrl Highsmith. OBLONG—Clyde Schiverin Wilson. PALESTINE—Robert Bruce Patterson. ROBINSON—Alan Goodwin Brooks; Charles Ludvey Davis; Ausby Lyman Lowe.

Cumberland County

GREENUP—Joseph C. Brookhart. TOLEDO—William Lester Smith.

DeKalb County

DEKALB—John Patrick Kane. SYCAMORE—Fred Harrison Bell.

DeWitt County

CLINTON—Warren E. Bradbury; Chas. W. Carter; Edwin Ralph May; Arthur Edwin Shell; Samuel L. Thorpe. DEWITT—Henry Kent Hooker. WELDON—Clarence W. Chapin.

Douglas County

ARTHUR—Charles W. Monroe. CAMARGO—Benjamin Franklin Zobrist. HINDBORO—John James Hopkins. NEWMAN—Raymond C. Gillogly; Clinton Daniel Swickard; James Andrew Valentine. VILLA GROVE—Phillip Herrin.

DuPage County

DOWNERS GROVE—Walter Schuck Bebb; Knud Hartnack; Maurice Lyon Puffer; Edwin Raymond Strong. HINSDALE—Ernest Herman Hoffman. LOMBARD—William Christopher Schiele. NAPERVILLE—Walter Scott Conn; Winfred Byrum Martin; Herman Patterson. WEST CHICAGO—Harry Winfield Kinne. WHEATON—Arthur Blanchard Connor; Thomas Oliver Greig.

Edgar County

CHRISMAN—Charles LaFayette Kerrick. HUME—Colin Kenneth Ross. METCALF—Hugh Irving Conn. OLIVER—John Wesley Martin. PARIS—Thomas C. McCord; Frank Edmund Shipman; Daniel Webster Young. SCOTLAND—James Frank Jennings.

Edwards County

WEST SALEM—Herman Christian Tietze; Timothy Charles Weber.

Effingham County

DEITERICH—John William Dunn. EFFINGHAM—Charles Frederick Burkhardt. MASON—James Thomas Breakey.

Fayette County

ST. ELMO—Wm. Jay Whiteport. ST. PETER—Fredk. Hyder Yates. VANDALIA—Mark Greer.

Ford County

PAXTON—Ira D. Kelsheimer.

Franklin County

AKIN—John Emory Reed. BENTON—Edward Carrol Alvis. MULKEY-TOWN—Francis Ashley Phillips; Fredk. Monroe Phillips. WEST FRANKFORT—Alvin August Peterson; Byford Hodgen Webb. ZEIGLER—Leo Vincent Gates.

Fulton County

AVON—Rollen Wilbur Harrod. CANTON—Everett Porter Coleman; Verne Hays; Cecil James Johnston; Harvey Harris Rogers. LEWISTOWN—Samuel Leo Oren.

Greene County

MARIETTA—Daniel William Jeffries. PATTERSON—Arthur Lawrence Muren. ROADHOUSE—Logan Orville Hamilton.

Grundy County

COAL CITY—Frank Arnold Stockdale. MORRIS—Roscoe Whitman.

Hamilton County

DAHLGREN—Roland Robt. Cross. McLEANSBORO—Emory Sylvester Hall; Luther Remi Moore.

Hancock County

CARTHAGE—Wilmer Phelps Frasier. DALLAS CITY—Thomas Alfred Wayland. HAMILTON—Donald I. Stanton. NAUVOO—John Alexander Bortz. WEST POINT—John Rhodes Bryant.

Henderson County

STRONGHURST—Hugh Lorimer Marshall.

Henry County

CAMBRIDGE—John DeWitt Hawks.

Iroquois County

WATSEKA—William Fredk. Buckner; John Albert Van Kirk.

Jackson County

CARBONDALE—Monroe Etherton; Louis David Hughes; John Milton Mitchell. DE SOTO—Oscar House. ELKVILLE—Clyde James Cham-mess. MURPHYSBORO—Edward Kent Ellis; William Henry Evans; John Hrabik; Charles Everett Kiselng; Ralph Stoddard Sabine.

Jasper County

NEWTON—Levi H. Fuson. WHEELER—Robert Seymour Wishard.

Jefferson County

INA—George Oscar Cull. MT. VERNON—Wilbur Hawley Gilmore; Andy Hall; Charles Wesley Hall; Charles Judson Poole; Orvel Addison Suttic; Todd Pope Ward.

Jersey County

JERSEYVILLE—Augustus Stout Hunt; Carl Frederick Lewis; Hayden Frederick Threlkeld.

Jo Daviess County

APPLE RIVER—Chester Abram Brink. GALENA—Harry Frederic Smith.

Kane County

AURORA—Elven James Berkleiser; George Alexander Darmer; Leroy Bertram Elliston; Clarence Umfred Geyer; Jefferson Davis McCullough Jr.; Percy Earl Rogers; Adam Edward Sherman; Elmer Merrill Thomas. ELGIN—Egbert W. Fell; Howard Talcott Knight; James Kink Pollock; Romney Moore Kitehey; Henry George G. Schmidt. HAMPSHIRE—Lee Stanley Cossell. KANEVILLE—Ralph Alonzo Claridge. ST. CHARLES—Daniel Edward Egan.

Kankakee County

GRANT PARK—Carl Henry Nielsen. KANKAKEE—Wilson K. Dyer; Walter Ari Ford; Ernest Nelson Greeman; Edwin S. Hamilton; Chas. R. Lockwood; Krikore Manong Manougian; Thomas James Riach; Charles Ricksher; Jesse Henry Roth. MANTENA—Orvan Abijah Phipps. MOMENCE—Anson LeRoy Nickerson.

Kendall County

PLANO—Gerson Fredrickson; Arthur E. Lord.

Knox County

DAHINDA—Richard James Bedford. GALESBURG—Benj. D. Baird; Julian Dawson; Edward C. George Franing; Guy A. Longbrake; William H. Maley; James Fulton Percy; Arthur Franklin Stotts. ONEIDA—Charles Warren Hunter; Alexander Fraser Stewart.

Lake County

ANTIOCH—Halley Ambrose Smith; John Arthur Turner. DEERFIELD—Charles Johnston Davis. GREAT LAKES—Frank W. Cannon; James A. Duggan; Frederick Ludwig; Jeremy J. Sharpe. HIGHLAND PARK—Harry Burton Roberts. HIGHWOOD—Ruffin Barrow Jacks. LAKE FOREST—Theodore S. Proximire. NORTH CHICAGO—Alford Edward Budde; Jos. Francis Mieczynski. WAUKEGAN—Frank Marion Barker; Benj. Jerome Schwartz; Roland B. Taber; William R. Turner.

La Salle County

DANA—Ora Richard Saul. LA SALLE—John Wolfgang Geiger. LELAND—William Edwin Chapman. MARSEILLES—Albert L. Stebbings. MENDOTA—Edgar Charles Cook. OGLESBY—Ralph Gates Cressman. OTTAWA—Homer King Nicoll; Roswell Talmadge Pettit. PERU—Benj. Walter Provost. SERENA—Benj. Dean Mosher. STREATOR—John Edw. Clark; George A. Dicus; Charles John Higinbotham; Harry Sumner Lester; George J. Powers; Clarence G. Reno.

Lawrence County

BRIDGEPORT—William R. Mangum. LAWRENCEVILLE—Everett Monroe Cooley; Tom Kirkwood; Kenneth Earl Montgomery; Ralph Randolph Trueblood. PINKSTAFF—James Alvin Emmons. ST. FRANCISVILLE—Randolph Snider.

Lee County

DIXON—Edmond Burt Owens; George P. Powell; Charles Albert Robbins.

Livingston County

CHATSWORTH—Franklin W. Palmer. CORNELL—Charles Morgan Ceen. CULLOM—John Gillman Dwyer. FAIRBURY—Clyde S. Brewer. FORREST—Walter Franklin Duckett; Glenn Stewart Evans. ODELL—Daniel Thomas Cole. PONTIAC—Irwin Bach; Victor Mackay Daly; Clarence Martin Dargan; Alonzo Bolen Middleton. SAUNEMIN—Osman Ames Coss.

Logan County

CHESTNUT—Geo. Stephen Mikkelson. ELKHART—Jos. Theodore Woodward. LINCOLN—Walter Arthur Bressmer; Wm. Walter Coleman; William Holmes Dyer; Emery Clizbe Gaffney; Joseph Martin Knockel; Calvin Carlin Montgomery. MT. PULASKI—Herbert Diekins Ryman; Henry M. Van Hook. NEW HOLLAND—Wm. Eugene Kendall.

Macon County

BLUE MOUND—Clinton Levi Montgomery. DECATUR—Verne Edw. Cannon; John Maurice Hayes; Geo. Elmer Lyon; Jesse Taylor McDavid; Robert Lyman Morris; James Redmon; Harry Louis Schultz; Frank Elbert Smith; John Clair Thompson; Charles Edwards West; Arthur F. Wilhelm; Oscar Yarnell. FORSYTHE—Lucien Nelson Lindsey.

Macoupin County

BUNKER HILL—Robert Etris Bley. GILLESPIE—Raschall N. Bowman; Frederick Carl Vogt. MEDORA—John Edw. Walton. MT. OLIVE—Gustav A. Floreth. NILWOOD—David Arthur Morgan. STAUNTON—John Bishop Hazel Jr.; Eugene Robert Van Meter. VIRDEN—Thos. W. Morgan.

Madison County

ALTON—Walter August Day; James Bernard Hastings; Louis Hodi Hayes; Harry Rodgers Lemen; Alexander Peter Robertson; Maurice Rulon Williamson.

COLLINSVILLE—Lay Gordon Burroughs; Theodore Fredk. Reusch. EDWARDSVILLE—Eugene Frank Wahl; Howard Eliphalet Wharf. GLENCARBON—Osmon Charles Church. GRANITE CITY—Philip Marshall Dale; Leslie Dorse Darner; William Friar Grayson; Ernest Alfred Purnell; Robert Dayton Luster; Harry Pierce Reuss. MADISON—Mal-fred Hamm. NEW DOUGLAS—Edw. Karl Allis. VENICE—Ralph Beedle Scott. WOOD RIVER—Hudson McBain Gillis.

Marion County

CENTRALIA—Francis Main Edwards; Frank W. Hall; John Carroll Hall; Julius Peter Kissel. SALEM—Harry L. Logan; Warren Robert Rainey. SANDOVAL—Hobert Conway Ruddick.

Marshall County

LA ROSE—Joel Albert Eastman. VARNA—Louis Schwambach. WENONA—Edwin Simpson Gillespie; Reuben A. Moffett.

Mason County

EASTON—Martin Warner Hanson; Russell R. Tomlin. BATH—Howard Steward Maupin.

Massac County

METROPOLIS—Benjamin Thane; Charles Edward Tucker.

McDonough County

BARDOLPH—William W. Hendricks. BUSHNELL—George Rueben Blackstone. COLCHESTER—Bruce Ashton Harrison. MACOMB—Knowles Carr; David R. Scott.

McHenry County

ALGONQUIN—Herbert Henry Pillinger. HARVARD—Phiny R. Blodgett; Arthur Raymond Knauf; Jesse Garfield Maxon. IEBRON—Harvey Willard Tupper. HUNTLEY—Oliver Isaiah Statler. MARENGO—William V. Gooder. WOODSTOCK—Clyde Franklin Baccus; Horace Montague Francis; Emil Windmueller.

McLean County

BLOOMINGTON—Thomas W. Bath; Andrew James Casner; Roy Asa Freeman; William Watson Gailey; Wilfred Henry Gardner; Frank Roy Maurer; Robert Avery Noble; Arthur Earnest Rogers; Charles Richard Sanderson. CROPSEY—George O. De Moss. ELLSWORTH—James Knox Johnson. LE ROY—Gwyn Forbes Haig; Orris Martin Thompson. LEXINGTON—Chas. Elder Lindsay; William Thomas Williamson. NORMAL—Frank E. Sayers; Marshall Wallis. SHIRLEY—Chas. Ellis Shultz. STANFORD—Edward Robert Herrmann. NORMAL—Ofard Francis May.

Menard County

ATHENS—Oliver P. Brittin. PETERSBURG—Loran Ernest Orr.

Mercer County

ALEDO—James Archibald Kleinsmid; Albert Newton Mackey. NEW BOSTON—Charles F. Childs.

Montgomery County

FARMERSVILLE—Karl Lowell Hayes. HILLSBORO—George A. Clot-felter; Edmund T. Douglas; Albert William Lindberg. IRVING—Robert Newton Canaday. LITCHFIELD—Geo. Washington Cox; Ross William Griswold; Myron Webster Snell. NOKOMIS—Grover C. Bullington. WAGGONER—Charles Ford. WITT—John Nelson Adams.

Morgan County

ALEXANDER—Wade Hampton Schott. COLUMBIA—Louis Carl Sodel. CONCORD—Samuel Rufus Magill. JACKSONVILLE—Elmer Lorenzo Crouch; Tully Overall Hardesty; Henry Clay Woltman. MEREDOSIA—Jesse Harrison McIntosh. WAVERLY—Paul R. Allyn; Walter H. Allyn.

Moultrie County

DALTON CITY—Samuel Lorenzo Stevens. SULLIVAN—William Perr Davidson; Ora Monroe Williamson.

Ogle County

MONROE CENTER—Harry H. Davis.

Peoria County

ELMWOOD—Harlan William Long. HANNA CITY—William Spencer Needham.

PEORIA—Sherman A. Askew; Robert C. Bradley; Harry Eugene Brown; Walter Conrad Cook; Hugh Edwin Cooper; Harry Anthony Durkin; Sidney Harris Easton; Emmett A. Garrett; Harry Hamilton Hanly; Sandor Horwitz; Walter Louvernia Hougland; Frederick Henry Maurer; Alva Edgar McReynolds; Elmer Edwin Nystrom; Walter Jewell Prie; James H. Shepperd; Casey Sims; Arthur Sprenger; Peter Thomas Spureck; William John Uppendahl; William David Cook.

Perry County

CUTLER—James Vernon Hoofter. DU QUOIN—Thomas Bartlett Kelly. PINCKNEYVILLE—Frank Brooks Hiller. SWANWICK—James Samuel Cleland.

Piatt County
ATWOOD—Jos. Alexander Pinckard. REMENT—Albert Field. MANSFIELD—Eugene Yetman Young. MONTICELLO—Winfield Grant McDeed.

Pike County
CHAMBERSBURG—Jesse Harrison McIntosh. GRIGGSVILLE—George E. Herman. PLEASANT HILL—John William Turner. PITTSFIELD—Frank Newton Wells.

Pope County
BROWNFIELD—Lewis Marshall Field. WALTERSBURG—Roy Albert Walther.

Fulaski County
MOUND CITY—Alonzo Thomas Griffin; Hall Whiteaker.

Putnam County
FLORID—Frank Erwin Brinckerhoff.

Randolph County
RED BUD—John Turk Riess.

Richland County
OLNEY—Ralph King; Ernest Jerome Worthington.

Rock Island County
EAST MOLINE—Thomas Franklin Neil; Walter Walden. MOLINE—August Henry Arp; Henry Sumner Bennett; Arvid Ernest Kohler; Karl W. Wahlberg; Arthur Dudley West; Hiram La Mont Youtz. ROCK ISLAND—Ralph Dart; Joseph R. Hollowbush; Bernard Miller; Patrick Francis O'Farrell; Abraham B. Rimmerman; Mervin Hays Smith; Alfred Stocker; Ford Cooper Walsh. SILVIS—William Day Chapman.

Saline County
ELDORADO—Charles Lowery Garris; Franklin Benjamin Pearce; Silas Walter Williams. HARRISBURG—Charles M. Fuson; Douglas Archer Lehman; Herbert Lloyd Thompson. STONEFORT—John M. McSparin.

Sangamon County
ILLIOPOLIS—Corwin Spencer Mayes. NEW BERLIN—Charles McLaughlin; Thos. Rhea Maxwell. SPRINGFIELD—Emil Lawrence Bernard; Robert Irving Bullard; Walter William Coen; Herman Harrison Cole; Gladstone C. Conlin; Frank Nathaniel Evans; Francis Drennan Fletcher; Edwin Bruce Godfrey; Charles Frederick Harmon; Herbert Bailey Henkel; Charles Hibbe; Harry Lorenzo James; George Noble Kreider; Franklin Maurer; John R. Neal; Ira Elton Neer; Fred Summa O'Hara; Daniel Mortimer Ottis; Robert Emmett Smith; George Frederick Sorgatz; George Willard Staben; Christopher B. Stuart; Herman H. Tuttle; John A. Wheeler; Ernest Clifford White; John Joseph Wilkinson; Jay Thomas Wood.

Schuyler County
RUSHVILLE—Willis Frederick Harvey.

Shelby County
COWDEN—Thomas Ewing Cherry. FINDLAY—Carl Foster Snapp. SHELBYVILLE—Oliver C. Brown. TOWER HILL—Franklin Albert Martin.

Stark County
CASTLETON—Charles Wells Neill. OSCEOLA—Philip Fout Roberts. SPEER—Clauson Morril Wilmot. TOULON—Martin Rist Chase. WYOMING—John George Henson.

Stephenson County
FREEPORT—Elmer Howard Best; Floyd Ellsworth Best; James Ned Buchanan; William Jacob Rideout; Edward Warren Sikes; Clair Lazarus Stealy. WYOMING—John George Henson.

St. Clair County
BELLEVILLE—Walter Albert Dew; John Charles Gunn; George Engelmann Hilgard; William Lucius Meng; Grover Cleveland Otrich. EAST ST. LOUIS—Lee Davis Applewhite; Millard F. Arbuckle; Lawrence Judah Bernard; Tullie Van Boyd; William Walter Boyne; Irenaeus Aster Foulon; George Manting; Edw. Christian Spitz; Harley Gibson Stanton; Royal Tharp.

Tazewell County
EAST PEORIA—Arthur Caldwell Gillam. HOPEDALE—Harlan W. Brink. WASHINGTON—O. Prescott Bennett.

Union County
ANNA—Joseph A. Campbell; Christian Herman Diehl; David H. Keller; George Franklin Rendleman. JONESBORO—William Garland White.

Vermilion County
DANVILLE—Henry S. Babcock; Francis William Barton; John Tenroek Bird; Ernest Boone Downs; Mark M. Duffy; Arnold Wilhelm Arltz; Melvin Leo Hole; Roy Malley Montfort; Hiram E. Ross; Ira Joseph Scott; James Holland Williamson. FAIRMOUNT—Belza Newton Herman. GEORGETOWN—Marcus S. Fletcher; Elmer Maurice Smith. OPESTON—Robt. Stanton McCaughey. MUNCIE—Oscar W. Michael. IDGEFARM—Samuel Myers Hubbard. ROSSVILLE—Everett E. Howard.

Wabash County
KEENSBURG—Olen Clyde Brown. MT. CARMEL—Albert A. Ankenandt; Cale Curtis Craig.

Warren County
CAMERON—Henry Samuel Zimmerman. MONMOUTH—Harry Lewisampen. ROSSVILLE—George William Clarke.

Washington County
ASHLEY—Harry Ingraham Stevens. OKAWVILLE—Robert Berry Jack.

Wayne County
FAIRFIELD—Isaac Logan Garrison.

White County
CARMI—James Alfred Boyer; Frank C. Sibley. ENFIELD—Clinton Daley. GRAYVILLE—Hugh Q. Allison.

Whiteside County
MORRISON—Charles Henry Beadles. STERLING—Frank W. Brodck; Edward W. Wahl. TAMPICO—Archie S. Horn; Roy Hitchien Wilson.

Will County
CRETE—Warren Caldwell Blim. JOLIET—Francis Henry Gburczyk; John William Krohn; Horace Raymond Lyons; Harry Albert Myers; Frederick E. Roberg; Edwin Robert Talbot. PEOTONE—John Bell Howe. PLAINVILLE—John L. Aleshire.

Williamson County
CARTERVILLE—Andrew John Aldr. BRUSH—Frank Deason. CREAL SPRINGS—Paul Richard Copeland; Herbert George Hempler. HERRIN—Lester Wade Baker; Paul Gilbert Capps; William Henry Ford; Frank Clay Murrah. JOHNSTON CITY—Lewis H. Green. MARION—Harvey Austin Felts; Loren Lycurgus Fowler; Dausa Dow Hartwell.

Winnebago County
ARGYLE—Willard Phelps Earnery. DURAND—Charles Alexander Roberts. ROCKFORD—Gerald R. Allaben; Clarence McKee Cheadle; George Patrick Gill; Harold Harvey; Jos. S. Lundholm; William E. Park; John Rice Porter; Emanuel Matthew Rundquist; Alfred Arthur Willander. ROCKTON—Anthony Bernard Zwaska.

Woodford County
BENSON—William Clement Cotton. SECOR—Frank Emil Nagel. WASHBURN—Frank Blair Ireland.

INDIANA STATE MEDICAL ASSOCIATION
Officers 1917-18
Jos. R. Eastman, President.....Indianapolis
V. V. Cameron, First Vice President.....Marion
H. H. Martin, Second Vice President.....La Porte
E. A. Sturn, Third Vice President.....Jasper
Chas. N. Combs, Secretary-Treasurer.....Terre Haute

Councilor Districts and Officers
Chairman, W. R. Davidson, Evansville; Secretary, Chas. N. Combs, Terre Haute.
First District.—Vanderburg, Warrick, Spencer, Pike, Gibson, Posey and Perry counties. W. R. Davidson, Councilor, Evansville.
Second District.—Knox, Sullivan, Greene, Owen, Monroe, Daviess and Martin counties. J. P. Maple, Councilor, Shelby.
Third District.—Crawford, Dubois, Lawrence, Orange, Harrison, Scott, Clark, Floyd and Washington counties. Jos. D. Heitger, Councilor, Bedford.
Fourth District.—Bartholomew, Brown, Decatur, Jackson, Jennings, Jefferson, Ripley, Dearborn, Ohio and Switzerland counties. W. H. Stemm, Councilor, North Vernon.
Fifth District.—Vigo, Vermillion, Parke, Clay and Putnam counties. Jos. H. Weinstein, Councilor, Terre Haute.
Sixth District.—Rush, Hancock, Shelby, Henry, Wayne, Fayette, Union and Franklin counties. O. J. Gronendyka, Councilor, Newcastle.
Seventh District.—Marion, Hendricks, Morgan and Johnson counties. T. B. Eastman, Councilor, Indianapolis.
Eighth District.—Blackford, Delaware, Madison, Randolph and Jay counties. G. W. H. Kemper, Councilor, Muncie.
Ninth District.—Montgomery, Fountain, Boone, Clinton, Tipton, Tippecanoe, Warren and Hamilton counties. Fred A. Tucker, Councilor, Noblesville.
Tenth District.—Benton, Jasper, Newton, Porter, Laporte and Lake counties. E. M. Shanklin, Councilor, Hammond.
Eleventh District.—Carroll, Cass, Miami, Wabash, Huntington, Grant and White counties. G. G. Eckhart, Councilor, Marion.
Twelfth District.—Adams, Allen, Whitely, DeKalb, Noble, Steuben, Lagrange and Wells counties. E. E. Morgan, Councilor, Ft. Wayne.
Thirteenth District.—St. Joseph, Elkhart, Starke, Marshall, Kosciusko, Pulaski and Fulton counties. H. H. Miller, Councilor, South Bend.

HONOR ROLL
Adams County
BERNE—Daniel Dailey Jones.

Allen County
FORT WAYNE—Charles Griffin Beall; Daniel R. Benninghof; Raymond J. Berghoff; Howard Verosta Blosser; Henry Otto Bruggeman; Warren D. Calvin; Willis W. Carey; Marshall B. Catlett; Charles Rowley Dancer; Earl Coulson Eberly; Baruch M. Edlavitch; Waldo Clay Farnham; Adrian E. Fauve; John Henry Gilpin; Allen Hamilton; Donald Dinnie Johnston; Edgar Nelson Mendenhall; Dorsey Dean Metcalf; Miles F. Porter; Lyman Talmadge Rawles; Bonnelle Wm. Rhamy; Elmer Clayton Singer; Budd Van Sweringen; Lewis Parker Drayer.
HUNTERTOWN—Harry George Erwin.

Bartholomew County
COLUMBUS—Alfred Plummer Roope. ELIZABETHTOWN—Lonzo Harrison Redman. HARTSVILLE—Flavius Jasper Beck. HOPE—William Clyde Heilman.

Benton County
BOSWELL—Henley Harvey Hubbard. EARL PARK—Clyde T. Bundy.

Blackford County
HARTFORD CITY—William Wise. MONTPELIER—Marion Amos Emshwiller.

Boone County
JAMESTOWN—Thomas Brown Johnson.

Carroll County
CAMDEN—Thomas Logan Cooper; Benj. Franklin Wray. DELPHI—Charles Cass Crampton; Oliver Edward Griest. OCKLEY—Frederick C. Locke.

Cass County
LOGANSPOUT—Will W. Holmes; Harry Charles Johnson; James V. Nelson; James Justice Stanton; Rodney E. Troutman. ONWARD—Ara Carl Badders. WALTON—James Francis Hatfield. YOUNG AMERICA—Daniel Edgar Lybrook.

Clark County
HENRYVILLE—Stephen Benton Elrod. JEFFERSONVILLE—David Cohen; Claude Charles Crum; Henry Heft Reeder; James Henry Walker.

Clay County
BRAZIL—Clint C. Sourwine; Fred C. Dilley. CENTER POINT—Lewis Courtney Rentschler.

INDIANA									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total No. Men	Physicians Under 45	Physicians Under 55	Members of Co. Society M.R.C., etc.
Adams.....	337	11.6	21,840	753	29	1	10	20	1
¹ Allen.....	661	3.8	105,149	607	173	7	82	117	25
Bartholomew...	407	7.6	24,971	471	53	2	10	24	4
Benton.....	408	24.0	12,688	746	17	1	10	16	2
Blackford.....	168	11.2	15,820	1,054	15	1	8	15	2
Boone.....	427	10.4	24,673	601	41	3	13	24	1
Brown.....	324	54.0	7,975	1,329	6	..	3	3	..
Carroll.....	377	10.4	17,970	499	36	1	18	20	5
Cass.....	416	5.3	37,696	483	78	1	35	52	8
Clark.....	375	9.6	30,260	775	39	..	17	23	5
Clay.....	361	8.5	32,535	774	42	..	16	20	3
Clinton.....	408	7.5	26,674	493	54	..	21	33	4
Crawford.....	303	20.2	12,057	803	15	..	6	7	..
Daviess.....	433	11.7	27,747	749	37	2	13	21	4
Dearborn.....	313	11.1	21,396	764	28	1	16	23	6
Decatur.....	378	9.9	18,793	494	38	1	17	25	3
DeKalb.....	370	9.2	25,054	626	40	2	22	26	6
Delaware.....	392	3.8	52,718	516	102	3	37	56	10
Dubois.....	427	13.7	19,843	640	31	..	13	22	6
Elkhart.....	462	5.6	51,894	632	82	1	24	52	7
Fayette.....	216	9.8	15,085	685	22	..	12	19	2
Floyd.....	148	2.7	30,421	573	53	2	20	30	3
Fountain.....	395	10.1	20,439	524	39	..	16	25	7
Franklin.....	394	23.1	15,335	902	17	..	4	4	..
Fulton.....	367	14.6	16,879	675	25	..	8	17	..
Gibson.....	486	10.8	30,164	670	45	..	17	25	1
Grant.....	423	4.5	51,426	558	92	6	33	55	8
Greene.....	543	14.2	42,963	1,130	38	1	19	50	3
Hamilton.....	399	8.4	27,026	575	47	1	16	29	5
Hancock.....	307	9.9	19,030	613	31	1	13	23	1
Harrison.....	486	19.4	20,232	809	25	1	12	15	3
Hendricks.....	408	11.3	20,840	578	36	1	19	22	3
Henry.....	397	7.0	33,167	592	56	1	23	34	4
Howard.....	297	4.6	36,536	570	64	..	31	42	7
Huntington...	386	9.4	29,040	708	41	..	13	23	5
Jackson.....	518	15.6	24,747	749	33	..	14	20	2
Jasper.....	562	56.2	13,044	1,304	10	..	9	9	2
Jay.....	375	9.8	24,961	656	38	2	14	25	18
Jefferson.....	364	10.4	20,483	585	35	1	10	19	2
Jennings.....	383	23.9	14,203	887	16	..	6	7	2
Johnson.....	322	6.7	20,517	427	48	1	10	24	19
Knox.....	510	6.8	43,881	585	75	1	35	50	42
Kosciusko.....	541	12.0	27,936	620	45	..	19	29	9
Lagrange.....	387	18.4	15,148	721	21	..	10	12	2
Lake.....	492	2.7	145,891	819	178	6	93	109	11
Laporte.....	595	9.7	51,205	839	61	5	32	46	12
Lawrence.....	456	12.3	34,198	924	37	..	14	25	2
Madison.....	450	4.2	65,224	621	105	3	25	55	11
² Marion.....	397	0.5	312,153	421	740	36	441	563	332
Marshall.....	441	10.2	24,175	562	43	1	12	22	9
Martin.....	339	24.2	12,950	925	14	..	7	8	10
Miami.....	381	7.6	30,084	601	50	..	26	39	25
Monroe.....	416	11.5	25,288	702	36	2	12	26	4
Montgomery...	501	7.1	29,296	418	70	3	23	38	35
Morgan.....	406	10.1	21,709	542	40	..	17	23	7
Newton.....	405	22.5	10,543	585	18	..	7	13	9
Noble.....	417	13.9	24,355	811	30	..	14	19	25
Ohio.....	85	12.1	4,329	618	7	..	2	4	5
Orange.....	407	12.7	17,437	544	32	..	12	17	15
Owen.....	393	17.0	14,053	611	23	..	5	11	10
Parke.....	447	12.7	22,214	634	35	1	20	24	8
Perry.....	384	22.5	18,078	1,063	17	..	7	10	12
Pike.....	338	13.5	19,684	787	25	..	9	12	14
Porter.....	415	14.3	21,535	742	29	..	14	21	17
Posey.....	402	12.1	21,670	656	33	..	11	22	17
Pulaski.....	432	27.0	13,312	832	16	..	9	10	15
Putnam.....	483	14.6	20,520	621	33	..	10	20	21
Randolph.....	447	9.1	29,275	597	49	1	19	26	29
Ripley.....	448	13.1	19,452	572	34	1	14	19	17
Rush.....	409	13.6	19,349	644	30	..	14	23	21
³ St. Joseph.....	460	3.9	102,874	879	117	5	52	87	66
Scott.....	190	19.0	8,334	833	10	1	3	6	3
Shelby.....	407	9.2	27,027	614	44	1	14	28	15
Spencer.....	403	10.8	20,676	558	37	..	14	23	17
Starke.....	305	25.4	10,666	888	12	..	4	8	1
Steuben.....	305	8.7	14,274	407	35	1	9	11	8
Sullivan.....	460	10.4	37,135	843	44	1	19	35	41
Switzerland...	222	13.5	9,914	826	12	..	4	8	9
Tippecanoe....	503	6.9	41,087	570	72	1	41	53	53
Tipton.....	260	7.6	17,459	513	34	2	16	21	23
Union.....	162	20.2	6,260	782	8	..	3	5	6
⁴ Vanderburg....	233	1.5	81,576	554	147	5	69	102	78
Vermillion.....	254	8.4	21,502	716	30	..	15	19	15
⁵ Vigo.....	409	2.6	106,830	680	157	2	80	109	90
Wabash.....	425	9.8	26,926	626	43	3	18	26	26
Warren.....	368	11.5	10,899	340	32	1	6	26	19
Warriek.....	302	10.0	21,911	561	39	1	12	20	14
Washington...	519	17.3	17,445	581	30	..	10	13	8
Wayne.....	411	4.9	47,257	569	83	4	38	50	51
Wells.....	365	13.5	22,418	830	27	..	10	19	22
White.....	507	17.4	17,602	606	29	1	14	15	8
Whitley.....	338	12.0	16,892	603	28	1	12	14	20
Totals.....	36,045	7.5	2,914,193	611	4,763	135	2,103	3,109	2,591

1. Includes Fort Wayne, population 74,352; physicians 147 [M.R.C. 24].
2. Includes Indianapolis, population 265,578; physicians 712 [M.R.C. 114].
3. Includes South Bend, population 67,000; physicians 89 [M.R.C. 11].
4. Includes Evansville, population 72,125; physicians 141 [M.R.C. 19].
5. Includes Terre Haute, population 64,806; physicians 122 [M.R.C. 16].

Clinton County

FRANKFORT—Archibald G. Chittick. GEETINGSVILLE—John Eayre Robison. KIRKLIN—Losey L. Harding. ROSSVILLE—Noah Webster Clark.

Daviess County

ALFORDSVILLE—Aaron M. Winklepleck. ODON—Ira Edgar Bowman. WASHINGTON—George Washington Boner; Revel Francis Banister.

Dearborn County

AURORA—John Martin Jackson; Omer Hall Stewart; Arlie John Ulrich. LAWRENCEBURG—Arthur Thomas Fagaly. MOORES HILL—David E. Johnston; Earl H. Mitchell.

Decatur County

GREENSBURG—Charles Robert Bird; Charles Edward Philpps; Paul Raphael Tindall.

DeKalb County

AUBURN—Archie Verl Hines; Dorsey M. Hines; John Augustus Leas. GARRETT—John Wm. Thomson. WATERLOO—Ethan Alexander Ish; Espy Karl Schurtz.

Delaware County

DALEVILLE—Franklin Taylor Kilgore; O. Arnold Tucker. MUNCIE—Frederick L. Bunch; Eldo Horace Clauser; Fred Leib Glascock; Earle S. Green; Byrl Raymond Kirkin; Michael Robinson. SELMA—Samuel Gilbert Jump. YORKTOWN—John Frank Downing.

DuBois County

FERDINAND—Andrew Fidelis Gugsell. HAYSVILLE—Elmer Ernest Eifert. HOLLAND—Herman Marcus Baker. HUNTINGSBURG—Sherman Logan McKinney; Harvey Kasper Stork; Leo Albert Salb.

Elkhart County

ELKHART—Orrie Ianthas Hetsler; Lloyd Albert Elliott; James Anderson Work Jr. GOSHEN—George W. Kirby. MILLERSBURG—Lloyd Himbaugh Simmons. WAKARUSA—Charles Leonard Amick. ELKHART—George Watson Twomey.

Fayette County

CONNERSVILLE—Herman Wayne Smekser. EVERTON—Melville Ross.

Floyd County

GALENA—Albert Glenn Kinberger. NEW ALBANY—George Huff Day; Charles Frederick Voight.

Fountain County

ATTICA—Clinton G. Beckett; Louis Austin Bolling; J. Roy Burlington. COVINGTON—James Wesley Aldridge. FOUNTAIN FARM—Charles Wallace Taylor. SILVERWOOD—Jos. C. Keller. WALLACE—Theophilus Parvin Caplinger.

Gibson County

PRINCETON—Harry Baldwin Gudgel.

Grant County

JONESBORO—Philip H. Lucas. MARION—Merrill Stamper Davis; Otis McQuown. NATIONAL MILITARY HOME—John Ernest Kelly; Charles Edward Peters; Henry C. Weber. ROANOKE—Edwin Wm. Schultz. UPLAND—Ellis T. Stout.

Greene County

JASONVILLE—Alfred Wilbur Hadley. SOLSBERRY—Frederick Samuel Deem. WORTHINGTON—Harvey Samuel Cook.

Hamilton County

NOBLESVILLE—George D. Haworth; Sam Wishard Hooke; Henry Herbert Thompson; Frederick A. Tucker. SHERIDAN—Edward Milton Young.

Hancock County

MAXWELL—Samuel D. Clayton.

Harrison County

CORYDON—Alva G. Thomas. DEPAUW—Charles Culley Sutter. LANESVILLE—Benjamin Jay Teaford.

Hendricks County

DANVILLE—Jacob Ader; Jay Harold Grimes. NORTH SALEM—Elmo Ray Royer.

Henry County

KENNARD—Walter Thomas Vandament. NEWCASTLE—Clyde C. Bitler; Chester Adam Marsh; E. K. Westhafer.

Howard County

GREENTOWN—Elbert Earl Freeman. KOKOMO—Chas. J. Adams; Clarence Leroy Bock; Frederick Arthur Henderson; George Dixon Marshall; Byron Johnson Peters; Burton A. Thompson.

Huntington County

BIPPUS—Homer S. Hewitt. HUNTINGTON—Mitchell Chase Clokey; Maurice Hill Krebs. MARKLE—Robert Gray Johnston. ROANOKE—Spies Valentine Wilking.

Jackson County

SEYMOUR—Edwin G. Kyte; John Harper Niles.

Jasper County

RENSSELAER—Cecil Emerson Johnson. WHEATFIELD—Malcolm Brown Elye.

Jay County

BRYANT—Grover Allen Smith. PORTLAND—Edgar Raymond Hiatt.

Jefferson County

BROOKSBURG—William Scott Dow. HANOVER—Carl Henning.

Jennings County

BUTLERVILLE—Miles Frederick Daubenhayer. ZENAS—Charles Colfax McFarlin.

Johnson County

EDINBURG—Walter Waldo Wright. NINEVEH—Ephraim Bassiel Chenoweth. WHITELAND—Chas. Edwin Woodcock.

Kosciusko County

CLAYPOOL—George Carr Taylor. LEESBURG—Pierre Gerold Fermier. MILFORD—Forrest Johnston Young. SIDNEY—Paul A. Garber. SYRACUSE—Clifford Ray Hoy. WARSAW—Chas. Norman Howard; Samuel C. Murphy; L. J. Quillin; August Omer Truelove.

Knox County

BICKNELL—Charles W. Ashley; Forrest Leslie Reese. DECKER—Emery Frank Small. VINCENNES—Myron Curtner; Morris H. C. Johnson; James Norman McCoy; Everett Herbert Pea. WHEATLAND—Robert Stanton Wood.

La Grange County

LA GRANGE—Carlos C. Rozelle; John Theron Short.

Lake County

EAST CHICAGO—Helmuth C. W. Ernst; Porter W. Hopkins; Robert Pear. GARRY—Harry Marvin Hosmer; John Eugene Metcalf; Albert August Watts; Irving Henry Willett. HAMMOND—Joseph Allen Graham. INDIANA HARBOR—Eli Levin. WHITING—Edward Lucian Dewey; dw. Kellan Newton.

La Porte County

KINGSBURY—Ben Webster. LA PORTE—George Washington Kimball; Byron G. Marlay; Harvey H. Martin; George Robert Osborn; Wilbur Wesley Ross; Franklin Trumbull Wilcox. MICHIGAN CITY—John Whitfield Bowers; Russell Adams Gilmore; Arthur Leil Leeds. WESTVILLE—Edwin Geo. Nelson; Forrest Joy Pinkerton.

Lawrence County

BEDFORD—Michael Beek Guthrie; Olin Bertram Norman.

Madison County

ANDERSON—Albert W. Collins; John Bartow Fattie; Henry Washington Ante; George H. Hockett; Lee F. Hunt; Thomas Monroe Jones; Weir Mitchell Miley; James McCann Stoddard; Julius Ross Tracy. SUMMITVILLE—Lewis Franklin Mobley; Will Carleton Moore.

Marion County

BEECH GROVE—Raymond Alfred Butler. BROAD RIPPLE—John A. Larsh.

INDIANAPOLIS—Horace Russell Allen; John A. M. Aspy; Clarence Earl Barcus; Charles Fred Bayer; Thurman Ross Beaver; Raymond Cle Beeler; George Washington Bowman Jr.; Frank Alembert Brayton; Eugene Buehler; Earl Russell Bush.

Clayton C. Campbell; Larue D. Carter; Edmund Dougan Clark; Paul Arnett Coble; Charles J. Cook; Chas. E. Cottingham; Kenneth Lawrence Craft.

Benjamin Thomas Daggy; John Thomas Day; Louis Elmer Devendriff; William August Doeppers; Edouard Julien Dubois; Lehman M. Dunning. Jos. Rilus Eastman; Scott Robert Edwards; John W. A. Emhardt; Leonard Austin Emsminger; William Jennings Erkenbeek.

Frederick Falk; Elmer Funkhouser; Chester North Frazier. Wm. Elmer George; William Walden Gibbs; Herman Henry Gick; Iols Bachman Graham; Nathan P. Graham; Arthur Ernest Guedel; Charles B. Gutellius; George Lewis Guthrie.

Earl Hazelton Hare; Fred Earl Hickson; Walter Frederick Hickman; Claude DuVall Holmes; Amel Wolfe Hon; Fred Leo Hosman; Charles elph Humes; Paul Thomas Hurt; Frank Frazier Hutchins. Henry Wilbur Irwin; Gustavus Brown Jackson; Charles Harold Jones; Lawrence Kenneth Jones; Thomas B. Victor Keene; Bernays Kennedy; Edwin Nicholas Kime; Luke W. Kuebler.

Napoleon LaBonte; Bernard John Larkin; George Winlock Lee; Mason Light; Ralph Laudis Lochry.

John Albert Martin; Paul Frederick Martin; Leslie Howe Maxwell; Clifford Hill Hayfield; Edward Leroy McCoy; Carleton Buel McCulloch; Jesse Leroy McElroy; Desmond F. McGuire; Donald Lee Miller; Robert Martin Moore; Eugene Bishop Mumford.

Harold Nimal; Jay D. Nusbaum; Lyman Overshiner. Lafayette, Page; Geo. H. Pendleton; Smith Alonzo Quimby.

Simon Reisler; Robert Eldon Repass; Joseph Warren Ricketts; Earl Rinker; Fowler Burdette Roberts; William Luther Royster; John Salb; Louis H. Segar; Harry Albert Shimp; Floyd Nicholson Shipp; John William Sluss; James Madison Smith; Troy Smith; Roy Lee Smith; Edgar Frank Sommer; Chas. Robert Sowder; Fredk. Alexander Stokes; Roy Basil Storms; Walter Moses Stout; Cecil G. Sutherland.

Ray Henry Thomas; Harrison Thurston; Elston Lacroix Titus. Ernest DeWolfe Wales; Frank Columbia Walker; Joseph Henry Ward; Frederick Charles Warfel; Cecil Lafayette Wayman; Hillard L. Weer; Arthur Ferdinand Weyerbaecker; Edward Augustus Willis; George W. Wood; Charles Edwin Woods.

INDIANAPOLIS—Harold Simon Hatch; John Ray Newcomb.

MIDDLEBURG—Melvin S. Teters. NEW AUGUSTA—Charles Raymond Teters. OAKLANDON—Harold S. Hatch.

Marshall County

ARGOS—Frank Hetherington Kelly. BOURBON—George Lyman Marshall. BREMEN—Raymond Chase Denison. CULVER—Oliver Carlisle Bennett; Homer Hinton Tallman. PLYMOUTH—John J. Hardy; H. Paul Weston; Harry Ernest Woodbury; Harry Knott.

Martin County

INDIAN SPRINGS—John William Pahmeier.

Miami County

BUNKER HILL—William C. Moss. CHILI—Homer Earl Line. CONVERSE—Andrew Sutton Newell. PERU—Ottho R. Lynch; George Warren Newell; John Paul Spooner; George G. Van Mater.

Montgomery County

CRAWFORDSVILLE—Nathan Austin Cary; Chester Warren Howard; George Thomas Williams. LADOGA—John Burr Talmage. LINDEN—James O'Dell Rhea. MACE—Harry Blon Williams. WAVELAND—Thomas Zopher Ball.

Monroe County

BLOOMINGTON—Raymond A. Akin; Fletcher Gardner. BLOOMINGDON—Geo. Frank Holland. ELLIOTTSVILLE—Walter William Harris.

Morgan County

MARTINSVILLE—George Dales Breedlove; Frank C. Robinson. MONROVIA—Everett Floyd Grave. MOORESVILLE—Millard F. Brackney.

Newton County

BROOK—Glen David Larriison.

Noble County

ALBION—John W. Green. LIGONIER—Virgil G. Hursey.

Orange County

FRENCH LICK—Joseph Rodolphus Dillinger. WEST BADEN—Harry Sharp.

Parke County

JUDSON—Grover Carlisle Price. MONTEZUMA—Omer Atherton Newhouse. ROCKVILLE—Joseph R. Bloomer; Edward G. Brandenberger; John Julian Connelly; Raymond B. T. Sweany; Raymond Earl Swope; Chester Samuel White.

Perry County

MAGNET—James Humbert. TELL CITY—Fred Nathaniel Williams.

Pike County

PETERSBURG—Edward S. Imel.

Porter County

VALPARAISO—Claude Weldy; Simon J. Young.

Posey County

NEW HARMONY—Kelley Charles Fitzgerald. STEWARTSVILLE—George Henry Parmenter.

Pulaski County

STAR CITY—Edward Estill Johnston.

Putnam County

GREENCASTLE—Joseph Franklin Gillespie; Brandt Elmer Lemmon. RUSSELLVILLE—David Emanuel P. Reed.

Randolph County

CARLOS—Charles Earl Martin. UNION CITY—Robert William Reid; Raymond A. Voisinet; Marshall A. Welbourn. WINCHESTER—Ivan Ernest Brenner; John Stanley Robinson. UNION CITY—Ward Clifton Zeller.

Ripley County

CROSS PLAINS—Charles David Ryan. MILAN—Irving Alcedo Whitlatch. NAPOLEON—Lafayette Thomas Cox. PIERCEVILLE—Hubert P. Butts. VERSAILLES—Tony Edward Hunter.

Rush County

GLENWOOD—Harry S. Osborne. MILROY—Merton Almond Farlow. RUSHVILLE—Lowell M. Green; Carroll J. Tucker.

Scott County

LEXINGTON—Charles B. Matthews. SCOTTSBURG—Edwin Mercer Wells.

Shelby County

MORRISTOWN—Harold Bailey Cox. SHELBYVILLE—Tell C. Waltermire. WALDRON—Sewell Briggs Coulson.

Spencer County

HATFIELD—John Clay Glackman. ROCKPORT—Orlon Chapin Snyder.

St. Joseph County

MISHAWAKA—Theodore Frederick Seymour. SOUTH BEND—Albert Edward Barber; Harry Boyd-Snee; Harry Linford Cooper; Thomas James Dehey; Thos. Pope Goodwyn; John Samuel Hickman; Hugh H. Miller; Edgar Harris Myers; Adam F. Panek; Robert Clarence Shanklin; Perry C. Traver; John Emerson Whitehill. WYATT—Leslie Ambrose Kuhn.

Steuben County

ANGOLA—Mark Duane Gundrum; Frank B. Humphreys; William Henry Lane. FREMONT—Blaine Andrew Blosser. HAMILTON—Angus Laverne Cameron.

Sullivan County

FARMERSBURG—Harry Clay Odell. SULLIVAN—Paul Higbee.

Switzerland County

EAST ENTERPRISE—Wesley Marion Hall. VEVAY—Daniel W. Dodd; Alva A. Shadday.

Tippecanoe County

LAFAYETTE—Arett C. Arnett; Manford Marion Clapper; Don C. McClelland. ROMNEY—Ora Lee McCay.

Tipton County

SHARPSVILLE—Ernest Edward Leeson. TIPTON—Hanson Smiley Gifford; Linley Murray Reagan; Arvine Earl Mozingo; Robert Milton Recobs. WINDFALL—Burt Vivian Chance.

Vanderburg County

EVANSVILLE—Wm. Robert Arthur; Ross Bradley Bretz; Joseph Burnside Cox; William Ruston Davidson; Wallace Curtis Dyer; William S. Ehrich; Ephraim Melvin Folsom; Warren Wilburn Hewins; John George Huber; Samuel Rudolph Laubacher; Paul Vernon Lynch; Edgar Franklin Magenheimer; Benoni Stinson Rose; Howard Randall Thompson; Reavill Millard Walden; Joseph Herbert Willis; Arthur Henry Wilson; Geo. Howard Wilson. MT. VERNON—George Wheeler Wilson. EVANSVILLE—Jeremiah Jackson.

Vermilion County

CLINTON—Frank McHarry Beeler; Raymond Evans. DANA—William Cleveland Myers. NEWPORT—Ithimer Maxwell Casebeer; Jones Lindsey Saunders.

Vigo County

NORTH TERRE HAUTE—Earl Martin Shores. RILEY—Herchel Victor Bruner. TERRE HAUTE—Oliver Alexander; Leon Francis Barbazette; Lyman A. Burnsides; Otto Casey; Chas. Nathan Combs; Malachi R. Combs; James Lyle Fortune; John Elias Freed; Wilfred P. Frelich; George Thompson Johnson; Melcherd Heimer Kutch; Albert M. Mitchell; Thomas Cromwell Stunkard; Jos. Hamilton Weinstein; Edward Andrew Weir. WEST TERRE HAUTE—Rufus Joel Danner. TERRE HAUTE—Joseph Adolph Frisz.

Wabash County

LA FONTAINE—James Lynn Walker. ROANN—James Gordon Kldd. WABASH—Thomas Kirby Davis; Walter Amazia Domer; Laurenee E. Jewett; Frederick Meredith Whisler.

Warren County

KRAMER—Robt. Estes Lee; Edward Orton Little; Walter D. Martin. PINE VILLAGE—Duffield Dufferin MacGillivray. WEST LEBANON—Earl Emerson Johnson.

Warrick County

BOONEVILLE—John Tilden Samples. LYNNVILLE—Richard L. Ralabourn.

Washington County
SALEM—Jules Lewis Bierach; Ervin Eugene Huckleberry.

Wayne County
EAST HAVEN—Joseph Sherman Craig; Fredk. L. Darrow. RICHMOND—Thomas Pounall Govan; Julius Johnston Grosvenor; Stephen Chas. Markley; Walter Leroy Misener; Arthur James Whallon.
EAST HAVEN—Lee Marcus Green.

Wells County
PETROLEUM—Geo. Burr Morris.

White County
BROOKSTON—L. B. Rariden. BURNETT'S CREEK—Walter McBeth. MONTICELLO—Guy Rupert Coffin.

Whitley County
COLUMBIA CITY—David Leston Lutes; Benjamin Franklin Pence. SOUTH WHITLEY—Fred G. Eberhard; Bruce David Hart.

IOWA STATE MEDICAL SOCIETY
Officers 1917-18

J. N. Warren, President.....Sioux City
J. E. Luckey, First Vice President.....Vinton
H. B. Gratiot, Second Vice President.....Dubuque
T. B. Throckmorton, Secretary.....Des Moines
T. F. Duhigg, Treasurer.....Des Moines

Councilor Districts and Officers

First District.—Henry, Jefferson, Lee, Louisa, Van Buren, Des Moines and Washington counties. John R. Walker, Councilor, Ft. Madison.

Second District.—Clinton, Iowa, Jackson, Johnson, Muscatine and Scott counties. L. W. Littig, Councilor, Iowa City.

Third District.—Blackhawk, Bremer, Buchanan, Butler, Delaware, Dubuque, Franklin, Wright and Hardin counties. W. A. Rohlf, Councilor, Waverly.

Fourth District.—Allamakee, Cerro Gordo, Chickasaw, Clayton, Fayette, Floyd, Howard, Mitchell, Winneshiek and Worth counties. Paul E. Gardner, Councilor, New Hampton.

Fifth District.—Benton, Cedar, Grundy, Jones, Linn, Marshall and Tama counties. G. E. Crawford, Councilor, Cedar Rapids.

Sixth District.—Davis, Jasper, Keokuk, Mahaska, Monroe, Poweshiek and Wapella counties. Smith A. Spilman, Councilor, Ottumwa.

Seventh District.—Dallas, Madison, Marion, Polk, Storey and Warren counties. Channing G. Smith, Councilor, Granger.

Eighth District.—Adams, Appanoose, Wayne, Clarke, Decatur, Fremont, Lucas, Page, Ringgold, Taylor and Union counties. J. F. Aldrich, Councilor, Shenandoah.

Ninth District.—Adair, Audubon, Cass, Guthrie, Harrison, Mills, Montgomery, Pottawattomie and Shelby counties. A. L. Brooks, Councilor, Audubon.

Tenth District.—Palo Alto, Pocahontas, Winnebago, Boone, Calhoun, Carroll, Crawford, Emmett, Greene, Hamilton, Hancock, Humboldt, Kosuth and Webster counties. W. W. Beam, Councilor, Rolfe.

Eleventh District.—Buena Vista, Cherokee, Clay, Dickinson, Ida, Lyon, Monona, O'Brien, Osceola, Plymouth, Sac, Sioux and Woodbury counties. G. C. Moorehead, Councilor, Ida Grove.

IOWA									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Adair.....	573	33.7	14,736	866	17	1	9	17	2
Adams.....	427	30.5	11,131	795	14	1	6	7	1
Allamakee.....	639	27.8	17,328	753	23	..	8	18	2
Appanoose.....	513	11.9	30,725	714	43	..	23	32	2
Audubon.....	443	36.9	12,671	1,055	12	..	4	9	1
Benton.....	712	25.4	24,591	878	28	..	19	25	4
¹ Blackhawk.....	565	6.5	53,962	620	87	1	42	66	6
Boone.....	569	22.8	29,696	1,187	25	2	18	25	2
Bremer.....	434	19.7	16,968	771	22	1	7	16	2
Buchanan.....	567	17.2	19,748	598	33	2	19	43	7
Buena Vista....	571	23.8	17,212	717	24	..	12	22	4
Butler.....	577	21.4	18,014	667	27	1	8	25	1
Calhoun.....	568	20.3	17,808	636	28	3	13	25	4
Carroll.....	571	17.3	20,997	636	33	1	15	29	4
Cass.....	564	16.6	19,787	581	34	2	15	34	2
Cedar.....	570	21.9	17,765	683	26	..	14	23	3
Cerro Gordo....	567	8.8	31,734	495	64	3	22	19	9
Cherokee.....	573	44.0	16,863	1,297	13	..	20	24	8
Chickasaw.....	497	16.5	16,089	596	30	..	11	20	7
Clarke.....	428	28.5	11,028	735	15	..	5	6	..
Clay.....	533	35.2	14,656	915	16	1	9	15	1
Clayton.....	762	19.0	25,576	639	40	3	13	36	4
Clinton.....	691	13.5	46,532	912	51	2	32	45	8
Crawford.....	715	24.6	20,581	709	29	1	13	23	4
Dallas.....	589	14.4	25,610	624	41	1	23	33	8
Davis.....	501	23.8	13,315	634	21	1	9	12	2
Decatur.....	533	16.1	17,148	516	33	1	10	28	3
Delaware.....	571	28.5	18,564	928	20	..	9	20	2
Des Moines.....	409	8.0	36,257	710	51	2	19	42	3
Dickinson.....	376	34.2	9,465	860	11	..	4	11	..
² Dubuque.....	601	4.8	60,975	487	125	3	50	125	7
Emmett.....	393	28.1	11,360	811	14	1	5	13	2
Fayette.....	724	20.7	29,257	835	35	..	24	33	5
Floyd.....	495	19.0	18,213	700	26	..	17	19	2
Franklin.....	578	18.1	15,841	495	32	..	10	20	2
Fremont.....	507	16.3	16,067	518	31	1	12	31	2
Greene.....	574	23.0	16,339	653	25	..	14	24	2
Grundy.....	501	27.8	14,051	780	18	..	10	15	4
Guthrie.....	595	22.9	18,416	708	26	1	..	26	..
Hamilton.....	570	19.6	20,514	707	29	3	14	26	6
Hancock.....	570	35.0	13,886	857	16	..	6	16	4

IOWA—Continued									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Hardin.....	569	15.4	22,484	607	37	..	19	35	5
Harrison.....	691	22.3	24,327	784	31	1	17	30	5
Henry.....	427	9.7	18,640	423	44	..	18	31	2
Howard.....	468	29.2	13,929	870	16	..	9	11	4
Humboldt.....	431	28.7	13,013	867	15	..	9	13	3
Ida.....	430	22.6	11,656	613	19	1	10	18	3
Iowa.....	583	20.1	18,666	643	29	..	14	28	5
Jackson.....	632	22.6	21,258	759	28	1	12	25	6
Jasper.....	730	12.8	27,496	482	57	1	21	43	4
Jefferson.....	431	16.6	16,922	650	26	5	14	20	3
Johnson.....	610	65.0	27,330	290	94	..	52	82	16
Jones.....	659	21.2	19,050	614	31	..	16	24	4
Keokuk.....	578	13.5	21,225	498	43	3	18	40	5
Kossuth.....	973	42.3	24,200	1,052	23	..	13	22	2
Lee.....	511	6.4	38,101	476	80	1	39	76	10
³ Linn.....	709	5.1	70,153	508	138	6	58	105	20
Louisa.....	396	23.3	12,855	756	17	..	6	15	3
Lucas.....	432	16.6	15,120	581	26	2	12	12	3
Lyon.....	582	30.6	15,688	825	19	1	10	17	3
Madison.....	563	22.5	15,621	624	25	..	7	20	2
Mahaska.....	568	14.2	29,860	746	40	..	18	33	6
Marion.....	563	14.4	23,972	614	39	1	20	39	6
Marshall.....	572	10.2	32,994	587	56	4	28	56	4
Mills.....	438	18.2	15,811	658	24	..	16	24	3
Mitchell.....	463	28.9	14,435	902	16	..	7	13	1
Monona.....	686	31.2	17,378	789	22	2	12	22	2
Monroe.....	432	16.6	30,862	1,187	26	..	11	25	2
Montgomery....	424	17.7	17,297	720	24	3	11	18	2
Muscatine.....	432	10.0	30,427	707	43	1	19	29	2
O'Brien.....	569	20.3	18,582	663	28	..	13	22	1
Osceola.....	395	30.4	10,169	782	13	..	6	12	1
Page.....	531	14.0	24,773	651	38	1	21	27	3
Palo Alto.....	561	37.4	14,965	997	15	..	6	15	1
Plymouth.....	856	34.2	23,799	951	25	..	17	25	5
Pocahontas....	576	23.0	15,635	625	25	..	13	25	4
⁴ Polk.....	582	2.1	130,740	475	275	14	138	217	45
⁵ Pottawattomie	942	11.2	56,922	677	84	5	37	68	26
Poweshiek.....	580	17.0	19,965	587	34	2	17	30	3
Ringgold.....	540	24.5	13,280	603	22	..	13	22	1
Sac.....	574	28.7	17,039	851	20	1	8	15	..
⁶ Scott.....	449	3.8	66,162	582	117	2	67	93	20
Shelby.....	589	23.6	16,692	667	25	..	12	25	4
Sioux.....	760	28.1	26,642	986	27	..	16	27	2
Story.....	567	10.7	25,787	486	53	1	25	34	7
Tama.....	720	24.0	22,806	760	30	1	16	30	1
Taylor.....	534	21.4	16,549	661	25	..	10	22	2
Union.....	427	15.8	17,168	635	27	..	16	25	2
Van Buren.....	477	15.9	15,020	500	30	..	10	23	2
Wapello.....	428	6.5	39,433	606	65	..	26	48	11
Warren.....	570	20.3	13,194	471	28	..	11	23	3
Washington....	559	14.7	20,004	526	38	..	19	28	6
Wayne.....	524	15.8	16,184	490	33	1	14	31	3
Webster.....	714	14.0	38,811	761	51	1	17	50	9
Winnebago.....	399	26.6	13,564	904	15	1	7	14	1
Winneshiek....	686	27.8	22,238	889	25	2	6	20	4
⁷ Woodbury.....	864	5.7	82,315	541	152	2	88	119	23
Worth.....	399	33.2	11,188	932	12	..	8	12	..
Wright.....	576	23.0	19,654	786	25	..	9	30	7
Totals.....	55,587	13.9	2,476,526	618	4,004	107	1,775	3,156	2,595

- 3. Includes Cedar Rapids, population 36,583; physicians 96 [M.R.C. 16].
- 4. Includes Des Moines, population 99,144; physicians 254 [M.R.C. 41].
- 5. Includes Council Bluffs, population 31,131; physicians 51 [M.R.C. 13].
- 6. Includes Davenport, population 47,127; physicians 94 [M.R.C. 14].
- 7. Includes Sioux City, population 55,588; physicians 124 [M.R.C. 20].

HONOR ROLL

Adair County
FONTANELLE—Ira James Gibson. GREENFIELD—Earl Owen Reynolds.

Adams County
PRESCOTT—William Henry Clary.

Allamakee County
POSTVILLE—Otto James Blessin. WAUKON—Cecil G. Morehouse.

Appanoose County
MORAVIA—William Harris. MYSTIC—Laurell L. Lugar.

Audubon County
AUDUBON—Daniel Francis Mathias.

Benton County
BELLE PLAINE—Don Hamilton Newland; Carl John Snitkay; George William Yavorsky. BLAIRSTOWN—Raymond Alvah Seiler.

Blackhawk County
CEDAR FALLS—Thomas Johannes Heldt. WATERLOO—Elmer J. Dunkelberg; Leo Erwin Evens; Ben C. Everall; William Henry Jenks Jr.; Guthrie McConnell.

Boone County
BOONE—Mark Clyde Jones; Ben Tallman Whitaker.

Bremer County
SUMNER—Edwin Edward Wuttke. WAVERLY—Robert Henry Lott.

Buchanan County
INDEPENDENCE—Fred F. Agnew; Henry Clemend Allen; Percy B. Battey; Roy C. Jackson; Samuel Connell Lindsay; Judd Campbell Shellito. JESUP—Frank E. Shimer.

Buena Vista County
REMBRANDT—William Marvin Hubbard. STORM LAKE—James Horatio O'Donoghue.

1. Includes Waterloo, population 31,131; physicians 63 [M.R.C. 5].
2. Includes Dubuque, population 39,950; physicians 66 [M.R.C. 7].

Butler County

NEW HARTFORD—Dyre Henry Pelletier.

Calhoun County

LOHRVILLE—Edgar R. Earwood. MANSON—Thomas Blanchard Herick; Hugh Mullarky. ROCKWELL CITY—Lewis Edward Eslick; Jefferson Newton Holt.

Carroll County

BREDA—Edward Webster Bookhart. CARROLL—Milton Joseph Freeman. DEDHAM—Cecl Claude Bowle. TEMPLETON—Otis Philip Morganthalor.

Cass County

GRISWOLD—Harrison L. Wyatt. MARNE—Chas. Walter Lyon.

Cedar County

DURANT—Julius Lewis Shryer. LOWDEN—Albert John Charlton. MECHANICSVILLE—Frank Albert Priessman.

Cerro Gordo County

CLEAR LAKE—Albin Blackmore Phillips. MASON CITY—William Jacob Egloff; Charles Lemuel Marston; James Edward McDonald; Frank G. Murphy; Stephen Ambrose O'Brien; Burton French Weston; Burton Raymond Weston. ROCKWELL—John Francis Meany.

Cherokee County

CHEROKEE—Prentiss Bowden Cleaves; Richard Gardner Eaton; William Arthur Howard; Morley Daniel McNeal; Fisher B. E. Miller; Love Elce Pennington; LeRoy Anderson Wescott.

Clay County

SPENCER—Roscoe Durr Taylor.

Clayton County

FARMERSBURG—Jesse Clifford Ross. MCGREGOR—William Harper Thomas. MONONA—Kinsley Renshaw. STRAWBERRY POINT—George Earl Hesner.

Clinton County

CLINTON—David Sturgess Fairchild Jr.; Kurt Jaenicke; Edward L. Martindale; Harry Rogers Reynolds; Elmer Paul Weih. DE WITT—Morton Lyon. LOST NATION—Raymond Eugene Robinson. LOW MOOR—Ralph Frank Lusc.

Crawford County

CHARTER OAK—George Ray Hill; Thomas Fredrich Thomsen. MANILLA—Walter E. Draper. WESTSIDE—Charles Luther Patterson.

Dallas County

ADEL—Harry Clay Irvin. DE SOTO—Martin T. Brewer. PERRY—Christian Henry Dewey; Henry Irl McPherrin; Harry Blaine Wilkinson. REDFIELD—Henry Edward Kleinberg. WOODWARD—Thomas Lee Long. PERRY—Arthur James Ross.

Davis County

BLOOMFIELD—Paul Francis Guernsey; Charles Dalton Shelton.

Deeatur County

LEON—Clalremont Hogue Mitchell. LAMONI—Oscar Hedberg Peterson; Paul Forrey Stookey.

Delaware County

GREELEY—Walter W. A. Kresensky. MASONVILLE—Leonard James Bowman.

Des Moines County

BURLINGTON—George B. Crow; Arthur Churchill Strong; Edward John Wehman.

Dubuque County

DUBUQUE—Arlie Vernon Bock; Lafayette Helmuth Fritz; Eugene Lewis; Dan Laurence Mahoney; Harry Caldwell Parker; Alanson Madison Pond; Edward Harvey White.

Emmet County

RINGSTED—James Kaykendale Guthrie. WALLINGFORD—Thomas Vincent Golden.

Fayette County

HAWKEYE—Thomas Nelson Walsh. OELWEIN—Dan William Shine. WAUCOMA—Walter Henry Fox. WEST UNION—Thomas Andrew King; Frank Beach Whitmore.

Floyd County

CHARLES CITY—William Leighton Griffin. NORA SPRINGS—Oscar Herman Banton.

Franklin County

HAMPTON—George Frederick Johnston; Howard Hubbard Johnston.

Fremont County

HAMBURG—Royal Clark Danley. SIDNEY—Audley Emmet Nelson.

Greene County

GRAND JUNCTION—Andrew Irvin Reed. JEFFERSON—Benjamin Charles Hamilton Jr.

Hamilton County

STRAFFORD—Carl Kall. WEBSTER CITY—Robert Cochran Crumpton; Franklin Joseph Drake; Ward Hannah; Everett Eugene Richardson. WILLIAMS—Francis Stephen Carey.

Hancock County

BRITT—Walter Simmons Chester; Edward Alexander Couper. CORWITH—Rollin Slosson Fillmore Jr. GARNER—George Arthur Bemls.

Hardin County

ACKLEY—James W. Thornton. IOWA FALLS—Clarke W. Mangun; Clarence McCarty Wray. NEW PROVIDENCE—Garnet Smith Felt. STEAMBOAT ROCK—J. Willard Caldwell.

Harrison County

LOGAN—Hans Hansen. MODALE—Amos V. Cooper. MONDAMIN—Walter George Finley; Donald H. Pitts. WOODBINE—Haramont Nathaniel Anderson.

Henry County

NEW LONDON—Frank Raymond Mehler. SALEM—Edgar Allen Stewart.

Howard County

CHESTER—Andrew Clinton Hansen. CRESCO—William Thomas Daly; George A. Plummer. LIME SPRINGS—Herbert William Plummer.

Humboldt County

BRADGATE—Frank Harold Gaffey. LIVERMORE—John Joseph Bowes; Paul Nicolai.

Ida County

BATTLE CREEK—James McAllister; Eugene W. Wolcott. IDA GROVE—Edward S. Parker.

Iowa County

MARENGO—Ira Nelson Crow. MILLERSBURG—Louls Burton Amlok. NORTH ENGLISH—Ulysses Simpson Geiger; Harry Jacob Jones. WILLIAMSBURG—Irvin John Simi.

Jackson County

ANDREW—Leslie Worthington Rantz. BELLEVUE—John Chase Denison. MAQUOKETA—Louis B. Carson; Stuart Howard Bowman; Frederick J. Swift. MILES—William Darwin McFaul.

Jasper County

MONROE—John Wm. Billingsley. NEWTON—Charles Everett Moore. PRAIRIE CITY—Clyde Randolph Van Voorhis. KELLOGG—John Thomas Hanna.

Jefferson County

BATAVIA—John H. Baldrige. FAIRFIELD—James Frederick Clarke; Lora Douglas James.

Johnson County

IOWA CITY—Howard Lombard Beye; Thomas Roy Gittins; John B. Gregg; Edwin Elmer Hobby; Harry Rogers Jenkinson; Leo Arthur Nelson; James Joseph Rock; Jason Ned Smith; Elliott Sheldon Stong; Thomas Harrison Van Camp; Clarence Van Epps; Herman LeRoy Von Lackom; George John Wenzlick; Theodore A. Willis. MT. VERNON—Herbert Rappael Mills; Edwin Cleveland Yoder.

Jones County

ANAMOSA—Clyde Leslie Van Patten. OLIN—Seward White; Howard Moore Williamson. MONTICELLO—Colin Caudon Thomas.

Keokuk County

HEDRICK—Rex Vale Henry; James Arthur Porter. KEOTA—Roy Robert Miller. KESWICK—Alvah Negus. WHAT CHEER—Charles Burr Taylor.

Kossuth County

ALGONA—Walter Fraser; Evert Clarence Hartman.

Lee County

FORT MADISON—Walter Harry Grlmwood; Robert Stollt Reimers; Frederick Warner Sallander; Frederick Louis Wahrer. KEOKUK—W. Frank Brown; Frank Manley Fuller; Bruce Lock Gillan; Henry Arthur Gray; Clarence Horace Kinnaman; George Raymond Narley; William Rankin; William P. Sherlock; Fred C. Smith. SUMMITVILLE—Jesse Lee Saar.

Linn County

CEDAR FALLS—William L. Hearst. CEDAR RAPIDS—Claude E. Aborn; Roy Colony Alt; Charles Glenn Baird; Charles Herbert Cogswell Jr.; Harold Russell Conn; Benjamin Richard Johnston; Roy Kneale Keech; Solon Mitchell Langworthy; Ralph E. Munden; Frederick Gray Murray; William Harwood Olmsted; Frank Palmer Riggie; George Coleman Skinner; John E. Stansbury; Rudolph Augustus Vorpahl; Arlo Richard Zuercher. CENTER POINT—Clarence Hays Doty. CENTRAL CITY—James Bliss Owen. LISBON—John Raphael Gardner.

Louisa County

COLUMBUS JUNCTION—Frank Albert Hubbard. LETTS—Elliott R. King. GRANDVIEW—Oliver W. McGrew.

Lucas County

CHARITON—Roy Clark Gutch; Leo Cornelius Kuhn. PURDY—John Archie Matson.

Lyon County

INWOOD—Alexander Porter Stewart. LARCHWOOD—Arthur Lewis Druet. LITTLE ROCK—Millard Ferdinand Smith.

Madison County

EAST PERU—Lawrence Lewellyn Craven. MACKSBURG—Merl Lee Pindell.

Mahaska County

PARNES CITY—James Alva Paradise. OSKALOOSA—Kenneth L. Johnston; Earl Derward McClean. NEW SHARON—Samuel Willard Hartwell; John Edward Morgan. ROSE HILL—Harry Everette Carver.

Marion County

COLUMBIA—Harry Lee Bridgman. KNOXVILLE—Corwin Schaffner Cornell; Arthur E. Shappell. PELLA—Carl Aschenbrenner; Jacob John Sybenga. PLEASANTVILLE—Elmer A. Bare.

Marshall County

MARSHALLTOWN—James F. Battin; Aaron Clyde Conaway; George Earl Hermance; Robert Crichton Molison.

Mills County

GLENWOOD—Erik M. P. Sward. PACIFIC JUNCTION—Gerald Vaughan Caughlan. MALVERN—Malcolm Samuel Campbell.

Mitchell County

ST. ANSGAR—Gerhard Frederick Hartwig.

Monona County

UTE—Lloyd Stanley Nease. WHITING—Clarence Harman.

Monroe County

ALBIA—Merle Bone; Albert Gartfield Byers.

Montgomery County

RED OAK—Abel Benson George; Russell Montague Young.

Muscatine County
MUSCATINE—Edmond Bland Ballard Fulliam Jr.; John Wilford Stiers.

O'Brien County
SUTHERLAND—Thomas D. Kas.

Osceola County
HARRIS—Clinton Colfax Cady.

Page County
SHENANDOAH—Joseph Walter Sellards; Charles Elmer Kellogg.
CLARINDA—Donald Enfield.

Palo Alto County
EMMETSBURG—Harold Linhoff Brereton.

Plymouth County
AKRON—Johnstone H. Kerr; George Mattison Jr. LE MARS—Erwin Julius Gottsch. MERRILL—Armand Naffziger. STRUBLE—Harry Francis Rubel.

Pocahontas County
GILMORE CITY—Charles Lee Jones. POCAHONTAS—Garner Forsemen Parker. ROLFE—Edmund Willoughby Wilson. VARINA—John Charles Creane.

Polk County
BERWICK—Isaac Hugh Odell.
DES MOINES—Arthur J. Booker; Wm. Frederick Brinkman; Thomas A. Burcham; Wilbur S. Conkling; James Arthur Downing; Thomas F. Duhigg; John William Elder; Rodney P. Fagan; Abraham George Fleischman; George Seelcy Gilpin; Milton Abe Given; Daniel Johnson Glomset; Calvin Waldo Harned; Francis Roderick Holbrook; Alden Robbins Hoover; James Everett Kessell; Francis La Plana; Emery Wilfred Lehman; Charles Nickolas Olson Leir; Clifford Welcome Losh; Robert James Lynch; Meredith Mallory; James William Osborn; Rosewell Herschell Payne; William Wilson Pearson; John Hyren Peck; Alfred Stirgus Price; John Russell; Charles Edward Ruth; Charles Francis Smith; Albert B. Stuart; R. Fred Throckmorton; Joseph Walter Tyrrell; Julius N. Van Meter; Clifford Webb Wells; Frank Arthur Will; Frank L. Williams; Howard Jesse Wright; George Spurgion B. Yates; Guss Bross Young; Bernard Joseph Callahan.
ELKHART—Philip Vial Ketchum. FORT DES MOINES—John F. Loosbrock. VALLEY JUNCTION—John Earl Kiley.

Pottawattamie County
AVOCA—George Albert Spaulding. COUNCIL BLUFFS—Frank E. Bellinger; Henry Aaron Cobb; Emmet Lefevre Hawkins; Albert Vincent Hennessy; Maurice Charles Hennessy; Louis LeRoy Henninger; Chalmers Alexander Hill; Konigmacher Adam Hiestand; Donald Macrae Jr.; Sydney Dale Maiden; Edwin Atkins Merritt; John Stephen McAtee; Robert Shibley Moth. HANCOCK—John Frank Standeven. MACEDONIA—Meredith Byrne Murray. McCLELLAND—Fred William Niehaus. MINDEN—Grant Augustine. NEOLA—Willard A. Bates; Guy Seward.

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MOUNT AYR—Walter Franklin Schmaltz.

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Shelby County
DEFIANCE—Valentine John Meyer. HARLAN—Elliott Cunningham Cobb; Jay Dee Dunshee. KIRKMAN—Albert Edward Sabin.

Sioux County
HAWARDEN—Fred. J. McAllister. IRETON—Thomas Elzir McCaughan.

Story County
AMES—Earl B. Bush; Joseph John Knepper; George Frederick Puffett. MAXWELL—William M. Trotter. ROLAND—Roy W. Smith. SLATER—Herbert Pease.
GILBERT—William Louis Hoffman.

Tama County
TOLEDO—Arthur A. Pace.

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CRESTON—James G. Macrae.

Van Buren County
FARMINGTON—Lonnie A. Coffin. STOCKPORT—Frederic John Graber.

Wapello County
BLAKESBURG—Ralph Jackson Selman. OTTUMA—Walter E. Anthony; Murdoch Bannister; Frederick W. Boles; Edward T. Edgerly; LeRoy Aaron Hammer; John Francis Herrick; Elmer John Lambert; Donald McElderly; Frank Wilbur Mills; Harold A. Spilman.

Warren County
INDIANOLA—John G. Davis; Martin Luther Hooper. MILO—Louis Lee Bowie.

Washington County
BRIGHTON—Roy Alvin McGuire; Marcus C. Terry Jr.; James Everett Edgington. WELLMAN—Fordyce H. McCabe. RIVERSIDE—George Maresh.
WELLMAN—Floyd Henry Weidlein.

Wayne County
ALLERTON—John Harvey McCall. CORYDON—Ben S. Walker. MILLERTON—Sylvanus Weston Corbin.

Webster County
DAYTON—Harry Franklin Klesling. DUNCOMBE—Joseph Larcher Ruyavitz. FORT DODGE—Edward Francis Peeh; William Franklin Carver; Paul Ernest M. Kersten; Arthur Henry McCreight; William Murry Wildman. MOORLAND—Charles Troy Farlow. VINCENT—Carroll D. Parsons.

Winnebago County
LAKE MILLS—Laurence J. Kaasa.

Winneshek County
DECORAH—Albert Everett Conrad; James Joseph Daly; John Daniel Hexom; Milton Dana Jewell.

Woodbury County
HORNICK—Nathaniel Palmquist; Charles Bernard Rentz. SIOUX CITY—Carl Estep Bosley; James Ray Brady; Louis Dwight Cheney; James Christiansen; Charles Emery Frear; Joseph W. B. Flageolle; Thomas Marsden Heard Jr.; Alvin H. Hendrickson; VanBuren Knott; Charles Thomas Maxwell; Jesse Blaine Naftzger; Elmer Remle Park; James Elery Reeder; Frank Garretson Rhodes; Fredk. H. Roost; Prince Edwin Sawyer; Harry Johnson Schott; Joseph Patrick Sheehy; John William Shuman; John E. Trierweiler. SLOAN—Prescott Lee Washton.

Wright County
BELMONT—George Heath Steele. CLARION—Franklin Augustus Stevens; Ranson Drips Bernard. DOWS—Orson Arza Kellogg. EAGLE GROVE—John Raymond Christensen; Luther Donald McNaughton.
ROWAN—William Null Gordon.

KANSAS MEDICAL SOCIETY

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Fourth District.—Clay, Riley, Geary, Waubensee, Pottawattomie, Shawnee, Dickinson, Lyon and Morris counties. O. P. Davis, Councilor, Topeka.
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Sixth District.—Pratt, Kingman, Elk, Chautauqua, Cowley, Sumner, Harper, Barber and Sedgwick counties. S. S. Edgerton, Councilor, Wichita.
Seventh District.—Republic, Cloud, Jewell, Mitchell, Osbourne and Rooks counties. K. P. Mason, Councilor, Cawker City.
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KANSAS										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commiss'd in M.R.C., etc.
Allen.....	508	14.9	33,577	987	34	..	12	16	23	5
Anderson.....	577	33.9	13,829	813	17	..	8	10	8	12
Atchison.....	412	8.9	29,107	632	46	2	18	29	22	6
Barber.....	1,134	76.9	12,340	822	15	..	9	11	3	4
Barton.....	892	35.6	20,862	834	25	..	16	18	19	6
Bourbon.....	656	18.2	25,077	696	36	..	9	21	21	4
Brown.....	571	19.6	21,314	734	29	..	13	20	18	3
Butler.....	1,434	31.1	24,724	537	46	1	22	35	11	3
Chase.....	751	62.5	7,527	627	12	..	8	9	6	1
Chautauqua....	652	46.5	11,429	816	14	..	5	8	..	..
Cherokee.....	605	16.3	33,162	1,034	37	..	18	25	17	2
Cheyenne.....	1,008	252.0	5,422	1,355	4	..	3	3	2	..
Clark.....	973	139.0	5,838	834	7	..	4	6	4	3
Clay.....	638	26.5	15,251	635	24	..	16	17	16	4
Cloud.....	702	21.9	19,512	609	32	..	21	23	21	5
Coffey.....	644	26.8	15,205	633	24	2	8	14	15	5
Comanche.....	783	98.5	4,494	561	8	..	4	7	2	1
Cowley.....	1,133	19.5	32,982	568	58	3	25	35	38	7
Crawford.....	605	7.4	61,736	759	81	1	45	57	48	9
Decatur.....	891	89.1	8,976	897	10	..	6	9	4	3
Dickinson.....	838	20.4	26,250	639	41	..	19	33	21	4
Doniphan.....	378	19.9	17,191	904	19	..	13	13	10	3
Douglas.....	469	9.9	25,101	534	47	1	16	28	29	9
Edwards.....	611	61.1	9,479	947	10	..	6	6	5	3
Elk.....	652	43.4	10,128	534	15	..	6	10	9	1
Ellis.....	901	69.3	14,758	1,135	13	..	8	9	2	2
Ellsworth.....	724	51.7	11,041	788	14	..	8	10	9	3
Finney.....	1,276	98.1	9,418	724	13	..	4	7	4	..

KANSAS—Continued										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Ford.....	1,082	54.5	15,697	784	20	..	13	16	14	4
Franklin.....	585	12.6	22,422	487	46	..	16	29	34	6
Geary.....	390	24.3	14,095	880	16	2	12	15	11	5
Gove.....	1,080	216.0	8,675	1,735	5	..	3	5	5	1
Graham.....	897	179.5	11,274	2,254	5	1	4	4	3	..
Grant.....	578	.....	1,571	.....	..	..	..	..	..	..
Gray.....	857	122.4	4,477	639	7	..	3	4	3	3
Greeley.....	776	776.0	1,949	1,949	1	..	..	1	..	..
Greenwood.....	1,158	55.1	16,060	764	21	1	8	15	11	4
Hamilton.....	984	492.0	11,772	5,886	2	..	1	1	..	..
Harper.....	799	34.7	17,987	782	23	..	11	12	12	3
Harvey.....	540	13.8	20,376	512	39	1	20	27	26	7
Haskell.....	577	288.5	1,383	691	2	..	1	1	1	..
Hodgeman.....	858	289.0	3,587	1,195	3	..	2	2	1	..
Hickson.....	675	25.0	16,861	624	27	..	8	20	21	5
Hoffman.....	543	20.1	15,826	586	27	..	14	19	16	3
Holmes.....	900	39.1	18,148	789	23	2	9	17	14	..
Holton.....	486	13.5	18,422	511	36	..	12	22	12	6
Horton.....	853	853.0	4,737	4,737	1	..	1	1	1	..
Hoyman.....	867	57.8	15,374	1,024	15	1	11	13	9	1
Howard.....	723	103.2	8,954	1,279	7	..	5	5	6	..
Labette.....	643	10.7	34,368	571	60	1	28	41	36	11
Lane.....	715	357.5	3,361	1,680	2	..	1	1	1	1
Leavenworth.....	440	8.6	41,402	811	51	1	32	41	14	12
Lincoln.....	721	65.7	10,880	777	14	..	7	10	8	3
Linn.....	613	25.5	15,255	635	24	..	10	14	14	2
Logan.....	1,082	270.5	5,901	1,475	4	..	3	3	3	1
Lyons.....	845	20.6	26,011	631	41	1	18	26	25	3
McPherson.....	900	29.0	21,934	707	31	1	17	22	21	6
Marion.....	971	30.0	23,684	816	29	..	17	24	22	5
Marshall.....	905	24.4	23,880	645	37	2	14	25	17	4
Mayes.....	984	123.0	7,550	948	8	1	4	8	4	..
McDonald.....	602	22.3	20,030	741	27	..	18	20	13	4
Mitchell.....	713	35.6	14,496	724	20	1	10	15	12	2
Montgomery.....	641	22.2	64,393	2,220	29	4	33	77	50	7
Morris.....	696	36.6	12,710	668	19	..	8	14	10	5
Morton.....	718	239.3	2,229	743	3	..	3	3	1	1
Muskegon.....	716	23.0	19,072	615	31	1	13	18	21	3
Neosho.....	580	14.8	27,037	693	39	1	13	22	19	5
Ness.....	1,079	119.8	6,866	762	9	..	7	8	4	4
Newton.....	876	48.6	11,823	656	18	..	13	14	10	3
Osage.....	718	28.7	20,196	807	25	1	11	16	9	..
Osborne.....	894	47.0	13,714	721	19	..	9	12	12	3
Ottawa.....	712	39.5	12,269	681	18	1	9	15	10	6
Pawnee.....	742	67.4	11,613	1,055	11	..	9	10	8	1
Phillips.....	887	49.2	14,150	786	18	..	8	16	5	..
Pottawatomie.....	829	37.6	17,522	796	22	..	12	16	7	5
Pottawatomie.....	726	34.5	14,126	672	21	1	10	18	12	5
Rawlins.....	1,064	212.8	7,209	1,441	5	..	3	4	1	..
Reano.....	1,242	16.3	44,295	582	76	1	45	63	41	9
Republic.....	704	39.1	17,447	969	18	..	12	12	14	2
Reece.....	707	29.4	15,369	640	24	..	13	20	19	2
Reiley.....	604	24.1	17,210	688	25	..	15	22	20	3
Rock.....	890	68.4	13,705	1,054	13	1	8	11	..	2
Rush.....	719	65.3	9,060	823	11	..	7	9	4	3
Russell.....	895	63.9	12,437	888	14	..	11	12	6	3
Saline.....	720	14.7	22,718	540	42	1	19	25	31	5
Scott.....	714	178.5	4,468	1,117	4	..	1	2	2	1
Seawick.....	994	6.9	94,305	659	143	5	75	108	77	21
Seaward.....	643	91.8	6,477	925	7	..	4	6	7	2
Shawnee.....	544	3.4	67,821	426	153	..	75	100	97	27
Sherridan.....	896	224.0	6,987	1,746	4	..	2	4	2	..
Sherman.....	1,049	209.8	5,428	1,085	5	1	2	4	3	1
Smith.....	888	46.7	15,672	824	19	..	10	12	16	1
Stafford.....	796	39.6	14,465	723	20	..	10	14	15	2
Stanton.....	685	685.0	1,549	1,549	1	..	1	1	..	..
Stevens.....	729	243.0	3,790	1,263	3	..	1	2	1	1
Sumner.....	1,179	20.3	34,320	591	58	..	29	42	36	6
Thomas.....	1,065	266.2	6,435	1,608	4	1	1	2	2	1
Trego.....	899	179.8	7,351	1,470	5	..	1	4	3	..
Tribune.....	795	39.7	12,721	636	20	..	12	18	3	3
Tallace.....	921	307.0	3,912	1,304	3	..	1	3	3	..
Texas.....	902	20.0	20,229	674	30	..	13	17	20	4
Tchita.....	721	240.3	2,597	865	3	..	2	2	1	..
Tilson.....	581	21.5	22,866	845	27	1	10	17	19	2
Toddson.....	503	35.9	9,460	675	14	..	5	8	7	2
Tyandotte.....	143	0.8	119,660	672	178	5	106	133	87	26
Totals.....	81,774	30.6	1,888,868	782	2,663	51	1,345	1,904	1,491	382

Includes Wichita, population 67,847; physicians 126 [M.R.C. 20].
 Includes Topeka, population 47,914; physicians 142 [M.R.C. 26].
 Includes Kansas City, population 96,854; physicians 155 [M.R.C. 24].

HONOR ROLL

Allen County

HUMBOLDT—Herbert M. Webb. IOLA—John M. T. Baskette; Omar Cox; Orestes Lucien Garlinghouse.
 MORGAN—Lester Isaac Simpson.

Anderson County

BARNETT—Arthur Benjamin Cullum; Tarlton Ambrose Hood.

Atchison County

ATCHISON—Eugene John Bribach; Hugh Lester Charles; Charles Gleton Ferguson; Thomas Edward Horner; William Francis Smith.
 TTER—Sam Montelth Myers.

Barber County

LARDTNER—John Elmer Hammer. HAZELTON—William Leonard Sch. KIOWA—George Robert Waite. MEDICINE LODGE—Thomasolphus Coleman.

Barton County

CLAFLIN—Herbert William Jury. ELLINWOOD—LeRoy J. Wheeler. GALATIA—Eugene Monroe Adkins. GREAT BEND—Edward King Lawrence; Clark William Zugg. HOISINGTON—Edward Henry Atkin.

Bourbon County

BRONSON—George Scott Lambeth. FORT SCOTT—John C. Lardner; John Franklin McGill. FULTON—Tiberius L. Jones.

Brown County

BAKER—Henry Herman Olsen. HORTON—Harry Leslie Goss; Harry James Harker.

Butler County

AUGUSTA—John Frazer Pattison. BENTON—Oscar Newton Lightner. DOUGLAS—Joseph Cook Bunten.

Chase County

ELMDALE—Franklin T. Johnson Jr.

Cherokee County

COLUMBUS—Harry H. Brookhart. MINERAL—Earl C. Lightfoot.

Clark County

ASHLAND—Ivan Roy Burkett; Paul Congleton Carson; Milton Oscar Nyberg.

Clay County

CLAY CENTER—Ira E. Durant; Emanuel N. Martin; Edwin Clyde Morgan. WAKEFIELD—John Everett Hewitt.

Cloud County

CLYDE—Monte' Louis Belot; Francis James Moffatt. CONCORDIA—Leo Eugene Haughey; Ross Eberhardt Weaver. JAMESTOWN—Hugh Duncan McGaughey.

Coffee County

BURLINGTON—Carl Calvin Culver; David William Manson; Henry T. Salisbury. GRIDLEY—Marcellus Lowery Stockton. WAVERLY—Frank C. Boggs.

Comanche County

COLDWATER—Wade Doster.

Cowley County

ARKANSAS CITY—Emanuel Harry Clayton; Milton Hahn; Richard Claude Young. CAMBRIDGE—Daniel Alcott Holland; Seth H. Martin. WINFIELD—Walter Parry Guy; Harold H. Jones.

Crawford County

ARCADIA—Joseph D. Pettet. ARMA—William Elmer Orr. CHEROKEE—Almonta Deaver Hays. GIRARD—Dwight Culver Smith. HEPLER—Chas. Louis Mosley. McCUNE—Charles Chapin. MULBERRY—William Allen Parrish. PITTSBURG—Richard Collins Henderson; Walter J. Nichols.

Decatur County

DRESDEN—Fred Raymond Funk. JENNINGS—Henry Osmond Hardisty. NORCATUR—Joseph Watkins Spearing.

Dickinson County

ENTERPRISE—Harrison Washington Wright. HERINGTON—James Welch. HOPE—Charles A. Dieter. MANCHESTER—Dana O. Jackson.

Doniphan County

HIGHLAND—Herbert Homer Smith. TROY—Wilhelm Albert Gartner. WATHENA—John Goldsborough Swails.

Douglas County

LARNED—Cyril Evan Sheppard. LAWRENCE—Ralph E. Barnes; Harry L. Chambers; Charles Francis Ensign; Edmond Ray Keith; Henry St. Clair O'Donnell; Carl Phillips. LE COMPTON—Carey Caldwell Kerr. VINLAND—Charles Everett Yates.

Edwards County

KINSLEY—James Byron Donnell; Walter P. Stoltenberg; Lewis Milward Schrader.

Elk County

MOLINE—Edward Arlington Marrs.

Ellis County

ELLIS—Nathaniel Adair Kidd Jr. HAYS—Casper Joseph Middlekauff.

Ellsworth County

ELLSWORTH—Jirah Marston Downs; Robert Lee Hoffman; Benjamin H. Mayer.

Ford County

BUCKLIN—Alexander Breekenridge Scott. DODGE CITY—Eugene James Broderick; Noble Elmo Melencamp. SPEARVILLE—Leonidas T. Brown.

Franklin County

OTTAWA—George Washington Davis; Boyd Franklin Eye; Charles Benedict Stephens. RANTOUL—Charles Clifford Bennett. RICHMOND—Delmar H. Smith. WILLIAMSBURG—Warwick T. Brown.

Geary County

JUNCTION CITY—Walter A. Carr; Reuben Jay Elliott; Frederick William O'Donnell; Leonard Somerville Steadman. MILFORD—John R. Brinkley.

Gove County

GRAINFIELD—Guy H. Winslow.

Gray County

CIMARRON—Robert Gottfried Klein. INGALLS—Earl V. Adams. MONTEZUMA—David Charles Munford.

Greenwood County

CLIMAX—Herschel Ledger Hendricks. EUREKA—George Blaine Garrison. MADISON—James Milton Moore. SEVERY—Walter Allen Hodges.

Harper County

ANTHONY—C. Fremont Cronk; Benjamin Franklin Hawk; Clarence Edward Ressler.

Harvey County

BURRTON—Irl Edwin Hempstead. NEWTON—Harold M. Glover; Ralph C. Hartman; Ralph Harold Hertzler; John Lewis Peppers; John R. Scott; Lawrence Theodore Smith.

Jackson County

DENISON—William Law Wilmoth. HOLT—Joseph Cook Shaw. MAYETTA—Charles Jay Bliss. SOLDIER—Joseph Richard Adams. WHITING—Guy R. McCreery.

Jefferson County

McLOUTH—Frank Schaeffer. NORTONVILLE—Tena L. Eyrly. PERRY—Arthur Leroy Weisgerber.

Johnson County

DE SOTO—Alvan Maurice Fortney. LENEXA—Lewis G. Allen; Clifford Calvin Neeselrode. OLATHE—Charles W. Jones. SHAWNEE—Walter Otto Quiring; George Washington Thume.

Kingman County

KINGMAN—Charles Willard Longenecker.

Labette County

EDNA—Charles Alfred Thomas. MOUND VALLEY—Robert M. Bennett; Otto Jarson Dixon. PARSONS—Elmer E. Bowser; Paul Christmann; John C. Cornell; Thomas Eugene Crump; Edmond Anderson Lodge; John Guirley Missildine; Arthur Richard Nash; John William Tinder.

Lane County

DIGHTON—Sebree Samuel McGinnis.

Leavenworth County

EASTON—Alonso Ray Adams. LEAVENWORTH—Albert Leroy Brown; Charles Elliott Brown; Joseph Howard Langworthy; Philip Benjamin Matz; Charles James McGee; Fletcher Burr Taylor. NATIONAL MILITARY HOME—Samuel Adams; John A. Barker; John Langley Fryer; Frederick Edwin Kraft; Rezin Clark Shawhan.

Lincoln County

LINCOLN—George Malcolm Anderson; Malcolm Newlon; John Magruder Sutton.

Linn County

CENTERVILLE—George Franklin Porter. MOUND CITY—John Orum Dingus.

Logan County

OAKLEY—Charles Melbourne Miller.

Lyon County

AMERICUS—John B. Brickell; Roy Hammond Edmiston. EMPORIA—Clarence Clinton Harvey.

Marion County

FLORENCE—Leonard Sweete Wagar. HILLSBORO—Henry Daniel Brunig. MARION—John F. Coffman Jr.; Charles William Matlock. PEABODY—Edward Hinmen Johnson.

Marshall County

BEATTIE—Emory Howard Gist. MARYSVILLE—John B. Close; Edward Lawrence Wilson. WATERVILLE—George Isaac Thacher.

McPherson County

CANTON—Samuel Neal Mallison. GALVA—Lewis Marion Gore. McPHERSON—C. Freeman Brubaker; Andrew Engberg; Marvin Hall. INMAN—Theodore Henry Aschmann.

Miami County

BUCYRUS—Gerald L. McGonigle. OSAWATOMIE—Benjamin F. Frazer; Bahnson Weathers. PAOLA—Jacob Henry Haldeman.

Mitchell County

CAWKER CITY—Kirk Patrick Mason. SIMPSON—George Jennings.

Montgomery County

CHERRYVALE—William Grant Norman; Myron Laverne White. INDEPENDENCE—Joseph S. Alford; Frank Winfred Shelton; Chester Orville Shepard. TYRO—Ira Bradford Chadwick. COFFEYVILLE—Everett Wallace Johnson.

Morris County

COUNCIL GROVE—Arthur John Lewis; Morris Bigelow Simpson. DELAVAN—Logan Milk Evans. DUNLAP—Lewis Scott Harvey. DWIGHT—George Edwin Brethour.

Morton County

ELKHART—John Harvey Hansen.

Nemaha County

CENTRALIA—William George Bouse. CORNING—John Child Maxson. SARETHIA—William Logan Carlyle; William Roy Dillingham; Saml. M. Hibbard; Frederick E. Wrightman. SENECA—Francis Franklin Carter; John Rudbeck.

Neosha County

CIANUTE—Jesse W. Barker; Frederick Roland Hickey. ERIE—Ralph Cambern Henderson. THAYER—Hal Edward Reece; John Norval Sherman.

Ness County

BROWNELL—John Wesley Combs. NESS CITY—William Samuel Fleming; Thomas Shirley Venard. RANSOM—William Seward Grisell.

Norton County

ALMENA—George L. Dailey. NORTON—Charles Willard Cole; Francis David Kennedy.

Osborne County

ALTON—Bertice Alvin Isenberg. DOWNS—Jarvis Edward Hodgson. NATOMA—Emory Alonzo Drake.

Ottawa County

ADA—Ulysses Simpson Boyer. MINNEAPOLIS—Arthur Louis Cludas; Fred Everett Harvey. NILES—Edward Jacob Haerle; Henry T. Haerle. TESCOT—Earl LeRoy Vermillion.

Pawnee County

GARFIELD—Charles C. Wolcott.

Pottawatomie County

BELVUE—Oscar R. Searl. HAVENSVILLE—James Edward McManis. ONAGA—Christian H. Koentz. ST. GEORGE—Charles Summer Fry. WAMEGO—Guy Alpin Finney.

Pratt County

COATS—John Ross Campbell. IUKA—Shirley Francis Boyce. PRATT—Herbert Atkins; James Addison Hoekaday. PRESTON—William Grant McManess.

Reno County

HAVEN—Walter H. Kirkpatrick. HUTCHINSON—Lloyd Andrews Clary; Clarence Walter Hall; Walter Newton Mundell; Herbert Livingston Scales; Newton Alfred Seehorn. LANGDON—James Bonner Ungles. PRETTY PRAIRIE—Ralph Walter Springer; Edgar Clarence Taylor.

Republic County

SCANDIA—Charles Victor Haggman; Roscoe C. Ward.

Rice County

FREDERICK—Melvin C. Martin. STERLING—Marion Trueheart.

Riley County

MANHATTAN—Robert R. Cave; William Andrew McCullough; Francis Baldwin Sheldon.

Rooks County

STOCKTON—Arthur B. Oechsli; Ernest Edward White.

Rush County

BISON—Norval William Roblson. LA CROSSE—Joseph Harrison Baker. McCRACKEN—Willfred Page.

Russell County

LUCAS—Eugene A. Miller. RUSSELL—Frederick Sears Hawes. WALDO—Henry Samuel Dreher.

Saline County

SALINA—Jesse O. Dillon; Charles Mooney Fitzpatrick; John Wesley Neptune; John DeWitt Riddell; Humah Horace Wilson.

Scott County

SCOTT CITY—Mark Herbert Rhoads.

Sedgwick County

CLEARWATER—Solon C. Whitney. WICHITA—Perry M. Bell; William George Burton; William Theophilus Doherty; George Eugene Egloff; Earl Johnston Frost; William Priest Greening; Ralph Waldo Hissem; Earle Edward Hussey; Arthur Kelton Lawrence; Ronald Owen Logsdon; Leon Matassarini; George William Matteson; Frank O. Miller; Walton I. Mitchell; Willard Alan Phares; George Kern Purves; James Glenn Rea; Henry Hutchinson Taggart; Wm. Otto Whitaker. WICHITA—Gordon Wood Higginbotham.

Seward County

LIBERAL—Arthur Lewis Knisely; Roscoe Townley Nichols.

Shawnee County

TOPEKA—Charles Curtis Allen; George V. Allen; Earle Godfrey Brown; Charles Joseph Cahill; Ernest Dale Cook; Jesse Deriekson Cook; John Adam Crabb; Albert Marcellus Dawson; Oscar Leonard Erickson; James Mahen Ernest Foy; Abram Robert Goodman; William Henry Greider; Seth A. Hammel; Charles Markham Hensley; Wilson Keith Hobart; Charles Henry Lerrigo; Claude C. Lull; Samuel Thomas Millard; Milton Bradford Miller; Ransley Jacob Miller; Orville Othello Moore; Leroy S. S. Ott; Arthur Kirk Owen; Henry S. Rogers; James Graves Stewart; John Lawrence Work. WAKARUSA—Charles Arthur Wyatt.

Sherman County

GOODLAND—Ernest Jones Beckner.

Smith County

ATHOL—Walter Claudius Keller.

Sumner County

BELLE PLAINE—Rinaldo Everett Baker; John Francis Rudolph. CALDWELL—David Edgar Kisecker; John Clinton McKinnan. GEUDA SPRINGS—Norman Bryce Fall. WELLINGTON—Clyde Mansford Zink.

Stafford County

HUDSON—Odus Liston. STAFFORD—James Amasa Hampton Webb

Stevens County

HUGOTON—Ben Hill Day.

Thomas County

COLBY—William John Lewis.

Wabaunsee County

ALMA—George Wm. B. Beverly; Charles Harry Mielke. HARVEYVILLE—Louis Monroe Tomlinson.

Washington County

HADDAM—Charles Marion Swab. PALMER—Hugh Boggs Hawthorne. WASHINGTON—Henry D. Smith. MORROWVILLE—Matthaus Henry Horn.

Wilson County

FREDONIA—Edgar Cecil Duncan. NEODESHA—Alexander Pound Williams.

Woodson County

NEOSHO FALLS—Stanton Albert McCool. TORONTO—Cyrus Chadsey Morrison.

Wyandotte County

KANSAS CITY—Alpheus J. Bondurant; Felix Cohen; Albert Porter Davis; Robert Crenshaw Davis; Dan Matthew Forbes; George M. Gray; John Franklin Hassig; Arthur Haislet Haynes; Frank Joseph Hombaeh; Mathew Henry Keefer; Harry Walter King; Roy Wilfred Layton; Lo Dalbert Mabie; James Whittier May; Clyde Leon Morris; William Rallard Palmer; Julius Hyman Rabin; Thomas Richmond; William L. Rhodes; George Hewitt Smith; LaVerne B. Spake; Richard T. Speck; Edwin Roy Tenney. ROSEDALE—Howard Earl Marchbanks; Raymond Swinner. Woodridge. KANSAS CITY—John Ellsworth Smith.

KENTUCKY STATE MEDICAL ASSOCIATION

Officers 1917-18

P. H. Stewart, President.....	Paducah
J. L. Barker, First Vice President.....	Pembroke
H. H. Stallard, Second Vice President.....	Pikesville
J. C. Douglas, Third Vice President.....	Franklin
A. T. McCormack, Secretary.....	Bowling Green
W. B. McClure, Treasurer.....	Lexington

Councilor District and Officers

First District.—Ballard, Caldwell, Calloway, Carlisle, Fulton, Graves, Hickman, Livingston, Marshall, Lyon, McCracken and Trigg counties. W. W. Richmond, Councilor, Clinton.

Second District.—Crittendon, Daviess, Hancock, Henderson, Hopkins, Muhlenberg, Union, Ohio, McLean, Breckenridge and Webster counties. D. M. Griffith, Councilor, Owensboro.

Third District.—Allen, Barren, Butler, Christian, Cumberland, Edmondson, Logan, Metcalf, Monroe, Simpson, Todd and Warren counties. Joseph N. McCormack, Councilor, Bowling Green.

Fourth District.—Bullitt, Grayson, Hardin, Henry, Larue, Meade, Hart, Nelson, Oldham and Shelby counties. C. Z. Aud, Councilor, Ceciliana.

Fifth District.—Anderson, Boone, Carroll, Franklin, Gallatin, Jefferson, Owen, Spencer and Trimble counties. E. L. Henderson, Councilor, Louisville.

Sixth District.—Adair, Boyle, Green, Marion, Mercer, Taylor and Washington counties. R. C. McChord, Councilor, Lebanon.

Seventh District.—Casey, Clinton, Garrard, Lincoln, McCreary, Pulaski, Rockcastle, Russell and Wayne counties. A. W. Cain, Councilor, Somerset.

Eighth District.—Bourbon, Bracken, Fleming, Grant, Harrison, Jessamine, Kenton, Martin, Campbell, Mason, Nicholas Pendleton, Robertson, Scott and Woodford counties. J. E. Wells, Councilor, Cynthiana.

Ninth District.—Boyd, Carter, Elliott, Floyd, Greenup, Johnson, Lawrence, Lewis, Magoffin and Pike counties. J. W. Kincaid, Councilor, Catlettsburg.

Tenth District.—Bath, Breathitt, Clark, Estill, Fayette, Lee, Madison, Menefee, Montgomery, Morgan, Owsley, Powell, Rowan, Knott, Letcher, Perry and Wolfe counties. I. A. Shirley, Councilor, Winchester.

Eleventh District.—Bell, Clay, Harlan, Jackson, Knox, Leslie, Laurel and Whitley counties. J. S. Lock, Councilor, Barbourville.

KENTUCKY

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adair.....	400	21.0	17,632	928	19	..	7	12	11	1
Allen.....	394	20.7	15,047	791	19	1	10	15	14	5
Anderson.....	201	15.5	10,215	785	13	1	5	11	8	2
Ballard.....	252	10.1	14,098	563	25	..	16	22	19	2
Barren.....	485	14.7	26,822	812	33	1	15	20	24	4
Bath.....	270	15.0	13,988	777	18	..	6	14	11	2
Bell.....	384	10.9	37,757	1,078	35	..	25	32	18	2
Boone.....	251	10.9	9,420	409	23	..	9	15	11	1
Bourbon.....	304	7.8	17,462	447	39	2	12	28	14	2
Boyd.....	159	4.1	26,809	687	39	1	19	30	26	4
Boyle.....	186	9.3	15,289	764	20	..	8	14	14	1
Bracken.....	204	10.2	10,308	515	20	..	5	12	6	1
Breathitt.....	483	37.1	19,890	1,530	13	..	12	12	7	3
Breckenridge.....	568	18.3	21,399	690	31	..	16	20	17	4
Bullitt.....	308	25.7	9,487	790	12	..	5	6	6	2
Butler.....	417	34.7	15,895	1,317	12	..	4	6	5	..
Caldwell.....	322	14.0	14,063	611	23	..	13	17	14	2
Calloway.....	412	12.9	21,497	671	32	2	16	23	18	..
Campbell.....	145	2.1	63,126	928	68	5	32	52	51	12
Carlisle.....	198	11.0	9,048	503	18	1	8	13	12	2
Carroll.....	132	8.3	8,110	540	15	..	4	11	9	4
Carter.....	413	24.3	23,236	1,366	17	..	8	13	13	..
Casey.....	379	34.4	15,725	1,429	11	..	5	13	8	1
Christian.....	725	10.3	39,489	564	70	1	32	49	46	9
Clark.....	265	7.0	18,931	498	38	..	23	33	28	5
Clay.....	478	4.0	19,558	1,629	12	..	4	9	5	3
Clinton.....	233	33.3	8,358	1,194	7	..	4	5	4	..
Crittenden.....	391	30.1	13,296	1,022	13	..	2	8	8	1
Cumberland.....	387	25.8	10,490	699	15	..	7	10	6	..
Daviess.....	478	5.7	42,736	514	83	1	36	56	57	7
Edmonson.....	308	77.0	10,757	2,189	4	..	1	3	..	..
Elliott.....	263	43.8	9,814	1,635	6	..	2	5	2	..
Estill.....	254	25.4	12,713	1,271	10	..	6	8	5	1
Fayette.....	269	2.2	51,834	431	120	6	69	88	65	17
Fleming.....	325	13.0	16,066	642	25	..	6	13	18	..
Floyd.....	399	16.6	20,865	869	24	..	14	22	8	4
Franklin.....	199	5.7	21,341	609	35	1	17	25	22	3
Fulton.....	193	6.2	15,988	515	31	..	15	22	18	6
Gallatin.....	109	12.1	4,697	521	9	1	2	5	4	1
Garrard.....	237	15.8	11,894	792	15	..	8	12	12	4
Grant.....	264	10.1	10,581	423	25	..	12	13	10	1
Graves.....	551	10.4	33,784	637	53	1	23	37	36	9
Grayson.....	497	19.9	20,016	800	25	..	11	17	16	1
Green.....	279	31.0	11,871	1,319	9	..	1	7	6	1
Greenup.....	346	18.2	20,695	1,089	19	..	9	13	10	3
Hancock.....	193	24.1	8,512	1,064	8	..	6	7	4	..
Hardin.....	606	15.1	22,696	567	40	..	14	24	23	2
Harlan.....	473	31.9	11,096	739	15	..	12	15	15	2
Harrison.....	311	9.4	16,873	511	33	2	16	24	22	4
Hart.....	430	19.5	18,173	826	22	2	7	11	13	2
Henderson.....	435	10.1	29,352	682	43	1	22	32	28	4
Henry.....	303	10.1	13,716	457	30	..	11	20	16	2
Hickman.....	225	15.0	11,752	783	15	..	7	12	9	3
Hopkins.....	546	9.7	36,696	667	55	1	25	39	25	6
Jackson.....	333	47.5	10,859	1,551	7	..	2	7	5	1
Jefferson.....	287	0.6	285,089	436	653	16	479	519	278	139
Jessamine.....	172	90.5	13,115	690	19	..	7	13	10	1
Johnson.....	263	12.2	20,220	919	22	..	16	19	13	1
Kenton.....	163	1.7	75,293	776	97	3	39	68	54	15

1. Includes Lexington, population 39,703; physicians 115 [M.R.C. 16].
2. Includes Louisville, population 237,012; physicians 610 [M.R.C. 131].
3. Includes Covington, population 56,520; physicians 78 [M.R.C. 13].

KENTUCKY—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Knott.....	348	116.0	12,312	4,104	3	..	4	3	2	..
Knox.....	356	11.5	25,577	825	31	..	10	16	15	..
Larue.....	288	20.6	10,701	764	14	..	4	8	8	..
Laurel.....	447	24.8	21,536	1,196	18	..	8	15	12	3
Lawrence.....	422	18.3	20,399	886	23	..	10	17	13	2
Lee.....	199	19.9	10,656	1,065	10	..	7	9	6	1
Leslie.....	373	124.3	10,598	3,532	3	..	2	3	2	..
Letcher.....	355	20.9	11,682	687	17	..	11	17	13	..
Lewis.....	491	40.9	16,887	1,407	12	..	8	11	9	2
Lincoln.....	338	14.1	18,503	771	24	1	11	16	19	2
Livingston.....	392	23.0	10,627	625	17	..	9	15	12	1
Logan.....	643	17.4	24,977	675	37	1	13	26	22	3
Lyon.....	277	34.6	9,498	1,187	8	..	2	4	8	1
McCracken.....	239	4.0	39,685	661	60	1	33	51	31	11
McCreary.....	490	49.0	8,000	800	10	..	8	9	8	1
McLean.....	253	21.1	13,818	1,151	12	..	7	10	10	1
Madison.....	446	11.1	27,931	698	40	1	19	32	19	4
Magoffin.....	302	33.5	14,857	1,650	9	..	7	7	6	1
Marion.....	345	15.7	16,359	743	22	1	9	14	19	4
Marshall.....	327	14.2	17,287	751	23	..	14	17	19	2
Martin.....	222	44.4	8,394	1,678	5	..	2	4	2	..
Mason.....	227	7.6	18,611	620	30	1	16	23	20	4
Meade.....	301	25.1	9,783	815	12	..	3	7	6	1
Menifee.....	203	50.7	6,153	1,538	4	1	1	4	4	..
Mercer.....	253	10.5	14,063	585	24	..	13	20	19	4
Metcalf.....	303	20.2	10,792	719	15	..	5	7	11	1
Monroe.....	441	24.5	14,108	783	18	..	10	13	10	2
Montgomery.....	198	7.6	12,892	111	26	..	10	15	15	2
Morgan.....	365	26.1	18,789	1,342	14	..	8	10	4	..
Muhlenberg.....	472	11.5	34,332	837	41	..	22	28	25	7
Nelson.....	411	17.9	17,006	739	23	..	6	12	16	2
Nicholas.....	208	10.9	10,601	557	19	..	7	14	13	..
Ohio.....	584	17.7	27,902	845	33	..	16	22	17	5
Oldham.....	180	16.4	7,371	670	11	..	4	4	9	2
Owen.....	367	19.3	14,248	744	19	..	7	12	7	2
Owsley.....	216	54.0	8,784	2,196	4	..	2	4	4	..
Pendleton.....	279	12.7	11,985	544	22	1	8	16	15	5
Perry.....	335	17.6	13,429	706	19	1	13	18	16	5
Pike.....	779	25.1	35,243	1,233	31	..	17	29	17	6
Powell.....	181	25.8	6,268	895	7	..	5	6	6	1
Pulaski.....	779	26.0	38,110	1,270	30	..	17	25	17	5
Robertson.....	109	13.6	4,121	515	8	..	4	6	4	2
Rockcastle.....	310	23.8	15,972	1,228	13	..	7	10	11	1
Rowan.....	272	24.7	10,285	935	11	..	5	8	6	1
Russell.....	329	29.9	11,712	1,064	11	..	4	11	9	..
Scott.....	289	11.1	16,856	6,521	26	..	7	16	17	2
Shelby.....	427	12.5	18,041	320	34	..	13	24	17	2
Simpson.....	216	10.8	11,460	573	20	..	5	14	12	3
Spencer.....	186	13.3	7,682	518	14	..	9	9	5	..
Taylor.....	279	16.4	12,608	741	17	..	9	12	11	2
Todd.....	367	14.7	16,488	659	25	1	9	20	12	3
Trigg.....	428	26.7	14,878	929	16	..	6	14	7	1
Trimble.....	154	22.0	6,512	970	7	..	3	5	1	..
Union.....	325	12.0	19,896	736	27	..	21	22	17	2
Warren.....	530	7.6	31,023	443	70	3	24	46	47	17
Washington.....	299	15.7	13,940	733	19	..	9	18	17	4
Wayne.....	590	42.1	18,434	1,316	14	..	5	8	11	..
Webster.....	344	9.8	21,614	617	35	..	13	27	9	..
Whitley.....	585	17.2	31,366	922	34	..	22	26	22	5
Wolfe.....	230	23.0	10,665	1,066	10	..	3	4	5	..
Woodford.....	195	9.7	12,571	628	20	..	9	17	11	2
Totals.....	40,664	11.7	2,425,466	696	3,483	63	1,801	2,587	1,953	479

HONOR ROLL

Adair County

COLUMBIA—Oliver Patterson Miller.

Allen County

ALLEN SPRINGS—Logan Mitchell Weaver. HOLLAND—John Wilson White. NEW ROE—Wilson Lewis Vickers. SCOTTSVILLE—William Allen Callis; Hubert Marvin Meredith.

Anderson County

LAWRENCEBURG—Charles William Kavanaugh; Asa Caperton Overall.

Ballard County

KEVIL—George E. Aubrey. LA CENTER—John Francis Hahs.

Barren County

Breathitt County

JACKSON—Luther Bach; Overton Hobart Swango.
QUICKSAND—Berton Milton Brown.

Breckenridge County

HARNED—Earl Moorman. IRVINGTON—Lon Beckwith Moremen.
McQUADY—William Wallace Martin. WESTVIEW—John Alvin Biggers.

Bullitt County

LEBANON JUNCTION—Otto Earle Johnson. SHEPHERDSVILLE—
Samuel Woodford Bates.

Caldwell County

PRINCETON—John Richard Jones; Richard Woods Ogilvie.

Campbell County

ALEXANDRIA—Clayton Whittemore Shaw. NEWPORT—William Wesley Anderson; Elmore Bernard Backsman; Shaler Berry; Clay Crawford; Walter Brooks Hughes; William Arnold Kreiger; John Linton Phythian; Frederick Carl Weber. DAYTON—Humphrey Newton Ervin. FORT THOMAS—James A. Robertson. GRANTS LICK—Otto Phillips Hodge.

Carlisle County

BARDWELL—Hazel Petrie Mosby. CUNNINGHAM—Dupe Senter Robertson.

Carroll County

CARROLLTON—Will Lee Calvert; John Maxwell Ryan; John P. Wheeler; Benjamin Logan Holmes.

Casey County

MINTONVILLE—Hugh Frank Taylor.

Christian County

HOPKINSVILLE—Randolph Dade; Urey Guess Davis; Otis Fillmore Miller; Charles Arthur Robinson; Robert Lee Woodard. PEMBROKE—Joe L. Barker; Irl Thomas.
HOPKINSVILLE—Bankie Oliver Moore.
EDGOTEN—Stanley Edward Stroube.

Clark County

RIGHT ANGLE—John Anderson Snowdon. WINCHESTER—Enoch Robinson Bush; Nathan Feld; David Howard McKinley.
WINCHESTER—Benj. A. Cockrell.

Clay County

BIG CREEK—Carlo B. Marcum. CHESTNUTBURG—James Madison Morris. MANCHESTER—James Gordon Bentley.

Crittenden County

TOLU—Ollie Thomas Lowery.

Daviess County

MACEO—Richard M. Taylor. OWENSBORO—William J. Froitzheim; Virgil A. Harl; Isaac Jones Hoover; Robert Lockhart; Charles C. Phillips. PLEASANT RIDGE—Zebulon Hamilton Shultz.

Estill County

RAVENNA—Richard Raymond Snowden.

Fayette County

LEXINGTON—Percy McGee Alexander; David Barrow; Walter Overton Bullock; Robert Milligan Coleman; Walter Cox; Robert Julian Estill; Charles Crain Garr; Samuel Blackburn Marks; Julian Turnbull McClymonds; Jackson Egbert Million; William Dandridge Reddish; Orrin Leroy Smith; Benjamin Franklin Van Meter; Clifton Brooks Willmott; George Hancock Wilson; Walter Simrall Wyatt. MILL SPRINGS—Oliver Hazard Perry Parrigin.

Floyd County

ALLEN—Harry Hampton Mayo. AUXIER—Ernest Elmo Archer. SMALLEY—Edward Stumbo. THOMAS—Hiram Clinton Bevins.

Franklin County

FRANKFORT—James Wallace Hill; Joseph Allen Sleet; Albert Stewart.

Fulton County

FULTON—Henry Tablor Alexander; John Marshall Alexander; George Anderson Crafton; Horace Luten. HICKMAN—James McConnell Hubbard; Hugh Edward Prather.

Gallatin County

WARSAW—Cornelius Howard Duvall.

Garrard County

LANCASTER—John Milton Acton; Virgil Gibney Kinnaird. MARCELLUS—Samuel J. Rose. PAINT LICK—William L. Carman.

Grant County

CORINTH—William Perry Foreman.

Graves County

BOAZ—Edward Adams. LYNNVILLE—Nona Bybe Ellis. MAYFIELD—Garnett B. Belote; John Ray Pryor; John G. Puryear. PRYORSBURG—Yandell Young Miller. SEDALIA—Marion W. Page. SEMSONIA—Earle Edwin Smith. WINGO—Stanley Mullins.

Grayson County

CANEYVILLE—Robert Lee Glascock.

Green County

WEBBS—James Clarence Graham.

Greenup County

GREENUP—James Davis Biggs; Samuel Clemens Smith. RUSSELL—Charles Edward Vidd.

Hardin County

ELIZABETHTOWN—Franklin P. Strickler Jr. VINE GROVE—Edwin Wallace Montgomery.

Harlan County

WALLINS CREEK—William Knott Howard. WHITE STAR—Oliver Perry Henry.

Harrison County

BERRY—Lawrence Newton Todd. CYNTHIANA—Haviland Carr; Rountree Wickliffe Wood. SUNRISE—Grover Athey Beckett.

Hart County

HARDYVILLE—William Adair Weldon. HORSE CAVE—Harry Price Honaker.

Henderson County

BASKETT—John Rodger Hodges. HENDERSON—William Bennett Negley; William W. W. Wilson; Malcom Hodge Yeaman.

Henry County

LOCKPORT—William W. Leslie. NEW CASTLE—John Thomas McDonald.

Hickman County

CLINTON—Charles Hunt; William Ferguson Peebles. COLUMBUS—James Walter McPheeters.

Hopkins County

DANIEL BOONE—Marvin Speed Veal. EARLINGTON—William K. Nisbet; Amplias Owen Sisk. MADISONVILLE—James D. Sory; Robert Sory. MORTONS GAP—Amplias Warrick Davis.

Jackson County

BOND—Henry Anderson Hughes.

Jefferson County

ANCHORAGE—J. VanD. Bedinger; Henry Ditto Berryman. JEFFERSONTOWN—Emory Law Dravo; John Rod Shacklette.

LOUISVILLE—Carl Edwin Abel; Irvin Abell; Dallas E. Abraham; Walter Scott Adams; Calvin Garnett Arnold; Isaac Albert Arnold; Francis G. Aud.

Albert Leonard Bass; Everett Russell Bailey; Ashton Morrow Baldwin; Edward Willard Bates; George Phillip Bentel Jr.; Maurice Albert Blackburn; Oscar Edgworth Bloch; Milton Board; Judson Powell Boulware; Horace S. Brannon; William Thomas Bruner; Theodore LeGrande Burnett; Coleman Craig Burns; Thomas Langford Butler.

Benj. D. Choate; Samuel Clarence Clowney; Thomas Read Collier; James Ruffin Cottell; Joseph Franklin Cook; Walter Legier Coolidge; Dallis Lowell Cornwell.

George Hanlon Day; William Brown Doherty Jr.; Henry Hunt Duke; Ellis Duncan; George F. Dwyer.

Louis Reuben Edleson; Hiram Simm Eggers; Lee Joseph Ernstberger. Charles Farmer; Morris Flexner; John Bunyan Floyd; Frank Thomas Fort; Louis Wallace Frank.

John William Galvin; Charles Meredith Garth; Arthur Ouchterlony Goodman; Walter Bourne Gossett; Ernest Owsley Grant; Guy Parkham Grigsby; Frederick Grunwald; Alfred Kellond Gymer.

Ferdinand Herbert Haessler; Thomas Harris Hale; John M. Hammons; Jetara Hancock; Granville Scott Hanes; Desha H. Harris; Elmer Lee Henderson; Michael Joseph Henry; Charles W. Hobbitt; David L. Hill; Albert Earle Holmes; Emmet Field Horine; Charles John Hufnagel.

John Broadus Jameson; Charles William Jefferson; Griffin Clinton Kelly; Frederick Luther Koontz.

Irvin Linderberger; Charles George Lucas; James Sharp Lutz.

Mehron Haroutyun Mathesian; William Eli McCormack; Stephen Clifford McCoy; Walter Felix McCrocklin; George Martin McLeish; Lewis S. McMurtry; Victor Newcomb Meddis; Sidney Johnston Meyers; Orville R. Miller; John James Moren; John Welsh Moss.

Lamar William Neblett; Richard Willis Oliver; Robert Lee Oliver; Ernest G. Overby; Evan Ellis Owen.

Albro L. Parsons; James Royden Peabody; Harry Lewis Pelle; A. C. L. Percefull; Charles Barker Petrie; Everett Layton Pirkey; Marion Ely Pirkey; Robert Tilford Pirtle; John Williamson Price Jr.; James Henry Pritchett; Drue McBride Purdom.

Ermin Levi Ray; Cleves Richardson; John Breckinridge Richardson Jr.; George Angus Robertson; John Clayton Rogers; Louis Carlisle Rudell.

Herbert Eldredge Schoonover; Jacob Patrick Shacklett; Roy Adeson Shell; Joseph Garland Sherrill; Virgil E. Simpson; Edwin Dargan Smith; Albert Lee Spaulding; Samuel Everett Stanley; William Calhoun Stirling Jr.

Grover C. Todd; Royal Bridges Tracy; John Barnard Voor; Allen H. Walker; Franklin Maran Walker; William Morris Watkins; John Henry Williams; Dunning S. Wilson; Karl David Winter; Waldorf H. Witherpoon; Harry Clanton Woodard; George Hardin Yenowine.

LOUISVILLE—Simrall Anderson; Calvin N. Caldwell; John Wesley Dyer; Jordan Bourne Hankal; Floyd Vern Kilgore; George Milton Shaunty; Llewellyn Powell Spears; William Claybourne White.

SHIVELY—Alfred Harris Kelly.

SOUTH PARK—Charles Penual Harrod.

WAVERLY HILL—Don P. Claypool; Eugene McD. Traubue.

Jessamine County

NICHOLASVILLE—Marvin Chester Pentz.

Johnson County

DENVER—David Harmon Daniel.

Kenton County

COVINGTON—Samuel David Cohen; William Guy Eckman; Clifford Newell Heisel; George Golden Hunter; Thomas Henshaw Kelly; Frank Edward Miller; Thomas Hayden Nelson; Edgar William Northcutt; Willoughby Heath Ranshaw; James Andrew Ryan; Theodore Sallee; James Martin Staughton; Frederick Isaiah Yates. LUDLOW—Harry Elliott McCord; Charles Wilbur Stroup.

Knox County

BARBOURVILLE—Leslie Logan. FOUNT—Seymour Hopper Rowland.

Larue County

BUFFALO—Isaac Leonard Wyatt. HODGENVILLE—Albert Loeb Solomon.

Laurel County

LONDON—Oscar D. Brock; James Boyd Mason.
ATLANTA—John LaFayette Stillings.

Lawrence County

BUSSEYVILLE—Joe Crislys Bussey. CHARLEY—Leslie Scott Hayes.

Lee County

BEATTYVILLE—John Harney Evans.

Lewis County

GARRISON—Arthur Carter Henthorn. VANCEBURG—Charles L. Graham.

Lincoln County

McKINNEY—James Britton Smith. MORELAND—Mastin Lee Pipes.

Livingston County

SALEM—John Luke Hayden.

Logan County
AUBURN—James B. Helm. LEWISBURG—Logan Felts. RUSSELL—Walter Byrne Jr.

Lyon County
KUTTAWA—Thomas Lowery Phillips.

Madison County
BEREA—Albert Franklin Cornelius; Lemuel Jones Godbey. RICHMOND—George Wilmer Pugh; Charles A. Tutt.

Magoffin County
SALYERSVILLE—Roscoe C. Adams.

Marion County
BRADFORDSVILLE—Eugene F. Beard. GRAVEL SWITCH—Thomas Vine Campbell. LEBANON—Charles Bismarek Robert. RAYWICK—Idron A. Mitchell.

Marshall County
BENTON—Lawrence Lee Washburn. CALVERT—William Thomas Little.

Mason County
MAYSVILLE—John Daniel Grant; Samuel Richard Harover; Charles William McClanahan. WASHINGTON—Washington Irvin Berry.

McCracken County
HEATH—Charles Clinton Morris. PADUCAH—Vernon Blythe; Van John Davis; Royal William Grubbs; Clifford E. Harkey; Frederick Bryan Hoyer; Elbert William Jackson; Walter Adair Lackey; Samuel Pulliam; Philip Henry Stewart; Edward Burnett Willingham.

McCreary County
FLAT ROCK—Charles Valentine Gibson.

McLean County
CALHOUN—Paul Dame Moore.

Meade County
BRANDENBURG—Eugene Campbell Hartman.

Mercer County
HARRODSBURG—William Bell Goddard; Carroll Porteus Price; John Thomas Price; John Burton Robards.

Metcalf County
EDMONTON—Perry Wyeliffe Bushong.

Monroe County
STRODE—Eugene Ellsworth Palmore. TOMPKINSVILLE—Richard F. Mean.

Montgomery County
MT. STERLING—David Hardman Bush; Owen Breekinridge Demaree.

Muhlenberg County
CENTRAL CITY—Floyd K. Foley; Septimus Theo. Taylor; Clarence Woodburn. DUNMOR—Charles Henry Haberer. GRAHAM—John Henry Arralson. GREENVILLE—Claude Wilson; Edmund Reno Yost.

Nelson County
FOX'S CREEK—John Breckenridge Overall. NEW HOPE—Rodman ner Williams.

Ohio County
CROMWELL—Oscar Allen; Henry Smith. DUNDEE—James Derelder Swart. FORDSVILLE—Clarence DeWeese. HARTFORD—Augustus ater Riley. ROCKPORT—Frank Brannon DeWitt.

Oldham County
LA GRANGE—Harry Berkley Blaydes; Richard Morris Goldsborough.

Owen County
NEW LIBERTY—George Purdy. OWENTON—John Hall Chrisman.

Pendleton County
BUTLER—John Elmer Wilson. DE MOSSVILLE—Harry Fiske Mann. LAMOUTH—William Andrew McKenney; Lew G. Wallace; Kirtley Ben Woolery.

Perry County
BUCKHORN—Zachry M. Abshar; Samuel Marcellus Richie. HAZARD—Robert Lee Collins; Thomas Cole Helloway. STAUB—William Edward y.

Pike County
PELLIER—James Calvin Preston. McVEIGH—Marshall Abner Moore. RA—Adam Granade Osborne. PIKEVILLE—Solomon B. Casebolt. GINA—Milton Don Flanary. STONE—Lawrence Francis Boland.

Powell County
LAY CITY—Robert Andrew Irvin.

Pulaski County
OMERSET—Edward Thomas Gallagher; Thomas Robbin Griffin; Rob-Fulton Jasper; Carl Norfleet; Sam Fletcher Parker.

Robertson County
RATTON—James McKinley Stevenson. MT. OLIVET—Harlan G. ypoole.

Rockcastle County
IVINGSTON—Eva Walter Walker.

Rowan County
OREHEAD—Frederick Kellum Blair.

Scott County
FORGETOWN—Edward C. Barlow; Robert William Porter.

Shelby County
INCHVILLE—William Harman Nash. SHELBYVILLE—Adriel Clark Eley.

Simpson County
RANKLIN—Samuel Richard Guthrie; Charles Lee Venable; Notley n Witt.

Taylor County
AMPBELLSVILLE—Frank Ingram Buckner; Hugh Harding Richeson.

Todd County
LENSVILLE—John Lee Farmer. KIRKMANSVILLE—Hylan Hale dson. TRENTON—Charles Mathew Gower.

Trigg County
CADIZ—Leonard Champion.

Union County
MORGANFIELD—David Cummins Donan Jr. STURGIS—Claude Bertram Neidhamer.

Warren County
BOWLING GREEN—John H. Blackburn; Phillip Earle Blackerby; Charles Conrad Buford; Frederick D. Cartwright; Dalferes Pennington Curry Jr.; Zachariah Carton Jones; Arthur Thomas McCormack; Robert Benjamin Morris; Morton M. Moss; William Hal Neel; Ernest Rau; Eldon Wright Stone; Burnett W. Wright.
OAKLAND—Adair Wayne White. ROCKFIELD—Robert Carlisle Moss. SMITHS GROVE—James Anderson Grider. WOODBURN—Bonaparte P. Davis.

Washington County
SPRINGFIELD—E. C. Brandon; Garland Withers Hill; Meredith Woodson Hyatt; John Wilson McElroy.

Whitley County
CORBIN—William Moss Cox. LOT—John E. Siler. SILER—Lee Rose. WILLIAMSBURG—Clive Arthur Moss; Lorenzo Oscar Smith.

Woodford County
MIDWAY—Sidney J. Anderson.
VERSAILLES—Smith Alford Blackburn.

LOUISIANA STATE MEDICAL SOCIETY

Officers 1917-18

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T. H. Watkins, First Vice President.....Lake Charles
A. Henriques, Second Vice President.....New Orleans
J. M. Mosely, Third Vice President.....Arcadia
L. R. De Buys, Secretary-Treasurer.....New Orleans

Councilor Districts and Officers

First Congressional District.—W. H. Knolle, Councilor, New Orleans.
Second Congressional District.—Jefferson, St. Charles, St. James and St. John parishes. Homer Dupuy, Councilor, New Orleans.
Third Congressional District.—Assumption, Iberia, Lafayette, Lafourche, St. Martin, St. Mary, Terrebonne and Vermilion parishes. J. W. K. Shaw, Councilor, New Iberia.
Fourth Congressional District.—Bienville, Bossier, Caddo, De Soto, Natchitoches, Red River, Sabine, Webster and Winn parishes. H. H. Smith, Councilor, Cotton Valley.
Fifth Congressional District.—Caldwell, Catahoula, Claiborne, Concordia, East Carroll, Franklin, Jackson, La Salle, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Union and West Carroll parishes. O. W. Cosby, Councilor, Monroe.
Sixth Congressional District.—Ascension, Iberville, East Baton Rouge, East Feliciana, Livingston, Pointe Coupee, St. Helena, St. Tammany, Tangipahoa, Washington, West Baton Rouge and West Feliciana parishes. J. J. Robert, Councilor, Baton Rouge.
Seventh Congressional District.—Acadia, Avoyelles, Calcasieu, Cameron, Grant, Rapides, St. Landry and Vernon parishes. C. A. Gardiner, Councilor, Sunset.
Eighth Congressional District.—E. Lee Henry, Councilor, Lecompte.

HONOR ROLL

Acadia County
CHURCHPOINT—Harry Jenkins.

Allen County
ELIZABETH—Charles L. Gauden; Harold Dean Van Schaick. OAKDALE—Alonzo Trent Palmer. WARD—Grover Grady Whitley.

Ascension County
ACY—Dawson Telesphere Martin. GONZALES—George Buckner LeSueuer. HOPE VILLA—Leslie Wallace Dixon.

Assumption County
NAPOLEONVILLE—William Whitmell Pugh.

Avoyelles County
BUNKIE—David Benjamin Davis. EVERGREEN—William Powell Buck Jr. MANSURA—Kirby Arthur Roy.

Beauregard County
DE RIDDER—John David Frazar; Robert L. McMahon; Spears Owen Turner. LONGVILLE—Erasmus L. Miller. MERRYVILLE—Robert Edward Windham.

Bienville County
ALBERTA—Edward Everette Archibald.

Bossier County
ALLENDALE—Walter Prescott Lambeth. BOSSIER—Alarie Claudius Whittington. ELM GROVE—Harper Leonidas Crow. TAYLORVILLE—Eugene Ernest Simpson.

Caddo County
BELCHER—Walter Ford Henderson. BLANCHARD—Howard P. Dolcs. HOSSTON—Matthias Mills Collins.
SHREVEPORT—Wiley Hugh Billingsley; George William Burchfield; George Bennet Dickson; Clarence Bartel Erickson; Francis Scrimzeous Furman; Broox Cleveland Garrett; Arthur G. Heath; Randall Hunt; Walter Benjamin Hunter; Thomas Peterson Lloyd; Jamison Cottrell Mills; Cornelius Pearl Munday; Pope Webb Oden; Walton Peter Prudhomme; Thomas Ragan; George Allen Ramsey; Isidore Barthelme Rougon; Clifford Phillip Rutledge; Harry Walker Scofield; William Wallace; James Clinton Willis Jr.; Wiltz M. Ledbetter.

Calcasieu County
LAKE CHARLES—Louis Zellek Kushner; John G. Martin. SULPHUR—Rufus H. Fisher; Samuel Benson Lyons.

Caldwell County
CLARKS—Brinsfield King; Dollie O. Sherman. KELLY—Thomas Byron Cracroft.

LOUISIANA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Acadia.....	647	20.9	37,953	1,224	31	..	12	17	12	1
Allen.....	705	25.2	14,139	504	28	..	18	27	13	4
Ascension.....	291	17.1	23,887	1,405	17	..	9	14	5	3
Assumption....	484	44.0	25,950	2,359	11	..	7	9	3	1
Avoyelles.....	847	20.7	37,315	910	41	1	10	33	8	3
Beauregard....	1,100	37.9	19,589	675	29	..	23	29	13	5
Bienville.....	848	32.6	24,833	955	26	..	12	21	8	1
Bossier.....	863	47.9	21,738	1,207	18	..	11	16	14	4
¹ Caddo.....	880	6.7	68,200	520	131	2	89	116	79	25
Caleasieu.....	3,650	89.0	31,974	779	41	..	15	35	18	4
Caldwell.....	531	48.3	9,816	892	11	2	7	7	9	3
Cameron.....	1,501	375.2	4,534	1,167	4	..	1	2	..	..
Catahoula.....	718	71.8	11,745	1,174	10	..	6	8	..	..
Claiborne.....	778	33.8	26,525	1,153	23	..	13	19	20	3
Concordia.....	714	71.4	14,803	1,480	10	..	9	9	4	2
De Soto.....	872	27.2	29,606	925	32	..	18	27	15	1
E. Baton Rouge	455	9.9	37,082	806	46	..	25	39	30	8
East Carroll...	420	70.0	11,831	1,971	6	..	..	5	2	1
East Feliciana..	464	21.1	20,055	911	22	1	9	17	14	5
Evangeline.....	790	7.2	21,516	1,956	11	..	7	8	5	..
Franklin.....	530	27.9	14,251	750	19	..	13	18	9	1
Grant.....	683	35.9	18,188	957	19	..	13	19	4	4
Iberia.....	589	32.7	32,901	1,827	18	..	12	12	11	3
Iberville.....	584	25.4	33,836	1,427	23	..	14	15	12	2
Jackson.....	602	30.1	17,248	862	20	..	10	16	14	4
Jefferson.....	425	53.1	20,382	2,547	8	..	5	7	3	1
Jefferson Davis	580	24.2	20,671	861	24	2	15	19	8	3
Lafayette.....	279	7.7	33,045	917	36	..	18	29	10	1
Lafourche.....	991	47.2	36,197	1,723	21	..	9	18	9	1
La Salle.....	640	53.3	10,602	883	12	..	8	10	3	1
Lincoln.....	472	20.5	20,375	885	23	..	12	21	10	2
Livingston.....	662	94.6	12,471	1,781	7	..	5	6	3	..
Madison.....	650	130.0	10,676	2,135	5	..	2	3	2	..
Morehouse.....	831	39.5	20,357	969	21	..	13	16	11	..
Natchitoches...	1,289	32.2	38,820	970	40	..	26	34	9	2
² Orleans.....	200	0.32	377,010	612	616	11	421	587	372	135
Ouachita.....	642	16.0	29,394	734	40	2	26	34	25	5
Plaquemines....	1,005	91.4	12,524	1,138	11	..	8	9	5	2
Pointe Coupee..	576	38.4	25,289	1,685	15	1	9	9	11	2
Rapides.....	1,370	19.8	48,172	698	69	1	47	59	44	8
Red River.....	400	44.4	11,402	1,266	9	..	7	7	5	..
Richland.....	565	24.6	19,165	833	23	..	14	16	16	3
Sabine.....	1,020	56.7	23,125	1,284	18	..	15	17	10	..
St. Bernard....	616	308.0	5,457	2,728	2	..	..	2	..	1
St. Charles.....	295	42.1	12,764	1,823	7	..	5	6	2	1
St. Helena.....	420	70.0	9,677	1,612	6	..	5	5	1	..
St. James.....	254	14.9	25,061	1,474	17	..	11	13	5	..
Saint John the Baptist.....	231	23.1	15,802	1,580	10	..	6	7	6	..
St. Landry.....	1,645	32.2	55,186	1,082	51	1	21	43	22	2
St. Martin.....	525	40.4	26,083	2,006	13	..	8	9	..	1
St. Mary.....	632	19.7	43,181	1,349	32	..	20	27	6	2
St. Tammany...	706	29.4	22,990	957	24	..	16	22	13	2
Tangipahoa....	790	23.2	37,579	1,105	34	..	19	27	7	2
Tensas.....	632	57.4	17,060	1,550	11	..	8	10	5	3
Terrebonne....	1,756	125.4	31,133	2,223	14	..	12	13	4	1
Union.....	918	45.9	21,860	1,093	20	..	14	14	4	1
Vermillion.....	1,213	50.5	30,538	1,272	24	..	20	20	6	2
Vernon.....	1,367	65.1	22,534	1,073	21	..	12	19	12	3
Washington....	655	24.1	25,643	1,114	23	..	14	23	6	3
Webster.....	609	24.9	22,149	922	24	..	15	20	12	1
W. Baton Rouge	214	30.6	14,352	2,050	7	..	4	5	2	1
West Carroll...	366	33.3	8,120	735	11	..	10	10	1	..
West Feliciana.	352	39.1	13,449	1,494	9	..	5	9	3	..
Winn.....	969	48.4	24,714	1,235	20	..	12	17	7	1
Totals.....	48,613	24.0	1,864,534	920	2,025	24	1,259	1,760	1,002	281

1. Includes Shreveport, population 37,064; physicians 95 [M.R.C. 22].
2. Includes New Orleans, population 377,010; physicians 617 [M.R.C. 136].

Claiborne County
ATHENS—William L. Atkins. HOMER—William Lemos Stone; Joel Ayleus Wilkinson.

Concordia County
FERRIDAY—Victor Wiley Maxwell. SHAW—John Luther Pittman.

De Soto County
PELICAN—James Crowe Burdette.

East Baton Rouge County
BATON ROUGE—Raymond M. Baranco; Thomas J. McHugh; John McKowen; Charles McVea; Thomas C. Paulsen; James Jehu Robert; James Arthur Tucker; Edwin Vignes Whitaker.

East Carroll County
LAKE PROVIDENCE—William Hugh Hamley.

East Feliciana County
JACKSON—Theophilus Watkins Evans; Jesse Worthy Lea; Edwin Mayer Levy; Ralph C. P. Truitt. NORWOOD—Christopher Ludwig Mengis.

Franklin County
GILBERT—Denson Gill.

Grant County
COLFAX—John Cecil Chapman; Charles Walter Phillips; William Job Roberts. SELMA—Isaac Newton Adams

Iberia County
JEANERETTE—Michel Faustin Morvant. NEW IBERIA—Enoch Speneer Fulton; Thomas Lee Welch.

Iberville County
PLAQUEMINE—Adrian A. Landry. WHITE CASTLE—Whyte Glen-dower Owen.

Jackson County
EROS—Joseph Luther Ewling. HODGE—Charles Hodge Mosely. JONESBORO—Edwin Caldwell Simonton. JONESVILLE—Edward Rhinehart Yancey.

Jefferson County
KENNER—Joseph Starns Kopfler.

Jefferson Davis County
LAKE ARTHUR—Walter Russell Abney. WELSH—Claude Alexander Martin; William Luther Stewart.

Lafayette County
LAFAYETTE—Charles Henry Pickett.

Lafourche County
THIBODAUX—Ewell Augustus Kleinpeter.

La Salle County
JENA—James Arthur Coleman.

Lincoln County
RUSTON—Delane S. Calhoun; William S. Rutledge.

Natchitoches County
MARTHAVILLE—Charles Buchanan Law. MELROSE—John Luther Kelly.

Orleans County
NEW ORLEANS—Davis Adiger; Ernest Emile Allgeyer; Charles A. Bahn; William E. Balsinger; Claude D. Barkley; Theodore Thomas Batson; Webster Whitall Belden; William Louis Bendel; Edgar Joseph Beranger; Thomas Buffington Bird; Rupert Michum Blakely; Charles James Bloom; Roy Elmer Bodet; Eleazer Robinson Bowie; Muir Bradburn Jr.; Sidney Francis Braud; Guy Allen Brooks; Frederick Temple Brown; Wiley R. Buffington; Clarence A. Burgheim. William Otis Callaway; Phillips John Carter; Frank Chetta; S. M. D. Clark; George Augustus Cronan. Joseph Rigney D'Aunoy; Henry J. Dauterive; Bradley B. Davis; John Fleming Dicks; Presley Young Donald; Isadore Dyer. Nicholas Kuntz Edrington; John B. Elliott Jr.; Edouard B. F. Faget; Erasmus Darwin Fenner; Frederick Leonard Fenno; John Blaize Ferran Jr.; Edward P. Ficklen; Winfield Newton Floyd; Lucien A. Fortier; Robert H. Foster. Louis Julian Genella; Gustav Raphael Gerson; Addley Hogan Gladden Jr.; James Birney Guthrie. John Taylor Halsey; William McLeod Hayes; Louis Alexander Hebert; James A. Henderson; Ralph Hopkins; Joseph Marlon Hountha; Edward James Huhner; Ralph Wilbur Humphreys; Solon Robinson Humphries. Albert Charles Jackson; Stanford Challie Jamison; Will O'Daniel Jones. Harold Leslie Kearney; William S. Kerlin; Kenneth W. Kinney; William F. Krone. Paul George LaCroix; Oliver Willard Landry; John Alex. Lanford; Thomas Latiolais; Lucien Amaron Ledoux; Isaac Ivan Lemann; Abraham Louis Levin; Lewis Harris Levy; James L. Locascio; Henry Clarence Lochte; Louis Vyasa James Lopez. Urban Maes; Roger John Mailhes; Thomas William Martin; Rudolph Matas; Abraham Mattes; Robert Paul McGowan; John Campbell McSween Jr.; Louis Anthony Meraux; Montefiore Meyer; William George Milhol-land; Charles Jefferson Miller; John Wesley Moore; Edmund Moss; Daniel J. Murphy. Emile Fidel Naef; Mayer Aby Newhauser; Karl Winfield Ney; Henry T. Nicolle. John Tolson O'Ferrall Jr.; Joseph Herbert Page; Frederick William Parham; Jose A. Perez; Ruffin Trousdale Perkins; William Martin Per-kins; Joseph M. Perret; Oliver L. Pothier; Edward Burke Preis. Walter Henry Reilley; Arthur Wellington Rhyne; Waldemar Tissott Richards; Labasse Joseph Robin; George Frederick Roeling; Jacob Rosenthal. Warren Fielding Scott; William H. Seemann; Covington Hardy Sharp; John Signorelli; Henry T. Simon; Harry V. Sims; John Smyth; Jack Sidney Stell; Henry Newell Stilphen; William Robinson Strange. William Barclay Terhune; Bert Tilley; John Almy Tompkins Jr.; Irenaeus Nicholson Tucker; George Hampton Upton; Roy McLean Van Wart; Charles Edwin Verdier; Rubie Justin Vining; Raymond Christian Voss; Joseph D. Wels; Presley Ewing Werlein; William H. Wynn. NEW ORLEANS—William Edward Barker Jr.; Joseph Anthony Danna; Joseph P. Israel; Waldemar R. Metz; Percy Lennard Quereus; Edward Dwight Rodda; Walter Clifton Royals; John Milton Single-ton Jr.

Ouachita County
MONROE—Herbert C. Cole; Leonidas Barkdull Faulk; David Isaac Hirsch; Armand G. McHenry; George William Wright.

Plaquemines County
BURAS—Hewitt L. Ballowe. BURRWOOD—Dalton Harris Trepagnier.

Pointe Coupee County
NEW ROADS—Joseph Farnand Cazayaux. OSCAR—Eric L. Major.

Rapides County
ALEXANDRIA—Jack T. Cappel; Marvin Cappel; Cyriaque J. Gremil-lion; Paul King Rand; Robert L. Randolph. BOYCE—Arthur Richard Choppin. GLENMORA—William E. Reid. LECOMPTE—Frank Montague Lett.

Richland County
DELHI—Robert L. May. GIRARD—Houston Carlisle Chambers. RAY-VILLE—James Clarence Sartor.

St. Bernard County
POYDRAS—John F. Dunshie.

St. Charles County
HAHNVILLE—Theophile Albert Combie.

St. Landry County
SUNSET—Charles Edward Hamilton. MELVILLE—Lester James Wil-liams.

St. Martin County
ST. MARTINVILLE—Patrick Henry Fleming.

St. Mary County
FRANKLIN—Daniel Nathan Silverman. CHARENTON—James William Kirby.

St. Tammany County
 SLIDELL—Aaron Walter Brazler. SUN—Victor Lamar Henton.
 Tangipahoa County
 AMITE—Glenn J. Smith. INDEPENDENCE—Nicolo V. Alessi.
 Tensas County
 LOCUST RIDGE—James Moore Adams. NEWELLTON—Ralph Prosser
 Evans. WATERPROOF—Joseph Marion Gorton.
 Terrebonne County
 HOUMA—Thaddeus Ignatius St. Martin.
 Union County
 MARION—Allen B. Wheelis.
 Vermilion County
 ABBEVILLE—Harold G. F. Edwards. ERATH—Pressley Aloysius
 Abbe.
 Vernon County
 BARHAM—Christopher Columbus Self. FULLERTON—Milton William
 Abbot. LEESVILLE—Daniel Oscar Willis.
 Washington County
 ANGIE—William T. McNeese. BOGALUSA—Truss Malcolm Brister.
 JONA—Haston Varnada Jones.
 Webster County
 SPRING HILL—Birt Lee Browning.
 West Baton Rouge County
 PORT ALLEN—Paul Bernard Landry.
 Winn County
 WINNFIELD—Daniel Wade Kelly.

MAINE MEDICAL ASSOCIATION

Officers 1917-18
 A. Spalding, President.....Portland
 George Coombs, First Vice President.....Calais
 M. Stewart, Second Vice President.....South Paris
 L. Bryant, Secretary-Treasurer.....Bangor

Councilor Districts and Officers
 First District.—Cumberland and York counties. F. N. Whittier, Coun-
 or, Brunswick.
 Second District.—Androscoggin, Franklin and Oxford counties. Geo. L.
 att, Councilor, Farmington.
 Third District.—Sagadahoc, Knox and Lincoln counties. A. F. Wil-
 ns, Councilor, Phippsburg.
 Fourth District.—Kennebec, Somerset and Waldo counties. Oliver W.
 ner, Councilor, Augusta.
 Fifth District.—Washington and Hancock counties. W. N. Miner,
 councilor, Calais.
 Sixth District.—Aroostook, Penobscot and Piscataquis counties. B. L.
 ant, Councilor, Bangor.

MAINE											
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo- men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	
Androscoggin..	450	4.6	63,896	658	97	3	55	73	67	7	
Aroostook.....	6,453	83.4	84,825	1,161	73	..	38	57	54	7	
Cumberland....	853	3.4	120,281	481	250	2	112	171	163	46	
Dorchester.....	1,789	73.4	19,611	754	26	2	14	17	18	2	
Hancock.....	1,522	29.8	35,575	697	51	..	16	25	27	6	
Kennebec.....	879	7.7	65,595	575	114	1	60	94	74	12	
Knox.....	351	8.2	28,981	673	43	1	22	29	26	6	
Lincoln.....	457	16.9	18,216	674	27	..	7	20	14	3	
Oxford.....	1,980	33.5	39,189	664	59	5	33	41	43	12	
Penobscot.....	3,258	22.2	91,882	625	147	7	62	104	99	23	
Piscataquis....	3,770	157.1	22,030	917	24	..	18	19	20	3	
Sagadahoc.....	250	14.2	18,574	773	24	..	15	15	16	6	
Somerset.....	3,633	67.3	38,039	705	54	4	25	36	25	6	
Waldo.....	724	20.1	23,333	649	36	..	16	30	15	8	
Washington....	2,528	53.8	42,905	912	47	2	23	35	34	3	
York.....	989	9.2	71,184	565	107	..	38	67	70	9	
Totals.....	28,895	24.5	794,216	673	1,179	27	544	833	865	164	

Includes Portland, population 64,720; physicians 169 [M.R.C. 39].

HONOR ROLL

Androscoggin County
 JBURN—Herbert Leslie Williams. LEWISTON—Edson S. Cummings;
 am L. Haskell; True Edgecomb Makepeace; Joseph John Pelletier;
 ld E. E. Stevens. LIVERMORE—Willis Elden Gould.
 Aroostook County
 RIBOI—Frank Orvis Blossom; Ferderick Leslie Gregory; Charles
 cis Thomas. FORT FAIRFIELD—William Gilbert Chamberlain.
 LTON—John Garfield Potter. MAPLETON—Albion Elliot Floyd.
 OPITLOCK—Harry Whipple Johnson.
 DULTON—Alba G. Walker.
 Cumberland County
 UNSWICK—Leon Stanley Lippincott; E. G. A. Stetson; Frank
 andel Whittier. FORT LEVETT—Fred T. Koyl. HARRISON—
 es Bradford Sylvester.
 RTLAND—Thomas Jayne Burrage; Chester Leonard Clarke; Wil-
 Lewis Cousins; Philip Webb Davis; Carl G. Dennett; Harold
 en Everett; Charles E. Fogg; Ernest Bertram Folsom; Thomas
 t Foster; Frank Yuba Gilbert; Carl Dinsmore Gray; Alfred W.
 ell; John Albert Hayward; Erastus Eugene Holt Sr.; Herbert Martin
 s; Royce Brewster Josselyn; Dudley Cromwell Kalloch; Charles

Dearborn McDonald; Henry P. Merrill; Herbert Eldridge Milliken; Alfred
 Mitchell; Roland Banks Moore; Bryant E. Moulton; Nelson Estes
 Nichols; Julius Calvin Oram; Bertrand Dean Ridlon; William Henry
 Shanahan; Henry Marshall Swift; Langdon Thaxter; Philip Pickering
 Thompson; Talcott Ostrom Vanamee; Merlon Arden Webber; De Forest
 Weeks; Arthur Winford; Herndon White; Arthur Wallace Winch; Charles
 Sias Wright; Benjamin Franklin Hayden; Frank Herbert Jordan; Loring
 Sawyer Lombard. WESTBROOK—Wybern A. Coombs.

Franklin County
 FARMINGTON—George L. Pratt; Harold S. Pratt.
 Hancock County
 BAR HARBOR—Elmer J. Morrison. BUCKSPORT—Hedley Vicaro
 Tweedle. CASTINE—Harrison Briggs Webster. ELLSWORTH—Arthur
 Hale Parcher. FRANKLIN—Charles Sargent Underhill.
 WINTER HARBOR—Jesse Sumner Bragg.
 Kennebec County
 AUGUSTA—Nessib Simon Kupelian; Henry K. Stinson; Carl Hamlin
 Witherell; Arthur Clarendon Wright. HALLOWELL—Herbert Wilder
 Hall. NATIONAL SOLDIERS HOME—David Lloyd Williams. NORTH
 VASSELBORO—Francis D. Walker. READFIELD—John S. Milliken.
 WATERVILLE—Arthur Ulderich Desjardins; Edson Everett Goodrich;
 Frederick Thayer Hill; John G. Towne.
 Knox County
 ROCKLAND—Lester Belmont Bradford; Earl Burton Carr; Michael J.
 O'Connor; Francis H. Webster. UNION—Lorenzo Walter Hadley.
 VINAL HAVEN—Freeman Fletcher Brown.
 Lincoln County
 DAMARISCOTTA MILLS—Willis E. Clarke. DAMARISCOTTA—James
 Webster Loughlin. WISCASSET—Bernard A. Bailey.

Oxford County
 ANDOVER—Frank Elliott Leslie. BETHEL—Raymond Tibbetts.
 BUCKFIELD—Harold Fisher Atwood. DIXFIELD—James Melvin Stur-
 tevant. HEBRON—Linn Bayard Marshall. NORWAY—Harold M. Allen;
 Walter J. Avery. OXFORD—Harry B. Farris. RUMFORD—Harold W.
 Stanwood; Fred Eugene Wheel. SOUTH PARIS—Delbert M. Stewart.
 WEST PARIS—Fred Everett Wheeler.

Penobscot County
 BANGOR—Lester Adams; Raymond Van Ness Bliss; Loren Frank
 Carter; Henry Milton Chapman; James F. Cox; Harold Hayes Crane;
 Hugh Gordon McKay; Harry Daniel McNeill; Louis Mordecai Pastor;
 William Chute Peters; Harrison Leonard Robinson; Herbert Charles
 Scribner; John Budd Thompson; Walter Everett Whitney; Walter Brown
 Willey Jr.; Allen Woodcock. BRADFORD—Horace Kimball Richardson.
 BREWER—Leonard Harris Ford; Calvin Merrill Thomas. DEXTER—
 Gillman Horace Clough; Joseph H. Murphy. EAST MILLINOCKET—
 Clarence Linwood Scamman. ENFIELD—Walter Jean Hammond. LIN-
 COLN—Harold Merle Goodwin; Isaac Louis Gordon. MILLINOCKET—
 Charles Sawyer Bryant. ORONO—William James Young.
 BANGOR—William Edward Emery.

Piscataquis County
 DOVER—Alvin H. Stanhope. FOXCROFT—Edgar T. Flint. MILO—
 James McFadyen.

Sagadahoc County
 BATH—Robert Hannigan; Warren E. Kerschner; Harry F. Morin;
 Seth Smith Mullin. PHIPPSBURG—Adelbert Franklin Williams. WEST
 WOOLWICH—Ardenne A. Stott.

Somerset County
 BINGHAM—Percival Orison Hopkins. CANAAN—Harold Thornton
 Bibber. FAIRFIELD—Morton H. Langill. MADISON—William Herman
 Kennison; John Lyman Pepper. NORTH ANSON—Henry Edward
 Marston.

Waldo County
 BELFAST—John Chellis Ham; Harry Leonard Kilgore. BROOKS—
 Norman Randolph Cook. ISLESBORO—George Warren Phelan. SEARS-
 MONT—Charles Wesley Kingshorn. SEARSPORT—Sumner Chadbourne
 Pattee. UNITY—Preston W. Whittaker. WINTERPORT—Leroy Henry
 Smith.

Washington County
 CHERRYFIELD—Dana Frank Cummings. MACHIAS—Oscar F. Larson.
 PRINCETON—Harold Ross De Pue.

York County
 BIDDEFORD—David E. Dolloff; Paul S. Hill; Clarence F. Kendall;
 William E. Youland Jr.; KENNEBUNK—Justin Starr Barker. SACO—
 Lester Lovett Powell. SANFORD—Stephen Aratas Cobb Jr.; Daniel
 Webster Wentworth. SOUTH BERWICK—Charles E. Cook Jr.

MEDICAL AND CHIRURGICAL FACULTY
 OF MARYLAND

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 Hiram Woods, Baltimore; W. Brinton, Baltimore; R. Winslow, Balti-
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 City; C. O'Donovan, Baltimore; Peregrine Wroth Jr., Hagerstown;
 J. F. Crouch, Baltimore.

HONOR ROLL

Allegany County
 CUMBERLAND—Leo M. Cavanaugh; Winter Reginald Frantz; George
 Oliver Sharrett; William F. Williams Jr.; Frank Minium Wilson; James
 H. Wilson. ECKHART MINES—George Hiram Wilson. FROSTBURG—

William Michel. MT. SAVAGE—F. Alan G. Murray. WESTERNPORT—Alexander Brown Kalbaugh.

Anne Arundel County

ANNAPOLIS—John R. Frank. CROWNSVILLE—Nolan Don Carpentier Lewis. FRIENDSHIP—Compton Wilson. GALLOWAYS—Martillus Hollis Todd. MILLERSVILLE—Harry Baldwin Gantt. ODENTON—Oscar Harrison McNemar.

CURTIS BAY—William Dodds Scott Jr.

MARYLAND									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Comm'd in M.R.C., etc.
Allegany.....	443	6.1	68,774	942	73	1	38	53	46
Anne Arundel..	432	10.8	39,553	988	40	2	19	28	17
Calvert.....	218	21.8	10,398	1,039	10	..	5	5	9
Caroline.....	319	14.5	21,382	971	63	3	23	35	35
Carroll.....	447	7.1	33,986	539	33	..	15	20	25
Cecil.....	377	11.4	23,759	719	33	..	7	10	3
Charles.....	464	33.1	16,386	1,170	30	..	16	22	19
Dorchester.....	571	19.0	29,184	972	79	1	44	59	46
Frederick.....	663	8.4	53,221	686	16	..	11	14	9
Garrett.....	685	14.8	21,859	1,366	37	..	18	25	18
Harford.....	442	11.9	27,965	755	23	..	10	16	12
Howard.....	250	10.9	16,106	700	21	..	8	13	7
Kent.....	282	13.4	16,957	807	32	1	28	32	35
Montgomery...	521	10.0	33,284	640	47	1	16	24	20
Prince Georges.	482	19.0	40,708	866	21	..	8	15	6
Queen Annes...	365	17.4	16,839	801	14	..	3	10	3
Saint Marys...	371	26.5	17,020	1,216	26	1	12	16	18
Somerset.....	331	12.7	26,843	1,032	23	..	10	14	13
Talbot.....	268	11.6	19,620	853	78	1	30	52	50
Washington...	459	5.9	52,890	678	26	..	18	23	14
Wicomico.....	371	14.2	29,706	1,142	24	..	13	17	13
Worcester.....	495	20.6	22,554	939	135	2	43	97	69
Baltimore.....	650	4.8	145,411	1,077	1,358	58	865	1,112	587
Baltimore City.	30	0.02	625,000	460	71	1,269	1,727	1,088	403
Totals.....	9,641	4.2	1,409,415	621	2,268	71	1,269	1,727	1,088

Baltimore City County

BALTIMORE—James Stewart Akehurst; Franklin Anderson; Walter Thomas Anderson; Howard E. Ashbury; Algernon Duval Atkinson; Henry Exum Austin.

William S. Baer; Frederick H. Beatjer; Walter A. Baetjer; Bartus Trew Baggott; Charles Bagley Jr.; John H. Baird; Horace McMurrin Banks; Robert P. Bay; Stanhope Bayne-Jones; Edward B. Beasley; Edward Hayes Benson; Bertram Moses Bernheim; Carl Alfred Lanning Binger; Herbert C. Blake; Joseph C. Bloodgood; Charles John Boehs; Thomas Richmond Boggs; James Bordley Jr.; Earle Griffith Breeding; Hugh Warren Brent; Eveleth Wilson Bridgman; Ipolitas Bonediktas Bronushas; Charles R. Brooke; William Lewis Brosius Jr.; Greenberry Bedford Brown Jr.; Nathan Worth Brown; Charles Teackle Carter Buckner; Walter Cleveland Burket; Charles Hammon Burton.

Curle Latimer Callender; Harry R. Carroll; David Wendel Carter Jr.; Henry R. Carter Jr.; Howard Lee Cecil; Thomas R. Chambers; Joseph A. Chatard; Alan M. Chesney; James Julian Chisolm; Paul William Christman; Admont Halsey Clark; John White Clift; Stanley Cobb; William J. Coleman; John Archibald Campbell Colston; Sydney M. Cone; Wilford Anderson Hall; James Eric Cudd; Robert Sydney Cunningham.

Wendell Phillips Dally; William H. Daniels; John Thomas Daves; William Brown Davidson; Edwin Greene Davis; John Staige Davis; Pinkney Lee Davis; Walter Lee Denny; Frederick L. Detrick; William Dew; Louis Diener; Carl Herman Dolge; Cranford H. Douthirt; Ernest Speers du Bray; William Core Duffy.

Page Edmunds; Charles R. Edwards; Michael Joseph Egan Jr.; Joseph Pugh Edison; Albert Eisenberg; Franklin Charles Eleder; Edward Dorsey Ellis; DuMont Frelinghuysen Elmendorf; Charles Bertram Ensor; Clarence P. Erken-Braek; Dorsey Paul Etzler; Alexander Mason Evans; Frank Alexander Evans; John Evans.

Leon Kendall Fargo; Rhodes Fayerweather; Israel Jacob Feinglos; Maurice Feldman; John M. T. Finney; William Parker Finney Jr.; William Alexander Fisher Jr.; Herbert Melvin Foster; Edgar Bar Friedenwald; Robert Guy Fuller; John S. Fulton.

Herman Anderson Gailey; Cary B. Gamble Jr.; Joseph Edward Gately; William Russell Geraghty; Hugh Clinton Fiske Gill; Alexander James Gillis; Ernest Fred Gott; Harry Gross; Bowers Hewitt Growt; Clyde Graeme Guthrie.

Charles Carroll Habbistion; Albert Gaither Hahn; Roseoe Willis Hall; Howard Harrison Hamman; Martin Jay Hanna; William Morris Happ; George Edward Webb Hardy Jr.; Bryant Eugene Harrell; Archibald Cunningham Harrison; Eugene Henderson Hayward; Erland Harold Hedrick; Arthur Pendleton Herring; George J. Heuer; Isidore Isaac Hirschman; Charles Wilbur Hoffman; Leslie Benjamin Hohmann; Joseph William Holland; Lysander Palmer Holmes; Lewis Hoagland Howard; John Howland; Jack Mason Hundley Jr.; Raymond Garrison Hussey; Amos Francis Hutchins.

Walter J. Jackson; Louis Llewellyn Jacobs; Benjamin Meyer Jaffe; William Herndon Jenkins; Frank Leslie Jennings; Edward Sooy Johnson; Harry G. Johnson; Robert William Johnson; Robert Wilkinson Johnson Jr.; Charles Loring Joslin; Moses Randolph Kahn; Francis Xavier Kearney; Claude Currie Kelly; Joseph William Ketzky; Clapman Price King; John Hendrickson King; John Theodore King Jr.; Hubert C. Knapp; Earnest A. Knorr; Henry Rowland Kritzer.

Charles Adam Laubach; Morris Benjamin Levin; Milford Levy; Robert M. Lewis; Moses Louis Liechtenberg; Oscar V. Linhardt; Edgar S. Linthcum; Frederick H. Linthcum; John Gabriel Long; Edward Anderson Looper; Coen L. Luckett; John Francis Lutz; Frank S. Lynn; Dunean McCalmann; Frank Christian Marino; Frank Martin; Henry Page Mauck; William T. May; Erwin Emanuel Mayer; Standish McCleary; Alexander Douglas McConachie; Joseph Libby McLaughlin; Claude V. McMeen; Henry Merkel; Gilbert Richard Miekletwalte; William Lawrence Millea; Theodore Sidney Moise; Joseph Earle Moore; Arthur Bernard Moran; William Lorenzo Moss; John G. Murray Jr.

William Neil Jr.; Samuel Newman; Clarence Adolph Neymann; Firmage King Nichols; Frank Peter Nicholson; Carl Clyde Nohe; Joseph Edward Norris; Edward Novak; James Joseph O'Connor; Walter A. Ostendorf; Newdigate Moreland Owensby; Marcus Ostro; Juan L. Paya-

wall; Phillip Pearlstein; Hovhannes Kevork Peltekian; Clement A. Penrose; Don Preston Peters; Francis Joseph Powers; George Heinrichs Preston; Samuel Orr Pruitt.

Fred Wharton Rankin; Moses Raskin; Charles W. Rauschenbach; Ralph Lewis Reber; Clarence Mansfield Reddig; Sidney O. Reese Jr.; Mont Rogers Reid; Charles Adam Reifschneider; Andrew Jackson Reik; Henry Ottridge Reik; Frederick Oscar W. Reinhard; George Herman Reinhardt; William W. Requardt; Gabriel E. Rigau; Thomas Milton Rivers; Harry Lee Rogers; Gilbert White Rosenthal; Lewis J. Rosenthal. Joseph Salan; Edgar P. Sandroek; Bertram Julian Sanger; Abraham Schapiro; Samuel Dennison Shannon; Henry Newton Shaw; Joseph Pardoe Shearer; Albert Shelley; Lloyd P. Shippen; Arthur M. Shipley; Alfred Theodore Shohl; David Silberman; Albert George Singewald; Henry Nathaniel Sisco; John Galen Skilling; Harry R. Slack Jr.

Daniel C. Wharton Smith II; Henry Lee Smith; William Henry Smith; Willford H. Smith; Anton Christian Sorenson; James Spence Speed; Hugh Raymond Spence; Lewis Cass Spence; Henry Hodges Stansbury; Harry Michael Stein; Leo Fleischer Steindler; Daniel D. V. Stuart; George Adolph Stewart; George L. Stickney; Harvey Brinton Stone; David Corbin Street; Alan C. Sutton; Hugh Wilson Sweeny; Virgil Preston Willis Sydenstrieker.

Robert Tunstall Taylor; William S. Thayer; Charles Roberts Thomas; William Smith Tillet; Gideon Timberlake; Horace Bullock Titlow; Martillus Hollis Todd; John Henry Traband Jr.; John Turner; J. Harry Ullrich; William Van Kirk; Fred H. Vinup; William Carson von Glahn.

Arthur Cochran Walker; George Walker; Henry Janney Walton; Howard H. Warner; Theo. B. Warner; Charles Alexander Waters; Lewis Hill Weed; Paul Gerhardt Weisman; William Henry Welch; Fred P. Weltner; Maurice Cornelius Wentz; Howard Lawrence Wheeler; Samuel Augustus White; William Kelso White; Lloyd Bankson Whitham.

Harry Lyman Whittle; George Richard Wilkinson; Gordon Wilson; Harry Eugene Wilson; Nathan Winslow; George Bernays Wislocki; Humphrey Dorsey Wolfe; Roy Azanah Wolford; Austin Hislop Wood; Churchill Freeman Worrell; Frank Dallam Worthington; Herbert Maxwell Wynne; Hugh Hampton Young; Isadore Zadek.

BALTIMORE—Wm. Willis Anderson; Nathaniel Hawley Brush; Geo. G. E. Cross; Verne R. Mason; Horace Withers Reid; Lawrence Richardson Wharton; William Houston Toulson.

Baltimore County

CATONSVILLE—Vernon Litsinger Mahoney; Joseph Carroll Monmonier; John Guy Runkel. CORBETT—Thomas Ross Payne. GLENARM—Adam William Reier. GOVANS—John C. Baldwin; George William Bishop. OWINGS MILLS—Kenneth Barzillai Jones; Elbert Coy Reitzel. PIKESVILLE—Henry Alan Naylor. RASPEBURG—Albert Livingston Wilkinson. SPARROWS POINT—Joseph Judson Waff. TOWSON—Daniel of St. Thomas Jenifer. WESTPORT—James Abram Duff. WHITE HALL—N. Milner Bortner.

Calvert County

WALLVILLE—George Peterson.

Caroline County

DENTON—Benjamin Bruce Brumbaugh; Percy R. Fisher. PRESTON—John Raymond Downes. RIDGELY—Jacob C. Madara.

Carroll County

HAMPSTEAD—Harry Cleveland Preston. SYKESVILLE—Henry Fred John Buettner; Frank Nevin Ogden. WESTMINSTER—Thomas Joseph Cooman.

Cecil County

ELKTON—William Dennis Cawley; Henry A. Mitchell. NORTH EAST—Wilmer M. Priest. PORT DEPOSIT—Clarence I. Benson; Granville Hampton Richards.

Charles County

INDIAN HEAD—Maynard James Simmons. NEWPORT—Francis Eugene Jameson.

Dorchester County

CAMBRIDGE—Raymond Kennedy Foxwell; Marcus Duke Smith. FISHING CREEK—William Humes Houston. VIENNA—Edward Elmer Lamkin.

Frederick County

FREDERICK—Charles Henry Conley; George Bruce Crist; Bernard Oscar Thomas. NEW MARKET—Charles Lowe Magruder. STATE SANATORIUM—William Howard Yeager. WOODSBORO—William Hartman Mitchell.

Garrett County

KITZMILLER—Edward Judson Miller. OAKLAND—Henry Stanley Kable.

Harford County

ABERDEEN—Vernon Stevens Wilkinson. BEL AIR—William Young Hollingsworth; Purnell Fletcher Sappington. FALLSTON—Richard Emory Yellott. HAVRE DE GRACE—John Collinson. PERRYMAN—Jay Hugh Stier.

Howard County

ELLICOTT CITY—Frank Oldham Miller. GUILFORD—Louis B. Douglas.

Kent County

CHESTERTOWN—Frank Brown Hines.

Montgomery County

BARNESVILLE—Joseph Meade White. BROOKSVILLE—John Hal Janney Jr. CHEVY CHASE—Thomas Kennerly Conrad; John Ryan Devereaux. DAMASCUS—George Milton Boyer. KENSINGTON—Thorn ton Moore Shorkley. POOLESVILLE—Francis Thomas Williams. ROCK VILLE—George Edwin Lewis. SILVER SPRINGS—Howard Henry Howlett. HOWARD MONTGOMERY. TAKOMA PARK—Charles Lee Baker.

Prince George County

BOWIE—James Handy Truitt. HYATTSVILLE—Caldwell Woodruff. LANHAM—Herbert Brodger Montgomery.

Queen Anne County

QUEENSTOWN—Samuel Jackson Price.

Somerset County

CRISFIELD—Rastus Ranson Norris; John C. Woodland.

St. Marys County

JARBOESVILLE—Philip J. Bean; James Douglas Crane.

Talbot County

EASTON—Alexander McCulley Stevens.

Washington County

HAGERSTOWN—Charles Nelson Branin; Frank Newcomer Hoffmeier; Richard Fulton Kleffer; Paul Nelson Fleming; William Hamilton Smith; Ralph Stanley Stauffer. HANCOCK—William Fulford Sappington. WILLIAMSPORT—Ira Melvin Zimmerman.

Wicomico County

BIVALVE—Robert E. Caldwell. SALISBURY—John Martin Elderice.

Worcester County

BERLIN—Ira Clinton Tyndall.

MASSACHUSETTS MEDICAL SOCIETY

Officers 1917-18

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Arthur K. Stone, Treasurer.....Boston
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MASSACHUSETTS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commiss'd in M.R.C., etc.
Barnstable.....	409	7.7	29,396	554	53	2	24	37	37	5
Berkshire.....	966	6.4	118,996	798	149	6	39	104	83	22
Bristol.....	567	1.4	368,585	969	380	23	274	295	185	56
Dukes.....	107	11.8	5,084	564	9	..	3	4	4	..
Essex.....	497	0.9	507,572	904	561	30	391	392	299	51
Franklin.....	697	11.4	50,369	825	61	1	23	42	37	7
Hampden.....	636	1.7	281,559	756	372	22	207	278	224	55
Hampshire.....	585	5.9	72,371	730	99	12	43	71	63	14
Middlesex.....	832	0.83	773,637	779	993	74	627	671	601	110
Nantucket.....	51	5.6	3,258	362	9	1	2	4	3	2
Norfolk.....	410	1.3	214,851	720	298	35	146	222	170	42
Plymouth.....	675	2.1	167,597	532	215	10	105	155	119	29
Suffolk.....	51	0.02	363,688	175	2,067	151	1,051	1,609	1,229	329
Worcester.....	1,556	2.5	446,723	739	604	36	430	441	349	69
Totals.....	8,039	1.36	3,403,686	669	5,870	403	3,410	4,325	3,403	791

1. Includes Pittsfield, population 43,004; physicians 66 [M.R.C. 13].
2. Includes Fall River, population 129,828; physicians 143 [M.R.C. 22], so New Bedford, population 121,622; physicians 133 [M.R.C. 22], also Taunton, population 37,023; physicians 39 [M.R.C. 4].
3. Includes Haverhill, population 51,870; physicians 77 [M.R.C. 5], also Lawrence, population 102,923; physicians 93 [M.R.C. 3], also Lynn, population 104,534; physicians 132 [M.R.C. 17], also Salem, population 346; physicians 49 [M.R.C. 4].
4. Includes Chicopee, population 32,287; physicians 11 [M.R.C. 2], also Holyoke, population 66,503; physicians 74 [M.R.C. 6], also Springfield, population 109,268; physicians 199 [M.R.C. 35].
5. Includes Cambridge, population 114,293; physicians 171 [M.R.C. 26], so Everett, population 40,160; physicians 29 [M.R.C. 2], also Lowell, population 114,366; physicians 124 [M.R.C. 14], also Malden, population 243; physicians 58 [M.R.C. 4], also Medford, population 33,848; physicians 16 [M.R.C. 3], also Newton, population 44,614; physicians 94 [M.R.C. 11], also Somerville, population 91,218; physicians 66 [M.R.C. 6], so Waltham, population 31,206; physicians 36 [M.R.C. 5].
6. Includes Brookline, population 36,075; physicians 78 [M.R.C. 11], so Quincy, population 44,318; physicians 31 [M.R.C. 8].
7. Includes Brockton, population 69,152; physicians 81 [M.R.C. 11].
8. Includes Boston, population 772,997; physicians 1,957 [M.R.C. 312], so Chelsea, population 48,405; physicians 59 [M.R.C. 10].
9. Includes Fitchburg, population 42,419; physicians 49 [M.R.C. 5], so Worcester, population 170,280; physicians 297 [M.R.C. 31].

HONOR ROLL

Barnstable County

HARWICH—Percy Farrington Miller. HYANNIS—Herman Baker; Charles Edward Harris. PROVINCETON—Roy Farrington Brown; Lawrence P. Curley.

Berkshire County

GREAT BARRINGTON—John Dodge Peters. LANESBORO—Louis Wright Barnes. MILL RIVER—Robert Cowan Sellow. NORTH ADAMS—Robert Carpenter; Nicholas Matthew Crofts; Arthur M. Curran; George W. Curran; Charles Wadsworth Wright. PITTSFIELD—Isaac Spencer Dodd; Daniel Francis Hannon; Kenneth Johnson; William James W. Ly; Thomas Littlewood; William Thomas McMahon; Edward R. Mosser; Arthur Fredolf Peterson; Harry Albert Schneider; Harrison Mor-Stewart; John Albert Sullivan; Harry John Tate; John Blanchard Thomas. WILLIAMSTOWN—Frederick Hollis Howard.

Bristol County

ATTLEBORO—Jerome Joseph McCaffrey; Wilfred Francis Milot; Patrick Joseph O'Dea. FALL RIVER—Frederick R. Barnes; William Henry Bouchette; George Willard Blood; George E. Butler; Thomas Cox, John W. Doyle; Daniel John Fennelley; Jonathan Pyott Hadfield; John Patrick Jackson; Samuel Benjamin Kaufmann; Elie Joseph La Liberté; John W. Lindsey; Richard Patton MacKnight; William Frank MacKnight; Ernest Dona Milot; Ernest Marriett Morris; William Sarsfield; George Gibson Parlow; Ralph Hayward Simmons; Clarence Wind-Stansfield; Philemon Edwards Triesdale; Charles Hansell Watt. RODMAN—Thomas S. Lowe. MANSFIELD—Benoni Mowry Latham; Charles John Albert Randall.

NEW BEDFORD—Arthur Lord Brunelle; Clarence E. Burt; Hormidas Bouchette; Randall Clifford; Jacob Gennert; John G. Hathaway; Erick John Johnson; Evariste La Riviere; Dennis Joseph Lowney; John Francis Mahoney; William Aloysius McCormick; William Armitage Moffatt; Patrick Henry O'Connor; Raoul Caston Provost; J. Norman Ris-; Anthony Joseph Roderick; Raymond Ernest Senecal; William Clinton Shely; Frank Elliot Stetson; William Kenneth Turner; John B. Webster; Edward Wallace Young. NORTH ATTLEBORO—Edward Silvanus Ward.

TAUNTON—Andrew James McGraw; Joseph Leroy Murphy; R. A. Pierce; Joseph Bernard Sayles.
NEW BEDFORD—Robert Irving Walker.

Essex County

AMESBURY—Michael Edward Connor. BEVERLY—Dwight Cowles; Peer Prescott Johnson; Harry Edward Sears; Whitman Gibson Stickney. DANVERS—Fergus Almy Butler. ESSEX—Joseph Simpson. GLOUCESTER—James H. Malonson; Scott Weber Mooring. GROVELAND—Elmer Stanley Bagnall. HAVERHILL—Charles James Carden; Lucien Romeo Chaput; William Cogswell; Homer Leigh Conner; Arthur Otis McLaughlin.

LAWRENCE—Joseph Forest Burnham; William Howe Merrill; Joseph Michael Scanlon. LYNN—Nathaniel Pope Breed; Henry L. Davis; Eugene Malcolm Dolloff; George W. Eastman; George Henry Gray; Gustave Hartmann; Leonard W. Hasset; Charles Louville Mason Judkins; William Vivant Kane; William Franklin Lemaire; Louis H. Limauro; Roy W. Mathes; Charles Henry Merrill; Everett Albert Merrill; Frank Wilbur Atkins Mitchell; Thomas Bernard Rafferty; John Wilson Trask. MANCHESTER—Rufus Wilfred Long. MARBLEHEAD—Martin William Peck. METHUEN—Arthur J. Ganley; Rolfe Clarke Norris. NEWBURYPORT—Thomas R. Healy; Frank Whipple Snow; Abraham Fifield Thomas.

SALEM—Lawrence E. Chisholm; DeWitt S. Clark; Ralph Winslow Haywood; Edward A. Rushford. SAUGUS CENTER—George Clarence Parcher. TEWKSBURY—Harry Ray Coburn. TOPSFIELD—Thomas L. Jenkins. WENHAM—John Charles Phillips.
HATHORNE—Alfred P. Chronquest.

Franklin County

CONWAY—Clarence Henry Dobson. GREENFIELD—Charles Francis Canedy; Edward Bryant Hodskins; David James McConnell; Frank Albertus Millett. ORANGE—Kirke Locke Alexander. SHELburne FALLS—Charles Louis Upton.

Hampden County

BLANDFORD—Percy Andrew Shurtleff. CHESTER—Howard Arthur Lanpher. CHICOPEE—Max Phillip Cowett; John H. C. Gallagher. CHICOPEE FALLS—William Joseph Dillon. EAST LONG MEADOW—Ellsworth Emmett Light. HOLYOKE—Dolor Israel Beaupré; Philip Henry Clarke; William Francis Greaney; George Dallas Henderson Jr.; Edgar Hamill Hughes; William Patrick Ryan. LONG MEADOW—Harry C. Martin. PALMER—Buell Leslie Ashmore; Morgan B. Hodskins; James Moore Murphy.

SPRINGFIELD—William B. Adams; George H. Bergeron; John Mathews Birnie; Orland R. Blair; Harold F. Budington; George Herbert Burke; Harry F. Byrnes; William Andrew Robertson Chapin; Johnston Louis Chereskin; John McMahon Claffy; William Leo Connery; Parker M. Cort; Ernest Leland Davis; Augustus Hughes Galvin; Ernest A. Gates; David Eugene Harriman; Arthur J. Horrigan; Clyde C. Johnston; Philip Kilroy; Charles Francis Lynch; Patrick Maurice Moriarty; Albert Augustus Naumann; James H. Quinn; Richard Augustine Rochford; Samuel Dudley Rumrill; George Leonard Schadt; Mortimer Joseph Stoddard; John Frank Streeter; John Matthew Tracy; Albert Julius Treichler; Walter Rupert Weiser; Harry Ray Wheat. WESTFIELD—Miles Dudley Chisholm; Joseph Justin Cosgrove. WEST SPRINGFIELD—Warren John Bostick; George B. Corcoran.

SPRINGFIELD—Robert Nason Nye; Bernard Rabinovitz; Henry Zimmerman.

Hampshire County

AMHERST—James Francis Bowen. BELCHERTOWN—Henry Whitney Eliot. EASTHAMPTON—Joseph Homer Gelineau; Werner Hiltpold; Edward Smith Winslow. HATFIELD—Alfred Joseph Bonneville. HAY-DENSVILLE—Charles Eugene Perry. NORTHAMPTON—Arthur Nelson Ball; Joseph Daniel Collins; William James Collins; Edward Chase Greene; Benjamin Franklin Janes; Herbert Brainerd Perry; Elmer Ellsworth Thomas.

Middlesex County

ARLINGTON—Robert Bates Hunt; Ezekiel Pratt. AYER—Bertrand Hiram Hopkins; Herbert Bancroft Priest. BELMONT—Frank Clyde Leavitt. CAMBRIDGE—Frank Brown Berry; Frederick B. M. Cady; Samuel Edward Chalfen; George Proctor Cogswell; Eugene Abraham Darling; David C. Dow; Augustus W. Dudley; John E. Dwyer; William J. Dwyer; Herbert Reynold Fiege; Lyman Sawin Hagood; Simon B. Kelleher; Roger Irving Lee; John Joseph Murphy; Edward Rosen; Richard Bliss Leith; Frederick Artemas Simonds; John J. H. Smith; Ralph Cleaves Wiggins; Horace P. Stevens; William Kilpack Smith Thomas; Everett Hale Tomb; George Arthur White. EVERETT—Henry Joseph Keaney; William Sullivan Schley.

FRAMINGHAM—George Carmine Bionde; William B. Blanchard; James Glass; Leon Webster Jessaman; Albert S. Owen; Cyrus Brown Partington; Austin E. St. Clair. HUDSON—Thomas Francis Tierney. LEWKS-BURG—Charles Wentworth DeWolf; Howard Knowlton Tuttle. LEXING-TON—Albert Pfeiffer; James J. Walsh. LINCOLN—Joseph S. Hart. LOWELL—Elphege A. Beaudet; Mason D. Bryant; Tancred Deodatis Chagnon; Charles Stanislaus Doucet; Robert Leroy Jones; John Henry Lambert; Harold Leander Leland; Clarence Bertram Livingston; Burton Edward Lovesey; Roy Stanley Perkins; Nathan Pulsifer; James Y. Rodger; William Francis Ryan; Harry Herbert Sumner.

MALDEN—Nicholas Ambrose Gallagher; Earle Haggett MacMichael; Eugene J. McCarthy; Clarence Whitecomb. MARLBORO—James T. Buck-ley; Stephen James Dalton; Alfred Mederic Lemay; Clyde Harold Merrill; Henry Ashton Robinson. MEDFORD—James Francis Boyd; Harry Cutter Burrell; Frederick Roscoe Hsley. MELROSE—Forrest Fay Pike; Albert Ernest Small. NATICK—John Edward Burns; W. W. Walcott. NEWTON—Edward Augustus Adams; Ridgley Fernald Hanscom; Perez B. Howard; Allan Stewart Kirkwood; Donald Macomber; Arthur Andrew Rattey; William D. Reid; Otho Lester Schofield; Henry Rouse Viets; George Browning Wilbur. SAXONVILLE—Oscar A. Dudley. SOMERVILLE—Earl Edwin Allison; Richard Dana Bell; Manuel Felix Cunha; Frank Leander Morse; Charles Francis Sharry; Harry Abram Walker.

TOWNSEND—Clarence Luther Chandler. WALTHAM—Roland A. Behrman; Ralph Waite Dennen; Irving William Fraim; William Edward Hamlin. WATERTOWN—Alfred Edward King; Edwin Alonzo Meserve. WAVERLEY—Edward Stanley Abbot; Chester P. Brown; Leo Thomas Kewer. WEST MEDFORD—Franklin Edward Campbell; Whitman King Coffin. WEST SOMERVILLE—Charles H. Bailey; Charles Wil-iam Finnerty; John Allan McLean. WINCHESTER—Victor Anthony Aimone; Irving Taylor Cutter. WOBURN—Clarence Guy Lane.

CAMBRIDGE—George Van Ness Dearborn; George Ernest Sherman. NEWTON—Daniel Crosby Greene. WALTHAM—William Henry Mackay. WAVERLEY—Walter Joseph Otis.

Nantucket County

NANTUCKET—John J. Blue; Frank Edward Lewis.

Norfolk County

ATLANTIC—Michael Thomas Sweeney. BROOKLINE—Worcester R. Angell; Horace Keith Boutwell; Freeman Hart Hibben; Frederick E. Jones; William Joseph McDonald; William R. Ohler; Roland Oliver Parris; Irving E. Stowe; Joseph H. Surls; Wolfert Gerson Webber. CANTON—Lysander Schaffer Kemp; Dean Sherwood Luce; William E. McPherson. COHASSET—George Osgood. DEDHAM—Alfred Emile Johnson Jr.; Arthur Morton Worthington. MEDWAY—John Howard Wyman. MILTON—Walter Appleton Lane; Charles F. Mains; Donald C. Munro. NANTUCKET—Frank Edward Lewis. NEEDHAM—Frederick Parker Jr.; Charles Wood Pease. NORWOOD—Alfred Archibald Fenton; Clarke Storer Gould; Leighton F. Johnson. QUINCY—Francis Ramon Burke; Edward Henry Bushnell; James Henry Cook; Harold Edgar Diehl; Carl H. Fornell; Sydney C. Hardwick; William Joseph Harkins; Edwin Eugene Smith. SHARON—William Madison Gay. SOUTH WYMARH—Henry Martyn Field. STOUGHTON—Edward Hilts Ewing; WEST MEDWAY—Samuel Butler. WEST QUINCY—Richard M. Ash. WOLLASTON—Walter Homer Lacey.

MEDWAY—Samuel Butler.

HARDING—George Edwin McPherson.

Plymouth County

ALLERTON—Walter H. Sturgis. BRIDGEWATER—Arthur Wyman Carr; Edmund V. Whelan. BROCKTON—Alphonse Frank Budreski; David M. Butler; Lea Philip Crimmin; Cornelius Joseph Dacey; Pierce Henry Leavitt; Charles Daniel McCann; John Anderson Petter; Alfred Charles Smith; Andrew J. Sullivan; Nial Franklin Twigg. DUXBURY—Nathaniel Kingsbury Noyes. FORT REVERE—James B. Pascoe. HINGHAM—Charles Whelan. KINGSTON—Charles Dudley; Oscar Clinton Swope. MARION—Ralph Harrison Hopkins. NORTH ABINGTON—Frank Edward Wheatley. SOUTH HANSON—Gaspere E. Lentine. WHITMAN—William G. Kinsley; Martin Henry Spellman. BROCKTON—Albert Orville Raymond. ROCKLAND—Joseph H. Dunn.

Suffolk County

BOSTON—Donald Stanbury Adams; Zabdriel Boyleston Adams; Arthur W. K. Akerley; Arthur W. Allen; Hiram H. Amiral; Horace D. Arnold; Arthur E. Austin; James B. Ayer; Harold Lester Babcock; Karl R. Bailey; Horace M. Baker; Franklin G. Balch; Jacob Ellis Banquer; John W. Bartol; Carl Bearse; Theodore C. Beebe; Alexander S. Begg; David Lawrence Belding; George Hoyt Bigelow; Jose Penteado Bill; Horace Binney; Clarence H. Birdsall; Franklin Lee Bishop; Nathan Abraham Bolo-tow; William Parsons Boardman; Frederick L. Bogan; John Taylor Bottomley; Elliott Gray Brackett; Charles W. Bressler; Lloyd Vernon Briggs; Maurice Briggs; Percy Emerson Brown; John Bryant; John Robert Burke; Charles Shorey Butler.

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En Young Kau; Arnold B. Kauffman; George F. Keenan; James Alphonse Keenan; Miner Raymond Kendall; Edward King; Frederick A. King; Robert James Kisko; William Fletcher Knowles; Henry Adolph Kreutzmann; Walter Brackett Lancaster; John William Lane; Thomas Hinckley Lannon; Wesley Terrence Lee; George Adams Leland Jr.; Samuel Albert Levine; Robert Williamson Lovett; Julian Dyer Lucas; Fred B. Lund; Moses H. Lurie; Henry Lyman; Arthur Bates Lyon.

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Alexander Quackenboss; Francis Minot Rackmann; Carlisle Reed; John Arnold Reese; Harold William Ripley; Wyatt Sanford Roberts; William Henry Robey Jr.; Charles Elvin Roderick; Edmund Augustus Rogers; Mark Homer Rogers; Milton Joseph Rosenau; Curtis M. Rosser; Benjamin William Rudman; Israel Ellis Rudman; William Timothy Rumage.

Louis Francis Salerno; Arthur Forrest Sargent; Joseph Carr Savage; Alpha Reuben Sawyer; David D. Scannell; Joseph Walter Schirmer; George H. Schwarz; Andrew Watson Sellards; Clarence Wesley Sewall; Malcolm Seymour; Albert Abraham Shapira; John Holbrook Shaw; Edward B. Sheehan; Warren Sylvester Shields; Joseph Henry Shortell; Max Silverman; Frank W. Sleeper; Harry Caesar Solomon; Robert Fulton Souther; Horace Kennedy Sowles; Lesley Hinckley Spooner; Charles Booth Spruit; Henry Eugene St. Antoine; John Joseph Stack; Albert W. Stearns; Harold Wentworth Stevens; James Kent Stoddard; James L. Stoddard; James S. Stone; Louis Strahlmann; Edward Clark Streeter; Richard Pearson Strong; David Sussler.

John Houghton Taylor; William N. Tenney; John Jenks Thomas; Harold Grant Tobey; James Rockwell Torbert; Cassell Clark Tucker; Louis Joseph Ullian; Beth Vincent; Ludo Von Meysenbug; Ralph Alexander Warden; John Warren; Frederic Augustus Washburn; Joseph Treloar Wearn; Conrad Wesselhoeft; William Fessenden Wesselhoeft; Arthur J. White; Paul Dudley White; Thomas William Wickham; Frank P. Williams; Paul R. Withington; William Franklin Wood; John Dawson Roswell Woodworth; McIver Woody; Wade Stanley Wright; Edwin Theodore Wyman; Ernest B. Young.

BOSTON—Theodore H. Aschmann; Fletcher M. Colby; Paul Carroll Dennett; Paul Waldo Emerson; Rafe Nelson Hatt; Douglas Heath Nisbet; Panagiotis Nichel Papoulacos; Llewellyn Harrison Rockwell; Adolph G. C. Schmack; Frank Robert Sedgley; Lewis Mahlon Spear; Edward Bancroft Towne.

CHELSEA—Allan R. Barrow; Heiman Caro; Frank Hills Chase; Sydney Vernon Kibby; Charles D. Padan; Dallas Pond; Glen A. Shepard; Dudley D. Shoenfeld; Sigmund Simons; Charles Henry Wilson. DEDHAM—Hollis Goodell Batchelder. FORT BANKS—Walter Midkiff Crandall. HYDE PARK—Charles A. Cullen. REVERE—Joseph Jacob Skirball; Louis Irving Skirball. WINTHROP—Ben Hicks Metcalf; Starr Abner Moulton; Raymond Brewer Parker.

Worcester County

ATHOL—Benjamin Whitney Gleason. BALDWINSVILLE—Walter Franklin Robie; Henry Louis Stick. CLINTON—James Joseph Goodwin. FITCHBURG—Aime Napoleon Fregeau; John H. Kearney; Wilfrid Teller LaFortune; Clayton Rogers Lanc; Albert F. Rodrick. GARDNER—Samuel Joseph Benoit; Herbert William Ellam; Gordon Brooks Underwood.

LANCASTER—Edward Francis Washburn Bartol; Chester C. Beckley. LEOMINSTER—Appleton Howe Pierce; Frederick Charles Shulties. MILFORD—Francis Stephen Caldicott. NORTH BROOKFIELD—Edward Francis Phelan. OXFORD—Robert Swan Fletcher. PRINCETON—Elisha Sears Lewis. RUTLAND—James A. Lyon. SOUTHBRIDGE—George William Tully. UXBRIDGE—John William Ledbury Jr.; George Thomas Little. WEBSTER—Bernard Louis Plouffe; Ernest Elmer Smith. WESTBORO—Ralph M. Chambers; James Alfred Gould; Walter Arthur Jilison; Roland Stephen Newton; Thomas Joseph O'Brien; Winfred Overholser; Melvin Harvey Walker Jr. WESTMINSTER—George Mossman. WICHENDON—William F. Holzer.

WORCESTER—Winthrop Adams; Howard W. Beal; Gordon Berry; Edward Bridge Bigelow; Alfred George Bolduc; Howard Spencer Colwell; George Henry Crofton; William Edward Denning; Kendall Emerson; Homer Gage; Frank W. George; Donald Robert Gilfillan; Samuel Carlton Gwynne; Frank Edwin Harriman; William Christian Jensen; Roger Kinneutt; Willard Wallace Lemaire; George Chandler Lincoln; Merrick Lincoln; Israel Lurier; Frank Thorwald Oberg; Charles Augustus Salmon; Roger William Schofield; Edward Burnside Simmons; Hugh Ludwig Simmons; Willard Pierce Stapleton; Douglas Armour Thom; John Clement Ward; George Watt; LeRoy A. Woodward; Abraham K. Yoosuf.

GARDNER—Edward Julius Sawyer.

NORTH DANA—Charles Warner Robertson.

WESTBORO—Michael Matthew Jordan.

MICHIGAN STATE MEDICAL SOCIETY

Officers 1917-18

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J. G. Turner, First Vice President.....Houghton
J. Mersen, Second Vice President.....Holland
A. O. Hart, Third Vice President.....St. Johns
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Fredk. C. Warnshuis, Secretary.....Grand Rapids
D. Emmett Welsh, Treasurer.....Grand Rapids

Councillor Districts and Officers

First District.—Macomb, Oakland and Wayne counties. G. L. Kiefer, Councillor, Detroit.

Second District.—Hillsdale, Ingham and Jackson counties. A. E. Bulson, Councillor, Jackson.

Third District.—Branch, Calhoun, Eaton and St. Joseph counties. S. K. Church, Councillor, Marshall.

Fourth District.—Allegan, Berrien, Cass, Kalamazoo and Van Buren counties. A. H. Rockwell, Councillor, Kalamazoo.

Fifth District.—Barry, Ionia, Kent and Ottawa counties. W. J. Du Bois, Councillor, Grand Rapids.

Sixth District.—Clinton, Genesee, Livingston and Shiawassee counties. A. M. Hume, Councillor, Owosso.

Seventh District.—Huron, Lapeer, Sanilac and St. Clair counties. W. J. Kay, Councillor, Lapeer.

Eighth District.—Gratiot, Isabella, Clare, Midland, Saginaw, Tuscola counties (and Gladwin unattached). A. L. Seeley, Councillor, Mayville.

Ninth District.—Benzie, Grand Traverse, Leelanau, Manistee, Mason, Tri-counties (Kalkaska, Missoukee, Wexford). B. H. McMullen, Councillor, Cadillac.

Tenth District.—Bay (including Arenac and Iosco), Otsego, Montmorency, Crawford, Oscoda, Roscommon and Ogemaw combined. C. H. Baker, Councillor, Bay City.

Eleventh District.—Mecosta, Montcalm, Muskegon, Oceana, Newaygo, Osceola-Lake counties. W. T. Dodge, Councillor, Big Rapids.

Twelfth District.—Chippewa (including Luce and Mackinaw), Delta, Dickinson-Iron, Gogebic, Houghton (including Baraga and Keweenaw), Ontonagon, Marquette-Alger, Menominee and Schoolcraft counties. R. S. Buckland, Councillor, Barada.

Thirteenth District.—Alpena (including Alcona), Antrim, Charlevoix, Cheboygan, Emmet and Presque Isle counties. F. C. Witter, Councillor, Petoskey.

Fourteenth District.—Lenawee, Monroe and Washtenaw counties. C. T. Southworth, Councillor, Monroe.

Iosco County

TAWAS CITY—Charles Vernor Crane.

Iron County

IRON RIVER—Wilhelm Carl Liefert.

Isabella CountyBLANCHARD—Ralph Ernest Dawson; Theodore Peter Vander Zalm.
MT. PLEASANT—Chas. D. Pulien.**Jackson County**

BROOKLYN—Cortlandt Whitehead Schepeler. JACKSON—Warren Bradley Anderson; Herman Duane Brown; Randall N. Cooley; Cuthbert Earl De May; Chas. Rowse Dengler; Harold Lee Hurley; John Joseph McCormick; Miar John McLaughlin; James Andrew McQuillan.

Kalamazoo County

AUGUSTA—Robt. Eaton Weeks. KALAMAZOO—Ross Uriah Adams; Ralph E. Balch; Jerome Francis Berry; Orton H. Clark; Ward Eugene Collins; Leo J. Crum; Dan Holton Eaton; Wm. Geo. Hoebeke; Rosco G. Leland; Louis Desenberg Stern. RICHLAND—William Newton Kenzie.

Kent County

ADA—Raymond C. Breece. EAST GRAND RAPIDS—Fred Plumer Currier Jr.

GRAND RAPIDS—Louis Barth; Horace J. Beel; Henry M. Blackburn; Alexander M. Campbell; Louis Henry Chamberlain; John Ralph Coryell; Clyde Wilson Deaver; Willis L. Dixon; John Clinton Foshee; Howard A. Grube; John Thompson Hodgen; John Newell Holcomb; Wm. Aloysius Hyland; John Carl Kenning; Frank Cameron Kinsey; Milford Arthur Leach; Wm. De Voe Lyman; Wm. Robt. Manlove; Alex. M. Martin; Louis Thomas O'Brien; Henry John Pyle; Omer Roan; Leon Edmund Sevey; Ansel Brooks Smith; Richard Root Smith; Roland Egbert Toms; Sumner Merrill Wells Jr.; Joseph Burgess Whinery; William E. Wilson. LOWELL—Aaron C. Button; Hans Peter Gotfredsen. GRANDVILLE—Jacob Daniel Brooks. SOLDIERS' HOME—Howard A. Grube.

Keweenaw County

MOHAWK—Albert Roling Tucker. PHOENIX—John Leo Kelliher.

Lenawee County

ADRIAN—Artemus Ward Chase; Ara Bird Hewes; Esli Terrill Morden; Leo John Stafford; Mahlon R. Sutton; George Mitchell Lochner. CLINTON—Robert Anthony Davis. DEERFIELD—Guy Malverton Claffin. MORENCI—Van Dale Barnes. ROLLING—John Leonard Meddaugh. SAND CREEK—William Henry Meddaugh.

ADRIAN—John Perry Bland.

CLINTON—Carroll Semans Thomson.

Livingston County

HOWELL—Vern N. Richesen. PARSHALLVILLE—William John Rynearson.

Macomb County

MT. CLEMENS—Henry G. Berry; Harold Arthur Kirkham; Charles Allen Martin; Harry Ferris Taylor; Russell William Ullrich; Arthur Jay Warren. ROMEO—Robert McKay Greenshields; Edgar J. Miller; Milton Case Smith. WASHINGTON—Cureus B. Lockwood.

ROMEO—Walter Robert Taylor Sharpe.

MEMPHIS—George Waters.

Manistee County

BEAR LAKE—Ward Herman Norconk. COPEMISH—Russell Ragan Huston. MANISTEE—Elmer Alfred Gunderson; Harlen MacMullen; Andrew A. McKay.

Marquette County

GWINN—David Christian Eisele. ISHPEMING—Albert V. Deventer Braden. MARQUETTE—Howard T. Carriel; Roscoe Conkling Main; Harold Boyce Markham. MICHIGANME—Isaiah Sicotte. NEGAUNEE—Ira A. Abrahamson; Emile Cyrus Houle.

Mecosta County

BIG RAPIDS—Wm. Temperance Dodge; Rolla George Karshner; Glen Dewey Ransom; Gordon Hurst Yeo.

Menominee County

MENOMINEE—Calvin Ross Elwood; Walter Raleigh Hicks; Stephen Codding Mason; Earl Vinton McComb; Henry Thomas Sethney.

Midland County

COLEMAN—Chas. Vernell High Sr. EDENVILLE—John Elmer Heslop. MIDLAND—James Henry Johnson; Rene James St. Louis.

Missaukee County

LAKE CITY—Nelson Abbott; John Foge Doudna.

Monroe County

DUNDEE—Hugh Rannells Hildebrant. MONROE—Herbert Wm. Landon; Frederick Clayton Thiede.

Montcalm County

CARSON CITY—Don Vilette Hargrove. GREENVILLE—Albert Stewart Barr; Albert James Bower. HOWARD CITY—Noble William Miller. LAKEVIEW—Lee Earl Kelsey. STANTON—Mortimer E. Danforth.

Montmorency County

MILLMAN—George Fenton Lister; Albert Joachim Schmaller. LEWISTON—Archie Currie MacKinnon.

Muskegon County

MONTAGUE—Henry Augustus Kling. MUSKEGON—Constant M. Colignon; Burns Rush Eastman; Leslie Albert van der Linde. WHITEHALL—Henry S. Cole; William Louis Hercik.

Oakland County

BIRMINGHAM—Lloyd Gully Campbell; George Patterson Raynale. CLARKSTON—Russell Graham Edgar. OXFORD—George William MacKinnon. PONTIAC—Lucius Augustine Farnham; Ellsworth Orton. ROCHESTER—Charles Spurgeon Strain.

Oceana County

HART—Clinton Day.

Ogemaw County

WEST BRANCH—Robert Jay Beeby.

Ontonagon County

EWEN—Edward Alexander Florentine. GREENLAND—Edwin James Evans.

Ottawa County

BERLIN—John Jay Miller. COOPERSVILLE—Harry Lieffers. GRAND HAVEN—Cornelius John Addison. HOLLAND—George Henry Thomas; William Westrate. NUNICA—Clayton Andrew White. ZEELAND—Joe DePree.

Presque Isle County

ONAWAY—Joseph Sill; Fred. William Wastell. POSEN—Fred Porter Nevius. ROGERS CITY—William Woodborough Arscott.

Saginaw County

BIRCH RUN—Harvey Benjamin McCrory. BURT—George Wesley Peart. SAGINAW—George Laviorious Alger; James Deacon Bruce; Benj. Franklin A. Crane; Walter Alexander De Foe; Wm. Franklin English; Bernhard Friedlaender; Leon Brayton Harris; Matthew Kollig; Alexander Reid McKinney; Henry John Meyer; Wm. Louis Miller; James L. Passmore; Norman James Pike; Emil Philip W. Richter; Bert Bessac Rowe; John Thomas Sample; Roy S. Watson.

Sanilac County

DECKER—Clayton Gregg Woodhull. MARLETTE—Raymond G. Tuck. PECK—John Clyde Webster. SNOVER—Hugh H. Angle.

Shiawassee County

DURAND—James Arthur Rowley. BYRON—Hermon Edw. Boice; Robt. Ray Fox. HENDERSON—Thos. Grover Amos; Glenn Taylor Soule. OWOSSO—Alfred F. Arnold; James Johnson Haviland; Harold A. Hume; Jesse Obed Parker; George Peter Sackrider; Egerton Thomas Wilson. SHAFTSBURG—William Herbert Dunham. VERNON—Arden Nathan Howe.

St. Clair County

ALGONAC—Walter Elijah Bostwick. ST. CLAIR—Frank Vern Carney. YALE—Wm. Guthrie Wight.

St. Joseph County

BURR OAK—John Joslyn Kelley. COLON—Wm. Eck Doran. THREE RIVERS—Arthur W. Scidmore.

Tuscola County

CARO—Frederick P. Bender. MILLINGTON—Wynne Clark Garvin. RICHVILLE—Ottomar Von Renner.

Van Buren County

BANGOR—Norman Dwight Murphy. HARTFORD—John Duncan Stewart. LAWRENCE—Duane Wesley Crankshaw.

Washtenaw County

ANN ARBOR—Robert H. Baker; Hugh McDowell Beebe; Clarence Austin Berge; James Fleming Breakley; Roy Bishop Canfield; Otis Merriam Cope; Robert H. Criswell; Roland S. Cron; Charles Beyland G. de Nancrede; Richard Wm. Denney; Carl Walter Eberbach; Joseph Alexander Elliott Jr.; Nellis Barnes Foster; Albert Carl Furstenberg; Evan Griffith Galbraith; Edwin Carl Ganzhorn; John L. Gates; William Henry Gordon; Harry H. Hammel; Howard Morton Holcombe; Robert Scott Ideson; Arnold F. Jacoby; Hubert Rudolph John; Harthor Lewis Keim; Lyle Boyle Kingery; Rollan Walter Kraft; Maurice Clock Loree; Harry M. Malejan; Russell A. A. Oldfield; John Jeremiah O'Leary; Reuben Peterson; Rudolph Herman Ruedemann; Walter Neale Salisbury; John Wesley Sherrick; Floyd Raymond Town; Geo. Douglas Treadgold; Warren Taylor Vaughan; Damon Orian Walthall; Udo Julius Wile. SALEM—Edward Payson Waid. YPSILANTI—Howard Isaac Post; Thomas Robert Whitmarsh. WHITMORE LAKE—Guy Garland Alway.

Wayne County

DETROIT—De Witt Carter Adams; Edward Joseph Agnelly; Herman Fred Albrecht; Frank Clinton Anderson; Warren L. Babcock; Frederick W. Baeslack; Max Ballin; Don C. Bartholomew; Charles Barton; Robert J. Baskerville; Robert Beattie; Harold A. Beck; Clarence Herbert Belknap; William Oscar Benjamin; Zina Bradn Bennett; Harry S. Berman; Isadore I. Bittker; Fred Horton Blanchard; Jacob Roland Bolansky; Edmund W. Bolio; Ralph Hug Bookmyer; Richard F. Boonstra; Henry Robt. Boyes; Frank B. Broderick; Clark D. Brooks; William Horatio Browne; Wm. S. Brownell; Bruno Berthold Brunke; John D. Buck; Frederick G. Buesser; Glenn A. Bulson; John Knox Burns Jr.; Lowell M. Bush.

Thomas P. Camelon; Geo. Henry Campan; Duncan Alexander Campbell; Clarence Candler; Edward K. Carmichael; Glenn Blish Carpenter; James G. Carr; Henry R. Carstens; John Henry Carstens; Albert Edward Catherwood; Aaron Lee Chapman; Clarence A. Christensen; Harold Francis Closs; Don Avon Cohoe; Homer C. Collins; Lannes Irving Condit; Ray Connon; Bernard Francis Corbett; Langdon T. Crane; Ernest Keys Cullen; Hampton Pharr Cushman.

Samuel Solomon Danziger; Milton Alfred Darling; Jos. Laudium Desrosiers; Harry Franklin Dibble; John Clinton Dodds; Daniel Raymond Donovan; Ira George Downer; David Bernard Downing; George Adam Drescher; Leo John Dretka; Adolph Ernst Dreyer; Charles Frederick DuBois.

Frederick Eakins; Clarence Henri Eisman; Rolland Renford Ensor; Arthur William Erkfitz.

George E. Fay; Ray Leopold Fellers; Charles Joseph Foley; Antonio Joseph Font; Walter David Ford; Harry Edgar Fraser; George Edward Frothingham.

Claude Benjamin Gaines; August Ernst Gehrke; Isaac S. Gellert; William Stephen Gonne; John Whitlock Gordon; James Gostanian; Raymond Salot Goux; William Granley; Hunter Lee Gregory; Thomas Reuben Keller Gruber; Samuel Charles Gurney.

Ernest William Haass; Carl Hanna; Beverly Drake Harison; Winfred Bronsart Harm; Albert Edward Harris; Earl R. Harris; John G. Harvey; James Ward Hawkins; Austin Wm. Heine; William Henderson; Preston M. Hickey; Louis J. Hirschman; George Hoffmeister; Arthur D. Holmes; Lawrence Nicholas Host; Abraham Willis Hudson; Harold S. Hulbert; Leroy Wetmore Hull; Willard Hunter Hutchins.

James W. Inches; Harry H. Jackson; Byron Homer Jenne; Alpheus Felch Jennings; Charles G. Jennings; Nathan Joseph Jessup; Morrell Mallory Jones.

Ladislaus Roman Kaminski; Zeno Leo Kaminski; Wm. James Kane; John Fredk. Kelly; Johnston Burnside Kennedy; William Young Kennedy; Frederick Clinton Kidner; Edw. David King; Paul Anthony Klebba; George Leo Koessler; Abraham Kovinsky; Albert Henry Krohn; Duffield Roy Kruger.

Alfred Daniel LaFerte; Rudolph Harold Lambert; Carl Niel Larsen; Bror Hjalmar Larsson; A. F. J. Lecklider; Ernest C. Lee; Henry Robt. Leibinger; Daniel James Leithauser; Alfred E. Lemon; Paul Herman Lippold.

Nelson MacArthur; Robert Bruce Macduff; Frank Benjamin Mac-
Mullen; Otis Bush Mallow; Vincent Samuel Mancuso; Walter William-
son Manton; Thomas Blaine Marsden; Robert Michael Martin; James
Dwight Matthews; Kenneth Fuller Maxey; Emil Valentine Mayer; Willard
D. Mayer; Frederick McAfee; Arthur McArthur; James Herald McCall;
Wm. Raymond McClure; Carey P. McCord; Crawford Ward McCormick;
Theodore Alexander McGraw Jr.; George Edwin McKean; Angus McLean;
Henry Oliver McMahon; Charles H. Merrill; Ellsworth Paro Mills;
Robert Conrad Moehlig; Stephen Gregory Mollica; Harold L. Morris;
Walter Muellenhagen; Charles Robert Mueller Jr.; Thomas F. Mullen.
Arthur Joseph Neumann; Frederick Henry Newberry; Arthur Wilnot
Newitt; Harry J. Noble; Ralph Arthur Norris.
William Austin O'Brien; Harold Fredk. Olert; Geo. Vernon Oll; Robert
W. Goldsborough Owen.
Leon Edward Pangburn; Walter Robert Parker; Grover Cleveland Pen-
berthy; Orlando Wm. Pickard; Lyman Justin Pinney; George Edward
Potter; Presley Louis Pound; William Henry Price; Wynand van Korleer
Pyle.
Octavius Marlon Randall; Claude Burton Ray; Harry Walter Reed;
Heinrich Albert Reye; James Milton Robb; Paul Charles Rohde; Herman
Hjalmar Runo; Frank Leith Ryerson.
Homer E. Safford; Wm. Graham Schlegelmilch; Harry B. Schmidt;
Ernest Charles Schultz; James Bradford Seeley; Ward Francis Seeley;
Alphous Mahlon Shafer; Reed Albert Shankwiler; Lyle Orting Shaw;
Harold Koch Shewan; William LaRue Sherman; Burt R. Shurley;
Arthur Ralph Smeck; Alba Lee Smith; Clarence Vernon Smith; Eugene
Smith Jr.; Frank Harvey Smith; Frederick Janney Smith; Theodore
Henry Smith; Clarence Stefanski; Frank T. F. Stephenson; Alexander
Meiklejohn Stirling; Lindley H. Stout; Luther Hinton Stout; Frank
Suggs; Hugh Albert Sullivan; Angus Price Sutherland.
Rolfe Tainter; Griffith Arthur Thomas; Arthur Rudolph Timme; Charles
Lewis Tomsu; Harry N. Torrey; Emmett Calvin Troxell; Arthur Turner.
Clyde Roger Van Gundy; James A. Van Horne; George Van Rhee;
Collin Campbell Vardan; John Walter Vaughan; Victor C. Vaughan Jr.;
Milton D. Vokes.
Frank Banghart Walker; Jos. A. Wall; Charles R. Walsh; Frank
Norman Wilson; George Wayne Wilson; Robert A. Wollenberg; Grover
C. Wood.
Harry Benjamin Yoh; John Campbell Young.
DETROIT—Russell Landrum Haden; James Leonidas Hawkins;
Mose Milton Hyman; Frederick Cleland Mayne; James William
McEwan; Alonzo Bond Persley.
ELOISE—Joseph Harvey Chance. HAMTRAMCK—Robert Henry Car-
michael. HIGHLAND PARK—Martin William Caveney; George Samuel
Feden; Richard Henry Juers. NORTHVILLE—Thomas Burnfield Henry.
REDFORD—Lewis Nelson Tupper; Roy Du B. Tupper. TRENTON—
Howard Bligh Kinyon. WAYNE—Romeo Horatio Earle. WYANDOTTE
—Glen Long Coan; William H. Honor; Joseph G. Knapp.

Wexford County

MANTON—Paul W. Bloxson. MESICK—John Fordyce Gruber; Albert
Edw. Stickley.

MINNESOTA STATE MEDICAL ASSOCIATION

Officers 1917-18

Arthur J. Gillette, President.....St. Paul
Vice Presidents—
O. C. Strickler.....New Ulm
E. H. Frost.....Willmar
M. J. Lynch.....Minneapolis
Thomas S. McDavitt, Secretary.....St. Paul
Earle R. Hare, Treasurer.....Minneapolis

Councilor Districts and Officers

First District.—Clay, Becker, Wilkin, Ottertail, Douglas, Grant, Polk,
Marshall, Kittson, Roseau, Norman, Pope, Red Lake, Stevens, Traverse
and Big Stone counties. C. E. Dampier, Councilor, Crookston.
Second District.—Aitkin, Beltrami, Cass, Crow Wing, Hubbard, Mor-
rison, Todd and Wadena counties. J. G. Millspaugh, Councilor, Little
Falls.
Third District.—Ramsey, Washington, Chisago, Pine, Millelacs, Isanti,
Kanabec, St. Louis, Lake, Carleton, Cook and Itasca counties. W. A.
Dennis, Councilor, St. Paul.
Fourth District.—Hennepin, Anoka, Sherburne, Meeker, Wright, Stearns,
Benton, Kandiyohi and Swift counties. Richard J. Hill, Councilor,
Minneapolis.
Fifth District.—Renville, Chippewa, Lac Qui Parle, Yellow Medicine,
Sibley, Brown, Redwood, Lyon and Lincoln counties. C. E. Persons,
Councilor, Marshall.
Sixth District.—Pipestone, Rock, Nobles, Murray, Cottonwood, Jackson,
Faribault, Martin and Watonwan counties. F. R. Weiser, Councilor,
Vinton.
Seventh District.—Nicollet, Dakota, Lesueur (west half), McLeod, Scott,
Carver, Goodhue, Rice and Wabasha counties. Franklin A. Dodge,
Councilor, Le Sueur.
Eighth District.—Blue Earth, Dodge, Freeborn, Houston, Fillmore,
Le Sueur (east half), Mower, Olmstead, Steel, Waseca and Winona
counties. Hugh F. McGaughey, Councilor, Winona.

HONOR ROLL

Aitkin County

AITKIN—Benjamin William Kelly.

Becker County

AUDUBON—Oluf Johan Pederson. RONSFORD—James T. Ballou.
BLUE EARTH—Alick Bernstein; Thomas Frank Rodwell.
FINLAYSON—William Henry Conner.

Beltrami County

BEMIDJI—Earl Howard Marcum. PONEMAH—Lynn Geophrey Neal.
ED LAKE—Richmond Favor Jr.
BIMIDJI—Daniel F. McCann, Jr.

Benton County

RICE—Clarence Addison Rathbun.

Blue Earth County

MANKATO—Julian Adolph Hielscher; Adolph G. Liedloff; Hiram John
oyd; Chelsea Carroll Pratt; Albert Johnson Wentworth. VERNON
ENTER—Thomas Gage Clement.

MINNESOTA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Aitkin.....	1,830	305.0	13,019	2,169	6	..	4	4	5	1
Anoka.....	459	76.5	13,354	2,225	6	..	4	5	2	5
Becker.....	1,349	64.2	20,994	999	21	..	8	17	10	5
Beltrami.....	3,822	101.1	27,341	1,439	19	..	11	17	10	4
Benton.....	405	57.8	12,857	1,836	7	..	4	5	5	1
Bigstone.....	491	54.5	9,830	1,092	9	..	6	7	5	..
Blue Earth....	762	16.5	29,337	637	46	6	24	38	26	6
Brown.....	612	32.2	20,387	1,073	19	1	10	14	17	3
Carlton.....	867	66.6	23,065	1,774	13	1	8	9	8	2
Carver.....	376	34.1	17,455	1,586	11	1	8	7	1	1
Cass.....	2,104	150.2	14,425	1,030	14	..	8	12	8	3
Chippewa.....	591	65.6	14,158	1,573	9	..	6	6	7	1
Chisago.....	427	47.4	13,747	1,527	9	..	5	7	9	..
Clay.....	1,043	65.1	20,881	1,305	16	..	11	12	11	3
Clearwater....	1,019	254.7	9,713	2,428	4	..	3	4	..	2
Cook.....	1,498	1439.0	1,719	1,719	1	..	..	..	..	..
Cottonwood....	640	91.4	13,076	1,868	7	..	7	7	7	1
Crow Wing....	1,057	39.1	18,766	695	27	..	17	22	17	5
Dakota.....	599	33.2	27,681	1,537	18	1	9	10	10	1
Dodge.....	440	40.0	12,094	1,099	11	..	4	7	8	1
Douglas.....	648	38.1	17,669	1,037	17	..	13	15	11	4
Faribault.....	719	36.2	19,949	1,049	19	..	12	14	14	2
Fillmore.....	868	37.7	25,680	1,116	23	..	18	23	22	3
Freeborn.....	735	35.0	22,606	1,076	21	1	11	18	15	4
Goodhue.....	767	23.0	32,001	1,103	29	1	13	21	15	2
Grant.....	553	39.5	9,244	660	14	1	10	11	5	2
Hennepin.....	565	0.8	410,227	638	642	23	362	503	394	104
Houston.....	570	71.2	14,297	1,787	8	..	6	7	7	..
Hubbard.....	958	106.4	12,204	1,356	9	..	4	4	2	1
Isanti.....	442	63.1	13,300	1,900	7	..	5	6	2	..
Itasca.....	2,730	160.5	27,338	1,608	17	..	8	14	10	2
Jackson.....	702	46.8	14,491	966	15	..	8	11	12	2
Kanabec.....	534	267.0	7,809	3,604	2	..	2	2	1	..
Kandiyohi....	801	50.0	19,373	1,210	16	..	11	13	13	2
Kittson.....	1,111	138.8	10,967	1,370	8	..	5	6	4	1
Koochiehiug...	3,141	349.0	10,217	1,135	9	2	2	9	4	2
Lac Qui Parle..	790	60.7	16,271	1,251	13	..	8	9	8	2
Lake.....	2,099	349.8	10,462	1,743	6	..	4	5	4	1
Lesueur.....	466	22.1	18,609	886	21	..	11	14	13	6
Lincoln.....	535	66.8	10,536	1,317	8	..	6	6	6	..
Lyon.....	703	37.2	16,546	870	19	..	8	15	13	5
McLeod.....	496	24.8	18,691	934	20	..	13	14	14	3
Mahnomon....	572	114.4	3,249	649	5	..	1	1	1	1
Marshall.....	1,788	198.6	16,805	1,867	9	..	6	7	7	3
Martin.....	719	44.9	17,942	1,121	16	..	8	12	13	6
Meeker.....	621	27.0	17,022	740	23	..	11	11	9	2
Millelacs.....	583	44.8	12,630	971	13	..	4	10	6	2
Morrison.....	1,143	63.5	24,901	1,383	18	..	10	13	8	..
Mower.....	711	26.3	22,861	846	27	1	12	23	19	3
Murray.....	704	70.4	11,753	1,175	10	..	7	10	9	2
Nicollet.....	443	29.5	14,125	941	15	1	5	11	14	2
Nobles.....	722	45.1	15,412	963	16	..	8	11	12	4
Norman.....	860	86.0	13,446	1,344	10	..	6	9	2	1
Olmsted.....	666	45.9	22,497	155	145	3	100	134	82	58
Ottertail.....	2,039	56.6	46,519	1,292	36	..	21	30	22	4
Pennington....	607	60.7	10,983	1,098	10	..	6	8	6	1
Pine.....	1,413	128.4	19,039	1,730	11	..	8	9	7	2
Pipestone.....	469	33.5	9,762	668	14	1	6	10	9	3
Polk.....	1,979	69.9	36,419	1,300	28	..	18	23	23	2
Pope.....	693	69.3	12,869	1,286	10	..	4	9	6	7
Ramsey.....	161	0.4	262,450	748	351	3	198	257	233	56
Red Lake.....	432	72.0	7,689	1,281	6	..	2	2	4	1
Redwood.....	881	61.5	19,274	1,376	14	..	11	11	11	2
Renville.....	978	65.2	23,123	1,541	15	..	11	14	12	3
Rice.....	495	16.5	25,911	839	30	2	16	25	24	4
Rock.....	492	70.2	10,626	1,518	7	..	4	6	5	1
Roseau.....	1,670	208.7	14,509	1,813	8	..	4	3	3	..
Saint Louis....	6,503	31.2	221,920	1,082	205	6	125	168	133	18
Scott.....	366	24.4	14,888	992	15	..	7	12	13	3
Sherburne....	448	89.6	8,759	1,751	5	..	4	5	4	1
Sibley.....	585	48.7	15,540	1,295	12	..	9	9	8	1
Stearns.....	1,362	29.6	50,119	1,089	46	..	23	35	32	10
Steel.....	431	26.9	16,146	1,009	16	..	8	11	12	2
Stevens.....	564	80.5	8,293	1,184	7	..	4	5	5	2
Swift.....	741	61.7	12,949	1,079	12	1	5	9	4	1
Todd.....	955	73.4	24,277	1,867	13	..	6	7	9	..
Traverse.....	568	94.6	8,395	1,399	6	..	6	6	3	3
Wabasha.....	541	28.8	18,554	976	19	..	14	17	15	3
Wadena.....	538	48.9	9,185	835	11	..	5	7	8	1
Waseca.....	431	43.1	13,466	1,346	10	..	5	10	9	1
Washington...	397	17.2	26,013	1,131	23	..	7	14	12	1
Watonwan....	434	54.2	11,382	1,823	8	..	5	8	7	1
Wilkin.....	745	140.0	9,780	1,956	5	..	5	5	4	2
Winona.....	637	19.3	33,398	1,012	33	1	16	22	23	6
Wright.....	691	28.7	28,082	1,170	24	..	12	18	12	4
Yellow Medicine	749	49.2	15,991	1,066	15	..	5	10	6	1
Totals.....	80,856	31.7	2,286,341	897	2,548	57	1,451	1,992	1,621	416

1. Includes Minneapolis, population 373,448; physicians 621 [M.R.C. 104].
2. Includes St. Paul, population 252,465; physicians 345 [M.R.C. 52].
3. Includes Duluth, population 97,077; physicians 109 [M.R.C. 10].

Brown County

NEW ULM—Otto John Seifert. SLEEPY EYE—Abraham Franklin Strickler. SPRINGFIELD—William Arnold Meierding.

Carlton County

CLOQUET—Virgil D. Guittard; Franklin W. S. Ralier.

Carver County

WACONIA—William John Stock.

Cass County

BACKUS—Albert Evan Williams. CASS LAKE—Samuel Reed Fraker. STATE SANATORIUM—Guy Brelford.

Chippewa County

WATSON—Seth Edwin Gilkey.

Clay County

BARNESVILLE—Alphonse Cyr; Charles Henry Patterson. MOORHEAD—Victor Ernest Verne.

Clearwater County

BAGLEY—Peter Cornelius Bjorneby. GONVICK—John Stevens.

Cottonwood County

JEFFERS—Charles Daniel Richmond.

Crow Wing County

BRAINERD—George I. Badeaux; Parker Lloyd Berge. CROSBY—Ralph Justin Sewall. DEER WOOD—George Melville Sewall. RIVERTON—Fred Foster Stocking.

Dakota County

HASTINGS—Rudolf Henry Wald.

Douglas County

ALEXANDRIA—Linwood Melrose Keene; Roy Edwin Swanson; Irving George Willrout. OSAKIS—William Howard Hengstler.

Faribault County

BRICOLYN—Oliver Eugene Stewart. WELLS—Stewart Harry Anderson.

Fillmore County

PRESTON—Adolph Edward De Tuneq Jr. SPRING VALLEY—Edgar Raymond Sather. WYKOFF—James Douglas Walker.

Freeborn County

ALBERT LEA—Byron A. Kamp; Jonas Risting Nannestad; Solomon Francis Rudolf. EMMONS—Arthur Irving Arneson.

Goodhue County

CANNON FALLS—Paul Richard Hanneke. RED WING—Frederick Nikolai Bjerken.

Grant County

ASHBY—Auvigne Mason Randall. ELBOW LAKE—Albert Ingvald Haugen.

Hennepin County

HOPKINS—Minor Morris. LONG LAKE—Winfield Scott Nickerson. MINNEAPOLIS—James Kerr Anderson; Jacob Fowler Avery.

Louis Benedict Baldwin; Stephen Henry Baxter; Archibald H. Beard; John Warren Bell; Harley G. Bickford; Francis Gilman Blake; Paul Francis Brown; Herbert Arthur Burns; John Butler Jr.

Verne Seymour Cabot; Don F. Cameron; Walter Edward Camp; William G. Carhart; William Mack Chowning; Gordon McCall Clark; Charles Edward Connor; James Frank Corbett; Richard Raymond Cranmer.

Walter Henry Darling; Lloyd Thomas David; Richard Irving Dorge; Aloysius Stephen Fleming.

Bernard James Gallagher; Emil Sebastian Geist; Paul William Glessler; Paul Bernard Gillespie; Ernest George Gilmore; Earl William Gilroy; Harold Leroy Goss; Ralph A. Gowdy; Walter Edward Grempler.

Erling Wilhelm Hansen; Henry Charles Hansen; Abraham Irving Haskell; Frederick Eugene Haynes; Arthur Trautwein Henrici; Seth Evelyn Howard.

Albert Eugene Johann; Norton Theodore Johnson; Reuben Alford Johnson; Richard Newton Jones; Alexander Josewich.

Charles Herbert Keene; Oscar Miller Kligen; Ralph Thomas Knight; Louis Robert Koller.

Rae Thornton La Vake; Arthur Ayer Law; John William Lee; Leslie Earl Luehrs; Frank Benjamin Mach; John Silliman Macrice; Stanley Robert Maximer; Thomas Francis McCormick; Charles Fergus McCusker; James Alvin McLaughlin; John William Mintener; Virgil Harrison Moats; Frederick Paul Moersch; Angus Washburn Morrison; Herbert E. Morris.

Joe Mullineaux Neal; Russell R. Noice; Gustaf Theodore Nordin; James Montgomery Northington; Bernt Odegaard; Harry Oerting; Trygve Oftedal.

Edw. Ludwig Paulsen; Reuben M. Pederson; Ralph St. John Perry; Paul James Preston.

Charles Anthony Reed; Douglas Ford Robbins; Harold Eugene Robertson; John P. Rosenwald; Henry H. Sellers; John Chandler Sessions;

Morse Joseph Shapiro; Daniel Marsh Shewbrooks; Harvey Maurice Slater; Taylor Sivens Smith; John Elford Soper; Joseph Aloysius Stoeckinger;

Joseph Stomel; Harold M. Stone; Adolph G. Sund.

Lewis Leonard Ten Broeck; David Owen Thomas; Gilbert Joshua Thomas; Frank Chisholm Todd.

Henry Patrick Wagener; Paul Alson Ward; Solon Marx White; Hugh Spaulding Willson; Paul William Wipperman.

MINNEAPOLIS—Carl W. Paulson; Max Scham; Benjamin Joseph Shalett; Philip H. Wolfram.

Hubbard County

NEVIS—George Earle McCann.

Itasca County

FRAHAM—Theodore Herbert Dedolph. COLORAINE—Roderick Frederick McHugh.

Jackson County

JACKSON—Ursus Victor Portmann. LAKEFIELD—John Townsend Rose.

Kandiyohi County

NEW LONDON—Henry Virgil Hanson. WILLMAR—Harry E. Canfield.

Kittson County

LANCASTER—Gustav William Dahlquist.

Koochicling County

INTERNATIONAL FALLS—Jenner P. Chance; Robert Hugh Monahan.

Lac Qui Parle County

FARIBAULT—Adolph Melancthon Hanson. MADISON—Walter Nordal

Lake County

SECTION THIRTY—Gordon Griffith St. Clair.

Le Sueur County

LE SUEUR—Joseph Eloi LeClerc; Daniel William McDougald. MONTGOMERY—Joseph Owen McKeon. NEW PRAGUE—William John Kucera; William F. Mavertz. WATERVILLE—Harry Bennett Weinburgh.

Lyon County

BALATON—Charles Germe. COTTONWOOD—John Banks Robertson; Therfinn Tharaldsen. MINNEOTA—Gustaf Larson. TRACY—Warner Gleason Workman.

Mahnomen County

MAHNOMEN—Erhard Anton Rumreich.

Marshall County

MIDDLE RIVER—Robert Earl Spinks. WARREN—Baldwin Borresen. NEW FOLDEN—George Luther Johnson.

Martin County

DUNNELL—Nels Philip Anderson. FAIRMONT—George Willard Dewey; Roy Chester Lowe; Gustav Herman Luedtke. TRUMAN—Erwin Otto Fatz; August Frederick Hunte.

McLeod County

GLENCOE—Merritt Whitacre Wheeler. HUTCHINSON—Henry Edwin Douglas. WINSTED—John Baptiste Clair.

Meeker County

LITCHFIELD—John Joseph Donovan; Carl J. Robertson.

Millelacs County

MILACA—Harry P. Bacon. PRINCETON—George P. Dunn.

Mower County

AUSTIN—Charles Crawford Allen; Fred Bruce Coleman; Clifford C. Leck.

Murray County

FULDA—Emil King. SLAYTON—Leon Arlington Williams.

Nicollet County

NICOLLET—Reinhart Gilbert Olson. ST. PETER—Jared Waldo Daniels.

Nobles County

ADRIAN—Carl Chamberlain Cowin. WILMONT—Joseph Dawes Waller; Arthur Bent Williams. WORTHINGTON—Frank Melville Manson.

Norman County

TWIN VALLEY—Charles Fremont Snell.

Olmstead County

ROCHESTER—Alfred Washington Adson; Burton A. Baird; Roy A. Barlow; D. M. Berkman; Wayne W. Bissel; Samuel Orr Black; Pio Blanco; Walter Meredith Boothby; James C. Brogden; Hermon Carey Bumpus; Charles M. Clark; William Gregg Crumley; Daniel Davis; Charles Herbert Doe; Henry Lightfoot Douglass; William John Egan; Raymond Myers Evans; Samuel Thomas Forsythe; Andrew Jackson Goodwin; Stuart William Harrington; James Martin Hayes; Joseph Eugene Heard; Russell A. Hennessey; Clarence Calvin Hoke; Herman William Hundling; Verne Carlton Hunt; Edward Starr Judd; Lawrence Ewald Lepper; Walter Ivan Lillie; Harry Matthew Lowell; Frank Charles Mann; Harold Edward Marsh; Edward Vernon Metcalfe Mastin; William W. Mattson; Charles Horace Mayo; William James Mayo; James Robert McVay; Frank Edward McEvoy; Oliver Clarence Nelson; Alexander Berkeley Moore; Robert Daniel Mussey; John Joseph O'Hearn; Paul Arthur O'Leary; John DeJarnette Pemberton; Frank Arents Plum; Lee Wesley Pollock; Samuel Robinson; Frederick Roman Sanderson; Charles Daniel Squires; George Ellsworth Sutton; Thaddeus L. Szapka; William Joseph Tucker; Porter Paisley Vinson; Charles Leonard Von Hess; Samuel Dinwiddie Weaver; William Ray Winnie; Henry William Woltmann.

Ottertail County

FERGUS FALLS—Shirley Dan Folsom; David Oscar Nathaniel Lindberg; Ralph Moody Thurlow. UNDERWOOD—William Andrew Lee.

Pennington County

THIEF RIVER FALLS—Jesse Ellsworth Douglass.

Pine County

HINCKLEY—Carleton Gale Kelsey. POKEGAMA—Robert Glenn Allison.

Pipestone County

JASPER—Albert Marinus Larson. PIPESTONE—Francis Lawrence Powers; George Fred Schmidt.

Polk County

CLIMAX—Thomas Arneson. GULLY—Axel Wilhelm Swedenburg.

Pope County

GLENWOOD—Michael Ambrose Desmond; James Ralph Elsey; Iver Ferdinand Selleseth. LOWRY—Luther Lewellyn Gibbon; Howard Lee Sargeant. STARBUCK—Charles R. Christenson. VILLARD—Richard Bates Girvin.

Ramsey County

NORTH ST. PAUL—Ernest William Cowern. ST. PAUL—John S. Abbott; Moses Barron; Walter Douglas Brodie; Frank Earl Bureh; Floyd William Burns; Andrew Christiansen; Sol George Cohan; Paul Burns Cook; Wallace Cole; Albert D. Corniea; Bronson Crothers; Karl Dedolph; Warren Arthur Dennis; Carl Bigelow Drake; James Nicholas Dunn; Edward John Engberg; James C. Ferguson; Everett K. Geer; Charles Harry Ghent; Joseph Marie Arthur Gravelle; Walter Henry Haloran; John Comstock Harding; Charles King Holmes; Joseph William Jesion; Elmer Mendelssohn Jones; Frank Norris Knapp; John Nickolas Libert; Elmer Harry Lutz; Archibald MacLaren; Jos. Louis Martineau; Edward August Meyerding; Joseph Clement Michael; Nels. George Mortensen.

Justus Ohage Jr.; William Patrick O'Malley; John Jay Platt; Fred John Plondke; Louis Ramalay; Willmar C. Rutherford; Francis Savage; Edward Schons; Olaf I. Sohlberg; John Clarence Staley; Kenneth Taylor; William Henry Von der Weyer; Jonas Samuel White; Frank White Whitmore; Clayton K. Williams; Otto Louis Winter; Harry Bernard Zimmerman; Johan Martin Arnson; Bernard John Weigel.

Red Lake County

RED LAKE FALLS—John Clinton Wilkinson.

Red Wood County

SANBORN—Monte Charles Piper. REDWOOD FALLS—Herman Oscar McPheeters.

Renville County
FAIRFAX—Arthur Murphy Crandall. HECTOR—Harry E. McKibben. RENVILLE—Ivan Rudolph Maereklein.

Rico County
FARIBAULT—Charles W. Robilliard; Frank Storms Warren. NORTH-
FIELD—Fager M. Babcock; Joseph Moses Jr.

Rock County
HILLS—Frederick Alonzo Engstrom.

Scott County
JORDAN—Lawrence Joseph Leonard; William Henry Phillips. SHAK-
LEE—George Peter Dempsey.

Sherburne County
CLEAR LAKE—Harry Brooks Clark.

Sibley County
HENDERSON—John Felix Traxler.

St. Louis County
ATKORA—Robert Percy Pearsall. BIWABIK—Paul Stevenson Epper-
son. CHISHOLM—Charles Hyatte Cherry. DULUTH—Chester Harland
Clark; Joseph Henry Cosgrove; William Joakim Eklund; Frank Augustus
Lawn; Fredolph H. Magney; William Joseph McKillip; Fred J. Patton;
E. Prudden; Campbell Sausing. EYELETH—Harvey Francis Rawlings;
John Andrew Saari. GILBERT—Frederick Barrett. VIRGINIA—Holland
odd Ground. WEST DULUTH—Robert Sabin Forbes.
DULUTH—Simon Aloysius Walkowiak.

Stearns County
ALBANY—Delphin William Kohler. BELGRADE—Hugh Henry Slo-
mb. BROOKTON—Richard T. Glycer. KIMBALL—Frank P. Frisch;
Richard O. Leavenworth. PAYNESVILLE—Harry William Arndt; Pierre
Mestlin Pilou. SAUK CENTER—Harold Ladd Lamb. ST. CLOUD—
George Delos Rice; Phillip E. Stangl.

Steele County
BLOOMING PRAIRIE—William John Dailey; Albert Miller Treat.

Stevens County
HANCOCK—Mathias Lent Ransom. MORRIS—Edward Thomas Fitz-
rall.

Swift County
BENSON—Lloyd Hermanus Van Slyke.

Traverse County
BROWN VALLEY—Ronald Leitch Laney. TINTAH—Nathan Freeman
Heman. WHEATON—Bret Verne Bates.

Wabasha County
ELGIN—Walter Franklin Bleifuss. LAZEPPA—William Brown Heag-
y. WABASHA—David Simon Fleischauer.

Wadena County
WADENA—Paul E. Kenyon.

Waseco County
WASECO—William Frederick Passer.

Washington County
STILLWATER—Eugene Benson Stebbins.

Watsonwan County
LEWISVILLE—Robert I. Bariekman.

Wilkin County
BRECKENRIDGE—Ernest Wesley Rimer. CAMPBELL—William Edgar
ay.

Winona County
LEWISTON—Gilbert Hendrickson. WINONA—William Vardeman Lind-
; Bertolet Perry Rosenberry; Samuel Schaefer.
WINONA—George Vincent Lynch; Charles Pern Robbins.

Wright County
ANNANDALE—George Henry Norris. BUFFALO—John Jefferson Cat-
DELANO—Bert Victor Lares. MONTICELLO—Frank Everettte
lison.

Yellow Medicine County
GRANITE FALLS—Maurice Levy.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Officers 1917-18

His Walley, President.....	Jackson
W. Pigford, Vice President.....	Meridian
A. Gamble, Vice President.....	Greenville
S. Arrington, Vice President.....	Brookhaven
F. Howard, Secretary.....	Vicksburg
M. Dye, Acting Secretary.....	Clarksdale
I. Buchanan, Treasurer.....	Meridian

Council Districts and Officers

First District.—Tunica, Coahoma, Quitman, Tallahatchie, Leflore, Sun-
er, Bolivar and Washington counties. L. L. Minor, Councilor, Holly-
d.

Second District.—De Soto, Tate, Panola, Yalobusha, Grenada, Lafay-
Marshall and Calhoun counties. B. L. Guyton, Councilor, Oxford.

Third District.—Benton, Tippah, Alcorn, Tishomingo, Prentiss, Lee,
n Pontotoc and Itawamba counties. C. M. Murry, Councilor, Ripley.

Fourth District.—Chickasaw, Monroe, Clay, Lowndes, Oktibbeha and
law counties. F. J. Underwood, Councilor, Nettleton.

Fifth District.—Carroll, Montgomery, Attala, Madison, Holmes, Web-
and Yazoo counties. T. J. Hooper, Councilor, Kosciusko.

Sixth District.—Issaquena, Sharkey, Warren, Claiborne, Hinds and
in counties. S. W. Johnston, Councilor, Vicksburg.

Seventh District.—Noxubee, Winston, Leake, Neshoba, Kemper,
ardale and Newton counties. W. G. Gill, Councilor, Newton.

Eighth District.—Lawrence, Simpson, Covington, Smith, Jones, Jasper,
ne and Clarke counties. H. F. Garrison, Councilor, Seminary.

Ninth District.—Amite, Adams, Copiah, Franklin, Jefferson, Lincoln,
Pike and Wilkinson counties. J. C. McNar, Councilor, Fayette.

Tenth District.—Greene, Hancock, Harrison, Jackson, Marion, Perry
and Pearl River counties. S. E. Reese, Councilor, Purvis.

MISSISSIPPI									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo- men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society
Adams.....	426	17.7	25,265	1,053	24	..	17	22	11
Alcorn.....	386	18.4	20,474	974	21	..	12	19	13
Amite.....	714	39.7	24,592	1,366	18	..	8	15	5
Attala.....	715	32.5	30,751	1,397	22	..	15	16	10
Benton.....	396	49.5	10,245	1,280	8	1	4	8	3
Bolivar.....	879	14.4	58,744	963	61	..	43	54	40
Calhoun.....	579	24.1	18,613	775	24	..	17	21	11
Carroll.....	624	28.4	23,886	1,085	22	..	14	15	10
Chickasaw.....	501	20.0	25,002	1,000	25	..	18	18	11
Choctaw.....	414	29.6	15,322	1,094	14	1	7	9	5
Claiborne.....	489	40.7	17,403	1,450	12	..	5	7	5
Clarke.....	675	33.7	24,469	1,223	20	..	10	12	8
Clay.....	408	25.5	20,671	1,291	16	..	11	14	9
Coahoma.....	530	10.6	40,000	800	50	1	38	39	38
Copiah.....	769	24.0	37,023	1,456	32	..	14	21	11
Covington.....	410	22.8	21,135	1,174	18	..	12	13	12
De Soto.....	475	18.3	23,130	889	26	..	12	13	16
Forrest.....	462	12.5	28,031	758	37	2	17	30	17
Franklin.....	547	32.2	16,298	958	17	..	14	14	2
George.....	475	59.4	7,420	927	8	..	4	8	7
Greene.....	710	142.0	6,803	1,300	5	..	3	3	2
Grenada.....	442	23.3	16,906	889	19	..	10	12	10
Hancock.....	439	33.5	11,207	800	14	1	14	13	8
Harrison.....	1,013	19.9	37,096	727	51	2	26	38	29
Hinds.....	858	9.6	71,865	807	89	..	50	67	50
Holmes.....	834	19.8	40,738	969	42	1	23	33	18
Issaquena.....	403	81.2	10,676	2,135	5	..	1	1	3
Itawamba.....	529	31.1	15,243	896	17	..	10	13	3
Jackson.....	710	47.3	17,374	1,158	15	..	5	10	14
Jasper.....	667	20.3	20,762	943	22	..	14	15	8
Jefferson.....	507	63.4	18,221	2,277	8	1	9	7	6
Jefferson Davis	404	31.1	16,074	1,236	13	..	7	10	11
Jones.....	696	19.3	38,673	1,074	36	..	26	28	12
Kemper.....	752	35.8	20,348	968	21	..	15	16	9
Lafayette.....	664	26.7	21,883	911	24	..	14	13	13
Lake.....	..	..	..	..	..	..	..	..	..
Lamar.....	495	3.0	15,748	97	16	2	13	16	8
Lauderdale.....	700	9.6	53,321	730	73	1	42	60	46
Lawrence.....	418	23.2	16,349	908	18	..	12	15	10
Leake.....	576	26.2	18,984	862	22	..	12	16	3
Lee.....	448	10.9	33,958	828	41	..	30	29	26
Leflore.....	572	11.7	45,381	926	49	..	30	41	21
Lincoln.....	578	27.5	33,739	1,606	21	..	14	17	11
Lowndes.....	499	15.1	31,877	965	33	..	16	25	11
Madison.....	725	38.1	34,243	1,802	19	..	11	14	7
Marion.....	624	34.7	15,922	884	18	..	13	14	5
Marshall.....	659	29.9	26,796	1,165	23	..	12	17	9
Mourne.....	770	24.1	38,070	1,189	32	..	19	26	17
Montgomery...	398	19.9	18,559	927	20	..	13	15	15
Neshoba.....	561	29.5	21,816	1,558	19	1	14	17	10
Newton.....	563	21.0	25,551	946	27	..	15	19	15
Noxubee.....	682	52.5	28,503	2,192	13	..	7	8	4
Oktibbeha.....	457	24.0	19,676	1,035	19	..	14	15	8
Panola.....	696	22.4	32,912	1,061	31	1	12	16	13
Pearl River.....	797	53.1	14,208	947	15	..	12	15	3
Perry.....	644	53.6	10,395	866	12	..	12	12	6
Pike.....	707	19.1	29,372	793	37	..	25	26	19
Pontotoc.....	494	18.3	20,719	767	27	..	14	15	7
Prentiss.....	409	17.0	17,765	740	24	..	15	15	14
Quitman.....	395	23.2	16,087	946	17	..	13	15	10
Rankin.....	791	41.6	26,124	1,374	19	..	13	15	8
Scott.....	597	37.3	18,479	1,154	16	..	10	10	9
Sharkey.....	444	24.7	18,479	1,027	18	..	9	12	7
Simpson.....	575	21.3	20,413	755	27	..	20	17	14
Smith.....	606	36.2	19,191	1,128	17	..	8	13	9
Stone.....	475	36.5	7,531	579	13	..	9	11	4
Sunflower.....	690	13.0	38,058	718	53	..	35	46	25
Tallahatchie...	629	17.5	35,996	999	26	..	21	29	17
Tate.....	400	20.0	19,714	985	20	..	15	16	11
Tippah.....	446	24.4	15,834	879	18	..	4	10	4
Tishomingo....	428	22.5	15,215	800	19	..	9	14	5
Tunica.....	418	23.2	20,227	1,123	18	..	9	15	10
Union.....	412	21.7	20,803	1,094	19	..	12	13	9
Walthall.....	..	..	20,000	3,333	6	..	5	5	2
Warren.....	572	65.5	37,488	986	33	..	27	28	20
Washington....	877	15.4	48,933	858	57	..	35	42	28
Wayne.....	812	74.1	16,292	1,086	15	..	8	9	6
Webster.....	416	24.5	15,753	926	17	..	10	11	2
Wilkinson.....	667	95.3	18,075	2,582	7	..	5	6	4
Winston.....	597	22.1	19,388	718	27	..	19	25	11
Yalobusha.....	490	28.3	22,817	1,086	21	..	15	17	13
Yazoo.....	1,038	24.7	48,660	1,158	42	..	23	33	19
Totals.....	46,825	23.7	1,994,685	1,009	1,975	15	1,231	1,527	985

1. Includes Jackson, population 31,104; physicians 57 [M.R.C. 13].
2. County recently organized; area and population included with that of other counties.
3. County recently organized; area included with that of other counties.

HONOR ROLL

Adams County
NATCHEZ—Edwin Eugene Benoist; Charles T. E. Chamberlain; John W. D. Dicks; Alfred Lawson Lewis; James Alexander Owen; Augustine Joseph Podesta; John Lilly Trice; Jacob Southeimer Ullman.

Alcorn County
CORINTH—Guy A. Caldwell; Maury Holcombe McRae. RIENZEL—Milton Waldrop Robertson.

Amite County

GLOSTER—Harvey Thomas Cuning; Frank Calhoun Smith.

Benton County

MICHIGAN CITY—Emile Quorles Withers.

Bolivar County

ALLIGATOR—Samuel Tilden Wells. CLEVELAND—Arthur Alphonso Sparkman. GUNNISON—John Douglas Simmons. SCOTT—Swinton Lamar Lane. SHAW—John Eldon McBill.

Calhoun County

BANNER—William Thomas Watson. REID—Rufus Elmer Priest. VARDAMAN—William J. Aycock.

Carroll County

BLACK HAWK—Graham Wall Diggs. NORTH CARROLTON—Hardie Rogers Hays. VAIDEN—Cassius D. Alexander.

Chickasaw County

HOUSTON—Daniel Sidney Johnson Jr.; Embry Pryor Wilson. OKOLONA—Armond French Wicks.

Clarke County

ENTERPRISE—Joseph Turner Irby. QUITMAN—Benjamin Jefferson McKee. SHUBUTA—James Andrew McDevitt.

Clay County

WEST POINT—Lon W. Dotson.

Coahoma County

CLARKSDALE—Thomas Joor Bush. FRIAR POINT—James Aylmer Stack. LULA—Eugene Reginald Shurley.

Copiah County

ROCKPORT—Hugh Long McCalip. WESSON—Carlos Reese McKee.

Covington County

MOUNT OLIVE—John Suine McIntosh. SANFORD—Harry Greenwell Fridge.

De Soto CountyCOCKRUM—Dudley Rook Moore.
OLIVE BRANCH—Ellis Leroy Wilkins.**Forrest County**

HATTIESBURG—William Roland Bethea; Walter W. Crawford; Robert Myers Donald; Duncan McInnis Draughn; Hampden Sidney Lewis. PETAL—Fletcher Eugene Lee.

Franklin County

FOXIE—John Harrison Wood. LUCIEN—Albert Columbus Lofton.

Grenada County

GRENADA—Paul Zollicoffer Browne; Frank Small Hill. HARDY STATION—Filo B. Coats. HOLCOMB—Barton Jones Farr.

Hancock County

BAY ST. LOUIS—Benjamin Clarence Rush. KILN—William Wallace Alfred. LOGTOWN—Joseph Otto Legura.

Harrison County

BILOXI—James Clinton Ballard; Hewitt Johnston; Charles Allen McWilliams; Erskine Patrick Odeneal. BOND—Burl Samuel Hood. GULFPORT—Edward Clifton Parker. PASS CHRISTIAN—John Galbraith Pratt; Robert Alexander Strong. STILLMORE—Reginald Francis Annis.

Hinds CountyFONDREN—Peyton R. Greaves.
JACKSON—Malcolm Irvin Brewer; Wallace Leslie Britt; Enoch Callaway; Walter Parker Dobson; Archie Ewing Gordin; Thomas Michael Kane Jr.; William B. Lewis; Little Berry Neal; Robert Lee Peyton; Wirt Adams Rodgers; Nolan Stewart; Charles Emmett Walker; James Percy Wall.**Holmes County**CRUGER—Robert Sidney Love.
DURANT—Roy Charles Elmore. GOODMAN—Sidney Colton Williams. LEXINGTON—Sidney Love; William Homer Strahan; Robert Mills Stephenson. WEST—John William Green.**Itawamba County**

EASTMAN—Allison Tower Graham. RARA AVIS—Edgar Allen Patton. RATLIFF—Ellis Perre Burns.

Jackson County

OCEAN SPRINGS—Henry Bradford Powell.

Jasper County

MOSS POINT—Henry McCabe Burnham. VOSBURG—Dryden Lamar Walker.

Jefferson County

McBRIDE—Robert Blackburn Harper.

Jefferson Davis County

CARSON—Virgil Newton Nichols.

Jones County

LAUREL—Harvey Lee Brown; Charles C. Buchanan; Frederick Marshall Cook; John Robert Kittrell; David Rodgers; John Franklin Scarborough. MOSELLE—John C. Butler. SOSO—Ellison Holmes Williamson.

Kemper County

DE KALB—John Stennis Adams.

Lamar County

SUMRALL—Albert Coleman Bryan.

Lauderdale County

MERIDIAN—Herbert L. Arnold; Thomas Grover Cleveland; Inman Williams Cooper Jr.; Gilbert Franklin Douglas; Marcellus Craig Garner; W. R. Grady; Leonard Hart; Ossee Fulton Keen; Kuteheu Threecfoot Klein; Robert Matthews Leigh; Robert B. Matthews; Thomas Jefferson Smith; Thomas Alva Strain; John Robert Tackett. WHYNOT—Thomas Edward Phillips.

MERIDIAN—James McElroy Guthrie.

Lawrence County

OAKVALE—Grover Cleveland Denson; Phil Russell Polk. SILVER CREEK—John Williams Wilson.

Leake County

CARTHAGE—Abner Jones Barnett; James Lovelace Parkes.

Lee CountyBETHAN—Henry Griffin Waldrop.
SHANNON—Shelby Cruthirds Spencer. TUPELO—Roy Nathan Caruth.**Leflore County**

GREENWOOD—Leonidas F. Barrier; Mark Anthony Booth; Benjamin Temple Williamson. ITTA BENA—Harvey Linwood Shamon. MONEY—John William Brandon Jr.; John H. McLain. SCHLATER—Martin Luther Holland. SIDON—Riley Barber Yates.

Lincoln County

BROOKHAVEN—John H. Johnson; Norman Algernon McLeod; Ira L. Parsons.

Lowndes County

ARTESIA—Edward Lehmberg. COLUMBUS—James William Cox; John Edgar Davis; William Lindley Ervin; William F. Leigh; John Washington McLain; William Evans Richards.

Madison County

CAMDEN—John Whitworth Melvin. CANTON—Charles G. Bell. FLORA—Oliver Rudolph Fore.

Marshall County

HUDSONVILLE—George Eddie Johnson. POTTS CAMP—Robert Hugh Pegram.

Monroe County

ABERDEEN—James Milton Acker Jr.; Richard M. Boyd; Leonard; Andrew Crosby. GATTMAN—Forney Know Hollis. HAMILTON—Lewis Wheeler Darracott. MULDON—James Estelle Dunlap. SMITHVILLE—Victor Hugo Bean.

Montgomery County

DUCK HILL—Samuel S. Caruthers. KILMICHAEL—Henry Gooch Hammond. SWEATMAN—Frank Lynn McGahey. WINONA—John Woodson Barksdale; George Baskerville; Thomas Wilburn Holmes; William Jefferson Lusk; Zachariah James Scott.

Neshoba County

PHILADELPHIA—Charles Henry Harrison; William Carl Seale.

Newton County

CHUNKY—Charles Augustus Martin. HICKORY—J. R. Plummer. NEWTON—Augustus Melville Harrelson. UNION—Zeffa Carl Hagen.

Noxubee County

SHUQUALAK—John Howard Kellis.

Oktibeha County

AGRICULTURAL COLLEGE—Benjamin Joseph Marshall. STARKVILE—Fred Lee Ricks.

Panola County

PLEASANT GROVE—James Freeman Williamson.

Perry County

AGNESS—Frank Aquilla Rogers. NEW AUGUSTA—Benjamin Travis Robinson. RHODES—Iris Joe Slay. RICHTON—Edward Moody Gavin David W. Walley.

Pike County

MAGNOLIA—Rufus E. Applewhite. McCOMB—Eugene Ray Gordon Bryant Jefferson Hewitt; Luther Boyce Oken. SUMMIT—Kotz Allen.

Pontotoc County

ALGOMA—Edward Greenland Abernethy.

Prentiss County

BOONEVILLE—Franklin Gail Riley.

Quitman County

LAMBERT—Eric Alexander McVey.

Rankin County

PUCKET—Solomon Relophard Boykin.

Scott County

LAKE—William Edwin Moody.

Simpson County

MAGEE—Ernest Leonard Posey. PINOLA—John Lively White.

Sunflower County

BALTZER—Claud Clinton Greene. DOCKERY—Eli Estus Farmer. DREW—Bernard Hess Booth. INDIANOLA—Henry Cowles Kent; George Jefferson Maneill; Samuel Doak Newell. INVERNESS—Lee Kelly Mayfield. RULEVILLE—Burriss Earle Burchfield.

Tallahatchie County

CHARLESTON—Hugh White Priddy. PHILLIPP—George Randolph Storm. TIPPO—Walter Clarence Friday. TUTWILER—John Garne Backstrom. WEBB—John Aaron Harris; William Robin Harris.

Tate County

STRAYHORN—Lewis Wesley Kitchens.

Tippah County

RIPLEY—John Taylor Barbee.

Tishomingo County

PADEN—Carl Western Norwood.

Tunica County

DUNDEE—Hal Glenn Johnson.

Union County

BLUE SPRINGS—William C. Hays. NEW ALBANY—Clyde Madison Speck; Hugh Priddy Boswell; William Luther Newton.

Walthall County
KNOXO—Richard Baker Austen.

Warren County
VICKSBURG—Hugh C. Denson; Charles John Edwards; John Sharp Ewing; Ewing Fox Howard; Sydney William Johnston; Richard Thomas O'Neil; Fred Edward Plnson; Henry Franklin Sproles; Augustus Street.

Washington County
BELZONI—Edw. L. Robertson. ERWIN—Walter William Scott. FOOTE—Thompson F. Worthington. GREENVILLE—John George Archer; Paul Gaston Gamble. HOLLANDALE—George Howard Spivey. ISOLA—William George Byrd; William Cooke Lester. WAYSIDE—Franklin Howard Russell.

Wayne County
CLARA—George David Mason.

Webster County
EUPORA—J. Howard Brown.

Wilkinson County
FORT ADAMS—David George Lemkowicz.

Winston County
LOUISVILLE—Silas Wesley Pearson. NOXAPATER—Joseph Cone Robinson. PLATTSBURG—James Henry Slaughter; Samuel Houston Wood.

Yalobusha County
COFFEYVILLE—Roger Pou Hentz. WATER VALLEY—Hilton Rice Carr; Montie Porter; Jesse Davis Westmoreland.

Yazoo County
BENTONIA—Miller Craft Henry. LAMKIN—James Sims Reid. LOUISE—James Thomas Rainer. MIDNIGHT—William Adam DeWitt James. VAUGHAN—John Houston Steen. YAZOO CITY—George Cameron Jones.

MISSOURI STATE • MEDICAL ASSOCIATION	
Officers 1917-18	
Robt. E. Schlueter, President.....	St. Louis
Vice Presidents—	
J. P. Henderson.....	Kansas City
H. A. Lowe.....	Springfield
Frank B. Long.....	Sedalia
W. A. Clark.....	Jefferson City
F. W. Colton.....	Van Buren
E. J. Goodwin, Secretary.....	St. Louis
Jail D. Allen, Treasurer.....	Lamar
Councilor Districts and Officers	
A. R. McComas, Chairman, Surgeon; E. J. Goodwin, Secretary, St. Louis.	
First District.—Holt, Atchison and Nodaway counties. Eugene L. Crowson, Councilor, Pickering.	
Second District.—Buchanan and Andrew counties. O. C. Gebhart, Councilor, St. Joseph.	
Third District.—Harrison, Worth, Gentry and DeKalb counties. G. W. Whitely, Councilor, Albany.	
Fourth District.—Grundy, Sullivan, Mercer and Putnam counties. J. B. Wright, Councilor, Trenton.	
Fifth District.—Clark, Scotland and Schuyler counties. J. R. Bridges, Councilor, Kohoko.	
Sixth District.—Adair, Knox and Lewis counties. P. F. Cole, Councilor, Ewing.	
Seventh District.—Shelby, Marion and Ralls counties. Jacob D. Smith, Councilor, Shelby.	
Eighth District.—Lincoln, St. Charles, St. Louis and Pike counties. Leander W. Cape, Councilor, Maplewood.	
Ninth District.—Audrain, Boone, Howard, Callaway, Warren and Montgomery counties. A. R. McComas, Councilor, Surgeon.	
Tenth District.—Macon, Randolph and Monroe counties. Don A. Barnhart, Councilor, Huntsville.	
Eleventh District.—Chariton, Carroll, Livingston and Linn counties. J. W. Hawkins, Councilor, Salisbury.	
Twelfth District.—Platt, Clay, Ray, Clinton, Caldwell and Daviess counties. Spence Redman, Councilor, Platte City.	
Thirteenth District.—Jackson County. F. E. Murphy, Councilor, Kansas City.	
Fourteenth District.—Lafayette, Saline and Cooper counties. C. T. Tyland, Councilor, Lexington.	
Fifteenth District.—Cass and Johnson counties. H. S. Crawford, Councilor, Harrisonville.	
Sixteenth District.—Bates, Vernon, Barton, Cedar and Dade counties. N. Chastain, Councilor, Butler.	
Seventeenth District.—Pettis, Henry, Benton, St. Clair and Hickory counties. W. J. Ferguson, Councilor, Sedalia.	
Eighteenth District.—Miller, Moniteau, Morgan and Camden counties. B. Norman, Councilor, Tipton.	
Nineteenth District.—Cole, Osage, Maries and Gasconade counties. S. Bedford, Councilor, Jefferson City.	
Twentieth District.—Franklin County and St. Louis City. A. H. Hamel, Councilor, St. Louis.	
Twenty-First District.—Jefferson, Ste. Genevieve and Perry counties. M. Rutledge, Councilor, Ste. Genevieve.	
Twenty-Second District.—Scott, Madison, Cape Girardeau, Mississippi and Bollinger counties. Garnett S. Cannon, Councilor, Farnfelt.	
Twenty-Third District.—Dunkin, Pemiscot and New Madrid counties. H. Timberman, Councilor, Marston.	
Twenty-Fourth District.—Wayne, Ripley, Butler, Carter, Shannon and Toddard counties. Wm. Spaulding, Councilor, Poplar Bluff.	
Twenty-Fifth District.—Washington, Reynolds, Iron and St. Francis counties. O. A. Smith, Councilor, Farmington.	
Twenty-Sixth District.—Crawford, Phelps, Pulaski, Laclede and Dent counties. W. H. Breuer, Councilor, St. James.	
Twenty-Seventh District.—Howell, Ozark, Oregon, Texas, Wright and Douglas counties. H. C. Shuttee, Councilor, West Plains.	
Twenty-Eighth District.—Dallas, Greene, Lawrence, Barry, Stone, Christian, Webster, Polk and Taney counties. T. O. Klinger, Councilor, Springfield.	
Twenty-Ninth District.—McDonald, Newton and Jasper counties. R. Wills, Councilor, Neosho.	

MISSOURI											
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	
Adair.....	571	21.1	23,407	866	27	..	10	18	9	3	
Andrew.....	428	21.4	15,232	764	20	..	10	14	8	..	
Atchison.....	528	29.3	13,604	755	18	..	6	9	12	..	
Audrain.....	685	22.1	22,069	711	31	..	12	23	25	1	
Barry.....	784	26.1	23,869	795	30	1	6	19	16	2	
Barton.....	596	28.4	16,747	797	21	1	6	11	12	2	
Bates.....	870	24.2	25,869	718	36	..	16	24	26	8	
Benton.....	745	41.4	14,881	830	18	..	9	13	15	2	
Bollinger.....	609	40.6	14,576	971	15	..	9	13	5	1	
Boone.....	688	10.7	31,911	493	64	2	23	44	35	6	
¹ Buchanan.....	408	2.3	101,331	562	180	3	95	151	107	21	
Butler.....	699	25.9	23,435	867	27	..	16	21	15	5	
Caldwell.....	433	13.1	14,605	442	33	..	11	20	19	4	
Callaway.....	808	20.2	24,400	610	40	..	14	28	23	4	
Camden.....	687	52.8	11,582	890	13	..	6	10	6	..	
Cape Girardeau	580	10.9	30,033	566	53	1	21	36	30	3	
Carroll.....	703	27.0	23,098	888	26	1	9	12	19	3	
Carter.....	506	63.2	5,504	688	8	..	1	5	4	..	
Cass.....	721	19.0	22,973	604	38	..	17	32	31	5	
Cedar.....	498	19.9	16,080	643	25	1	8	17	15	1	
Chariton.....	768	27.4	23,503	839	28	..	10	20	21	1	
Christian.....	553	32.5	15,832	931	17	..	7	10	10	3	
Clark.....	498	23.7	12,811	610	21	..	4	12	13	1	
Clay.....	402	7.6	21,323	402	53	..	24	39	36	4	
Clinton.....	423	16.3	15,297	588	26	..	10	18	15	1	
Cole.....	389	13.0	22,963	765	30	..	15	26	21	2	
Cooper.....	558	19.9	20,311	725	28	..	13	13	19	1	
Crawford.....	747	53.3	14,025	1,001	14	1	6	8	10	1	
Dade.....	501	29.3	15,613	918	17	..	6	13	4	2	
Dallas.....	543	38.8	13,181	941	14	..	4	7	3	..	
Daviess.....	564	20.9	17,605	652	27	..	11	18	4	5	
DeKalb.....	425	23.6	12,531	696	18	1	9	9	9	..	
Dent.....	746	82.9	13,432	1,492	9	..	3	4	5	..	
Douglas.....	804	73.1	16,664	1,514	11	..	4	6	5	..	
Dunklin.....	530	10.4	36,621	718	51	..	23	40	24	9	
Franklin.....	879	20.4	29,830	693	43	..	22	33	27	8	
Gasconade.....	514	30.2	13,247	779	17	..	10	15	12	1	
Gentry.....	490	17.1	16,820	600	28	1	13	17	14	2	
² Greene.....	667	5.5	71,946	594	121	..	54	79	77	14	
Grundy.....	433	14.4	16,744	558	30	4	17	19	20	3	
Harrison.....	721	20.0	20,466	568	36	1	14	16	17	1	
Henry.....	744	17.3	27,242	633	43	2	10	27	30	3	
Hickory.....	407	45.2	8,741	971	9	..	4	4	6	..	
Holt.....	446	15.4	14,539	501	29	..	13	19	22	1	
Howard.....	468	19.5	15,653	668	24	..	7	15	23	3	
Howell.....	915	35.2	21,065	810	26	1	6	16	8	1	
Iron.....	553	46.1	8,563	713	12	..	4	9	6	3	
³ Jackson.....	610	0.6	347,997	363	958	41	491	621	385	154	
⁴ Jasper.....	635	4.8	94,099	697	135	5	51	98	68	8	
Jefferson.....	681	25.2	29,458	1,091	27	..	11	19	13	1	
Johnson.....	831	18.9	26,297	597	44	..	10	27	22	6	
Knox.....	514	22.3	12,403	539	23	..	8	16	12	2	
Laclede.....	753	37.6	17,976	898	20	..	5	14	10	..	
Lafayette.....	612	13.0	30,154	641	47	1	23	32	34	3	
Lawrence.....	609	15.2	26,582	664	40	1	16	34	25	3	
Lewis.....	504	18.0	15,514	554	28	..	15	21	19	4	
Lincoln.....	607	17.8	17,033	500	34	..	9	24	4	6	
Linn.....	626	17.4	25,253	701	36	1	23	25	33	5	
Livingston.....	531	17.1	19,453	627	31	..	9	21	19	2	
McDonald.....	527	37.6	13,539	967	14	..	2	6	4	2	
Macon.....	809	17.6	30,868	671	46	..	15	29	31	5	
Madison.....	499	38.4	12,218	939	13	..	7	8	10	..	
Maries.....	520	43.3	10,432	869	12	..	6	9	8	3	
Marion.....	436	8.1	33,666	623	54	1	26	39	23	6	
Mercer.....	453	23.8	12,335	649	19	..	10	16	13	5	
Miller.....	593	37.1	17,833	1,114	16	..	7	13	10	3	
Mississippi.....	413	17.9	16,540	719	23	..	11	16	13	2	
Moniteau.....	410	24.1	14,375	845	17	..	7	11	16	2	
Monroe.....	666	28.9	18,304	795	23	..	12	18	12	3	
Montgomery.....	514	20.6	15,604	624	25	..	8	13	13	4	
Morgan.....	614	38.4	13,365	835	16	..	8	13	6	2	
New Madrid.....	653	24.1	25,478	943	27	..	17	24	12	3	
Newton.....	622	22.2	27,234	972	23	1	7	18	17	..	
Nodaway.....	871	16.4	28,833	544	53	..	19	34	32	5	
Oregon.....	778	70.7	15,245	1,385	11	..	4	7	1	..	
Osage.....	593	14.8	14,420	360	40	..	12	20	15	3	
Ozark.....	746	82.8	11,926	1,325	9	..	4	5	3	..	
Pemiscot.....	456	14.7	24,992	806	31	..	19	25	19	3	
Perry.....	462	24.3	14,898	784	19	..	11	16	8	3	
Pettis.....	685	12.2	34,988	624	56	1	28	47	37	9	
Phelps.....	670	41.9	16,964	1,060	16	1	6	11	11	2	
Pike.....	653	22.5	22,536	777	29	1	14	23	9	7	
Platte.....	415	18.9	14,429	655	22	..	6	16	16	4	
Polk.....	641	22.1	21,561	743	29	..	15	16	22	2	
Pulaski.....	542	30.1	12,199	677	18	..	9	9	12	2	
Putnam.....	517	30.4	14,308	841	17	2	8	11	10	1	
Ralls.....	418	20.9	13,368	668	20	..	5	9	5	1	
Randolph.....	491	8.9	27,451	499	55	..	17	39	24	8	
Ray.....	565	21.0	21,451	794	27	..	10	18	16	1	
Reynolds.....	828	92.0	10,637	1,181	9	..	6	7	9	1	
Ripley.....	627	78.4	1,399	174	8	..	3	5	3	2	
St. Charles.....	535	15.3	24,854	710	35	..	15	29	15	8	
St. Clair.....	706	28.6	16,412	683	24	1	7	15	16	3	
Ste. Genevieve.....	481	43.7	10,787	980	11	..	5	8	9	2	
St. Francois.....	458	11.2	44,267	1,079	41	..	16	33	25	5	
St. Louis City.....	61	0.03	768,630	444	1,730	75	1,070	1,412	832	304	
St. Louis.....	487	2.0	106,049	460	239	3	42	62	44	9	
Saline.....	754	12.8	29,448	499	59	..	23	36	30	3	
Schuyler.....	309	19.3	9,062	566	16	..	6	9	10	1	
Scotland.....	439	24.4	11,869	659	18	..	7	11	11	2	

1. Includes St. Joseph, population 86,498; physicians 166 [M.R.C. 17].
2. Includes Springfield, population 41,169; physicians 111 [M.R.C. 13].
3. Includes Kansas City, population 305,816; physicians 903 [M.R.C. 152].
4. Includes Joplin, population 33,400; physicians 69 [M.R.C. 4].

MISSOURI—Continued									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Scott.....	419	10.7	29,145	747	39	..	20	36	18 5
Shannon.....	992	124.0	11,585	1,448	8	..	4	5	2 1
Shelby.....	509	18.2	14,864	530	28	..	11	19	21 6
Stoddard.....	815	22.6	30,097	836	36	..	23	35	8 7
Stone.....	510	63.7	12,775	1,596	8	..	5	6	6 ..
Sullivan.....	649	21.6	18,598	619	30	..	8	13	12 1
Taney.....	655	93.5	9,134	1,304	7	..	2	5	3 1
Texas.....	1,159	52.7	21,458	975	22	..	9	16	17 4
Vernon.....	839	20.5	28,827	703	41	..	12	25	31 2
Warren.....	410	37.3	9,123	829	11	..	3	8	4 ..
Washington....	741	61.7	13,378	1,114	12	..	6	7	1 ..
Wayne.....	775	36.9	15,181	722	21	..	9	14	7 2
Webster.....	585	34.4	17,914	1,053	17	..	6	8	13 1
Worth.....	265	18.9	8,007	571	14	..	10	12	2 2
Wright.....	677	30.8	18,895	858	22	..	8	10	12 1
Totals.....	68,664	11.3	3,537,819	583	6,063	156	2,956	4,375	3,136 699

HONOR ROLL

Adair County

KIRKSVILLE—Frank Lester Bigsby; Ezra Clarence Grim; Wilford Wayne Martin.

Audrain County

VANDALIA—Warren Wilson Bland.

Barry County

CASSVILLE—William Thomas Jefferson Bailey. SHELL KNOB—Lossie Edward Gilbert.

Barton County

IANTHA—George Everett Locker. LAMAR—Gail Darwin Allee.

Bates County

ADRIAN—Edward Everette Robinson. AMORET—John Asa Corn. BUTLER—Robert E. Crabtree; Charles Anne Lusk. HUME—W. A. Williams. RICH HILL—Herbert Wellington Insley. MAYESBURG—William H. Allen. ROCKVILLE—Charles Ellerethe Powers.

Benton County

COLE CAMP—Norman Anthony Schwald. WARSAW—James Alexander Logan.

Bollinger County

PATTON—Henry Thomas O'Kelley.

Boone County

ASHLAND—Finis Clifford Suggett. COLUMBIA—William Patton Dy-sart; Otis Andrew Moore; Mazyck P. Havenel; Carl Miller Sneed. ROCHEPORT—Paul Shaeffer Mabry.

Buchanan County

DE KALB—William Judson Shelton. RUSHVILLE—Edgar Lee Gard-ner; Clay Spencer. ST. JOSEPH—Elijah Augustus Colley; Emmett F. Cook; William Tecumseh Elam; Oliver C. Gebhart; Fenton Noah Good-son; Charles Greenberg; Eugene Hall; Francis Xavier Hartigan; Pierre Isidore Leonard; Levi Samuel Long; Thomas J. Lynch; Frank Rudd McDonald; Otto A. Schmid; Albert Sidney Johnston Smith; Harry Leroy Smith; Estil Young Strawn; Hilan Ketcham Wallace; Henry Otto Witten.

Butler County

BROSELY—Walter Lee Brandon. POPLAR BLUFF—Victor Cadwell; Louis Bernard Knecht; Gough Henry Tarr. QULIN—Scott Cook.

Caldwell County

BRECENRIDGE—William Lent Chaffin. HAMILTON—Herbert Booth; Leander Jacob Eads. POLO—Isaac Newton Parrish.

Callaway County

BACHELOR—Halbert Rowland Hill. FULTON—Robert Goff Hall; Greene Day McCall; Elbert Lafayette Spence.

Cape Girardeau County

CAPE GIRARDEAU—John W. Berry; Paul Raymond Williams. FRUIT-LAND—Chester Arthur Poe.

Carroll County

CARROLLTON—Harold Blaine Seovern. DEWITT—Bid Cooper Cole; Marcus Rolla Damron.

Cass County

CREIGHTON—Edgar McDonnell Griffith. HARRISONVILLE—Harry Struthers Crawford. PLEASANT HILL—Wilford Andrew Fair; Rowland Paxton Yeagle. RAYMORE—Wellman Franklin Chaffin.

Cedar County

STOCKTON—Burr Hamilton Emerson.

Chariton County

SALISBURY—Ora Francis McKittrick.

Christian County

BILLINGS—Frederick H. Brown. CLEVER—Floyd Herman Maples; Larkin E. Williams.

Clark County

LURAY—Virgil S. Dangerfield.

Clay County

EXCELSIOR SPRINGS—Thomas Andrew Grace. LIBERTY—Burton Maltby. NORTH KANSAS CITY—George Ross Dagg.

Clinton County

LATHROP—Otto Ernest Schoenfeld.

Cole County

JEFFERSON CITY—Lawrence David Enloe; Isaac Edward Moore.

Cooper County

BOONVILLE—Charles Forrest Lyle.

Crawford County

CUBA—John Herbert Martyn.

Dade County

GREENFIELD—Jerome Lee Rawhauser. LOCKWOOD—William Mathias Hoel.

Daviess County

GALLATIN—Earl Weldon Netherton; Marshall Ashby Smith. PAT-TONSBURG—Frank Hedges; John Wesley Nigh. WINSTON—Charles Clinton Coats.

Dunklin County

CARDWELL—John G. Birchett; Allen Grey Scott. CLARKTON—John D. Hess. HOLLYWOOD—Walter Ray Limbaugh. KENNETT—Thomas Hiram Egbert; Ernest Farris Harrison; James Clyde McKay; Ural Albert Vest Presnell. MALDEN—Homer Beall.

Franklin County

BERGER—Robert Roscoe Cutler. ST. CLAIR—Reuben Hamilton Wil-liams. SULLIVAN—Charles Hermann Eyermann; Otto Nicholas Schudde. WASHINGTON—Henry Allen May; Otto Lewis Muench; Henry L. Roth-man. UNION—Floyd Blythe Ricketts.

Gasconade County

MORRISON—Isaac G. Cook.

Gentry County

KING CITY—Moses J. Ferguson; Alfred Morton Ganaway.

Greene County

SPRINGFIELD—Jasper L. Atherton; Ernest M. Box; William Andrew Dalzell; James E. Dewey; Ersel Mial Fessenden; Robert R. Glyna; Joseph Wooding Love; Horace Arch Lowe; James Madlson Potts; William Frederic Andrew George Rienhoff; Murray Chaffee Stone; William J. Wills; Charles Elbert Woody. STRAFFORD—George Dillard Wells.

Grundy County

TRENTON—George W. Belshe; Walter Ernest West. BETHANY—Glen H. Broyles.

Harrison County

MARTINSVILLE—Alfred Louis Wessling.

Henry County

CLINTON—Samuel William Woltzen.

Hoddard County

BLOOMFIELD—Hugh Vincent Ashley.

Holt County

OREGON—Samuel E. Simpson.

Howard County

FAYETTE—Thomas Carter Richards; Merrill Neville Smith. GLAS-COW—Wesley Romeo Hawkins.

Howell County

WEST PLAINS—A. H. Thornburgh.

Iron County

BELLEVUE—Dailey Appleberry. GOODWATER—Herman Ramming. REDMONDVILLE—James Hardy Marten.

Jackson County

INDEPENDENCE—Francis Ignatius Stuart. KANSAS CITY—Christo-Andrew Abramopoulos; Arthur N. Altringer; Paul V. Annadown; John Aul; George Elihu Bellows; Elmer J. Billick; John Fairbairn Binne; Theodore S. Blakesley; Harvey Peter Boughnou; Lloyd Reuben Bout-well; Roger B. Brewster; Arthur C. F. Brown; Bruce Hardy Brown; John Edgar Castles; Ernest W. Cavaness; Edward Harry Clark; Morris Holden Clark; Logan Clendenning; Evan Shelby Connell; Calvin L. Cooper; George Francis Cooper; Paul F. Cope; William Forrest Cul-bertson.

Oram Columbus Dail; Fred Edward Dargatz; Charles Fletcher Davis; Charles Clayton Dennie; Everett R. DeWecse; Joseph Edgar Dibble; Frank Drake Dickson; Rex Leon Diveley; Harry William Dugay; Clarence E. Earnest; Devilla David Edmonds; James Ryan Elliott; Carl A. Feige; Amos Theodore Fisher; Albert Florian; Forest Field Foster; Clarence Benjamin Francisco; Claude Eugene Frazier; John Henry George; Joseph Getelson; Maurice Edward Grier.

John W. Hallberg; Minford Armour Hanna; Edmund Lee Harrison; Dillon Benjamin Haworth; John G. Hayden; Mayro Oran Hodge; George Washington Hedgepeth; Harold Bertram Hedrick; James Paris Hender-son; Henry Lewis Hess; Sherman Blaine Hibbard; William Hickman Hill; Frank Baker Hiller; Samuel Barth Hirschberg; William Louis Hoagland; Arthur A. Hobbs; Russell Lorne Hodge; Ralph W. Holbrook; Walter Franz Holbrook; Charles Babson Hopkins; Joseph Aschwanden Horigan; John F. Howell; George Howard Hoxie; Claude Judson Hunt; Frank Hurwitt.

William Reginald Jackson; Archie N. Johnson; Granvil Lessen Kerley; Joseph Wesley Kimberlin; Paul Morton Krall; Owen William Krueger; Harold Philipp Kuhn; Thomas Arthur Kyner; Harper Miles LaRue; Arthur Charles Leonard; Ward Holmes Leonard; Ned Overton Lewis; Frederick McK. Lowe; Arthur Lee Ludwick; John Charles Lynch; John V. Lynn; Ernest Guthrie Mark; William Linn McBride; Harvey Edward McCarthy; George D. Carty; Clarence A. McGuire; Owen Percy McPherson; Reginald H. Meade; Robert Middlebrook; George Caplice Miller; Wade Hampton Miller; Lindsay S. Milne; James Gordon Montgomery; George Hulett Moreland; Lincoln Harrison Norwood; Joseph Francis Nutz.

James Whitman Ousley; Samuel Henry Clay Owen; Michael J. Owens; Charles Ralph Ozias; George B. Pipken; Jesse Thomas Pittam; Frank McCluny Postlewait; James William Powers; Fabian Lee Pratt; Richard Bert Platt; Stephen Hood Ragan; Albert Thomas Ransone Jr.; George Wesley Rice; Francis I. Ridge; Samuel Earl Roberts; George Wilso Robertson; Fordyce Barker Rogers; Cameron Alfred Rose.

Ben Abraham Salzberg; James Robert Sanford; Edwin Henry Schorer; Franklin Frazier Sharon; Edward H. Skinner; Ernest W. Slusher; Walter Lee Small; Clinton Kitt Smith; Delbert O. Smith; James Herbert Smith; Samuel Harrison Snider; E. Stanton Stofer; John Theodore Swanson; Newman Marion Sykes; Frank Randall Teachenor; Guy Austin

Tull; Herbert Spencer Valentine; Dean Stanislaus Van Hecke; William Chester Vernon; James C. Walker; John M. Walker; Leo H. Wallendorf; John Sebastian Weaver; Edwin C. White; John Henry Whittaker; Dorris E. Wilhelm; James Rector Williams; Charles Edgar Wilson; Paul Vincent Woolley. LEES SUMMIT—Lee Roy Farmer. OAK GROVE—James Lionel Downing.

INDEPENDENCE—Harry Edgar Braun.
KANSAS CITY—Max Goldman; George W. Smith.

Jasper County

CARTIAGE—Benjamin Rush McAllister; Winfred Bryant Post. JOP-
LIN—Miller Oliver Coombs; Harry A. Leaming; Ellsworth E. Moody;
Earl H. Welcome. NECK CITY—William George Hogan. LEEDS—
George Herbert Bragdon.

Jefferson County

DE SOTO—Charles Earl Fallet.

Johnson County

HOLDEN—Samuel Astley Murray. LEETON—Elijay Y. Pare. WAR-
RENSBURG—Alfred Wesley Harrison; Harry Field Parker; John Alex-
ander Powers.
HOLDEN—Charles Emanuel Briscoe.

Knox County

EDINA—Henry Joseph Jurgens. KNOX CITY—Ralph McReynolds.

Lafayette County

CORDER—Lewis E. Carthrae Jr. ODESSA—Paul Baker Clayton; Roy
Fallas Mills.

Lawrence County

MT. VERNON—William Ira Fulton; Frederick W. Shaw. PIERCE
CITY—Fred Gasser.

Lewis County

CANTON—Alexander C. Crank; Ray Mercer. LA BELLE—Roy
Edward Wilson. STEFFENVILLE—Samuel Winn Holt.

Lincoln County

HAWK POINT—John Joseph Devereaux. MOSCOW MILLS—Ray
Howard Parker; Horace Albert Shepard. OLD MONROE—Percy Carl
Neunlist. TROY—Samuel D. Avery. WINFIELD—John Frank Hardesty.

Linn County

BROOKFIELD—Luther John Ferguson; Roy Robert Haley; Charles
Edwin Jenkins. MARCELINE—Edward August Hoefer. MEADVILLE—
Morgan Leland Clint.

Livingston County

CHILLICOTHE—Calvin Lee Woolsey.

Macon County

BEVIER—George Franklin Brewington. ETHEL—Ned Alvin Balding.
KEOTA—Franklin Thomas Edwards. MACON—Luther Ove Nickell; Ed-
ward Sanborn Smith.

Maries County

VANCLEVE—George Alfred Nieweg. VICHY—Joseph Thomas Bren-
nan; Ralph E. Jones.

Marion County

HANNIBAL—James Franklin Cooper; Joel Wise Hardesty; William
Turner Patterson; Frederick Bascom Spencer; Elmer Eugene Waldo.
PALMYRA—Archibald Redd Stone.

McDonald County

ROCKY COMFORT—David Nathaniel Dabbs. SOUTH WEST CITY—
John Pierce Beeson.

Mercer County

PRINCETON—Clarence J. Laws; Clay Eli Mullinax; John Morris
Perry. RAVANNA—Fred Cottier Callaway. SALINE—Thomas John
Wilkin.

Miller County

BRUMLEY—Preston Thompson. OLEAN—Lansford Monroe Spalding.
ST. ELIZABETH—Lawrence Edward Gausepehl.

Mississippi County

CHARLESTON—John Calhoun Boone; Mitchell Hudson Shelby.

Moniteau County

JAMESTOWN—Cyrus P. McRaven; Logan Lancaster Latham.

Monroe County

HOLLIDAY—Wilford Henry Urquhart. MONROE CITY—John Albert
Malley. STOUTSVILLE—John Michael Wilson.

Montgomery County

MIDDLETOWN—Winfield Newton Floyd. MINNEOLA—Douglas
Vyatt. MONTGOMERY CITY—Carl Bibb Hudson; Buell Fountain Men-
fee.

Morgan County

BARNETT—James Frederick Leslie. VERSAILLES—Harry Nelson
Jutman.

New Madrid County

LILBOURN—Edward Bogard. MARSTON—Claude McRaven; John
Harrison Timberman.

Nodaway County

CLEARMONT—Horace Simpson Dowell. MARYVILLE—Leslie Errol
Dean; Hugh Smith Rowlett; William Miles Wallis Jr. SKIDMORE—
James Everett Pierpont.

Osage County

BONNOTS MILLS—Ezra Leslie Meads. CHAMOIS—Hans Schaerrer.
META—Samuel Everett Gaston.

Pemiscot County

CARUTHERSVILLE—George W. Phipps; Ira Leon Scurlock. PAS-
OLA—James Knox Rosson.

Perry County

CROSSTOWN—Kirby Curtis Garner. LITHIUM—John Harvey Graff.
PERRYVILLE—Francis Meredith Vessells.

Pettis County

GREEN RIDGE—Eugene Albert Heibner. LA MONTE—Ernest Mitchell.
EDALIA—William Albert Beckemeyer; Gulph Walden Grove; Charles
Edward Long; Frank Barnes Long; Hardy David Havard; Clive Sidney
McGinnis; Henry Albert Meyers.

Phelps County

ROLLA—Stuart Lee Baysinger. ST. JAMES—William Hayes Breuer.

Pike County

BOWLING GREEN—James Brown Riggs. FRANKFORT—Jacob Jenkin
Kennedy. LOUISIANA—Charles P. Lewellyn; Ira Hamilton Miller;
Joseph Bryson Unsell; Sylvanus Holsley Warfield. NEW HARTFORD—
Ray Jackson Gay.

Platte County

FARLEY—Lee Hanville Winemiller. PLATTE CITY—Grundy Cockrill
Coffey. WALDRON—Cadwallader Hamilton Atchison. WESTON—Lewis
C. Calvert.

Polk County

FAIR PLAY—Charles H. Brown. HUMANSVILLE—Richard Lee
Russell.

Pulaski County

BLOODLAND—Cyrus Mallette.

Putnam County

LEMONS—Benjamin Elden Cobb.

Ralls County

PERRY—Charles Dick Manefee.

Randolph County

HIGBEE—Roscoe C. Campbell. JACKSONVILLE—Carl C. January.
MOBERLY—Godfrey O. Cuppage; Thomas Simpson Fleming; Paul
Campbell Davis; Stephen Thomas Ragan; Ralph Rayburn Simmons;
Roderick Dhu Streeter.

Ray County

ORRICK—Robert Sheetz.

Reynolds County

CENTERVILLE—Loren B. Ralls.

Ripley County

DONIPHAN—John Robert Hume; Carter Atwater Proctor.

Saline County

MARSHALL—Guthrie Eugene Scrutchfield. SWEET SPRINGS—Clyde
Wallace Parsons.

LITTLE ROCK—William Lowery Sharp.

Schuyler County

LANCASTER—William Advance Potter.

Scotland County

MEMPHIS—Abram Edson Platter. RUTLEDGE—Wallace Sidney Petty.

Scott County

CHAFFEE—William Ozro Finney. BLODGETT—Roy Kinkrough Ogil-
vie. SIKESTON—Trentis V. Miller; George W. H. Presnell; Abraham
Lincoln Stepp.

Shannon County

KOLLER—William Thomas Eudy.

Shelby County

CLARENCE—Stanley Montjoy Hall; Dennis Edward Singleton. LEN-
TER—Adolph Mitchell Wood. SHELBY—Richard S. Battersby; Florian
Vaughn. SHELBYVILLE—George E. Farr.

St. Charles County

FORISTELL—R. C. McDonald Millar. ST. CHARLES—August Anton
Gossow; Otto Brueggemann Ilch; Samuel Robert Johnson; Frank Joseph
Tainter. PORTAGE DES SIOUX—U. S. Grant Arnold; Charles Albert
Barnard. WEST ALTON—George Rue Pennington.

St. Clair County

APPLETON CITY—Gerald C. Bates; Duke Girdner Divine. OSCEOLA
—Charles Alfred Smith.

St. Francois County

ELVINS—Edwin Eugene Whiteside. FARMINGTON—William George
Patton; George Lancaster Watkins. LEADWOOD—Reuben Appleberry;
James William Huffman.

St. Genevieve County

BLOOMSDALE—Frank Alvin Elders. COFFMAN—George McClellan
Hamilton. ST. GENEVIEVE—Louis Joseph Birsner.

St. Louis County

BALLWIN—Otto William Koch. CLAYTON—Dudley Earl Mackey.
JEFFERSON BARRACKS—Norman E. McBeth; Waldo Harrison Will.
KIRKWOOD—Ralph Ellis Murrell; Harry Gage Wyer. KOCH—Guy
Frank Robinson. LUXEMBURG—Roy Cameron Dripps. POND—Joseph
Wilson Dean. WEBSTER GROVES—Harold Arrott Goodrich.

St. Louis City County

ST. LOUIS—Frederick Book Abbott; Robert D. Alexander; Nathaniel
Allison; Carl Jacob Althans; Claude Lester Armstrong; John Hinton
Armstrong; Joseph T. Axline; Trester R. Ayars.

Oscar Frank Baerens; Frederick Warren Bailey; Elbert Baker; Roscoe
L. Barlow; Charles M. Bauman; Edmond Bechtold; Hubert Bowler
Beedle; Howard H. Bell; Grover Cleveland Black; Joseph M. Blackmore;
Virray Papin Blair; Lux H. Bock; David C. Bosserman; Thomas Kinsey
Bowles; Oscar Franklin Bradford; William Charles Bradley; Howard
Conley Brashear; Joseph Francis Bredech; Harry L. Bremser; William
Carr Broadhead; Henry Spence Brookes Jr.; Theodon Prewitt Brookes;
John Young Brown; Wilbur Kenneth Brown; Richard Shepard Bryan;
James R. Bunch; Charles Henry Burdick; Cyrus Edgar Burford; Emil
H. Burgher; Robert Burns Jr.; Stanley S. Burns; Montrose T. Burrows;
Robert E. Byrns.

James Graham Calhoun; Solon Cameron; Cecil Stevenson Campbell;
Oliver Howard Campbell; Harry D. Carley; William Marshall King
Chattle; Ira R. Clark; Horace Fletcher Cleveland; Malvern B. Clopton;
John Howard Cochran; Ernest Linwood Coffin; James Thomas Cook;
Ralph L. Cook; Edward Louis Cooley; Thomas Egner Cooper; William
Thomas Coughlin; Harry Sturgeon Crossen; Robert M. Cullison; William
Devine Davis; William Thomas Dean; Bradford French Dearing; Elliott
Knight Dixon; James Clifford Donahue; Thomas Leo Draney; Clifton
Rogers Dudley; Clyde Percy Dyer.

William August Edler; Edwin Douglas Edwards; Ralph Victor Ellis; Edwin C. Ernst; Frederick C. Esselbruegge; Fayette Clay Ewing; Harold William Fay; David Patrick Ferris; Joseph Leo Ferris; Walter Fischel; Roland Frederick Fisher; Moyer Springer Fleischer; Paul R. Fletcher; John Albert Flury; Howard Marion Foster; Sylvester Daniel Fox; Adolph Mitchell Frank; Walter Floyd Fry; Robert M. Funkhouser; Edwin Clarence Funsch.

Edmond Erwin Gallagher; Fred LeGrande Gibbs; Robert Henry Gibson; Allan Arthur Gilbert; William W. Gilbert; William Paul Glennon; Andrew Joseph Gettinger; Max Aaron Goldstein; Frank Newton Gordon; Frank De Vore Gorham; Harry Gus Greditzer; Albert Jacob Griot; George August Griot.

Ferdinand Franklin Haas; Frederick Hagler; Claude Dickerson Halley; Albert H. Hamel; Clarence Orval Hamilton; Schuyler Colfax Harbour; Louis Grayson Harney; Nelson Joy Hawley; Solon Earl Haynes; Charles Henry Hecker; Lloyd Lewis Heid; Aloys Severin Heithaus; Walter E. Hennerich; Harold C. Herrick; Charles Edward Herriot; Scott Heuer; George Washington Heuman; Abraham Dana Hobson; Marc Ray Hughes; James Eldridge Hurt; Joseph Lewis Hutton; Joseph Charles Hynes; William Bates Inman.

Walter John Jaracz; Roy Walford Johnson; Tucker Jerome Jones; Don Rosco Joseph; Isaac Dee Kelly Jr.; Leon Woodford Kelso; Andrew Frederick Kennedy; William Le Roy Kenney; Roland S. Kieffer; Walter C. G. Kirchner; Bernhardt William Klippel; Arthur William Koessel; John Albert Konzelman; Jonas Clarence Kopelowitz; Martin Flad Kouri; Frederick C. E. Kuhlmann.

James Clifford Landree; Herbert S. Langsdorf; Hollie Linder; Edward Xavier Link; Joseph W. Larimore; William S. Lawrence; Elbert Johnson Lee Jr.; Abram C. Leggat; Edwin Partridge Lehman; Sidney Saul Levin; James Lewald; Benjamin William Lewis; William Edison Lockwood; Hanau Wolf Loeb; Virgil Loeb; Maurice Julius Lonsway; Paul Steinberg Lowenstein; William H. Luedde; Drew Luten; Harry Webster Lyman.

Alvin Henry Maey; Paul P. Maher; Clarence Martin; Eugene Mattice; Daniel McCarty; Eugene Florian McCarthy; Anthony McClory; Grover Cleveland McCormack; Thomas Corwin McClure; Hugh McCulloch; James Frederick McFadden; Roy Archie McGarry; Patrick McGennis; Ernest M. McKenzie; Bernard John McMahon; Walter Julius Mellies; Louis Henry Mestemacher; Claude Bertram Meyer; William John Mische; William Francis Mitchell; William Hewson Mook; Harry M. Moore; Neil Sewell Moore; Michael David Moran; John Campbell Morfit; Ludwig O. Muench; Carl John Muller; Charles Lucius Munson; Arthur John Murphy; Fred T. Murphy; John Harry Murphy; John Patrick Murphy; George Marshall Myers.

William Lawrence Nelson; Quitman Underwood Newell; Ralph Edgar Niedringhaus; Edwin Adelbert Noll; Scott Omien; Eugene Lindsay Opie; Robert Emmet Owen; Louis Gregory Pawelek; Richard Johnson Payne; Kenneth Cleland Peacock; Joseph Carroll Peden; Fred Selby Perrings; Charles Augustus Pfeffer; George Marquet Phillips; Claude Dildine Pickrell; Edgar Everett Poos; Lawrence Tyler Post; Martin Hayward Post Jr.; Jerome Frederick Potts; Herbert Hall Price; Arthur Walter Proetz; Madison James Pulliam.

Gerhardt H. Raithel; John Roy Ranson; Amand N. Ravold; James Crescent Reddington; Joseph John Reilly; George Lesley Riley; Thomas L. Rives; Hugh Earl Rogers; Dalton Keats Rose; Joseph Rothman; Lawrence Augustus Ryan; Linus Martin Ryan.

Llewellyn Sale; William Joseph Say; Joseph Charles Schafer; Abe Lewis Scheff; Robert Ernst Schlueter; David E. Schmalhorst; Irwin Henry Schmidt; Edgar Ferdinand Schmitz; Louis Walter Schreiber; Harry William Schumacher; Sidney Isaac Schwab; Gabriel Seelig; Claude L. Sellers; Omar Richard Sevin; Arthur Henry Sewing; James Wilbur Shankland; Nowelle Wallace Sharpe; Algine Ray Shreffler; Charles Henry Shumaker; Frederick Casimir Simon; Alvin Hiram Sippy; William I. Smith; Raymond Mills Spivay; William August Henry Steinmann; John Walker Stewart; Joseph Edgar Stewart; Samuel Smith Stewart; Arthur Edgar Strauss; Orril Le Grand Suggett.

Lloyd Lewis Tate; Herbert Isaac Taylor; George Avena Telfer; James Campbell Thomson; Joseph Lynn Thurman; John Leo Tierney; Thomas Naxon Toomey; Albert Robert Tormey; Vincent Francis Townsend; Alois Edward Turek; Waldemar Ude; Hillel Unterberg; Leon Vincent Urbanowski; John Russell Vaughan; Borden Smith Veeder; Robert Vinyard; Charles Augustus Vosburg.

Carl H. Wachenfeld; Allen Gans Wainwright; Lancaster George Washington; Ernest Darrington Weaver; Hooper Winslow Welch; Oliver C. Wengel; Samuel Franklin Wennerman; Clarence Mansur Westerman; Jesse Brown White; Wistar T. White; Otto Julius Wilhelm Jr.; James E. Williams; Robert Sidney Williams; Hugh Joseph Witwer; Sidney J. Wolfermann; James Ballance Wood; Frederick Eno Woodruff; Daniel Paul Wright; Henry McC. Young; John Smith Young; William Bransford York; Nicholas Aloys Young; George Frederick Zachritz.

ST. LOUIS—Louis A. Kempff; Lurin Patrick Macklin; Harvey Gilmer Mudd; Louis Edward Prnty; William Stanley Reilly; Julius Albert Rossen; DeWilson Timberman; George Louis Tonneli.

Stoddard County

ADVANCE—Charles Moore. BELLE—Grover Clayton Johnson. BENIE—Robert William Sayre. BLOOMFIELD—John Wilson. DEXTER—William C. Dieckman; Frank LaRue. LEORA—Edward Ford.

Sullivan County

OSGOOD—Ursa Cleveland Weston.

Taney County

BRADLEYVILLE—Eugene Bernhardt Munier.

Texas County

CABOOL—Louis Martin Edens. HOUSTON—Elmer P. Blankenship. LICKING—Leslie C. Randall. SUMMERVILLE—Luther Hayes Wallen.

Vernon County

BRONAUGH—Fred Clayton Albright. NEVADA—Douglass Haggard.

Wayne County

LEEPER—Roy Jefferson Owens. PIEDMONT—Lee Egbert Toney.

Webster County

MARSHFIELD—John Rufus Bruce.

Worth County

DENVER—Lewls H. Long. GRANT CITY—Welcome Blaine Tilton.

Wright County

MOUNTAIN GROVE—Edward Christlan Wittwer.

MONTANA STATE MEDICAL ASSOCIATION

Officers 1917-18

Arthur Morrow, President.....Kalispell
H. H. Judd, First Vice President.....Bozeman
G. E. Brown, Second Vice President.....Miles City
E. M. Gans, Third Vice President.....Judith Gap
E. G. Balsam, Secretary-Treasurer.....Billings

Council Districts and Officers

First District.—Silverbow County. J. A. Donovan, Councilor, Butte.
Second District.—Missoula County. H. C. Smith, Councilor, Missoula.
Third District.—Deer Lodge and Fergus counties. E. D. O'Neill, Councilor, Kalispell.
Fourth District.—Cascade County. LeRoy Southmayd, Councilor, Great Falls.
Fifth District.—Chouteau and Valley counties. M. D. Hoyt, Councilor, Glasgow.
Sixth District.—Beaverhead County. E. L. Sutherland, Councilor, Sheridan.
Seventh District.—Lewis and Clark County. B. C. Brooke, Councilor, Helena.
Eighth District.—Flathead County. W. W. Andrus, Councilor, Miles City.
Ninth District.—Park County. D. Claiborn, Councilor, Bigtimber.
Tenth District.—Gallatin County. C. W. Jump, Councilor, Bozeman.

MONTANA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commiss'd in M.R.C., etc.
Beaverhead.....	4,714	673.4	7,200	1,028	7	..	5	6	3	..
Big Horn.....	9,775	1,629.2	4,950	825	6	..	4	5	1	..
Blaine.....	12,900	1,842.8	7,900	1,128	7	..	6	6	2	..
Broadwater....	1,194	233.8	3,812	762	5	..	4	4	2	1
Carbon.....	2,438	152.4	9,200	575	16	..	12	14	8	2
Carter.....	.....	.....	.....	.....	5	2	3	3	..	1
Cascade.....	3,384	61.5	29,063	528	55	2	28	49	40	17
Chouteau.....	15,972	1,064.8	17,700	1,180	15	..	11	13	7	2
Custer.....	13,156	1,012.0	13,450	1,034	13	2	10	10	4	2
Dawson.....	12,231	815.4	31,600	2,106	15	..	12	12	3	5
Deerlodge.....	749	44.0	6,250	367	17	1	10	15	13	4
Fallon.....	9,500	1,900.0	10,150	2,030	5	..	5	5	2	1
Fergus.....	9,078	245.3	21,950	593	37	2	23	28	17	9
Flathead.....	6,070	209.3	11,800	406	29	2	18	24	18	4
Gallatin.....	2,513	119.7	16,281	775	21	..	12	19	15	7
Granite.....	1,637	409.2	2,742	685	4	..	2	3	2	1
Hill.....	14,800	778.9	11,100	584	19	..	17	18	10	4
Jefferson.....	1,650	330.0	5,399	1,079	5	..	2	3	2	..
Lewis and Clark	3,465	108.3	22,211	694	32	4	17	24	20	7
Lincoln.....	3,530	441.1	8,500	944	9	..	3	5	2	..
Madison.....	4,581	416.3	6,729	611	11	..	10	11	7	..
Meagher.....	3,766	1,255.3	6,850	2,283	3	..	..	..	2	2
Mineral.....	1,700	1,700.0	2,600	2,600	1	..	1	1	..	..
Missoula.....	4,243	117.9	13,450	373	36	..	22	32	26	4
Musselshell....	3,400	283.3	11,450	954	12	..	11	11	9	2
Park.....	2,675	222.9	12,405	1,033	12	..	11	12	10	3
Phillips.....	13,010	2,602.0	8,500	1,700	5	..	5	5	1	1
Prairie.....	2,100	700.0	4,950	1,650	3	..	2	2	..	..
Powell.....	2,559	639.7	6,600	1,650	4	..	3	3	2	1
Ravalli.....	2,447	116.5	13,571	646	21	1	16	18	5	3
Richland.....	3,350	372.2	6,250	694	9	..	8	8	2	1
Rosebud.....	9,663	690.2	10,850	775	14	..	10	12	5	4
Sanders.....	2,859	357.3	4,950	618	8	1	3	7	2	1
Sheridan.....	13,400	432.2	12,150	391	31	..	18	24	3	6
¹ Silver Bow.....	698	9.7	59,574	827	72	1	44	61	43	11
Stillwater.....	5,500	550.0	6,850	685	10	2	4	6	5	1
Sweet Grass....	2,918	972.7	6,250	2,083	3	..	2	3	3	..
Teton.....	7,581	329.6	10,500	456	23	1	20	21	6	5
Toole.....	2,300	460.0	5,900	1,180	5	..	4	5	1	..
Valley.....	13,515	1,126.2	4,250	354	12	..	8	11	..	3
² Wheatland.....	.....	.....	.....	.....	4	..	3	4	3	1
Wibaux.....	2,400	1,200.0	4,950	1,475	2	..	..	..	..	1
Yellowstone....	5,729	150.8	12,150	319	38	3	27	37	22	4
Totals.....	240,150	363.3	472,987	715	661	24	435	560	328	121

1. Includes Butte, population 44,057; physicians 71 [M.R.C. 11].
2. County recently organized; area and population included with that of other counties.

HONOR ROLL

Broadwater County

TOSTON—Aaron Tomlin Lukins.

Carbon County

RED LODGE—Waldo Frederick Brinkman; Carl Louis Koehn.

Carter County

EKALAKA—George Albert Baker.

Cascade County

CASCADE—Donald Archibald McLennan; Frank Cline Vanatta. GREAT FALLS—Solomon David David; Willoughby George Dye; Edwin James Greer; William Jordan Lakey; E. Martin Larson; Albert Forrest Longeway; Alexander M. Macaulay; William Dunn Madden; Ambler B. Patton; Geo. Hampton Putney; Karl Avery Snyder; LeRoy Southmayd; Charles Emeric Kerr Vidal; Donald Kendrick Woods; Frank Albert Woodward.

Chouteau County

FORT BENTON—James Francis Michael Murphy. BIG SANDY—George Joseph Juckem.

Custer County

MILES CITY—Wm. Henry Buskirk. STACEY—Thomas Archibald MacKenzie.

Dawson County

GLENDIVE—Lionel A. Anderson; Robert E. Hathaway. JORDAN—David Alfred Baker. LINDSAY—Bigelow Putnam Blackstone. RICHEY—Serge Androp.

Deer Lodge County

ANACONDA—Max Allan Dorland. LIVINGSTON—Carl Arthur Johnson. WARM SPRINGS—Rae Hazen Cather; William Edward Long.

Fallon County

BAKER—Lindsay Wilson Baskett.

Fergus County

DENTON—James Lloyd Jensen. GRASS RANGE—John D. Bartlett. HILGER—Frank Webster Cotton. HOBSON—Walter Eugene Estabrook. LEWISTOWN—John Timothy Foley; Ralph Sherwood Hedges. MOORE—Earl Stevens Porter; Julio Ramson Soltero. ROY—Winfield Scott Faulds.

Flathead County

KALISPELL—Lawrence Glenn Griffiths; Wm. Starling Little; Edward Daniel O'Neill. POLSON—George Bernhard Owen.

Gallatin County

BOZEMAN—Lee K. Gibson; C. F. Jump; Clyde Watkins Jump. LOGAN—Charles Edgar Whitehead. THREE FORKS—Clinton Luman Hoy; Clinton Virgil Reed; Walter Henry Stephan.

Granite County

DRUMMOND—Bernard John Heetdirks.

Hill County

CHESTER—Albert Angelo Pastene. HAYRE—Austin Leroy Ward. HINGHAM—Arthur A. Husser. INVERNESS—Francis St. C. Reilly.

Lewis and Clark County

EAST HELENA—Ross D. Wright. HELENA—Philip Gillett Cole; Alozo B. Eckerdt; Ellis A. Johnston; William Crosby Ridell; Edward Augustus Sweet. LINCOLN—James Harris Irwin.

Meagher County

WHITE SULPHUR SPRINGS—Adolph Thomas Gilhus; Weaver Burnside Rogers.

Missoula County

MISSOULA—James David Hobson; William E. Shea; John Jerome Tobinski. RONAN—Andrew Karl Resner.

Musselshell County

ROUNDUP—James Newton Alexander; Creswell T. Pigot.

Park County

CLYDEPARK—Joseph Chandler Denney. LIVINGSTON—Paul Lincoln Greene; Samuel Elmer Leard.

Phillips County

MALTA—Charles Edward Blankenhorn.

Powell County

DEER LODGE—Carl Otto Rinderspacher.

Ravalli County

CORVALLIS—Walter Neil King. DARBY—Herbert Hayward. HAMILTON—Robert Lincoln Owens.

Richland County

SIDNEY—Houston Haddon Parsons.

Rosebud County

FORSYTHE—William Archibald Alexander; Harry Stark Holmes; Harry J. Huene; Wendell Cotton.

Sanders County

THOMPSON FALLS—Harold A. Miller.

Sheridan County

ANTELOPE—Mark Talmage Vornholt. FROID—Charles Beno. Fleischmann. MEDICINE LAKE—Thomas M. Morrow. OUTLOOK—Louis A. Tangan. SCOBEE—Arthur Stone Needles; Claude C. Tucker.

Silverbow County

BUTTE—Eugene F. Brindjone; John E. Dutcher; Homer John Flinn; Michael Hugh Gleason; Arthur Clyde Knight; Frederick William Loring; Thomas V. Moore; Harold Schwartz; Julien Latrance Tremblay; Vezlo Oliver Ungherini; Thomas Casey Witherspoon.

Stillwater County

COLUMBUS—Charles A. Gardner.

Teton County

BRADY—Leo Martin Maguire. BROWNING—Clifton M. Rosin. GYNUM—Edward F. Dixon. CHOUTEAU—Howard W. Bateman. CUTBANK—Ralph Glass Nelson.

Valley County

GLASGOW—Mark Dickens Hoyt. NASHUA—James Ashton Lomas. PHEIM—Grover Cleveland Sherrard.

Wheatland County

JUDITH GAP—Edward Mathias Gans.

Wibaux County

WIBAUX—Paul Leonard Ashley.

Yellowstone County

BILLINGS—Ferris Lyle Arnold; Samuel Garfield Arnold; John Harlan Ridenbaugh; Edwin Archer Gerhart.

Councilor Districts and Officers

First District.—Douglas and Sarpy counties. J. B. Potts, Councilor, Omaha.

Second District.—Cass, Lancaster and Otoe counties. H. J. Lehnoff, Councilor, Lincoln.

Third District.—Gage, Johnson, Pawnee, Nemaha and Richardson counties. I. H. Dillon, Councilor, Auburn.

Fourth District.—Antelope, Boyd, Knox, Cedar, Madison, Wayne, Stanton, Dixon, Dakota, Thurston, Pierce and Cuming counties. L. Stark, Councilor, Hartington.

Fifth District.—Boone, Burt, Colfax, Dodge, Merrick, Nance, Platte and Washington counties. R. C. Byers, Councilor, Nickerson.

Sixth District.—Saunders, Butler, Seward, York and Hamilton counties. E. O. Weber, Councilor, Wahoo.

Seventh District.—Clay, Fillmore, Thayer, Jefferson, Nuckolls and Saline counties. W. L. Curtis, Councilor, Fairbury.

Eighth District.—Clay, Brown, Dawes, Rock, Holt, Keyapaha, Sheridan and Sioux counties. W. J. Douglas, Councilor, Atkinson.

Ninth District.—Blaine, Dawson, Buffalo, Garfield, Grant, Hooker, Logan, Hall, Custer, Howard, Greeley, Valley and Sherman counties. M. S. Moore, Councilor, Gothenburg.

Tenth District.—Adams, Chase, Dundy, Frontier, Hays, Webster, Kearney, Franklin, Phelps, Harlan, Hitchcock, Red Willow, Gosper and Furnas counties. S. F. Sanders, Councilor, Holdrege.

Eleventh District.—Arthur, Cheyenne, Deuel, Gordon, Keith, McPherson, Perkins, Kimball and Lincoln counties. H. E. Mantor, Councilor, Sidney.

Twelfth District.—Roxbutte, Scotts Bluff, Banner and Morrill counties. A. J. Stewart, Councilor, Mitchell.

HONOR ROLL

Adams County

HASTINGS—Eugene Clair Foote; Lester Kenneth Strate. INGLE-SIDE—Ward Willard Hedlund; Harry Jay Pittock. PAULINE—Charles Nicholas Meriwether.

HASTINGS—Samuel James Stewart.

Antelope County

NELIGH—Stanley Curtis Clements; Uen Samuel Harrison. OAK-DALE—George William Earle.

Blaine County

CRETE—Francis Joseph Stejskal.

Boone County

ALBION—Herbert Peter Walker; Finley Joseph McRae. CEDAR RAPIDS—Frank Dooley Burgess. PETERSBURG—William Edward Mogan. ST. EDWARDS—Thomas Jefferson Jones.

Boyd County

BUTTE—John Ray Beatty. LYNCH—Guy Bentley Ira.

Brown County

AINSWORTH—Oscar Edwin Coleman; Tyre Kinser Jones. JOHNS-TOWN—Charles Edward Remy. LONG PINE—Arthur Jacob Griot; Sam Hardeman; James C. Tucker.

Buffalo County

ELM CREEK—Charles Albert Yoder. KEARNEY—Delbert L. Hibberd; Wallace Edson Rose; Judd A. Strong.

Burt County

CRAIG—Alfred Edward Westervelt. LYONS—Frank Dell Ryder. OAK-LAND—Samuel August Swenson. TEKAMAH—Henry Albert Johnson; Merritt Wood.

Butler County

DAVID CITY—Charles Edward Palmer.

Cass County

GREENWOOD—Harry Webber McFadden. WEEPING WATER—James Walter Thomas.

Cedar County

COLORIDGE—Fredk. E. Braucht. HARTINGTON—Lucien Stark; Edw. Martin Thies. RANDOLPH—Bert Fuller Gleason.

Chase County

CHAMPION—Charles Edwin Legg.

Cherry County

CODY—William Roy Cornelius.

Cheyenne County

LODGE POLE—Frank Waldo Scott. SIDNEY—Riley Edward Roche.

Clay County

EDGAR—Robert Turney Jones. FAIRFIELD—Geo. Henry Bentz.

Colfax County

SCHUYLER—Ralph S. Hart; Jesse Carl Painter; Oscar Paul Schnetzky.

Cuming County

BANCROFT—Harry Whiting Francis. WEST POINT—Harry Lee Wells.

Custer County

ANSELMO—Claude Leroy Wills. ANSLEY—Ralph Philip Higgins; Charles Lawson Housel. BROKEN BOW—Willis Edward Talbot. CAL-LAWAY—Roy Douglas Bryson. OCONTO—John Christopher Wade.

Dakota County

HOMER—Daniel Brooks Stidworthy.

Dawson County

COZAD—Lloyd Henry Fochtman. EDDYVILLE—James Bernard Klie. FARNAM—Alfred E. Reeves. OVERTON—Charles B. Edwards.

Dixon County

PONCA—John M. Davey; Glyndon Angus Young.

Dodge County

FREEMONT—George James Haslam. HOOPER—Clinton Daniel Heine. NORTH BEND—William Elden Doane; Paul Regan Howard.

NEBRASKA STATE MEDICAL ASSOCIATION

Officers 1917-18

as. L. Mullins, President.....Broken Bow
ice Presidents—
Lucien Stark.....Hartington
A. W. Montgomery.....Stella
Joseph M. Alken, Secretary.....Omaha
lex. S. Von Mansfelde, Treasurer.....Ashland

NEBRASKA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams.....	565	12.0	22,403	476	47	1	25	40	27	6
Antelope.....	872	54.5	15,943	996	16	..	11	13	1	3
Arthur.....	725	241.7	375	125	3	..	1	1	..	..
Banner.....	742	247.3	1,684	561	3	..	2	2	..	..
Blaine.....	711	177.8	2,452	613	4	..	1	3	1	1
Boone.....	692	49.4	14,208	1,014	14	..	8	11	7	5
Box Butte.....	1,076	107.6	6,539	653	10	..	4	7	6	..
Boyd.....	535	41.1	9,916	762	13	2	8	9	6	2
Brown.....	1,235	88.2	7,990	570	14	..	6	10	5	6
Buffalo.....	945	29.5	23,113	722	32	..	14	22	22	4
Burt.....	475	29.7	12,726	795	16	..	8	12	11	5
Butler.....	583	30.7	15,403	810	19	..	14	16	18	1
Cass.....	538	18.5	19,786	682	29	1	11	25	15	2
Cedar.....	735	49.0	17,180	1,145	15	..	8	13	11	4
Chase.....	899	149.2	4,382	730	6	..	2	6	3	1
Cherry.....	5,979	597.9	13,241	1,324	10	..	7	9	7	1
Cheyenne.....	1,194	108.5	5,848	531	11	..	6	9	6	2
Clay.....	579	24.1	15,729	654	24	1	13	13	18	2
Colfax.....	405	27.0	11,900	793	15	..	10	13	6	3
Cuming.....	577	36.1	13,782	861	16	1	4	12	13	2
Custer.....	2,588	80.9	29,981	936	32	..	20	25	24	6
Dakota.....	253	50.6	6,767	1,353	5	..	1	3	..	1
Dawes.....	1,402	155.8	9,742	1,082	9	1	5	7	4	..
Dawson.....	985	41.0	18,695	778	24	..	14	16	14	4
Deuel.....	439	87.8	2,447	489	5	..	2	4	1	..
Dixon.....	472	24.8	12,164	640	19	2	11	11	13	2
Dodge.....	531	14.3	22,145	598	37	..	18	28	30	4
¹ Douglas.....	331	0.8	188,954	457	413	26	235	342	264	93
Dundy.....	927	185.4	5,312	1,062	5	..	3	3	5	..
Fillmore.....	576	27.7	14,674	698	21	1	11	19	15	2
Franklin.....	578	38.5	10,923	728	15	1	9	12	12	..
Frontier.....	975	121.9	8,572	1,071	8	..	5	8	..	2
Furnas.....	721	48.1	12,083	805	15	..	7	11	10	3
Gage.....	862	17.9	30,525	635	48	1	24	30	31	3
Garden.....	1,652	550.7	4,844	1,614	3	..	2	2	1	1
Garfield.....	575	143.7	4,359	1,089	4	..	1	2	..	1
Gosper.....	464	154.7	4,933	1,644	3	..	1	3	2	..
Grant.....	726	181.5	1,341	335	4	..	1	4	1	1
Greeley.....	571	81.6	9,767	1,395	7	..	5	2	1	..
Hall.....	528	16.0	22,663	686	33	..	21	24	26	5
Hamilton.....	538	33.6	13,554	847	16	..	10	13	12	2
Harlan.....	574	44.1	9,730	748	13	..	7	10	8	1
² Hayes.....	722	.....	3,232	.....	..	..	..	..	..	..
Hitchcock.....	724	144.8	6,150	1,230	5	..	3	3	4	..
Holt.....	2,393	170.9	17,969	1,283	14	..	9	13	8	1
Hooker.....	722	361.0	1,382	691	2	..	2	2	..	1
Howard.....	561	62.3	11,103	1,233	9	..	6	8	8	3
Jefferson.....	578	22.2	18,060	694	26	..	14	19	17	2
Johnson.....	374	20.8	10,187	565	18	1	7	15	14	1
Kearney.....	516	46.9	9,106	827	11	..	7	9	8	1
Keith.....	1,068	178.0	4,962	827	6	..	4	4	1	1
Keyapaha.....	775	387.5	3,727	1,863	2	..	2	2	..	1
Kimball.....	958	191.6	2,806	561	5	..	2	3	1	1
Knox.....	1,114	39.8	21,288	760	28	1	15	24	17	8
³ Lancaster.....	853	4.0	80,331	378	212	8	90	165	100	31
Lincoln.....	2,536	101.4	18,798	751	25	2	10	18	13	4
Logan.....	573	286.5	1,930	965	2	..	2	2	1	..
Loup.....	576	576.0	2,831	2,831	1	..	1	1	1	..
² McPherson.....	1,674	.....	3,519	.....	..	..	..	..	..	..
Madison.....	576	14.6	20,651	645	32	..	18	27	23	9
Merrick.....	463	25.7	11,200	622	18	1	10	12	14	2
Morrill.....	1,417	202.4	5,890	841	7	..	3	7	2	1
Nance.....	446	49.5	9,438	1,048	9	..	5	8	8	5
Nemaha.....	389	14.0	13,095	467	28	..	12	14	18	4
Nuckolls.....	579	30.5	13,459	708	19	..	13	15	14	1
Otoe.....	606	24.2	19,323	772	25	1	14	20	13	3
Pawnee.....	431	26.9	10,582	661	16	..	7	12	7	5
Perkins.....	886	886.0	3,202	3,202	1	..	1	1	..	..
Phelps.....	538	53.8	10,451	1,045	10	..	5	7	6	..
Pierce.....	577	52.4	11,345	1,031	11	..	4	12	9	2
Platte.....	673	30.6	19,923	905	22	..	11	11	18	7
Polk.....	430	30.7	10,521	751	14	..	5	14	19	..
Red Willow.....	720	42.3	12,116	712	17	1	10	11	11	3
Richardson.....	545	16.5	17,448	529	33	2	21	27	19	6
Rock.....	1,004	502.0	4,223	2,111	2	..	1	1	1	1
Saline.....	573	19.1	17,866	595	30	..	15	22	16	2
Sarpy.....	240	26.7	9,415	1,046	9	..	5	8	4	4
Saunders.....	756	28.0	21,179	784	27	..	14	19	13	1
Scotts Bluff.....	723	24.8	12,589	434	29	4	13	25	23	1
Seward.....	574	30.2	16,044	844	19	..	14	15	8	2
Sheridan.....	469	52.1	8,272	919	9	..	5	6	3	1
Sioux.....	573	47.7	9,539	794	12	..	4	10	..	1
Stanton.....	2,055	411.0	8,186	1,637	5	..	2	4	1	1
Thayer.....	431	71.6	7,967	1,327	6	..	2	5	5	1
Thomas.....	578	23.1	15,103	604	25	1	10	16	16	3
Thurston.....	716	358.0	1,602	801	2	..	1	1	1	..
Valley.....	387	38.7	10,299	1,029	10	..	6	7	5	3
Washington.....	570	47.5	11,042	920	12	..	4	4	6	..
Wayne.....	380	27.1	12,738	900	14	..	7	9	11	2
Webster.....	450	37.5	10,786	989	12	1	4	10	6	3
Wheeler.....	578	32.1	12,290	627	18	..	9	13	12	3
York.....	578	578.0	2,970	2,970	1	..	..	1	..	..
Totals.....	75,533	48.3	1,295,896	828	1,565	64	1,020	1,557	1,173	312

1. Includes Omaha, population 167,741; physicians 398 [M.R.C. 91].
2. No physicians reported in these counties.
3. Includes Lincoln, population 46,902; physicians 174 [M.R.C. 26].

Douglas County

FLORENCE—Hiram Henry Avery. MILLARD—John Jacob Fossler.
OMAHA—Henry Leland Akin; Jeremiah Smyth Alexander; John Franklin Allen; William N. Anderson; Jos. Anthony; Grove Baldwin; Wm. Henry Betz; Louis Carl Bleick; Thomas D. Boler; Edson Lowell Bridges;

Alfred Jerome Brown; Arthur Clarence Brown; Neil Louis Criss; Clement Anthony Cummings; Arthur Lewis Davis; Delmer L. Davis; John Calvin Davis Jr.; Emile L. Delaney; Gustave Wm. Dishong; John Wm. Duncan; Lother Frederick Egan; Harold Everett Eggers; Jacob Martin Erman; Neill J. Everitt; Henry M. Fitzgibbon; Daniel Franklin.

Sanford R. Gifford; George Richardson Gilbert; Abraham Greenburg; Fredk. Marschner Hahn; Lynn Thompson Hall; Stacy B. Hall; Louis Everett Hanisch; John Madison Hench; Edwin Clyde Henry; Joseph Aloysius Henske; John Holst Jr.; Aaron Hull; Clarence Michael Hyland; Harry Jerome Jenkins; Aldis Adelbert Johnson; August Frederick Jonas; Vincent Leo Jones.

John Raymond Kleyla; Vernard Anthony Lanphier; Wm. Joseph Leary; Henry Bassett Lemere; Philip Levey; Adolph Bernard Lindquest; Arthur Lawrence Linquist; John Prentiss Lord; Emil Anderson Lynwood.

Otis Martin; James S. McAvin; Jos. Daniel McCarthy; William Joseph McCrann Jr.; Louis David McGuire; Edward Huntington McLean; William Henry Mick; Clarence Molseed; John Clyde Moore; Reuben A. Moser; Francis Patrick Murphy; Charles Thayer Needham; John Rudolph Nilson; James McDowell Patton; Robert Clayton Person; Guy Sterling Philbrick; Alva Sherman Pinto; John Beekman Potts; George Peyton Pratt; Normall Call Prince; George William Pubsley.

Leonard Otto Riggert; Wm. Lytle Ross Jr.; Benj. Carl Russum; Robert D. Schrock; Charles Francis Shook; Adolph Frank Srb; Harvey Burr Stapleton; Frank Joseph Stodden; Arthur Charles Stokes; Joseph Phillip Swoboda; Carl Leonard Swanson; Vernon Vivaldo Talcott; John Alexander Tamisica; Claude Thomas Uren; Frederick A. Van Buren; Edward Amos Van Fleet; Glenn D. Whitcomb; Wilbur Kirk Riley.

Fillmore County

EXETER—Karl Frederick Ernest Wegener. FAIRMONT—Martin Henry Deffenbaugh.

Frontier County

CURTIS—Clarence Minnick. EUSTIS—Norman Tott Hale.

Furnas County

HENDLEY—Carl William Morrow. OXFORD—Elbert Ernest Cone. WILSONVILLE—George Halley DeMay.

Gage County

FILLEY—Edward Edmond Sweeney. ODELL—Adolph Nicholas Thoms. PICKRELL—Marion Theodore Sigler.

Garden County

LEWELLEN—Clifford Leon Hooper.

Garfield County

BURWELL—James Folwell Wood.

Grant County

HYANNIS—Wm. Llewellyn Howell.

Hall County

CAIRO—Samuel Earl Metheny. GRAND ISLAND—Henry Blakeslee Boyden; Benjamin Robert McGrath; Willis Jay Redfield; John Henry Regan.

Hamilton County

AURORA—Chas. Delano Hustead; James Madison Woodard.

Harlan County

ALMA—William Clarence Bartlett.

Holt County

ATKINSON—Neal Patrick McKee.

Hooker County

MULLEN—Thos. Ernest Atkinson.

Howard County

DANNEBROG—Christian Pedersen. ST. PAUL—Royal F. Jester; Frank S. Nicholson.

Jefferson County

FAIRBURY—Hayes Hunter Culbertson; William John Hawes.

Johnson County

TECUMSEH—Joseph Milton Curtis.

Kearney County

AXTELL—Francis Allen Wells.

Keith County

OGALLALA—Charles Curtis Wallingsford.

Keyapaha County

SPRINGVIEW—Joseph Alphonse Furlong.

Kimball County

KIMBALL—Wilber K. Myler.

Knox County

BLOOMFIELD—J. Harvey Mettlen. CREIGHTON—Czar Clinton Johnson. NIOBRARA—Avedis H. Sissakian. WAUSA—Frank Clark Ghe-nung; Otto Theodore Hansen. WINNETON—Roy Crook. YORK—James S. Bell; Dexter D. King.

Lancaster County

BENNETT—Wm. Walter De Wolfe. BETHANY—Frank Alonzo Wil-mot. HICKMAN—George W. Strough. LINCOLN—Charles H. Arnold; John M. Birkner; Martin Robt. Broman; Geo. Worthington Covey; Leslie Baue Crumrine; Harry Ernest Flansburg; Chas. Warren Harms; Henry Bernard Frosh; Ira Hiram Lockwood; Harry Bohn Metheny; Terrence Calvin Moyer; Arbor Day Munger; Ole Olson; Hiram Winnett Orr; Charles W. Parks; Edward W. Rowe; John F. Spealman; Clark Dwight Spivey; Lazelle B. Sturdevant; Francis Marion Swartwood; Elmer S. Tenney; James E. M. Thomson; Arthur Bruce Walker; Adin Hilton Webb; Hal. Drummond Wilmeth; James Mac Woodward. NORMAL—Paul Ambrose Royal. UNIVERSITY PLACE—Carl Wagner Sherfey.

Lincoln County

NORTH PLATTE—Earl William Fetter; Claude A. Selby; John Shaffer Simms; Frederick Josias Wurtele.

Madison County
MADISON—Arthur Emile Gadbois; Edward Olinger Wilson. NEWMAN GROVE—Frank Lee Frink; Carl Augustus Meyer. NORFOLK—Augustus Charles Barry; Harry R. Carson; Warren Martin Phillips; Peter Harold Salter; Arthur Marlinus Sonneland.

Merrick County
CLARKS—Ralph Conklin Christie; Lowell Little.

Morrill County
BAYARD—Grover Cleveland Rice.

Nance County
BELGRADE—Onley Alphonso Brittell. FULLERTON—Roy Ellsworth Hall. GENOA—Homer Davis; Henry Eugene King; Creighton David Williams.

Nemaha County
AUBURN—Edgar Cline; Ira Hugh Dillon. PERU—William D. Jack; Bartlett Lockwood Shellhorn.

Muckolls County
BOSTWICK—William James Pinkerton.

Otoe County
NEBRASKA CITY—William Edmonds; Martin Luther Koser. PALMYRA—Chas. Percy Charlton.

Pawnee County
PAWNEE CITY—Earl Brisbin Brooks; James Clyde Waddell. STEINAUER—Walter Lawrence Johnson. TABLE ROCK—Miles John Breuer; Leo Dow Harman.

Pierce County
OSMOND—Ellis Herbert Whitehead. PIERCE—William Sidney Dinsmore.

Platte County
COLUMBUS—Charles H. Campbell; Carroll Dandola Evans, Jr.; James North Evans; William Samuel Evans; Theodore Henry Koefoot; Frank Henry Marrow; William Richard Carl Neumarker.

Red Willow County
DANBURY—McDonald Ryan; Griffith Alonzo De May. MCCOOK—Roland Ray Reed.

Richardson County
BARADA—Jesse Franklin Strong. DAWSON—James Francis Kelly. FALLS CITY—Sam David Cowan; Oscar Fredk. Lang; Henry Rufus Miner. SALEM—Andrew Jackson Smith.

Rock County
NEWPORT—Clinton Quincy Dodd.

Saline County
DORCHESTER—Robert Carpenter Panter. WILBER—Louis John Storkan.

Sarpy County
GRETNA—Charles Edward Pinckney. PAPILLION—Wesley C. Becker; Oswald H. Margaret. SPRINGFIELD—John Arthur Peters.

Saunders County
WAHOO—Charles Willard Way.

Scottsbluff County
SCOTTSBLUFF—Joseph Benson Schrock.

Seward County
MILFORD—James G. Muir. SEWARD—Edward M. Bernecker.

Sheridan County
RUSHVILLE—William Henry Crawford.

Sherman County
LOUP CITY—Otto Earle Longacre.

Sioux County
HARRISON—Frank M. Barns.

Thayer County
BELVIDERE—Walter Edwin Kelly; Thomas Lahners, Jr. HEBRON—Joseph Harold Boyes.

Thurston County
PENDER—John Buis. ROSALIE—J. Jay McCarl. WALTHILL—Irwin mburg.

Washington County
ARLINGTON—George Frederick Hawes. BLAIR—Louis Lancelot Arstein.

Wayne County
CARROLL—William Henry Phillips. WAYNE—Earl B. Erskine. WINDE—Victor Lamont Siman.

Webster County
BLUE HILL—Philip Henry Bartholomew; Claude Ross Laird. COWLES William E. M. Devers.

Woodbury County
SHICKLEY—Laird W. Elwood.

NEVADA STATE MEDICAL ASSOCIATION
Officers 1917-18
A. Brown, President.....Reno
ce Presidents—
Raymond St. Clair.....Reno
H. J. Brown.....Reno
A. Robison, Secretary.....Reno

Councilors
Iluffaker.....San Francisco, Cal.
R. Craig.....Aurora
H. Riley.....Minneapolis, Minn.
J. Richards.....Tonopah
J. Howland.....Goldfield

NEVADA									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Churchill.....	5,050	561.1	4,257	428	9	2	4	6	1
Clark.....	8,045	1,609.0	4,576	915	5	..	4	4	..
Douglas.....	733	244.3	2,159	719	3	1	2	2	1
Elko.....	17,059	1,218.5	9,918	708	14	..	11	13	4
Esmeralda.....	7,432	1,061.7	7,385	1,075	7	..	3	4	1
Eureka.....	4,157	4,157.0	1,830	1,830	1	..	1	1	..
Humboldt.....	15,857	1,057.1	8,549	569	15	..	9	14	6
Lander.....	5,721	2,860.5	1,970	985	2	..	2	2	..
Lincoln.....	10,411	2,105.2	4,808	961	5	..	2	3	1
Lyon.....	1,509	251.5	4,516	752	6	..	3	5	3
Mineral.....	7,120	890.0	7,384	923	8	..	3	6	5
Nye.....	18,294	1,524.5	12,163	1,013	12	1	3	10	11
Ormsby.....	156	19.5	3,796	474	8	..	4	7	5
Storey.....	251	251.0	3,045	3,045	1	..	1	1	1
Washoe.....	6,251	145.4	23,487	546	43	..	19	34	28
White Pine.....	8,795	676.5	11,441	880	13	..	11	11	7
Totals.....	116,941	769.3	111,284	732	152	4	82	123	86

HONOR ROLL
Clark County
LAS VEGAS—Halle Lincoln Hewetson.

Douglas County
GARDNERVILLE—William Leonard Howell.

Elko County
ELKO—Eric Munk; Claudius Wilson West. RUSSELL. TUSCARORA—Charles Edgar Secor.

Esmeraldo County
GOLDFIELD—Delos Ashley Turner.

Humboldt County
LOVELOCKS—John Chapel Kitchen. McDERMITT—Only J. Chaney; John Thomas Rees. PARADISE VALLEY—Lawrence Raymond Knorr. WINNEMUCCA—Edward David Giroux; Charles Edison Swezy.

Lincoln County
CALIENTE—Frank Tinges.

Lyon County
YERINGTON—Granville Ernest Leavitt.

Mineral County
MINA—James Porter Crawford; Bruce McVean Mackall.

Ormsby County
CARSON CITY—William J. Circe.

Washoe County
RENO—Herbert Augustus Abbott; Benjamin Frazier Cunningham; George McKenzie; Henry Ostroff; William Calvin Roller; Anthony Stadtherr; Raymond St. Clair.

White Pine County
ELY—Albert Franklin Adams; Isaac Alexander; Clifford Ashby; Walter Sanford Holmquist. KIMBERLY—Ray Verplank Larzalere. RUTH—David Wade Bedinger.

NEW HAMPSHIRE MEDICAL SOCIETY
Officers 1917-18
F. S. Towle, President.....Portsmouth
Emdon Fritz, Vice President.....Manchester
D. E. Sullivan, Secretary.....Concord
D. M. Currier, Treasurer.....Newport

Councilors
Belknap County.—A. H. Harriman, Councilor, Laconia.
Carroll County.—Fred E. Clow, Councilor, Wolfeboro.
Cheshire County.—Charles S. Walker, Councilor, Keene.
Coos County.—Richard E. Wilder, Councilor, Whitefield.
Grafton County.—Fredk. von Tobel, Councilor, Lebanon.
Hillsboro County.—Frank E. Kittredge, Councilor, Nashua.
Merrimack County.—Robert J. Graves, Councilor, Concord.
Rockingham County.—A. W. Mitchell, Councilor, Epping.
Strafford County.—F. L. Keay, Councilor, Rochester.
Sullivan County.—E. M. Fitch, Councilor, Claremont.

HONOR ROLL
Belknap County
LACONIA—Henry S. Beckford. MEREDITH—Alexander Borland. TILTON—Theron Howard Huckins.

Camden County
HADDONFIELD—William Sumner Long.
MERCHANTVILLE—Edgar Nathan Cowan.

Carroll County
NORTH CONWAY—Samuel Dryden Snow. SANBORNVILLE—John Carl Eckhardt. WEST OSSIPEE—Lester W. Lord.

Cheshire County
ALSTEAD—Bayard Taylor Mousley; Lee Chamberlain Stillings. EAST JAFFREY—Lawrence Brown Hatch. GILSUM—Harry George Williams. KEENE—Joseph R. Helff; Robert Ward Holmes; John Jacob Osterhout; Charles S. Walker.

NEW HAMPSHIRE									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Belknap.....	397	10.7	22,611	611	37	4	15	22	25
Carroll.....	955	32.9	16,316	562	29	1	13	20	18
Cheshire.....	728	12.8	30,659	537	57	4	24	39	40
Coos.....	1,798	52.9	31,691	932	34	1	15	24	29
Grafton.....	1,729	24.0	42,242	586	72	3	28	55	53
Hillsborough...	985	55.3	135,875	738	184	11	80	132	150
Merrimack.....	932	10.5	53,995	606	89	7	42	60	67
Rockingham....	691	8.5	52,968	653	81	3	37	54	61
Strafford.....	379	7.9	38,951	811	48	1	14	33	36
Sullivan.....	527	20.3	20,305	708	26	2	12	17	23
Totals.....	9,031	13.3	445,613	677	657	37	270	456	502

1. Includes Manchester, population 79,507; physicians 196 [M.R.C. 22].

Coos County
BERLIN—Arsene Lavallee. COLEBROOK—Walter Leigh Barbour. LANCASTER—Howard Wilfred Cleasby; Homer Brandel Smith. NORTH STRATFORD—James Charles Thompson. WHITEFIELD—John Bachop Warden.

Grafton County
BETHLEHEM—Millard Cressey Clark. CANAAN—Persons W. Wing. GRAPTON—Lee Henry Knapp. HANOVER—Percy Bartlett; John M. Gile; Howard Nelson Kingsford. HAVERHILL—Fred Cutler Russell. LEBANON—Daniel Robert Chase. LITTLETON—Winfred Oren Brown; Edwin Alga Cameron. PLYMOUTH—Ernest Lorne Bell. RUMNEY—John Almus Drew.

Hillsboro County
BENNINGTON—Guy Daniel Tibbetts. GOFFSTOWN—Maurice Albert Stark. GRASMERIE—Eddy Benjamin Swett. MANCHESTER—Melvin Pirl Badger; Pierre Bergeron; Benjamin P. Burpee; Walter Theodore Crosby; Clarence Eugene Dunbar; George Francis Dwinell; George Var-num Fiske; Noel Eusebe Guillet; William R. Lightbody; Bernard Henry Lovely; Samuel Miller; John Christopher O'Connor; Frederick H. Perkins; Harris Earle Powers; James Joseph Powers; John Franklin Robinson; Henry Ladd Stickney; Amos G. Straw; Charles Alton Sturtevant; Daniel Joseph Sullivan; George Marshall Watson; Arthur Fitts Wheat. MILFORD—Bertell L. Talbot. NASHUA—Albert Edward Brownrigg; Charles Everatt Congdon; Stillman George Davis; Oswald S. Maynard; Augustus W. Shea. PETERBORO—Frank Brooks Foster.

Merrimack County
CONCORD—Henry Hubbard Amsden; Robert Oscar Blood; Harold James Connor; Arthur Bickford Howard; Goodwin Adolph Johnson; Carlton Ray Metcalf; Philias Arthur Pion; Fred Alvah Sprague; Russell Wilkins. EAST ANDOVER—Edward Chase Durgin. FRANKLIN—James Brown Woodman. HENNIKER—Cheney Isaac Cole. HOOKSETT—Leopold Theodore Togus. NEW LONDON—Charles Allen Lamson. SUTTON—William Plummer Clough. CONCORD—Lawrence Richardson Hill.

Rockingham County
EXETER—John G. W. Knowlton; Ralph Sherburne Perkins. FORT CONSTITUTION—Herbert I. Harris. HAMPSTEAD—Elmer Ellsworth Lake. PORTSMOUTH—Morgan Patrick Hanlon; George Andrew Tredick; Wallis Dunlap Walker. SEABROOK—Forest Jay Drury.

Strafford County
DOVER—Fred Chambers Goddard; John Charles Lawlor.

Sullivan County
CHARLESTOWN—John Ernest Toye. CLAREMONT—Earl Percy Cushman.

MEDICAL SOCIETY OF NEW JERSEY

Officers 1917-18

Wm. G. Schauffler, President.....Lakewood
Thos. W. Harney, First Vice President.....Orange
Gordon K. Dickinson, Second Vice President.....Jersey City
Philander A. Harris, Third Vice President.....Paterson
Harry A. Stout, Corresponding Secretary.....Wenonah
Thos. N. Gray, Recording Secretary.....East Orange
Archibald Mercer, Treasurer.....Newark

Councilor Districts and Officers

First District.—Sussex, Warren, Morris and Essex counties. Christopher C. Beling, Councilor, Newark.
Second District.—Union, Bergen, Hudson and Passaic counties. John C. McCoy, Councilor, Paterson.
Third District.—Mercer, Middlesex, Somerset and Hunterdon counties. W. A. Clark, Councilor, Trenton.
Fourth District.—Camden, Burlington, Ocean and Monmouth counties. W. H. Iszard, Councilor, Camden.
Fifth District.—Cape May, Cumberland, Atlantic, Gloucester and Salem counties. James Hunter, Jr., Councilor, Westville.

HONOR ROLL

Atlantic County

ATLANTIC CITY—Paul Benjamin Bender; David A. Berner; Richard Bew; Filbert Richard Corson; Edward Guion; Adolph A. Gurin; Philip Marvel; Norman James Quinn; Samuel Lyon Salasin; Edward Sterne Sharpe; Charles Hendry DeTurck Shivers; Samuel Stern; Carl Surran; Harry Gordon Thigpen; Herman Trager; Edward Foy Uzzle; Edwin Myron Weil; Samuel Elias Welner; Joseph T. White; Gurney Williams. AUDUBON—William Henry Haines. HAMMONTON—Joseph Clarence Bitler; Wm. Earle McIlvaine. LONPORT—Arthur Moses Greenwood. PLEASANTVILLE—Halvor Larson Harley; James Frank Wallis.

NEW JERSEY									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Atlantic.....	569	3.6	92,895	597	156	6	80	124	92
Bergen.....	237	2.0	195,097	1,667	117	3	90	95	79
Burlington.....	815	10.4	78,058	1,000	78	4	39	57	46
Camden.....	222	1.2	174,617	964	181	12	81	136	89
Cape May.....	265	8.3	26,301	853	32	1	17	25	19
Cumberland....	500	6.7	61,239	816	76	6	39	57	29
Essex.....	127	0.1	635,172	797	796	44	476	687	474
Gloucester.....	332	7.1	46,114	983	47	1	17	26	27
Hudson.....	43	0.1	647,589	1,384	468	19	308	397	252
Hunterdon.....	437	1.2	35,155	817	43	1	23	27	28
Mercer.....	226	1.3	153,759	883	174	6	100	138	82
Middlesex.....	312	3.2	157,029	1,638	96	2	54	79	62
Monmouth.....	479	3.5	112,880	817	138	6	69	97	44
Morris.....	475	4.6	84,282	818	103	7	56	68	67
Ocean.....	637	16.3	23,699	607	39	1	16	31	19
Passaic.....	196	0.9	260,212	1,182	220	..	126	189	110
Salem.....	343	7.1	31,630	658	48	3	18	32	25
Somerset.....	305	5.7	46,278	873	53	3	22	37	32
Sussex.....	529	20.3	28,714	1,104	26	..	11	16	18
Union.....	103	0.61	181,636	1,087	167	8	86	136	97
Warren.....	362	7.4	47,132	961	49	5	13	35	30
Totals.....	7,514	2.5	3,119,558	1,024	3,046	147	1,747	2,489	1,721

1. Includes Atlantic City, population 59,515; physicians 130 [M.R.C. 20].
2. Includes Camden, population 108,117; physicians 120 [M.R.C. 16].
3. Includes East Orange, population 43,761; physicians 66 [M.R.C. 9], also Newark, population 418,789; physicians 529 [M.R.C. 83], also Orange, population 33,636; physicians 45 [M.R.C. 10].
4. Includes Bayonne, population 72,204; physicians 47 [M.R.C. 8], also Hoboken, population 78,324; physicians 57 [M.R.C. 14], also Jersey City, population 312,557; physicians 244 [M.R.C. 42], also West Hoboken, population 44,386; physicians 34 [M.R.C. 4].
5. Includes Trenton, population 113,974; physicians 139 [M.R.C. 38].
6. Includes Perth Amboy, population 42,807; physicians 23 [M.R.C. 6].
7. Includes Passaic, population 74,478; physicians 62 [M.R.C. 13], and Paterson, population 140,512; physicians 142 [M.R.C. 30].
8. Includes Elizabeth, population 88,830; physicians 58 [M.R.C. 10].

Bergen County

ALLENDALE—Robert William Rodman. CLIFFSIDE—Walter William Schmidt. EAST RUTHERFORD—Paul O'Brien. ENGLEWOOD—Alfred Lee Loomis Bell. GARFIELD—Charles B. Bleasby. GRANTWOOD—Philip E. Brundage. HACKENSACK—Edward Porter Essertier; Samuel Zachary Orgel. LEONIA—James Bennett Edwards; James T. Wyckoff. MAYWOOD—Frank Freeland. ORADELL—Samuel Albertus Vandewater. RAMSEY—Harold Ellsworth Gillett. RIDGEWOOD—William C. Craig; Walter Franklin Keating; William Lovridge Vroom. RUTHERFORD—Norman Scott Garrison; Earl Charlton Reynolds. WYCOFF—Harold Gilmore Walker.

Burlington County

BORDENTOWN—Robert Buermann; Robert E. Sievers. BURLINGTON—John S. Conroy; James MacFarland; William Eugene Rink. CHATSWORTH—Martin William Curran. FLORENCE—Elber Brodhead Peace; John Francis Weber. MOORESTOWN—Jeremiah Boone Wintersteen. PALMYRA—Howard Raymond Rarig; Charles Francis Voorhis. PEMBERTON—Lyman Benajah Hollingshead.

Camden County

AUDUBON—Horace Brees Dean. BERLIN—Leslie Hand Ewing. CAMDEN—Charles Fred Becker; W. Kempton Browning; William Joseph Burke; Arthur Jay Casselman; Albert B. Davis; Irving Elmer Delbert; Walter John Jones; Thomas K. Lewis; Frederick Wm. Marcy; Herbert S. McKinstry; George Phillip Meyer; Alexander Charles Moon; Thomas Wolden Phillips; Ernest Shirly Ramsdell; William G. Shemeley; James Leo Shoemaker. COLLINGWOOD—Edward Bancroft Rogers. GLOUCESTER CITY—John Alonzo Beek; Roger Talmage Fox. STRATFORD—Charles Butcher Kaighn. HADDONFIELD—William Sumner Long. MERCHANTVILLE—Edgar Nathan Cowan.

Cape May County

CAPE MAY COURT HOUSE—J. Morgan Dix. CAPE MAY—Edgar Arthur Draper. DENNISVILLE—Clarence Wilton Way. OCEAN CITY—John Hogate Whiticar. TUCKAHOE—James Service Knowles. WILDWOOD—Henry Hurlburt Tomlin.

Cumberland County

BRIDGETON—Irving Eugene Charlesworth; William Leslie Cornwell; Elton S. Corson; Walter P. Glendon; Millard Freeman Sewall; Alfred G. Sheppard; Harold Flavell Westcott. DEERFIELD—Herbert Leavitt Cooper. DEERFIELD STREET—Henry Pratt Webb. LEESBURG—George Sigars Spence. MILLVILLE—Ralph R. Charlesworth. PORT NORRIS—Samuel T. Day Jr. VINELAND—Leonard Francis Hatch; John Hayes Winslow.

Essex County

BELLEVILLE—William T. Elmore; Arthur Edward Lee; Leroy Danforth Whitney; Joseph Clark Winans. BLOOMFIELD—George Vane Morse; Arthur Gibson Pilch; David Clark Thompson. CALDWELL—George B. Verbeck. CEDAR GROVE—Charles Englander; Henry Greene Smith. EAST ORANGE—Charles Winfield Buvinger; Daniel W. Fetterolf; Albert Groves Hulett; Ralph Hudson Hunt; James Norton Nichols; Palmer Augustus Potter; Abram C. Reeves; Arthur Francis Thompson; Lloyd Baldwin Whitman. ENGLEWOOD—Charles Miles McKinlay; John Nelson Teeter. IRVINGTON—William S. Bull. MAPLEWOOD—LeRoy Lorenzo Colsh. MONTCLAIR—William Wheeler Cox; Max Dobrin; Samuel Ward Dodd; Harvey M. Ewing; William Nelson Harrison; Walter Barclay Mount; Arthur Richardson; Robert Dannelly Schimmelpfennig; Victor Bayard Seider; Martin John Synnott. NEWARK—Abram Bernard Abramowitz; Frederic Augustus Ailing; Maurice Asher; Maurice S. Avidan; Aaron G. Baldwin; George T. Bareklow; Joseph Adolph Belott; Nelson K. Benton; Carmine G. Berardinelli; Addison Hayes Bissell; George Blackburne; Dundas Ralph Campbell;

Jasper Walfred Coghlan; Harry Noah Comando; Phillip Jerome Conlon; David H. Crawford; Geo. Ward Disbrow; Widmer E. Doremus; Ambrose Francis Dowd; Wells Phillips Eagleton; Arthur Jeffries Ellis; George Bache Emory; John Theodoro English; Edward Francis Fitzpatrick; Benjamin Applegate Furman; Nathan Furst; George Bancroft Gale; Percy Harrison Garland; Ernest Gennell; Daniel Leon Gollann; Abraham Julius Gordon; Clement Jacob Halperin; George Edward Harhen; Julius Heilbrunn; Nathan Heller; Philip Horwitz; Clarence Sumner Janifer; Meyer Jedel; David Aaron Kraker.

Matthew Samuel Levitas; Walter Clifford Liebmann; Jesse D. Lippincott; Albert Eugene Man; Frank Neeler Mandeville; Harrison Stanford Martland; Thomas Sheridan McCae; James Edward McCormick; John L. Meeker; Raymond Joseph Mullin; Rocco Marlon Nittoli; Henry Boylan Orton; Frank Wilcox Plinnco; Elias Rapoport; Samuel B. Rawitz; Abraham George Reinfeld; George Stiles Reitter; Charles Rich; Samuel Totenberg; Abraham Ruskin; Leslie Crawford Russell; William Satterer; Joseph Albert Schramm; Albert Stetson Sherman; Benjamin James Silverstein; Howard S. Smith; Julius Sobin; Robert Edward Soule; Richard Henry Staehle; Richard Damascus Swain; Grant Thorburn; William Raymond Tilton; Irving M. Vanderhoff; Henry J. F. Wallhauser; William Henry Warren; Francis Chas. Weber; Michael Benjamin Weinstock; Jean L. Wolfs; Earl LeRoy Wood; Alfred Woodhouse; James John Lee Young; Anthony Charles Zehnder.

NEWARK—Samuel Brook; Charles William Titus.

ORANGE—John King Adams; Thomas William Harvey Jr.; Jesse Abraham Levine; Barclay Wellington Moffat; Edwin Nicholas Riggins; Larry Rogers; Ord Ledyard Sands; Henry Trautmann; Walter Roberts Symson; Fredk. Herbert Von Hofe. SOUTH ORANGE—George Cummings Albee; Charles Dane; Dennis Francis O'Connor. UPPER MONTCLAIR—William Henry Areson; Carroll E. Krichbaum; Alexander John McRae. VERONA—Archer C. Bush.

Gloucester County

BARNSBORO—William P. Chalfant. GLASSBORO—Ellas M. Duffield; Charles Dun Pedrick. MULLICA HILL—H. Bailey Chalfant. PITMAN—Marshall Flowers Lummis; Herbert C. Woolley. SWEEDESBORO—Ernest E. Degroff. WOODBURY—Stephen Campbell.

Hudson County

ARLINGTON—Charles Percival Lingle; Edward Hallick Willan. BAYONNE—Sydney Chayes; Lucius Francis Donohoe; Emanuel Klein; Louis Lipschitz; Irving Henry Russotto; Edward Franklin Syrop; Morris Jacob Weiss. BOONTON—William Joseph Summers. GUTTENBERG—James Lawrence Evans. HARRISON—Bernard Aloysius O'Connor. HOBOKEN—Hugo Alexander; Charles H. Ball; Henry Valentine Brocser; Hugh Smith Chidester; George Ginsberg; Humbert Albert Granelli; Michael Simon Granelli; Livingstone Lovell Lewis; Thomas Jerome McKiernan; Joseph Erpina Paganelli; Nicholas William Pinto; John Gordon Rea; Henry Theodor von Deesten; Joseph John Walker. JERSEY CITY—Paul M. Andreal; Joseph Binder; Jacob Blumberg; Frank Bortone; John Anthony Botti; James Lyons Cobham; Thomas W. Connolly; Samuel A. Osgrrove; Patrick Sebastian Duffy; James G. Enright; Adolph van Prief ardelmann; Nicholas Frederick Feury; Martin Bernard Finneran; Edward Harold Franklin; Oscar C. Frundt; Raymond De Witt Henderson; Gerald Leo Higgins; Richard Hirsch; Leonard Michael Kalaher; Arthur wen Largay; John Joseph Lettieri; Alonzo W. Little; Francis P. K. acMurrrough; Irwin Markowitz; Walter Curt Martini; Jacob L. Mathheimer; William Wallace Mayer; Kenneth Ewing McCamey; George eLaughlin; Frank Joseph McLoughlin; Claude E. McMenney; Donald iner; Abraham Jacob Newman; Joseph M. Rector; Jacob Rosenberg; Frank Le Lacy Sherwood; Ernest F. Slater; John Phillips Stout; Daniel aon Street; Joseph Wechsler; James Lancelot Wilson. KEARNY—Edward Robert Dukes; William Hyman Goldstein. SECAUCUS—Irving imuel Ingber; Robert Stewart. UNION HILL—Charles Stuart Brady; tto Kothe. UNION—William Alva Brady; Frederick James Quigley. EELHAWKEN—Albert G. Bisong; William Thomas Callery; Maxwell ordon Keeler. WEST HOBOKEN—Henry Frank Klaus Jr.; John Pelrin; Louis Eben Poole; Anthony Gregory Sacco. WEST NEW YORK—ester McDonnell Coulter; Edgar W. Roberts. JERSEY CITY—Elmer Marshall Mount, Jr.

Hunterdon County

FLEMINGTON—Floyd A. Thomas. HIGH BRIDGE—Edmund Eastod. QUAKERTOWN—Morris Hampton Leaver.

Mercer County

LAWRENCEVILLE—Elam Knott Fee. PENNINGTON—Wm. A. Little. MNCETON—Charles Browne; John Andrew Freese; Walter Atlee Hickman; Stewart Paton; Theobald Smith. TRENTON—Charles Franklin lams; Herman Baldauf Jr.; Samuel Blaugrund; William Alexander ark; Josiah Wellington Crane; Joseph Gosling Denelsbeck; Julius O. nelsbeck; Ernest A. L. Dickinson; Philip Joseph Dorety; Edgar ight Funkhouser; Joseph Louis Gariss; Harold Inman Gosline; Daniel o Haggarty; Charles Nicholas Harper; Charles Haight Holcombe; urray Baldwin Kirkpatrick; Barney D. Lavine; William Augustus well; Morris Leroy Potts; Martin William Reddan; Leo Vivian Rosenal; James Parvin Sands; Sidney Scheinman; Raymond S. Seibert; Charles Richard Sista; Clarence Johnson Slack; William Henley Smith; orge Woodruff Williams. WINDSOR—E. Drew Silver. TRENTON—Morace Doolittle Bellis.

Middlesex County

CHROME—Joseph Sidney Mark. COLONA—Raymond Albert Tommasie. ELIZABETH—Benjamin F. Slobodien. HIGHLAND PARK—Her William Nafety. NEW BRUNSWICK—William Joseph Condon; Anny Gruessner; Arthur Gamble Hilliard. PARLIN—George Howard rmann. PERTH AMBOY—Edward K. Hanson; Arthur LaRoe; John Lund; John Jacob Mann. WOODBRIDGE—Bonnette Wight Hoagland.

Monmouth County

ALLENTOWN—Harry Miller Anderson. ASBURY PARK—Jones Oliver dson Jr. (colored); George Walter Potts; William Denton Rowland; ri Calvin Wagner. ATLANTIC HIGHLANDS—Brayton E. Failing. ON-BY-THE-SEA—Ferdinand Gisler Angeny. BELMAR—William A. wbold. FREEHOLD—James Breslin; Harvey Simpler Brown; David art Carey; John C. Clayton; Earl B. Stokes. HIGHLANDS—James Rowland. LONG BRANCH—Stanley H. Nichols; William Henry Sloon; Walter Sterling Tilton; Joseph T. Welch; Lester Drummond Wise. NASQUAN—Philip Garfield Hood. OCEAN GROVE—Henry Bryan rr. RED BANK—James Wesley Parker; Peter R. Rafferty; William uglas Sayre. SPRING LAKE—Robert Leroy Leighton; Joseph George vannali. KEYPORT—Harvey Wesley Hartman.

Morris County

BOONTON—Ellery Newel Peck. BUTLER—Charles Jerome Massinger. CHESTER—Harris Day. DOVER—Augustus L. Baker; Richard L. Cook. GERMAN VALLEY—William James. GREYSTONE PARK—Lawrence Martin Collins; Louis Kaufman Hensehel; Eiam Filo Srygley; Franklin Charles Young. MORRISTOWN—George Haynes Lathrop; Noel Bleeker Leggett; Frank E. Perkins; Frank Hugo Pluckney; Robert Ralston Reed.

Ocean County

LAKEWOOD—Harold B. Disbrow; William G. Schauffler. TUCKERTON—Charles Higbee Conover.

Passaic County

HASKELL—Earl Elmo Griggs. PASSAIC—Joseph Clarence Balson; John Howe Carlisle; Ernesto Casino; Henry Edward Dwyer; Albert G. Jahn; Robert Nichol MacGuffie; George Francis Murmane; Harry Campbell Reynolds; Morris L. Simon; Elroy Willis Smith; John Joseph Szymanski; Arthur Henry Temple; Hyman Joseph Udinsky. PATERSON—Thomas Arthur Clay; Henry Cogan; Maurice Cohen; Thomas Vincent Connolly; Donald Austin Curtis; James Gordon Donnelly; William Aloysius Dwyer; Philip Harold Finkelstein; Hugh Vincent Gilson; Archibald Fowler Graham; Orville Reed Hagen; John J. Halnan; Sidney Charles Levine; Elias Joseph Marsh; Andrew Francis McBride; John C. McCoy; Charles Reuben Mitchell; Charles Joseph Murn; Frank Y. Neer; William Archibald Norval; Louis Milton Suchoff; Francis J. Van Noort; John S. Van Winkle; Albert Hamilton Ward; William J. Whalen; Joseph White Williams; Meyer Wishnack. POMPTON LAKES—Clarence LeFevre Vreeland.

PATERSON—Louis Joseph Bohl; Thomas Leo Caldronney; Michael Sarla.

Salem County

CARNEYS POINT—John H. E. Fust; Frank Ebaugh Mason; Rawley Watt Ward. ELMER—Marion Stanley Black; John Franklin Reeves. PENNS GROVE—George Lindsay Cook; Brooke Dodson; Samuel Raymond Fairchild. SALEM—David Wright Green; David W. Green; William Thomas Hilliard; Charles Everett MacDonald. WOODSTOWN—Claude Wellington Thomas.

Somerset County

BERNARDSVILLE—John Gordon Ross. FALL HILLS—Frank Longstreet Field. NESIATIC STATION—Walter Humstone Whiton. RARITAN—Warford Lash Nixon. SOMERVILLE—Lancelot Ely; Dr. Runkle Fisher Hegeman; Absalom Anderson Lawton.

Sussex County

BRANCHVILLE—Herbert Ewing Riddell. HAMBURG—Joseph Gilbert Coleman; Thomas Lawrence Pellett. NEWTON—Blase Cole. SPARTA—Albert Nicholas Jacob.

Union County

CRANFORD—Friend Bennett Gilpin. ELIZABETH—Edward Oscar Boller; Abijah Orange Buck; Philip D. Bunting; Julius Gerendasy; James S. Green; Carmine Rocco Marone; William Henry McCallion; Stephen T. Quinn; Charles Henry Schlichter; Frank Steinke. PLAINFIELD—Robert J. Childers; Harold D. Corbusier; Frank Wilbur Cornwell; George V. Genzmer; Edward Sheafe Krans; Thomas Murray Morris; Sydney Rose Titsworth. RAHWAY—Frederick William Sell. ROSELLE—Zadoc Lawrence Griesemer. SUMMIT—Carleton Bates; William Henry Lawrence Jr.; John Allen Thurston. WESTFIELD—Howard Fauntleroy Brock; William Wilson Sisserson.

PLAINFIELD—Jefferson Charles Anderson.

Warren County

OXFORD—Howard C. Millick. PHILLIPSBURG—James Monroe Torrence Jr.

NEW MEXICO MEDICAL SOCIETY

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Frank E. Tull, Treasurer.....Albuquerque

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Doña Ana, Luna, Grant, Sierra, Socorro, Valencia and Bernalillo counties. G. S. Melandress, Councilor, Albuquerque.
Chaves, Otero, Lincoln, Roosevelt, Torrance, Quay, Curry and Guadalupe counties. H. A. Miller, Councilor, Clovis.

HONOR ROLL

Bernalillo County

ALBUQUERQUE—Henry Rolf Brown; John Wilson Elder; Henry B. Kaufman; Robert C. Kirkwood; Ethan St. Clair Milford; David Cushman Twitchell.

Chaves County

ROSWELL—Oliver Hugh Haymaker; Henry Allison Ingalls; John W. Kinsinger; William Clarence Matthews.

Colfax County

DAWSON—Frank Brady; Fred Barrett Evans. SPRINGER—Henry Hiram Pantan.

Doña Ana County

LAS CRUCES—George Duling Carter; William Ewing Vandevere.

Eddy County

CARLSBAD—Mallory B. Culpepper; Louis H. Pate.
CARLSBAD—Joseph Warren Lackey.

Grant County

FT. BAYARD—Edward P. Rockwell. HANOVER—Calvin Wilson Davis. PINOS ALTOS—Lewis Burchfield Robinson. SILVER CITY—Earl S. Bullock; Ernest Allen Duneau; Samuel Hodedger Eckles; Edward Waddell Hooper; Ignatz David Loewy; William MacLake; O. J. Westlake. TYRONE—Emmer Palmore Davis; Nathaniel Daniel Frazln.

NEW MEXICO									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Bernalillo.....	1,214	20.6	23,606	400	59	3	32	49	43
Chaves.....	9,408	254.3	16,850	455	37	1	12	23	23
Colfax.....	3,798	140.7	21,068	780	27	..	11	23	19
Curry.....	1,406	117.2	11,443	953	12	..	7	10	7
¹ De Baca.....	.....	.....	.....	.....	19	..	3	3	1
Dona Ana.....	3,821	201.1	15,567	819	19	..	7	14	9
Eddy.....	6,923	346.1	19,094	954	20	..	11	18	7
Grant.....	7,428	225.1	17,568	592	33	..	28	30	18
Gaudalupe.....	3,927	490.9	10,927	1,365	8	..	5	6	1
¹ Lea.....	.....	.....	.....	.....	6	..	4	6	1
Lincoln.....	4,779	841.3	7,822	558	14	..	10	12	6
Luna.....	2,976	198.4	4,724	314	15	1	5	12	7
McKinley.....	5,506	275.3	12,963	648	20	1	10	19	12
Mora.....	2,571	257.1	14,295	1,429	10	..	5	8	..
Otero.....	6,689	514.5	8,731	671	13	1	8	12	5
Quay.....	2,905	217.6	14,912	1,065	14	..	13	13	4
Rio Arriba.....	5,871	533.7	16,624	1,511	11	..	10	10	5
Roosevelt.....	2,265	205.9	12,064	1,096	11	..	3	8	7
Sandoval.....	3,871	553.0	8,579	1,225	7	..	4	7	2
San Juan.....	5,476	547.6	8,504	850	10	..	5	8	..
San Miguel.....	4,798	239.9	23,570	1,178	20	..	10	14	13
Santa Fe.....	1,973	103.8	14,770	777	19	..	8	11	9
Sierra.....	3,118	1,559.0	3,311	1,905	2	..	1	1	1
Socorro.....	1,507	94.2	14,761	922	16	..	10	12	9
Taos.....	2,252	563.0	12,824	3,206	4	..	2	4	..
Torrance.....	3,369	421.1	10,119	1,264	8	1	5	7	..
Union.....	5,370	357.3	11,404	760	15	..	7	10	5
Valenela.....	5,659	808.4	13,320	1,902	7	..	1	7	4
Totals.....	108,940	238.9	349,920	767	456	8	242	363	224

1. County recently organized; area and population included with that of other counties.
- Guadalupe County

SANTA ROSA—Silvius S. Craig.
- Lea County

LOVINGTON—Herbert H. Gallatin.
- Lincoln County

CAPITAN—Enoch Cyril Price. CARRIZOZO—Robert T. Lueas.
- Luna County

DEMING—Samuel D. Swope; Earle LeGrand Ward.
- McKinley County

CROWN POINT—Davis Herren. GALLUP—Dwight Allison; William Brackett Cantrell; Armstrong Cooper Pratt.
- Mora County

MILLS—Orville Bruce Moon.
- Otero County

ALAMOGORDO—Jesse George Holmes. MESCALERO—John Richard Callaway.
- Rio Arriba County

PARKVIEW—Harry Dickey Sewell; George Lewis Wyekoff.
- Roosevelt County

ELIDA—Burris Barton McGee. PORTALES—John Lehr Reid.
- Sandoval County

BERNALILLO—John Emery Hastings.
- San Juan County

FARMINGTON—George Whittenhal Sammons.
- San Miguel County

EAST LAS VEGAS—William P. Mills.
- Santa Fé County

SANTA FÉ—Frank Joseph Erdlitz; Frank Eustace Mera. SPRINGER—Louis Floyd Murray.
- Socorro County

RESERVE—Howe King Riddle.
- Taos County

TAOS—Thomas Paul Martin.
- Union County

CLAYTON—Denna Cree Daniel; Sidney Manson Edmondson; John Wesley Muir. DEDMAN—Anthony Ernest Lankford. DES MOINES—William Gilbert Bassett.

MEDICAL SOCIETY OF THE STATE OF
NEW YORK

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Councilor Districts and Officers

First District.—Dutchess, New York, Richmond, Orange, Rockland and Westchester counties.
Second District.—Kings, Queens-Nassau and Suffolk counties. Arthur H. Terry, Councilor, Patchogue.
Third District.—Albany, Greene, Rensselaer, Schoharie, Columbia, Sullivan and Ulster counties. James P. Marsh, Councilor, Troy.

Fourth District.—Clinton, Essex, Franklin, Fulton, Montgomery, St. Lawrence, Saratoga, Schenectady, Warren and Washington counties. Lew H. Finch, Councilor, Amsterdam.
Fifth District.—Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga and Oswego counties. James F. McCarr, Councilor, Watertown.
Sixth District.—Broome, Chenango, Cortland, Delaware, Chemung, Otsego, Schuyler, Steuben, Tioga and Tompkins counties. Arthur W. Booth, Councilor, Elmira.
Seventh District.—Cayuga, Livingston, Monroe, Ontario, Seneca, Wayne and Yates counties. W. Mortimer Brown, Councilor, Rochester.
Eighth District.—Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans and Wyoming counties. Albert T. Lytle, Councilor, Buffalo.

NEW YORK									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
¹ Albany.....	527	....	187,258	684	273	6	167	210	212
Allegany.....	1,047	17.4	41,412	690	60	1	23	29	42
² Broome.....	705	4.6	95,450	623	153	8	62	108	92
Cattaraugus...	1,343	14.4	75,535	812	93	3	42	59	54
³ Cayuga.....	703	7.1	70,261	706	99	8	27	64	65
⁴ Chautauqua...	1,069	7.1	121,570	805	151	2	57	98	102
⁵ Chemung.....	407	4.4	60,736	660	92	7	41	61	56
Chenango.....	894	14.9	37,083	618	60	3	24	32	38
Clinton.....	1,049	19.8	48,815	921	53	..	22	35	38
Columbia.....	644	10.9	44,294	750	59	1	18	35	34
Cortland.....	503	11.2	30,469	677	45	..	12	23	37
Delaware.....	1,449	26.3	46,166	839	55	..	15	36	26
⁶ Dutchess.....	806	5.3	95,904	626	153	11	81	100	106
⁷ Erie.....	1,034	1.1	598,549	646	926	41	471	682	651
Essex.....	1,836	36.7	35,466	709	50	1	33	35	32
Franklin.....	1,678	26.6	47,808	758	63	1	39	46	42
Fulton.....	516	8.5	46,068	755	61	1	31	44	40
Genesee.....	496	10.3	41,963	874	48	3	22	31	37
Greene.....	643	17.9	30,214	839	36	..	18	21	23
Hamilton.....	1,700	242.8	4,539	648	7	1	5	5	3
Herkimer.....	1,459	16.4	67,260	755	89	4	42	63	59
⁸ Jefferson.....	1,274	9.7	82,036	626	131	4	41	80	72
⁹ Kings.....	70	0.03	1,798,513	762	2,360	98	1,294	1,912	904
Lewis.....	1,270	52.9	26,393	1,099	24	..	9	13	14
Livingston....	631	8.9	38,752	545	71	6	28	32	50
Madison.....	650	11.0	42,729	724	59	1	15	37	36
¹⁰ Monroe.....	663	1.3	339,157	654	518	30	270	382	351
¹¹ Montgomery...	398	6.1	64,924	998	65	3	28	45	53
Nassau.....	274	2.1	130,196	993	131	7	70	97	73
New York.....	63	0.01	2,137,747	335	6,379	235	3,891	5,206	3,077
¹³ Niagara.....	522	4.2	115,263	929	124	..	60	94	73
¹⁴ Oneida.....	1,250	5.0	178,860	715	250	10	127	184	130
¹⁵ Onondaga.....	781	1.9	228,307	546	418	18	176	301	223
Ontario.....	649	6.9	55,580	591	94	3	34	60	73
Orange.....	834	5.1	124,863	693	180	10	82	124	100
Orleans.....	396	9.6	34,698	846	41	2	14	22	27
Oswego.....	966	11.6	77,662	935	83	3	38	55	58
Otsego.....	1,009	12.4	49,069	605	81	1	24	50	47
Putnam.....	233	13.7	15,307	900	17	..	6	10	13
Queens.....	105	0.4	396,727	1,491	266	10	155	217	109
¹⁶ Rensselaer....	663	4.1	722,698	4,433	163	4	88	118	96
Richmond.....	48	0.4	98,634	921	107	5	70	90	59
Rockland.....	183	3.4	53,130	1,002	53	3	28	35	33
Saratoga.....	823	8.4	63,414	647	98	4	42	64	56
¹⁷ Schenectady....	206	6.9	123,355	4,111	30	..	85	113	110
Schoharie.....	647	17.0	23,855	627	38	1	13	22	20
Schuyler.....	336	13.4	14,004	560	25	..	10	14	18
Seneca.....	336	7.1	26,972	573	47	2	19	31	28
St. Lawrence...	2,701	23.5	90,813	789	115	3	38	72	71
Steuben.....	1,401	11.5	83,755	686	122	5	48	75	82
Suffolk.....	924	5.5	109,682	656	167	11	37	124	108
Sullivan.....	1,002	21.8	39,970	868	46	2	30	36	21
Tioga.....	520	11.8	25,624	582	44	1	13	27	23
Tompkins.....	476	5.5	37,708	438	86	8	31	54	63
Ulster.....	1,140	12.0	94,212	991	95	3	32	56	63
Warren.....	879	12.8	33,887	555	61	2	25	45	35
Washington...	837	15.8	49,349	931	53	..	19	31	40
Wayne.....	599	9.1	54,816	830	66	..	20	40	38
¹⁸ Westchester....	448	1.0	357,473	780	458	18	225	362	284
Wyoming.....	601	11.1	33,495	620	54	3	15	31	37
Yates.....	343	11.1	18,922	610	31	1	10	22	22
Totals.....	47,661	3.0	9,321,431	593	15,877	619	8,552	12,255	8,324

1. Includes Albany, population 111,077; physicians 249 [M.R.C. 68].
2. Includes Binghamton, population 55,791; physicians 107 [M.R.C. 14].
3. Includes Auburn, population 37,823; physicians 61 [M.R.C. 8].
4. Includes Jamestown, population 40,415; physicians 48 [M.R.C. 7].
5. Includes Elmira, population 41,278; physicians 79 [M.R.C. 12].
6. Includes Poughkeepsie, population 34,656; physicians 74 [M.R.C. 17].
7. Includes Buffalo, population 475,781; physicians 857 [M.R.C. 123].
8. Includes Watertown, population 30,404; physicians 52 [M.R.C. 5].
9. Includes Brooklyn, population 2,330,183; physicians 2,358 [M.R.C. 372].
10. Includes Rochester, population 264,714; physicians 461 [M.R.C. 77].
11. Includes Amsterdam, population 38,043; physicians 39 [M.R.C. 4].
12. Includes Niagara Falls, population 47,058; physicians 49 [M.R.C. 10].
13. Includes Utica, population 89,272; physicians 150 [M.R.C. 14].
14. Includes Syracuse, population 158,514; physicians 336 [M.R.C. 35].
15. Includes Troy, population 73,094; physicians 116 [M.R.C. 21].
16. Includes Schenectady, population 103,774; physicians 124 [M.R.C. 23].
17. Includes Mt. Vernon, population 40,291; physicians 62 [M.R.C. 10].
18. Includes New Rochelle, population 39,192; physicians 53 [M.R.C. 14], also Yonkers, population 103,666; physicians 105 [M.R.C. 21].

HONOR ROLL

Albany County

ALBANY—Stanley Earl Alderson; William Dewey Allen; Jas. M. Archibald; Milton Aronowitz; Chas. L. Bailey; John Charles Brown; Leroy Joseph Butler; Byron Edwin Chapman; Harold Duncan Coehraue;

Erastus Corning; Leon Chas. Cote; Frederick Joseph Cox; Joseph A. Cox; Stephen Horace Curtis.
Charles Edmund Davis; Louis Joseph De Russo; Arthur Mantby McKinson; Thobald Frederick Doescher; Joseph Levi Donhauser; Malcol Douglas; Edwin Lyon Draper; Loyal Linsey Dunlop.
Lawrence Joseph Early; Arthur Wells Elting; Otto Alois Faust; Emanuel Martin Freund.
Louis H. Gaus; Wm. Edwin Gazeley; John Giffen; Lemuel Whittington Gorham; Clarence Flack Graham.
Philip C. Hacker; Paul Tompkins Harper; Harold Colvin Haviland; Clinton Benjamin Hawn; John Edward Heslin; William Patrick Howard.
Thomas W. Jenkins; Harry Vincent Judge; James Henry Keeling; Wm. Geo. Keens.
Joseph Aloysius Lanahan; Joseph S. Lawrence; Harry Judson Lipes; Howard Eaton Lomax.
Andrew MacFarlane; Robert A. MacTaggart; Clarence Edmonds Mul-
us; Joseph Patrick O'Brien.
George W. Papen Jr.; Harold Artemus Peck; Abraham Max Rabiner;
George Bradford Randall; John Joseph Randall; Theodore D. Reed;
Conrad Aloysius Rissberger.
Henry L. K. Shaw; Byron Gray Shults; John Archibald Smith; John
Ernest Southwell.
H. K. Tebbutt Jr.; Ralph Waldo Turner; Edgar Albert Vander Veer;
mes Newell Vander Veer.
Howard Lull Van Winkle; William James Wansboro; Arthur Hastings
Heeler; Linsly Rudd Williams.
COHOES—Wallace Jos. E. Aubry; Joseph Charles Edward Daunais;
Richard Patrick Doody; Raoul Albert Herbert; Aloysius Dewitt Maby;
mes Henry Mitchell Jr.; Leslie Boyd Seaport; Arthur Edgar Smith;
Clarence Howarth White. DELMAR—Thomas Milton Holmes. GUIL-
ERLAND CENTER—Frank Hazelett Hurst. RAVENA—James Edward
Aloney. SOUTH BETHLEHEM—Frank A. Augur. WATERVLIET—
as. Augustus Krauss. WEST ALBANY—Earl Wayne Wilkins.

Allegheny County

ALFRED—Emerson Winfred Ayars. BELMONT—Ralph Elmer Robin-
n. BOLIVAR—Laurence Hackett. CANASERAGE—Carl Geo. Schwan.
ERES—Frederick John Pfisterer. CUBA—Theron Blain Bond. FRIEND-
HIP—Harold MacMurray Johnson. RUSHFORD—Hanford Kendall
rdy. WELLSVILLE—Ray M. Eaton; Frederick Eugene McCarty.

Broome County

BINGHAMTON—Samuel M. Allerton; Carleton T. Bagley; Raymond
ernand Bell; Myer Sol. Bloom; John D. Bowen; John Groat Corson;
on M. Hooks; Harry Isaac Johnston; Ulysses Silver Kann; Sylvanus
mes Nunn; Frank W. Sears; Charles Anthony Squires. ENDICOTT—
eight Guilford Dudley; James Santee McNett. JOHNSON CITY—John
alter Farrell. PORT DICKINSON—George Jesse Ganow. UNION—
y Holly Humphrey.
BINGHAMPTON—Daniel C. O'Neil; Lester E. Sanford.

Cattaraugus County

ALLEGANY—Jay Gould. DELEVAN—Myron Everett Fisher. EAST
NDOLPH—James Edgar Crossman. GOWANDA—Herman Walter
nson; Ira Warner Livermore; Frederick Perlee Schenkelberger.
EAN—James Jay Clark; Clarence Albert Greenleaf; John Alexander
nson Jr.; Raymond Bartlett Morris; Benjamin Van Campen.
RRYSBURG—Arthur Burt Graves. SALAMANCA—John Conrad
effler; Charles Arthur Lawler; James Almon Taggart; George Beck-
Ubel.
ALLEGHENY—Eugene Daniel Quinlan.
OLEAN—Donald Angus MacDuffie.

Cayuga County

AUBURN—Francis Joseph Bennett; Eugene Napoleon Boudreau; John
rdsworth Copeland; Raymond Fleming Johnson; Wm. Henry Kober Jr.;
b Roy McCully; Forest Ray Mildren; Maxwell Kemper Willoughby.
EDSPORT—Clinton Eddy Goodwin.

Chautauqua County

CASSADAGA—Henry Salem Edmunds. DUNKIRK—George R. Irving;
ary Jos. Meister; Norman Leo Sheene; Walter Hall Vosburg; John
Charles Webster. FREDONIA—Roy John Juhre; Harry Elmer Wheelock.
EWSBURG—Francis John McCullo. JAMESTOWN—Frank Perry
odwin; Floyd Warner Hayes; Walter G. Hayward; Edward Laban
zeltine; Bergen Fred Ilston; Milton John Johnson; William Miller
s. KENNEDY—George William Batt. RIPLEY—Paul Sterrett Per-
s. SHERMAN—Guy Granger; Harold Elliott Shaver. WESTFIELD—
ini Julius Busck; Roswell Fellows Foster.

Chemung County

LMIRA—Floyd Pinckney Breese; Charles Hendry Erway; Arthur
r Glover; Floyd Harding Jones; Louis Eugene McCanna; Edgar
rden Phillips; Stewart Stow Piper; Daniel Edgar Pugh; Arthur C.
th; Donald Joseph Tilton; Raymond A. Turnbull; Bert Grant Voor-
s. VAN ETEN—Benjamin Franklin Colegrove.

Chenango County

UILFORD—Blinn A. Buell. LINCKLAEN—Frederick Dudley Keppel.
RWICH—Edwin Fred Gibson; William Edward Hartigan. OXFORD—
ton Alexander Hall. SHERBURNE—Archibald K. Benedict.
FRNA—Leroy Dimore Soper. SOUTH OTSELIC—Jaynes Mott Crumb;
hibald Thomas Perkins.

Clinton County

ANNEMORA—Harold Russell Robert. PLATTSBURG—Wilmarth S.
k; Le Roy Walter Hyde; Thomas A. Rogers; Ira Alonzo Rowison;
ard Cornelius Thompson. STANDISH—Fred Vosburgh.

Columbia County

UDSON—Otis Howard Bradley; John Lounsbury Edwards; Henry
stian Galster. KINDERHOOK—Nathan David Garnsey. NEW LEB-
ON—Nathaniel Preston Brooks. OLD CHATHAM—Hamilton Munn
thworth. PHILMONT—John Christian Knapp. STOTTVILLE—Jere-
i West. VALATIE—Asa Redmond Dimock.

Cortland County

ORTLAND—James J. Parsons; Daniel Robert Reilly. VIRGIL—John
ry Evans.

Delaware County

ELIH—Grover Asa Silliman. DOWNSVILLE—Fred De Grande Wil-
SIDNEY—Ralph Henry Loomis.

Dutchess County

EACON—Leo Charles Dubois; Joseph Waldron Moore; George T.
; George Aaron Sharp. LAGRANGEVILLE—Ralph Grace. MILL-

BROOK—Vincent Valens McCabe. MILLERTON—Geo. Roger Dempsey.
POUGHKEEPSIE—David T. Brewster Jr.; Grady Sebastian Clinkscales;
Lawrence Edward Cotter; Charles D. Cromwell; St. Clair Terra Darden;
Howard Wilcox Davis; Percy Loraine Dodge; James Taylor Harrington;
Clyde Lipsey McNell; Frederick Williams Parsons; Everett D. Plass;
Arthur Grant Rodgers Jr.; Raymond Sanderson; Archibald Wilson Thom-
son; Lee Rose Tighe; Claude Evans Tubb; Sidney Chas. Vermilyea.
STANFORDVILLE—John Newton Boyce.
WAPPINGER FALLS—Rowland Parker Blythe.

Erie County

BUFFALO—Francis Argus; Lloyd Kenneth Babcock; Antonio L.
Barone; Peter Joseph Barone; Samuel Barone; Charles Joseph Barone;
George Cosimo Barone; Herbert Henry Bauckus; Lynn Staley Beals;
George Adam Becker; Edwin L. Beebee; Lawrence Melvin Belzer; A. L.
Benedict; Maynard Gilmore Bensley; Joseph Barton Betts; Lynn Morton
Bolton; Joseph Patrick Brennan; Jos. Brumberg; Patrick H. J. Buckley;
Boleslaw M. Bukowski; Lorenzo Burrows Jr.
O. J. Case; Marshall Clinton; Julius Y. Cohen; Raymond Cleveland
Conklin; George Ferdinand Cott; Harold Wm. Culbertson.
David M. Davis; Robert Edward DeCew; Richard Newnham DeNiord;
Robert Paul Dobbie; Timothy Francis Donovan; Henry DeWitt Duryea.
Earl Leo Eaton; George J. Eckel; Albert Richard Ellison; John Fitz-
gerald Fairbairn; Lee Francis Masten; Carl Grover Frost; Edward
Lysander Frost.

Albert August Gartner; Harvey Russell Gaylord; George John Geisler;
Milton Harry Goldberg; John C. Grabau; Irving Franklin Gram; Samuel
Grienstein; John George Grotz.

Francis John Haley; George McK. Hall; Barton E. Hauenstein; Ray-
mond Hensel; Wm. Oakley Hill; Robert W. Hinds.

Harold Bartlett Johnson; William Harry Jones; Daniel Jung; Russell
Stewart Kidder; Robert King; Chas. Gowen B. Klophe; Clarence Perry
Kummer; Frank Kruse; Leon Sebastian Kurek.

Jos. Peter La Duca; Charles W. Lane; Sabrater C. Lojacono; Charles
Edward Long; Frank Henry Long; Earl Henry Lormor; William Chis-
holm Lucas.

Walter Louis Machemer; Wallace F. MacNaughton; Baldwin Mann;
Herman Frank May; William Lee McCarty; Arthur Everett McCarthy;
Harold James McDonald; Hugh Chauncey McDowell; Descum Clayton
McKenney; Michael James McMahon; Roland Otto Meisenbach; Edward
Frederick Meister; John Anthony Metzen Jr.; Rudolph C. Miller; Vincent
Chas. Moscato; Jerome Aloysius Murphy.

Joseph Aloysius Nowicki; Oscar J. Oberkircher; Geo. Melvin Oppen-
mann; William Ostrow; Frederick Wm. Palmer; Charles C. Panzarella;
Harold Alexander Patterson; William Ward Plummer; Frank Nelson
Potts; Thomas H. Powick; Leon Hastings Prior.

Nelson Gorham Russell; Leo Marks Sachs; Arthur C. Schaefer;
Charles Simon; Herbert Alexander Smith; Edward Archibald Southall;
Frederick Edward Sperry; John Gurney Stowe; Fredk. Ettore Strozzi;
Jas. Cornelius Sullivan.

Earl Wm. Thoma; Carl Tompkins; Haworth R. Traver; Alfred Herbert
Vogt; Frank Gebhard Walz; John Henry Watson; Harry Milton Weed;
Grover Wm. Wende; Carlton E. Wertz; Hiram Samuel Yellen. COLDEN
—Warren Z. Dell. HAMBURG—Amos John Minkel. COLLINS—Herman
Lester Raymond. LACKAWANNA—Harry Alexander Scott; Kenneth
Allan Smith; Edward A. Twist. LANCASTER—Clarence Herbert Mackey.
SPRINGVILLE—Gregory Everett Stanbro. TONAWANDA—Howard
Cousins Fairbanks; Archibald William Thompson. WILLIAMSVILLE—
Harry Bestow Huver.

BUFFALO—John Cunning Brady; Frederick William Filsinger;
Urban Andrew Fischer; Harry Joseph Hammond; Thomas Henry
McKee.

LACKAWANNA—Roy B. Woodward.

Essex County

AU SABLE FORKS—George Jacob Culver. KEESEVILLE—Frank M.
Holcombe. PT. HENRY—Edward S. Smith. WESTPORT—John A. Battin.

Franklin County

BURKE—Frank Floyd Finney. CHATEAUGAY—Leonard Pearsons
Sprague. MALONE—Benjamin Roy Allison. SARANAC LAKE—Edward
Newman Packard Jr.; James Woods Price; Willard Burr Soper; Francis
Berger Trudeau.

Fulton County

GLOVERSVILLE—Homer H. Oaksford; Charles E. E. Pannaci; Jos.
Leo Ward; Harry Whitney Wheaton. JOHNSTOWN—Frank Mathias
Neuendorf; Michael Edward Nolan.

Genesee County

BATAVIA—Anthony Joseph Greco; Clarence Bentley Gould; Ward
Beecher Manchester; Elmer Elwell Owen; Henry Morris Spofford.
BYRON—Edgar Bieber.

Greene County

CATSKILL—Charles Frederick Bove. URLTON—Stanley M. King.
WEST COXSACKIE—James Israel Schoonmaker.

Herkimer County

DOLGEVILLE—Fred M. Barney. HERKIMER—Fredric Stephen Cole;
Ralph Pyne Huyck; Floyd Hazard Moore; Howard Casper Murray.
ILION—William Knowlton Johnson; Lewis P. Jones; Morris Head New-
ton. LITTLE FALLS—John Daniel Miller. MOHAWK—Herbert Henry
Williams. NEWPORT—Arthur Thomas Davis.

Jefferson County

ALEXANDRIA BAY—Louis John Hartman. CAPE VINCENT—Norman
P. Bentley. CLAYTON—William James Ross. EVANS MILLS—Claude
Erastus Chapin. LAFARGEVILLE—Arthur Lewis Tinkess. PHILADEL-
PHIA—Roy Wesley Bury. WATERTOWN—Maurice Daniel Barnette;
Harlow G. Farmer; Murray MacGregor Gardner; Jesse R. Pawling; Page
Earl Thornhill.

Kings County

BROOKLYN—Stephen H. Ackerman Jr.; Harry Agris; Alexander L.
Anderson; Robert Burns Anderson; Barnett Aronson; Gilbert Alonzo
Ashmun.

Joseph Sylvester Baldwin; Robert F. Barber; Samuel P. Bartley;
Joseph Lee Behan; Harold Kennedy Bell; H. Muhlenberg Bergamini;
Edward Leo Berger; Louis Berlin; William Guy Berlucci; Benjamin
Maurice Bernstein; James E. Bernstein; Phillip Franta Bernstein;
William Henry Best; Julius C. Bierwirth; Jas. Abruzzo Bilello; Murtha Paul
Blaber; Howard Thos. Blahr; Julius Martin Blank; Samuel Jos. Blu-
menthal; Julius B. Boehn; Robert Bogan; Henry Benjamin Boley;
Valentine Vincent Bourke; Gustave August Broun; Everett Clifton Bren-
nand; William B. Brinsmade; Bertram Porter Brown; Charles A. Brown;
Francis Xavier Brown; Waldemar Theodore Browne; Joseph M. L. Bruno;

Hugh Max Bullard; Henry Alden Bunker; John Henry Burke; John Bernardino Byrne Jr.

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John Baptist D'Albora; John F. Daly; Frederick Damrau; Hyman Danish; Saml. Danzer; John E. Daugherty; Wilburt Cornell Davison; Prosper Hector Degregori; Beeckman J. Delatour; Henry Beeckman Delatour; Joseph Carlisle De Vries; Thurston H. Dexter; Alfredo DeYoanna; Savario DeYoanna; John Francis Dooling; James Francis Dougherty; Henry Cecil Drew; Herbert Sperry DuCret; Chester Ford Duryea.

Charles Eastmond; Adam Eberle; Lowell Brown Eckerson; Wilfrid Vincent Egan; Wm. Murray Ennis; Irving Epstein; John Leonard Everlof. Peter Gracie Fagone; Henry Joseph Feaster; Henry M. Feinblatt; Laurant Gustave Feiner; Harry Feldman; A. Arthur Feller; Manning Cromwell Field; Richard Michell Field; Carl O. Fischer; Henry Andrew Fisher; Samuel Lloyd Fisher; Edwin Howe Fiske; James Thomas Flanagan; William Gordon Flickinger; John Henry Flynn; Merrill Newton Foote; Alexander McGowin Foshee; Cecil Richard Frank; George Freiman.

Ralph Howard Garlick; Gordon Gibson; Donald Maurice Gildersleeve; Chas. R. Gill; Albert Edward Gilmartin; William Schaffer Glenn Jr.; Louis Gold; Louis Goldfort; Charles Goldman; Samuel Goldman; Emanuel Goldstein; Eugene H. Goodfellow; Anslow Allen Gordon Jr.; Abraham Louis Gottlieb; Leon J. Grant; Irving Gray; Edward Everett Green; Isaac Ernest Greenberg; Lewis Grenberg; Herman Grossman.

Henry Harris Haft; Cornelius Edw. Hagan; James T. Hanan; Frank Harnden; Harry Cleveland Harris; Isadore Daniel Haskell; John Joseph Hauff; Charles Hunter Heacock; Samuel Hecht; Otto Hugo Heffter; Harry Howard Hemstreet; George Edward Henderson; Solomon Hendleman; Emilio Leopold Hergert; Frank Richard Herriman; William Gettier Herrman; Alphonse Jos. L. Hertel; Llewellyn Evans Hetrick; Jacob Ellis Hodcs; George Francis Hogan; Nelson Miles Holden; John C. Holzberger Jr.; George Ralph Horton; Henry T. Hotchkiss; Percy F. Houghton; Otto Von Huffman.

Alfred Herbert Jaason; Benjamin Jablous; Leo Jacobs; Morris Jacoff; Arthur R. Jarrett; Kent Wood Jarvis; Francis Bates Jennings; John Edward Jennings; Everett Colgate Jessup.

Carl Kaplan; Joseph Dominic Kelly; Frank Henry Knight; Abraham Kogut; George Kornfeld; Morris Ted Koven; Geo. Samuel Kramer; Samuel Kraushor; David Dudley Krupp.

William Watson Laing; Herbert Leonard Langer; Irving David Lau-deutscher; Carlton Anderson Lee; John A. Lee; Harry Michael Lefkowitz; Phillip Lehman; Leon Edward Lesser; Samuel Kantor Levy; Mortimer Harold Linden; John Lovejoy Linn; Harry Lipston; William H. Lohman; John H. Long; Jos. Francis Long; James Francis Xavier Loomam; Joseph T. Loughlin; Thomas A. Lynch; John J. Lyons.

John C. MacEvitt; William Lawrence Madden; Anthony Mangiaracino; Frank Joseph Mangold; Albert Carlyle Margulies; Edward Hugh McCaffrey; Chas. Francis McCarty; Thos. H. McClintock; Walter Arlington McCullough; Geo. Gerard McElvare; Jos. Lee McGoldrick; Donald Esterbrook McKenna; Hector Jas. McNeile; Thos. Donald McRossie; John Francis Wallace Meagher; Henry E. Meleney; Albert A. Mendez; Max Mensch; Franklyn Herman Miller; Sutherland Miller; Walter Moehle; Cesare Mondini; William Moitrier; Francis W. Moore; Joseph L. Moore; Walter Van Olinda Moore; Henry Monroe Moses; Otto Lewis Mulot.

William Henry Nafis; Charles Dwight Napier; Abraham Nemser; Harold Nexson; Howard LeRoy Norton.

Arthur Jos. O'Connor; Charles George O'Connor; Karl Osterhaus; Sidney Douglas Palmer; Samuel Parness; Russell Cisney Parson; David Pashman; Harry Hopeman Patrie; Thomas Francis Patterson; Richard Sebastian Pearse; Samuel Perlman; Jacob John Pfeifer; William Gray Phillips Jr.; Arthur H. Pierson; James T. Pilcher; Harry Plotz; George A. Powers; Wm. Kent Pudney; Theo. Louis Pulvermacher.

John A. Quell; John Randolph Quinn; Benjamin Rabbiner; William Raim; Abraham Ravick; Harold Vincent Raycroft; Floyd Grendon Reed; Thomas Moreland Reid Jr.; George Ballantyn Reitz; Richard Anthony Rendich; Peter Augustus Reque; Max Resnicoff; Frank H. Richardson; Alfred A. Richman; Francis Bertrand Ring; Daniel Rutgers Robert; Dudley D. Roberts; Ransom S. Robertson; Hugh A. Rodden; Joseph Rosenfeld; Joseph Daniel Rosenthal; Herman Rubin; Jacques Rushmore; Charles Evelyn Rynd.

Edward Aaron Saltzman; Solomon Jos. Sambur; Geo. Frank Sammis; Moses Sandler; Ernest Herman Saniter; August Matern Sartorius; Ernest Ludwig Schaefer; Henry Louis Schelling; Maxwell Scher; Ernest Schilling; Ivan Michael Schneible; Irving Solon Schneikraut; Abraham Schultz; Robert H. Scott; Jacob Joseph Seidenstein; Richard Frank Seidensticker; Fedor Leo Senger; Isadore Edwin Shack; Morris Earl Leonard Shapiro; Clayton Sharp; Walter A. Sherwood; Francis Milton Shockley; Harold William Shutter; Ferdinand Francis Siegel; Max Kaufman Silverman; Alexander Smith Sim; William Edward Skidmore; Arthur W. Slee; Henry B. Smith; James Washington Smith; Joseph Wheeler Smith Jr.; Henry Snow Jr.; Samuel Solovei; Jos. James Sorkin; Thomas Bray Spence; Edgar Spiegel; William H. Steers; Joseph Benjamin Stenback; Milton Irving Strahl; Henry William Straus; Jos. Geo. Strickler; Samuel Strumwasser; Raymond Peter Sullivan; Thos. Jos. Sullivan; Irving Emerson Sumner; Henry Alexander Sussman.

Robert Willis Tate; John Mortimer Taylor; Wm. Henry Taylor; Hyman Irving Teperson; Alec Nicol Thomson; Samuel Topkins; Harold Augustus Traynor; Hubert King Turley.

Herbert Moffit Vann; Franklin Brush Van Wart; Ernest Marsters Vaughan; John De Cesare Verilli; Archibald Albert Walker; John Woodward Walther; Joseph Francis Ward; Robert Grover Ward; Frederick Washnitzer; James Watt; James Elwood Weatherford; Nathan Weinberg; Martin Weinberger; Bernath Weiss; Samuel Weiss; Thos. Franklin Welton; Raeburn James Wharton; Byron Dyson White; Edward L. Whittemore; Arthur Wildman; Raphael Wolfe; William L. Wolfson; Jay G. Wood; Lucius Judson Woodworth; William C. Woolsey.

Charles Francis Yerdon; Frederic David Zeman; William Zuckerman; Samuel Zwerling.

BROOKLYN—Antonio Arbona; Robert Bailin; Leo Faske; William H. Field; Royale Hamilton Fowler; Meyer Grollman; Adolph Samuel Kramer; Anthony Wayne Martin Marino; Maurice Morrison; Frank Moskowitz; Charles Francis Nicol; Maurice Rosier; Aaron Roth; George W. Ruger; George Joseph Signorelli; William Sidney Smith; Joseph Tenopyr; Morris Weissberg; Leo Zimbaum.

Lewis County

CROGHAN—Paul Henry Von Zierolshofen. LOWVILLE—Cyrus Whitney Culver. WEST LEYDEN—Charles Adelbert Perry.

Livingston County

AVON—Charles Guy Swan. DANSVILLE—Clark Vernon Fairbanks. GENESEO—Charles I. Newton. LIVENIA—Vernon Leslie Bishop. NUNDA—William Erwin Diefenbach. SONYEA—Elias Cecil Fischbein; Charles Aubrey Joy; James Frederick Munson. YORK—Benj. Harrison Dike.

Madison County

CANASTOTA—Samuel T. Barton; Calvert Martin Deforest; Hermann Gustav Germer; Earl Chester Holden. MADISON—Arthur Joseph Forward. ONEIDA—Robert Lewis Crockett; Geo. Flamm; George Francis Mills; Otto Pfaff. POOLVILLE—Clyde Danford Oatman.

Monroe County

FAIRPORT—William Henry Ferrier; George S. Price. HILTON—Walton Hovey. ROCHESTER—Max Alonzo Almy; Frank B. Baldwin; Leon James Barber; Edmund C. Boddy; Anthony Bondi; Charles O. Boswell; John Ruskin Bradley; Raymond John Brown.

Michael Lester Casey; Alfred F. Cassebeer; Milton Chapman; Leighton Randolph Cornman; Joseph Richard Culklin.

Sol Charles Davidson; James Clement Davis; Michael Richard De Vita; Raymond E. Elliott; William V. Ewers.

Ralph Roswell Fitch; James Murray Flynn; John Denison Fowler. George H. Gage; Frederick Joseph Garlick; George Washington Goler; Philip Gordon; Thomas John Goundry; Corden Thorne Graham.

Edward L. Hanes; Clayton Kendall Haskell; Charles W. Hennington; Joseph P. Henry; Wallace Herriman; Charles L. Hinchey; James LeRoy Hondorf; Charles W. Hoyt; Joseph Edward Hurley.

Edwin Stanley Ingersoll; William B. Jones; Albert D. Kaiser; Franklin Austin Knope.

Abraham Lebendig; Macy Levi Lerner; William Alexander Macpherson; Charles Maggio; Henry Elsner Marks; David Ralph Melen; Alvah Strong Miller; Harry Adelbert Miller; Howard D. Mitchell.

Lawrence James Nacey; Francis J. O'Brien; William K. Otis.

Myron Botsford Palmer; Paul Martin Parker; William W. Percy; Norman Jos. Pfaff.

Hiram Randall; Arthur Patterson Reed; Ray D. Richman; Francis John Robinson; Samuel Hendricks Rosenthal.

Jacob Sachs; Harry Allen Sadden; William Waldo Schairer; Benjamin James Slater; Alexander Lorne Smith; Harold Launt St. John; Charles Clyde Sutter; John M. Swan.

Julius T. Waterman; Edward Tubbs Wentworth; William Richardson Woodbury; Warren Wooden; Harry Wooden; Harry Wronker; Chas. Carmelo Teresi.

SULLIVAN—Elsworth Eliot.

WEBSTER—James Byron Foster; William Stanton.

ROCHESTER—John C. Dessloch; Frank Sackett Schonover, Jr.

Montgomery County

AMSTERDAM—Earl Cunningham McCordy; Elmer H. Ormsby; Avery H. Sarno; William Henry Seward. FONDA—Edward Johnson Abbott. FORT PLAIN—Walter Clayton Fox. FULTONVILLE—Stephen John Henry Reed.

Nassau County

BALDWIN—Luther Holden Kice. FLORAL PARK—Thomas Franklin Davies. GLEN COVE—Frederick Bernstein; Harrison Greenlead Sloat. GREAT NECK—David Crawford Byrne Jr.; Alfred Harrison Parson. HEMPSTEAD—John Rutherford Herrick; Herman C. Russell; Herbert de Grove Sherman; Harold Askerman Storms. HICKSVILLE—Thomas Freundlich. OYSTER BAY—Rupert Vincent Gibbons. PLANDOME—Frederick Rodney Sanborn. ROCKVILLE CENTRE—Arthur Chalmers Martin. WESTBURY—George Stephen Silliman. WOODMERE—Edward Hamilton Pershing; Edwin D. Smith.

New York County

FORDHAM—Moody Warren Arnold. BLACKWELL ISLAND—Charles Elbridge Howe. NEW YORK CITY—Robert Abbe; Theodore Jacob Abbott; Frank Earl Adair; Leopold Adams; Herbert A. Adler; Fred H. Albee; Harry L. Alexander; Max Alexander; James S. Allan; Jere Augustus Allis; Louis M. Alofsin; Julius Elmer Alter; Emil Altman; Alexander Altschul; Harold L. Amoss; Warren E. Anderson; William Dulaney Anderson; Abraham Anesh; John Aquaro; Richard T. Atkins; Ralph Nordack Arnold; Morris Auslander; Dixon L. Austin; Charles Auer; Anthony Avata; William Lloyd Aycock; Edward L. Ayme; Reuete J. Azzari.

Daniel Bacharach; George Baehr; Pearce Bailey; William Bainbridge Valentine C. Baker; Harrie S. Baketel; Herman J. Ballen; Leon Banach; Garrett Nelson Bancker; Frederick W. Bancroft; Harold Barclay; J. C. Barker; Percival M. Barker; Cyril Barnert; Edmund J. Barnes; David Preswick Barr; Frederick James Barrett; Henry Smith Bartholomew; Jon N. Bassin; William Henry Baughman; Oscar Israel Baumann; Rex Warren Beard; Edwin Beer; Maurice B. Bender; Arthur Jerome Bendick; Edward L. Benjamin; Walter Bensei; Thomas Fabian Berberovich; Conrad Berens Jr.; James Michael Bernhard; James Wallace Beveridge; Henry Lambert Bibby; Alfred Morrell Bidwell; Lavis Arthur Binzman; Louis E. Bisch; Howes Bishop; Joseph Bidleman Bissell; Constantine Lawrence Bjerring; Donald Ray Black; Lowrie Wilson Blake; George Arthur Blakeslee; William Blancard; Edward Bleier; Charles D. Bles; Walter Parks Bliss; Raymond Gregg Blood; George Eason Blue; Ephraim Michael Bluestone; Aaron S. Blumgarten; Ernest P. Boas; Milton Bodenheimer; Joseph Bogan; John Joseph Boland; Herman J. Boldt; Louis A. Bonvincino; Lewis Samuel Booth; Maxwell Meyer Booxbaum; Kevorl Norses Bostanian; David Bovialrd; Jacob Bower; James Raymond Boyd; Louis Franklin Boyd; Donald Edward Brace; Edwin L. Brackney; Samuel Bradbury; John C. Bradner; Murray L. Brandt; Jacob Branower; Robert Emery Brennan; Charles Brewer; George E. Brewer; George F. Brewster; Harry Dwight Brewster; Walter M. Brickner; Thomas Francis Bridgman; Arthur Comstock Bright; Abraham Atlon Brill; Nathan Edwin Brill; Daniel Bradley Brinsmade; Benjamin Brod; Benjamin Brodie; William Charles Brons; Harlow Brooks; Morris Brooks; James Harvey Brothers; Douglas Brown; John Harris Brown; Samuel Brown; Everett Garne Brownell; Abram B. Bruner; William S. Bryant; James Lauderdale Bryson Jr.; Samuel Adolph Buchenholz; Robert E. Buckley; Kenneth Buckley; Jacob Buckstein; Carroll Gideon Bull; Carl A. Burdick; Sidne Rogers Burnap; Athel Campbell Burnham; William A. Burns; Jacob Burstan; Archibald Henry Busby; Charles Terry Butler; William Edwin Butler.

Joseph Turner Cabaniss; Attilio M. Caccini; George Francis Cahill; Eugene Wilson Caldwell; Alfred Franklin Calvelli; Eugene Cavelli; Charles Nicoll Bancker Camac; Ernest A. Campbell; James Alonzo Cam

bell; Royall Graves Cannaday; Robert Golden Carlin; Louis Carp; Eldridge Arthur Carpenter; Matthew L. Carr; John H. Carroll; John Dennis Carroll; William Edward Carroll; Robert Leon Carter; Edward T. Cary; Louis Casamajor; Stanmore Langford Cash; Henry Arthur Cassebeer; Michael Edward Cavallo; Charles E. Caverly Jr.; Russell L. Cecil; Louis Herbert Celler; Arthur Lloyd Chambers; Hugh Chaplin; Henry T. Chickerling; George Arthur Clark; Arthur Hutchins Cilley; Abram S. Clark; George Arthur Clark; James B. Clark; Francis J. Clemenger; Mather Cleveland; Edward G. Clifton; James Livingston Cobb; Gerhard Hutchinson Cocks; Henry C. Coe; Frederick Livingston Coerr; Ira Cohen; Jacob Cohen; Alfred E. Cohn; Mark Cohn; Sidney Cohn; John William Colbert; Carter S. Cole; Lewis Gregory Cole; Edward Martin Colie; Howard Dennis Collins; Joseph Collins; Ralph Colp; Henry Taylee Compton; John Edward Conboy; Woodhull Lee Condict; Dudley Steel Conley; Karl Albert Connell; Edmund McCollam Connely; Lewis Atterbury Conner; Joseph Edward Connery; John Francis Connors; George Washington Conterno; Thomas Edwin Cooney; Stratford F. Corbett; Robert Adwood Corbin; James Griffin Corneille; Herbert Corda de Vilar; Estan Cornwell; James Albert Corscaden; Edwin Gordon Cosby; Harry Austin Cossitt; Ralph Edward Costanzo; Gregory Joseph Costigan; Fritz Jarke Costen; John James Cotter; James F. Coughlan; Calvin Brewster Cullter; Cyrus Burns Craig; J. Kenneth Crandall; Stanley E. Crawford; Edward J. Cringle; Nathaniel Crost; Wilbur Fiske Crutchley; Robert Hinger Cumming; John Joseph Cunningham; William Francis Cunningham; John Francis Curtin; Edward Cussler; Condict Walker Cutler Jr.; Clarence Joseph D'Alton; Charles Goodliffe Darlington; Gustavus Cornellus Darlington; Thomas Darlington; William Darrach; Edward John Davin; Eugene Davis; Thomas George Davis; Hal McCluney Davison; Frederick Myers Dearborn; James Windsor Decker; Augustus Peter ellett; Charles Kenneth Deming; Edward B. Deuch; Wilfred Sidney emmis; Bernard Solomon Denzer; Richard Derby; Adolph G. De Sanctis; George P. De Tunq; Edmund Devel; Leon E. De Yoe; Frederick Henry eterich; Paul Albinus Dineen; Norman McLeod Dingman; Salvatore l Palma; Hubert Carlyle Dixon; Alphonse Raymond Dochez; Raymond anfield Dodd; Blake F. Donaldson; Joseph Edward Donnelly; William uy Doran; Alvah H. Doty; Jay W. Dounce; Ralph Leo Dourmashkin; Charles N. Dowd; Heman Laurence Dowd; George Draper; John W. raper; Eugene Du Bois; Guilford Swathel Dudley; Allison Harold ugdale; Edward K. Dunham; Henry Sage Dunning; John Hughes Dunngton; James G. Dunselth; John F. Dunselth; Howard Barham DuPuy; Herbert Alton Durham; Kirby Dwight; Fred Ward Eastman; Earl Henry erton; Frederick John Echeverria; Meyer M. Eckert; Leo Edelman; mini Ballinger Edgar; William Murray Edmonds; Walter Davis Edards; Louis John Robert Effler; Carl Frederick Eggers; Edward Percy eec; Max Einhorn; Moses Nathaniel Eisner; Russell D. Elliott; Thomas ederick Ellis; William James Elser; Hermann Elwyn; Haven Emerson; Herbert Waldo Emsheimer; William Engel; Joseph Engel Engelson; Robt Engl; Richard Bilderback Ernest Jr.; James Pendleton Erskine; Oscar muel Essenson; Beverly Van Warren Estill; Jesse Ettelson; Archibald ans; Sumner Everingham; Maurice Exlner.

James Louis Fagan; Henry Charles Falk; Constantine Phillips Fallar; Robert Spencer Familton; Warren Conrad Fargo; David L. Farley; Waldo attle Farnum; Richard Sumner Farr; John Raymond Farrell; Jacob thaniel Feinberg; Moses Murray Feinberg; Joseph Felsen; Albert rnett Ferguson; Paul Williams Fetzter; Silas Lorenzo Filkins; James Finnegan; Maximilian Charles Fischman; Harry Hyman Fisher; James rter Fiske; William Edward Fitch; Reginald Fitz; Albion J. Fitzald; James Joseph Fitzgerald; James Patrick Fitzgerald; Charles romer Fitzpatrick; Robert Flanders; Mark Lance Fleming; Simon xner; Edward Paul Flood; Rolfe Floyd; Edward Foote; William M. rd; Henry Hall Forbes; John Brooks Foster; Edmund P. Fowler; bert Henry Fowler; John Winston Fowlkes; Howard Fox; Robert den Frank; Spencer Franklin; John Frank Fraser; Nelson Robert asler; Frederick Clarence Freed; Moses Freiberg; Harold Herman eund; Maximilian Frick; Harry Fried; Simon Sydney Friedman; Wil- m Friedman; Claude A. Frink; Morris Louis Fuchs; Eugene Fuller; hard Roy Trumbull Furlong.

Linwood Malone Gable; Albert E. Gallant; Elias Gamrin; Abraham on Garbat; Joseph William Gardam; Faxton Eugene Gardner; Frederick mont Gates; Robert Finley Gayle Jr.; Samuel H. Geist; Lucian Arthur raci; James Belden Gere; John Carl Arpad Gerster; Frank R. Geyser; Charles L. Gibson; William B. Giles; William Davis Gill; James Frederic ette; David Botmer Gillam; Daniel Paul Gillespie; Curtenius Gillette; rraham Ginsburg; Joseph Glrsdansk; Arthur Francis Glaeser; Francis hur Glass; Morris Gleich; Fred Glucksman; Harry Frantz Goeckley; rold Gluck; Harry Henry Goldberg; Ralph Henry Goldberg Morris on Goldberger; Louis Leo Goldblatt; Ephraim Goldman; Theodore ilip Goldstein; William Goldstein; Joseph Golomb; Samuel Goodglick; old Myer Goodhart; Charles Goodman; Edwin Wilson Goodman; rman Goodman; Julius Gottesman; Charles Gottlieb; Everett W. Gould; ix Graboff; Roderick Vincent Grace; George Fay Gracey; Isidor Grad; es Francis Grattan; Charles P. Gray; Irving Greenberg; Berryma en Jr.; Samuel Dave Greenfield; Manas Sarkis Gregory; Charles ley Griffith Jr.; Lewis Theophilus Griffith; Leizer E. Grimberg; John dwin; J. Grimley; Parker A. Groff; Joel Grosner; Harold Gross; ald H. Grout; James Tayloe Gwathmay.

Joseph Haas; Edward W. Hall; David Horace Hallock; Robert Hurtin sey; Harbeck Halsted; Samuel Warren Hamilton; George Dempster ulen; William James Hammer; Frederick Porter Hammond; Graeme roe Hammond; Jesse Donald Hand; Franklyn Pierce Hannon; Wil- Campbell Hannon; Ejnar Hansen; Harry B. Hansen; Joseph Har- y; James Clement Harkins; Henry Harris; Henry Cameron Harris; mas Jefferson Harris; Max H. Harrison; Winifred Morgan Hartshorn; n Augustus Hartwell; William Henry Haskin; Thomas Wood Hastings; rles Elmer Haynes; Henry Willis Haynes; Harold R. Hays; John nels Healey; William Vincent Healey; Mark Francis Healy; Michael urd Healy; Reuben J. Held; Perry Lee Helmick; William Ted Hel- h; Edwin Henes Jr.; Charles Robert Henry; Harold Herman; Byron ermann; William Post Herrick; William Worthington Herrick; Albert wford Herring; Melvin G. Herzfeld; Ralph Halladay Hewitt; Charles on Heyd; Russell A. Hibbs; S. Mortimer Hill; John G. F. Hiss; es Morley Hitzrot; Austin Latting Hobbs; John William Hofman; lerie William Holcomb; Arthur Fenwick Holding; Edward Hollander; d Louis Hollenbeck; Richmond R. Holt; William Francis Homan; som S. Hooker; Joseph Gardner Hopkins; Joseph Carrigan Horan; o S. Horowicz; Joseph Horowitz; Lucius Wales Hotchkiss; John bbell Howard; Charles Francis Howland; Daniel James Hoyt; Ran- Edward Hoyt; Lester Mead Hubby; James Howard Huddleston Jr.; lam Lee Hudson; John Cecil Hughes; Michael E. Hughes; Harold es Hunt; James Peter Hunt; Wesley M. Hunt; Wellington Baker ley; Lefferts Hutton; Harold Thomas Hyman.

Imund Waldemar Ill; Charles Johnstone Imperatori; Charles G. Irish; Shepard Irvin; Harold Joseph Isaacs; Frederick Merwin Ives . opold Jachs; Henry Wirt Jackson; Alexander William Jacobs; Wil- Addison Jacques; Henry James; Henry M. James; James Walker

Jameson; Herman Herbert Janes; George W. Jean; Norburne Barnard Jenkins; Paul Butler Jenkins; Albert Oswald Jimenis; Lemuel Jefferson Johns; Edwin Martin Johnson; Harold Foote Johnson; Otis Hackett John- son; Howard C. Johnston; Marvin Fisher Jones; Walter Falke Jones; Harold Henry Joy.

Lipman Miller Kahn; Morris Hirsch Kahn; Samuel Kahn; Frederic Kammerer; Arthur M. Kane; Harry E. Kaplan; Abraham Kardiner; Norris Jacob Karpas; Harry Katz; Henry Katz; John J. H. Keating; Frederick Conrad Keller; William Alvan Kellogg; Robert Hayward Ken- nedy; John Stanley Kenney; James Manning Kent; John Michael Keyes; Edward F. Kilbane; Cleveland C. Kimball; Edward Ambrose King; Frank Albert King; Joseph Eggleston Johnston King; Jerome Kingsbury; Ralph Aloysius Klusella; Thomas Joseph Kirwin; George F. Klemann; Benjamin Schoenbrun Kline; Robert Phineas Knapp; Sig. Adolphus Knopf; George August Koenig; Jerome Ludwig Kohn; Samuel Joseph Kopetsky; Philip Korn; Warren Post Kortright; Arthur Furman Kraetzer; David Kramer; Walter Max Kraus; Geza Kremer; David Edward Kronman; Ernest Fred- erick Krug; Isidor Harry Kugel; Barney Maurice Kully; Monroe Brad- ford Kunstler; Moses Kupperman; Henry Robert Kutil.

Anthony Lacovara; William Sargent Ladd; Louis Julius Ladinski; Alexander Lambert; Robert A. Lambert; Herman Ferdinand Lampe; Thomas F. Lancer; Joseph Aaron Landy; Edward A. Lane; Morton Paul Lane; Charles Lewis Larkin; Oswald N. La Rotonda; Nils P. Larsen; Henry M. Larson; Willis W. Lasher; Berton Lattin; Thomas Eugene Lavelle; Frederick Manwaring Law; James Herbert Lawson; Joseph Arthur Lazarus; Isadore Maurice Leavy; Burton James Lee; Edward Wallace Lee; George Bolling Lee; John Carey Lee; Maurice Lenz; Joseph Leo; Veader Newton Leonard; Henry Rothschild Lesser; Sidney Philip Levey; Herman Levison; Max Abraham Levy; Ralph J. Levy; Robert Louis Levy; Leon Theodore Le Wald; Frank Waring Lewis Jr.; John Francis Lewis; Milton Smith Lewis; Howard Lilienthal; Asa Liggett Lin- coln; Joseph Morris Linett; Joseph Lintz; Walter Maynard Lippincott; Philip Joseph Lipsett; I. Edward Liss; Henry William Lloyd; Samuel Lloyd; Moses Lobsenz; Harry Loeb; Raymond Force Longacre; Warfield T. Longcope; Edward Julius Lorenze Jr.; David Lotringer; Young Cleve- land Lott; John J. Loughlin; Frederic William Loughran; Robert L. Loughran; Alfred Isadore Lowenthal; Thomas Claude Lowry; Thomas John Luby; William Henry Luckett; Abraham Lustgarten; Charles Lutz; Henry Hamilton Moore Lyle; Daniel Bernard Lynch; James Augustus Lynch; Jerome M. Lynch; Michael J. Lynch; Charles Willard Lynn; Edward Crane Lyon; John D. Lyttle.

John T. McCurdy; Joseph McDonald Jr.; Constantine J. MacGuire Jr.; John A. MacIsaac; George MacKenzie; Walter Fullarton Macklin; Robert Cooley Maddox; John S. Maeder; Thomas Francis Maher; Hugh William Mahon; Andrew Walter Mahoney; Adfur Eddy Maines; Alfred L. Malabre; Edward R. Maloney; Stuart Ellsworth Mandeville; Louis Theodore Mann; Gustave Randolph Manning; Abraham Louis Margolies; Thomas Meri- wether Marks; Arthur Harold Martin; Louis Goodman Martin; Thomas Aloysius Martin; Herman Martinson; Philip Marvel Jr.; Frederick R. Mason; Maurice S. Mathis; David Matus; George F. Maurier; Wm. R. May; Kenneth R. McAlpin; Malcomb McBurney; John Aloysius Mc- Cafferty; William Sharp McCann; Thomas Cresap McCoy; John Alexander McCreery; William P. McCrossin Jr.; Samuel McCullagh; Robert Francis McDonald; James Henry McDuffie Jr.; Charles Louis McEveety; Joseph L. McEvitt; Laurence D. McEvoy; William Landram McFarland; Peter Paul McGlade; John Francis McGovern Jr.; Junius Hardin McHenry; Rustin McIntosh; Clarence S. McKee; James F. McKernon; William C. McKnight; Frank McLean; Franklin Chalmers McLean; Marion Blaisdell McMillan; George Palmer McNeill Jr.; Donald Thomas McPhail; George W. McSweeney; Jerome Augustine McSweeney; Clarence A. McWilliams.

Theodore F. Mead; Fred Marlin Meader; John Ignatius Meagher; Gaetano Joseph Mecca; Harold D. Meeker; Harold Lee Meirhof; Frank Lemont Meleney; Samuel James Meltzer; Simon Mencher; Alfred Meyer; Leo Bernard Meyer; Monro A. Meyer; Willy Meyer; Saul Lawrence Mey- lackson; Leo Michaels; Otis Charles Michie; Seth Herbert Miles; Hudson Russell Miller; Julius Asher Miller; Milton Alexander Miller; Louis David Minsk; Charles B. J. Mittelstaedt; Edmund Christopher Mohr; Walter C. Montgomery; Claude Moore; John J. Moorhead; William A. Morgan; Aaron M. Morgenlander; Rufus Ayers Morison; Benjamin Francis Morowitz; Myron Louis Morris; Robert T. Morris; Frederick Holton Morrison; Albert Sidney Morrow; Sterne Morse; Harry Thomas Morton; John Jamieson Morton Jr.; Alexis V. Moschewitz; Aloysius M. Mul- holland; Albert Thomas Murphy; James Bumgardner Murphy; James D. Murphy; William Alexander Murphy; Alonzo Harrison Myers; Mervin C. Myerson; Magnus Jacob Myres.

James Franklin Nagle; Louis Herman Nahum; Charles Halpin Nam- mack; David Morris Natanson; Lewis Knode Neff; Ray Sextus Nelson; Maximilian Mark Nemser; Harold Neuho; David Newman; Thomas C. Newsom; Silvanus Blanchard Newton; Alexander Nicoll; William P. Nicolson Jr.; George Henry Noble Jr.; Benjamin Nochilla; Joseph Emerson Noll; George E. G. Norton.

William Henry Joseph O'Brien; Sylvester Francis O'Day; Edward E. O'Donnell; Charles Townsed Olcott; George Potts Olcott Jr.; Peter Kosciusko Olitsky; Jean Redman Oliver; Walter Wayland Oliver; John Charles O'Neill; Owen Roe O'Neill; Bernard Sutro Oppenheimer; Edgar Davidson Oppenheimer; Russell Henry Oppenheimer; William Herbert Ordway Jr.; Abe Orenstein; Manus Emmanuel Ornstein; Robert E. O'Rourke; Alfred Frank Orth; Rudolph Daniel Orth; Lawrence Joseph Osborne; Gilbert S. Osincup; Herman Ostrowsky; Harold Francis Owens.

George Delmont Pace; Royce Paddock; Samuel Paleg; Anthony M. Palermo; Comde de Saleg Pallen; Walter Walker Palmer; Harold Ensign Bennett Pardee; Irving Hotchkiss Pardee; William Barclay Parsons Jr.; Henry Salem Pascal; Vincenzo Pascale; Jehiel H. Patrick; Paul Meyer Patterson; George F. Patton; Marshall C. Pease Jr.; Charles Howard Peck; James Pederson; Edward W. Peet; Thomas Christian Peightal; Emil John Pellini; Russell Pemberton; John Punnett Peters Jr.; Abra- ham Benjamin Pensler; Gouverneur Morris Phelps; Carlin Phillips; Herman Byrol Phillips; Bruce Grotton Phillips; Charles Phillips; Otto Carl Pickhardt; Julius Pincus; Edward W. Pinkham; Irving Jonas Pinkus; Milton Woolley Platt; Daniel Poll; Sigmund Pollitzer; Louis Polon; Maurice Moses Pomeranz; Eugene Hillhouse Pool; Walter G. H. Pott; Robert Earl Pound; Thomas Hiff Price; Edgar Bacon Prout; Harry L. Purdy; Edwin Pyle.

Arthur Gardner Quinn; Morris Jacob Radin; John B. Rae; George Herbert Ramsey; Maurice Rashbaum; Percy Scott Rawls; Albert Amis Rayle; Mortimer Williams Raynor; William I. Reardon; Laurance David Redway; Linn Vander Hyden Reed; Theodore Byington Reed; Arthur Mitchell Reich; Ralph David Reid; Isaac Reitzfeld; Aloysius E. C. Ren- ner; Jacob Resnik; Robert P. Raymond; Wythe Munford Rhett; George Kremer Rhodes; Arthur Curtis Richards; George M. Richards; Orville Heber Richer; Sidney Loeb Rieser; Edward John Riley; Henry A. Riley; Hugh Augustine Riley; Frederick G. Ritchie; Charles Peter Roach; John Bourne Robertson; Oswald Hope Robertson; Bernard Leo Robins; Lewis Byrne Robinson; Edward Lewis Rochfort; John William Rock; Samuel William Rock; William Hayden Rockwell; Lester Brooks Rogers; Lester

Laurens Roos; Samuel Solomon Rosenfeld; Samuel Victor Rosenkranz; Benjamin Rosenthal; Nathan Rosenthal; Harold Lane Ross; Samuel Roth; Marcus Adolphus Rothschild; Max Ira Rozen; Fred Rovitti; Rodney Wallace Rowell; Jay Besson Rudolph; James Isaac Russell; Worthington Russell; William Butler Ryan Jr.

Louis Bertram Sachs; Lucius A. Salisbury; Thomas William Salmon; Alfred Victor Salomon; Emanuel Salwen; Roy Osborne Sample; Edwin Field Sampson; Theodore Michael Sanders; Charles Henry Sanford; Waldo Henry Sanford; Louis Frederick Sanmann; Henry Suydam Satterlee; Harry Clayton Saunders; Royal Albert Schaaf; Frederick William Schaeffer; Milton Schaele; Samuel William Schapira; Joseph Schapiro; George William Schenck; Henry Morris Scheer; Nathan Samuel Schiff; Henry William Schlesinger; Robert Clinton Schleussner; Harry Christian Schmeisser; Henry Keller Schneider; Albert John Scholl Jr.; Frederick Christian Schreiber; Max Schroeder; Daniel Schultheis; Harry C. W. Schultz-de-Brun; Ernest C. Schultze; Alfred Alexander Schwartz; Otto Maximilian Schwerdtfeger; William Joseph Scott; William Alfred Scruton; Charles Fleet Scudder; Galen Fisher Scudder; Isadore Seff; Robert E. Seibels; Harry Joseph Self; Jerome Selinger; John Louis Sengstack; Arnold Shamaskin; Robert Shapiro; Herman Sharlitt; Hord Sharp; Frank Alexander Sharp; Howard Francis Shattuck; Andrew Francis Shea; Robert Joseph Shea; George Sheinberg; Joseph Morton Sheridan; Gerald Spencer Shibley; Francis W. Shine; George Marsden Shipton; George Wynn Shirk; Solomon Shlimbun; Montgomery Sicard; Hugo August Siebeneichen; Lewis Siegal; Henry Burr Siglar; Morris Kaufman Silberman; Samuel Silbert; William Henry Silverstein; Daniel Alison Sinclair; Donald Bunker Sinclair; Robert C. Simpson; Irvin Edward Siris; Samuel George Siskind; Henry Robertson Skeel; James R. Skeoch; Abraham Skversky; William P. Smale; Edward Michael Smith; Elmer William Smith; Goodrich Truman Smith; Groves Blake Smith; James Vincent Smith; John Smith Jr.; Martin Def. Smith; Morris K. Smith; Thayer Adams Smith; William Lent Sneed; Louis James Sokol; Thomas A. D. Somers; William Andrew Somerville; Harry David Sonnenschein; Sidney Lehman Spiegelberg; Edwin Albert Spies; Edward Anthony Spitzka; Raymond John Sprowl; John Bentley Squier; Armin V. St. George; Fordyce Barker St. John; William Patrick St. Lawrence; Hendrik Van Renken Stam; Rowland Pendleton Stanley; Irving Samuel Startz; Kyle Baer Steele; Porter Aaron Steele; Louis Robert Steibel; Jacob J. Steinfelder; William Steinhauer; Reuben Steinholtz; Richmond Stephens; Emanuel Stern; Edwin Sternberger; De Witt Stetten; Albert M. Stevens; Alexander Raymond Stevens; Neil Campbell Stevens; Ralph Alexander Stewart; William Holmes Stewart; Walter Francis Stillger; Alfred Stillman; Edgar Stillman; Ralph Griffiths Stillman; Philip Moen Stimson; Harry Russell Stone; Arthur Purdy Stout; David Dudley Stowell; Maurice Jacob Strauss; Simon Strauss; Spencer G. Strauss; Charles William Strobell; Samuel M. Strong; Charles William Strowger; Joseph Subkis; Arthur Bernard Sullivan; Edmund Bernard Sullivan; James F. Sullivan; Timothy Francis Xavier Sullivan; Edward Harrison Sutliff; Michael John Sweeney; William Patrick Sweeney; Theodore Higgins Sweetser; Homer Fordyce Swift.

Louis Harry Taft; Frank Tannenbaum; Archibald William Taves; Fenton Taylor; Herbert Douglas Taylor; Melvin James Taylor; John Hamilton Telfair; William S. Terribery; Arthur Hutchinson Terry Jr.; Henry Clarke Thacher; Clarence Proctor Thomas; Henry M. Thomas; West Carstephen Thomas; William S. Thomas; Wilcox George Thorne; Josiah Payne Thornley; Michael Joseph Thornton; Benjamin Trowbridge Tilton; Alexander Berthold Timm; Norman Edwin Titus; Jacob Toporoff; Clarence Eneas Toshack; Jay Lester Touchstone; Sidney Trattner; James F. Trimble; Samuel Tripler; Edward Emory Tull; Fenton Benedict Turk; Philip Layton Turner; Reeve Turner; Percy R. Turnure; Carl Vann Tyner; Cornelius John Tyson.

Jacques Stanley Uhr; Abraham Unger; Arthur Wayne Uran; Jacob Urdang.

Albert Valensi; Julius John Valentine; Frederick T. Van Buren Jr.; Benjamin Morgan Vance; Albert Vander Veer Jr.; Earl Edward Vanderwerker; Benjamin Ford Van Duzee; Philip Van Ingen; Euen Van Kleeck; Allen Edward Van Ness; Cornelius D. Van Wagenen; Harry H. Varner; Richard Vaughn; Charles Vejvoda; Herbert Noble Vermilye; Philip John Vetter Jr.; Leonard Marshall Vincent; Ralph M. Vincent; John Elmer Viriden; Karl Max Vogel; Maxwell Lewis Volk; Victor Conrad von Unruh; James Ditmars Voorhees; Arthur Seymour Vosburg.

Robert P. Wadhams; Jerome Wagner; Alex S. Walker; John Baldwin Walker; George Barclay Wallace; Kenneth B. Wallace; Joseph Irving Wallach; Kaufman Wallach; Robert Emmet Walsh; William J. Walsh; George Walter; Milton Raphael Walter; Mark Hopkins Ward; Drew Mallon Wardner; Edward J. Ware; Edward Richmond Ware; John William Warner; Mortimer Warren; Jacob Washton; Harvey Middleton Watkins; John Thomas Watkins Jr.; Francis Elwood Weatherby; Roscoe Clayton Webb; Charles Edward Stuart Webster; Webb William Weeks; Benjamin Francis Weems; Elmer Peter Weigel; Adolph Abraham Weiss; Jacob Joseph Weiss; Vincent William Weiss; Samuel Frederick Weitzner; Fred Strouble Westmoreland; Albert T. Weston; George Whiting Wheeler; Rae Wyant Whidden; Allen Oldfather Whipple; Brainerd Hunt Whitbeck; Francis William White; Park J. White Jr.; William Beverly White; William Crawford White; Armitage Whitman; Chester Field Smith Whitney; Reynold Webb Wilcox; Charles Mallory Williams; Percy Herbert Williams; Alexander Hamilton Williamson; Charles Edward Wills; Brickhouse Wilson; Edwin Barrett Wilson; Frederick W. Wilson; Harvey Hall Wilson; Hudson Jennings Wilson; Ross Miller Wilson; Isaac Max Wilzin; Morris Winard; Asher Winkelstein; David Henry Winternitz; William Daniel Witherbee; Samuel Edward Witt; Charles Wolf; Gessel Wolf; Solon Charles Wolff; William Baxter Ward; Wilson Guyon Wood; Wiley Egan Woodbury; George Woolsey; James N. Worcester; Arthur Nullin Wright; George Louis Wurtzel; John Henry Wyckoff.

Sidney Yankauer; Joseph Grant Yocum; Frank Glynn Young; John Joseph Young; Edwin Garvin Zabriskie; Harry Oscar Zamkin; Abraham Zingher; Philip Richard Zinn; Hans Zinsseer; Samuel Zuckerman; Gustav Walter Zulauf.

NEW YORK CITY—Ray H. Bechtell; Burnett B. Benson; William Campbell Buntin; Mark Cohn; Samuel Sidney Fern; Guy Fish; James Frederic Gillette; Harry Joseph Handelman; William Monroe Handelman; Hyman Hershsberg; Charles Elbridge Howe; John Leonard Kantor; Julius Kaufman; Oscar Wentworth King; Paul Ely McChesney; Alexander Milcau Jr.; John Harold Morris; Arthur Palmer; Walter G. H. Pott; Joseph Price; Francis Allen Richardson; Crea Roane Sexton; Abraham Shorr; Herman Smith; William Christopher Stadie; Max E. Stern; Norman Henry Taylor; James Dowling Trask Jr.; David Tropaner; Euen Van Kleeck; Wiley E. Woodbury; Charles H. Young.

RIVERDALE—Augustus Bertram Dykman; Ewing Taylor.

Niagara County

JOHNSON CREEK—Murray F. Mudge. LOCKPORT—Lemuel Rankins Hurlbut; Henry Hamilton Mayne; Frank Austin Walder; Lyman Hall

Wheeler. NEWTANE—Edwin Shoemaker. NIAGARA FALLS—Raymond Samuel Barry; John Lewis Bishop; Charles C. Childs; Edward Eugene Gillick; Howard Joseph Hutter; Frederick N. C. Jerauld; Robert J. Lawler; Ernest Martin Guido-Rieger; John Preston Sharp; Francis Joseph Talbot. NORTH TONAWANDA—Harry Oren Maldiner; Martin Francis Nolan. YOUNGSTOWN—Lewis William Falkner.

Oneida County

CAMDEN—George Canfield Lyons. CLARK MILLS—Fred Goodwin Jones. CLINTON—Roy Bicknell Dudley; Varney Bernard Hamlin; Erwin G. MacFarland. NEW YORK MILLS—Henry Miller Mitchell. ORISKANY FALLS—Robert Bruce Wilson. ROME—William Lester Grogan; Roy Jay Marshall; Maxwell Comrie Montgomery; William Bradley Reid; Le Clare Stuart; Kent Eugene Williams. UTICA—Charles H. Baldwin; George B. Campbell; Francis Temple Chase; Jason Henry Conger; Frederick Christopher Devendorf; Arthur Rogers Grant; Miles Wendel Johns; John Joseph Leary; Harold Cleveland Lyman; Stephen A. Mahady; Nicholas Alfred Sullo; Robert Francis Zimmerman. VERNON—John Dean Shipman. WATERVILLE—Lewis Furbeck Cole; Edward Gove Randall; Howard David MacFarland.

UTICA—John Richard Fischer; Frederick Thomas Owens.

Onondaga County

CAMILLUS—George Hamell Shaw. JORDAN—Walter W. Osgood. MANLIUS—R. M. Ballantyne. MOTTVILLE—Milton Edward Gregg. POMPEY—Frederick Austin Hunt. SYRACUSE—Adelbert Cleveland Abbott; William Dewey Alsever; Archer D. Babcock; Clyde O. Barney; Arthur W. Brennan; George Sidney Britten.

Murray A. Cain; Donald Smythe Childs; Clarence E. Coon; John James Corbett.

Raymond John Devine; Brewster Clarke Doust; Henry Burton Doust. Scott Romain Fisher; Albert Alton Getman; Herbert Gifford.

Lee Arthur Hadley; Herbert Israel Kallet; Jefferson B. Latta; Glendon Richard Lewis; Daniel F. Luby.

Henry Alexander MacGruer; Brooks Walton McCuen; Arthur Dubois Meyers; Bernard Stanislaus Moore; Leonard Stevens Nolan.

Philip Sheridan Potter; Robert Case Scott; Myles Bernard Sharkey; George Kellogg Smith; Samuel Stewart; Earl Vincent Sweet; William E. Truax.

Edward Seguin Van Duyn; Earle Cyrenius Winsor; Edward Judson Wynkoop.

Ontario County

CANANDAIGUA—Alfred W. Armstrong; Frederick Coe McClellan. CLIFTON SPRINGS—Samuel Darragh Earhart; Samuel Timothy Nicholson Jr.; Walter Stevens Thomas; Walter Longfellow Weeden; John Alexander Wentworth. GENEVA—James Stevenson Allen; Isaac Williams Brewer; Thomas W. Maloney; Frank Hassan Snyder. GORHAM—Lloyd Frederick Allen. SHORTSVILLE—Daniel Alverson Eiseline. STANLEY—Charles W. Selover.

GENEVA—Thomas William Maloney.

Orange County

CORNWALL—Rufus Barker Crain. FLORIDA—Charles Willis Many. HIGHLAND FALLS—Thomas Daniel McMenamin. MIDDLETOWN—Floyd H. Cook; James C. Donovan; Arthur Selwyn Moore; Edwin Maurice Schultze; Moses A. Stivers; Samuel L. Truex. NEWBURGH—Charles Bailey Reed. PORT JERVIS—Lester Howard McAllister. TUXEDO PARK—Harold Fleming Morrison. WARWICK—Maurice Renfrew Bradner; Bernard McDowell Krug; Stephen Warner Perry. WEST POINT—Kenneth Allen Phelps.

Orleans County

ALBION—Ralph Earle Brodie; James Arthur Elson. HOLLEY—Clarence C. Nesbitt. MEDINA—Arthur Sharpe Bugbee.

Oswego County

FULTON—Frank Edward Fox. OSWEGO—Harvey S. Albertson; Charles Alexander Galisch; Edward Dowdle; Grover C. Elder; William John Galvin. PARISH—Stanley Stuart Ingalls. PULASKI—Fred Lester Ritter. RICHLAND—Alva Garfield Dunbar.

Otsego County

COOPERSTOWN—Floyd Jerome Atwell; Joseph Brown Cooke. ONEONTA—George W. Augustine; Arthur Ward Cutler; William Gilford Dickinson. OTEGO—Willis S. Cooke. UNADILLA—Whitney Hotalin Joyce. WORCHESTER—Lewell T. Genung.

Queens County

BAYSIDE—Harris A. Houghton. COLLEGE POINT—Harry M. Biffar; Walter Carl August Steffen; Robert V. Williams. DOUGLASSON—Nathaniel Perkins Breed. ELMHURST—J. de Raimsee Combs; Leonard Knight Graves; Henry C. Mahnken; Thomas P. McCann; Joseph Lawrence Morrissey.

FAR ROCKAWAY—Abram S. Tepper. FLUSHING—John Auer; Louis Nathaniel Gallego; Harvey Columbus Hardegree; George J. J. Lawrence; Johnston Macleod; James Michael O'Neill; Daniel Joseph Swan. FORES HILLS—Frederick B. Humphreys; Edward Louthborough Keyes Jr.; War J. MacNeal. FORT TOTTON—Floyd William Hunter. JAMAICA—John Joseph Kilcourse; William Lieberman; Gonzalo O'Neill. KEW GARDEN—Harold Ellsworth Smith. LONG ISLAND CITY—Andrew John Anderson; Carl Boettiger; Harry Stark Fincke; Harry Goldman; Harry Philip Mencken; Jacob Daniel Rosenman; Michael Myron Schultz; Ignatius Max Sonkin; Louis Stein.

RICHMOND HILL—Russell J. McCraw; Edmund Henry Parizo. ROCKAWAY BEACH—Daniel Ralph Lucas. WOODHAVEN—Edward Dale Fraser; John Peter Schneble.

Rensselaer County

CASLETON—Garret Warren Timmers. HOOSICK FALLS—William Alfred Ackroyd; Francis Joseph Cahill; William Levi Clark; Thomas Andrew McGrath; Ira Condict Whitehead Jr. SCHAGHTICOKE—Morris B. Beecroft. TROY—John Albert Barnes; Arthur Wight Benson; Archibald Buchanan; Eugene Francis Connally.

John Joseph English; Clayton Longueville Gifford; Peter Lyons Harvi; John Thomas Hopkins Hogan; Alson Joye Hull; Charles Franklin Kivlin.

Alexander Mitchell Loewenstein; Walter Daniel McKenna; William Bernard McKeon; Walter Hugh McShane; Charles Mester; Frank Noonan; William Panitch.

Harold Payne Sawyer; William Thomas Shields Jr.; William Trotte; Morris Samuel Wineck.

Richmond County

STATEN ISLAND—Francis F. Callahan; Francis C. Clark; Robert Emmet Conway; Arthur Storer Driscoll; Goodlatte Browne Glimor; Frank Julius Herbig; John R. Hicks; F. S. Jameson; Frederick P. Le John Louis Nicholas; Vincent John Thomas O'Neill; Morris Louis Po

ack; Joseph Edward Rapuzzi; Charles Rieger; Edward Sherrard Rimer; obert Nathaniel Severance; Vincent Gorman Smith; Enrico Celeste oldini; Joseph Sparck; John T. Sprague; Burton Learn Sterner; Osear ague; Alfred Harold Thomas; Stanley Leon Wang; Dayton Carroll Wigs- us; Jesse Rush Patton.

Rockland County

HAVERSTRAW—William Blake Gibb; Jacob Harry Hirsch. SLOATS- URG—John Mance Gillette. STONY POINT—Albert Francis Augustus arry; Ralph A. Hurd; John Louis Sengstacken. SUFFERN—John lkins Payne.

Saratoga County

BALSTON SPA—Robert Willard Deming. CRESCENT—Walter Robert unewald. MECHANICVILLE—Gilbert Worden Crissey; George Aug- tine Green. MIDDLE GROVE—Patrick Joseph Hirst. SARATOGA RINGS—George Byron Brown; Carl Rodney Comstock; Frederick orge Eaton; James T. Houghton; John Bell Ledlie; Elbert Alonzo lmer; James Robert Swanick; Edward Hellis Vines. SCHUYLERVILLE—Edward James Callahan; Robert S. Cleaver; ward Cochrane Gow. WATERFORD—John Luverne Hemstead.

Schenectady County

DELANSON—Wilbur Foster McDonald. SCHENECTADY—Garrett Mar- llus Clowe; Roland Barkley Doig; James M. Dunn; John P. Faber; illiam Peter Faust. Joseph N. Garlick; John Duncan Gulick; John Alexander Heatley; arles Abel Howland; Earl H. Jackson; Arthur Krida; Hubert Mann; nderick Francis McGauley; Charles Gould McMullen; Harold Sydney rgan; David W. Overton; Jonathan Pearson; Peter Francis Purcell; bert Reid. Jesse Melville White Scott; Daniel Glen Smith; Waldron Allen Stearns; aude William Walker; Alfred LeRoy Warner; Calvin Bassler Witter; arles Wesley Woodall; Joseph Leon Wozniak. SCOTIA—William Carl eder.

Schcharie County

COBLESKILL—David W. Beard; John J. Beard; Millard Francis afer. MIDDLEBURY—Willard Tipple Rivenburgh. RICHMONDVILLE William Edgar Low.

Schuyler County

ALPINE—John William Burton. VALOIS—Palmer H. Lyon. WATKINS Noah Philip Norman.

Seneca County

VID—John Graham Gordon. SENECA FALLS—Robert Knight; Fred- ck William Lester. WATERLOO—Francis Victor Hoehn; William Wal- e Carleton. WILLARD—John Francis McNeill.

Steuben County

BATH—Raymond Coleman Hill. CANISTEO—Harold Hubbard Mitchell. COTON—John H. Miller; CORNING—Willis Sylvester Cobb; Ralph incis Gregorius. HORNELL—Milton Gardner Burch; James Raymond lly; Leon M. Kysor; Frederick Carver Robbins; George Ellis Taylor; liam Joseph Tracy; Clark Anson Wilcox. JASPER—Leon Mitchell oor.

St. Lawrence County

ENSON MINES—David Moulton Gardner. LASSENA—Raymond Francis McAlvon. NORWOOD—Lloyd Thomas ulty. OGDENSBURG—Samuel William Hausman; Richard Henry ehings; Grant Charles Madill; Jay E. Meeker; Charles Rose Miller. TSDAM—Sidney Pope Brown; Robert Jesse Reynolds. PYRITES—Michael Francis Sullivan.

Suffolk County

MAGANSETT—Howell F. Babcock. BABYLON—Daniel Woodbury nkoop. BAY SHORE—Louis F. Garben; Joseph T. Low. BRIDGE- MPTON—Edwin Carpenter Gilbert. CENTRAL ISLIP—William N. nhardt; Geoffry C. H. Burns; William Alfred Conlon. FT. H. G. IGH—George Nicholas Acker. GOODGROUND—Thomas H. Chattle; id Davidson. HUNTINGTON—Wm. Jas. A. Donahue; Willoughby r Pendill. KINGS PARK—Harold A. Benson; Aaron Joshua Rosanoff; ry Arthur Steckel; John Valentine Swierat. NORTHPORT—Wilbur leton Travis. PATCHOGUE—Ernest Levi Hicks. SAG HARBOR— es Hugh McCort. SETAUKET—Irvine Justin Russell. SMITHTOWN ANCH—Guy Hanford Turrell. SOUTHAMPTON—Joseph Storer Wheel- ent. ST. JOHNSVILLE—George W. Beebe.

Sullivan County

IVINGSTON MANOR—Victor Gabriel Bourke. ROSCOE—Charles ore Allaben.

Tioga County

CHOLS—Leroy Jakway Osborne. OWEGO—Kennedy Furlong Rubert; ey Welles Thompson. SPENCER—Frederick Terwilliger. WAVERLY ul Eugene Betowski; Arthur John Smith; Frederick Hallett Spencer.

Tompkins County

NFIELD CENTER—David Robb. GROTON—James Howard Van ter. ITHACA—John Frank W. Allen; Reed Brinsmade Bontecon; rt Cyrus Durand; Chas. Henry Gallagher; Walter Bonnell Holton; or McDaniels; Samuel Archer Munford; Martin Buel Tinker; Isador k Unger; Otto Emil Utzinger; Royden Mendeveille Vose. LUDLOW- LE—Ira A. Allen.

Ulster County

LENVILLE—Raymond Thornton Potter. KINGSTON—William J. iston; Philip Wm. De Garmo; Frank Alford Johnston; Elbert Du Bois hman; Frederick Snyder. SAUGERTIES—Rudolph Francis Diedling.

Warren County

WESTERTOWN—Howard Barton Swan. GLEN FALLS—Walter elder Bennett; Henry Elisha Clarke; Conrad Rowland Hoffman; is Maslon. POTTERSVILLE—George Biffy.

Washington County

ANVILLE—William Leslie Munson. GREENWICH—Michael Augus- Rogers. HUDSON FALLS—John Leonard Byrnes; Orla James Park. EN—Frederick William McSorley. WHITEHALL—Robert Edward kett.

Wayne County

TON—William George Lewis. LYONS—Reuben Spencer Simpson. ON—Arthur Besemar. NEWARK—Louis Stone Kelley; John An- Morrisey; Cyrenius Adelbert Newcomb; James Raymond Sanford. MYRA—Lee Rice Pierce. WOLCOTT—Samuel Wilson Houston.

Westchester County

EDFORD—George Peter Coopernall. BRIARCLIFF MANOR—Edwin y Nall. BRONXVILLE—Edgar William Beckwith; Herbert Richard

Charlton; Vernon Offutt Heddens; Henry Earl McGarvey; Marion Childress Wilson. DOBBS FERRY—Jos. Hoyt Beattie. EASTVIEW—Thomas Raines. HARTSDALE—Alwin Max Pappenheimer; Walter C. Tilden. HASTINGS-ON-HUDSON—Francis Romeyon Lyman. LARCHMONT—Ells- worth Johnson Smith. MT. KISCO—Elisha Milton Brown; Ellis Barks- dale Gray; Arthur Randolph Green. MT. VERNON—Karl Gebhard; John Joseph Hughes; Charles D. Kayser; Wm. Matthew Kenno; Abraham Albert Levine; Darwin Oliver Lyon; William G. Phipps; Leo Grover Weishaar; Walter Stuart Woodruff. NEW ROCHELLE—August Leo Beck; Edward L. Burwell; Charles Campbell Deklyn; Paul Brice Fitzgerald; Matthias Lauckton Foster; Clifford H. Fulton.

Clifford Wood Hendrickson; Samuel S. Markel; Eugene T. Morrison; George Augustus Peck; Clarence A. Read; John Stephen Reardon; Charles Augustus Smith; Henry Woodruff Titus. NORTH TARRYTOWN —Alfred Edward Oakes. OSSINING—Thomas Randolph Barry; Lawrence Dennis Cremin; Robert Wm. Helm. PEEKSKILL—Hickson Field Hart; Pleathew Francis Olstein. PELHAM—Lawrence Mason Simonson. PLEASANTVILLE—Horace Eddy Robinson. PT. CHESTER—George Berger; George Guttman Ornstein; Benjamin David Ruben; John Franklyn White. SHRUB OAK—Allen G. Fechtig; William Stanton Martens. WHITE PLAINS—Karl Murdock Bowman; Sanger Brown; Frederick Brush; Ralph Hill Chaney; Louis B. Chapman; John Francis Holden; Watson Angus Lawrence; Walden Evermont Muns; Wm. Jos. Meyer; Walter Wesley Mott; Sylvanus Purdy; Edwin George Ramsdell; Rae Latham Strong. YONKERS—Samuel Dennis Bell; Albert Newell Benc- diet; Harrison Betts; William Edgar Boyce; Ethen F. Butler; Francis Jos. Cline; William John Dougherty; John Joseph Flynn; Samuel Emmet Getty; Marmaduke Jos. Hoy; Moses Katz; Verner Kennedy.

William Bruce Macben; Robert Malcolm; Geo. Albert Mott; John Christian Muth. David Ramsay; F. O. Reed; Wilbur Watkins Stearns; William Jerome Vogeler; Theodore Stephen West.

RYE—George Joseph Hogben. MT. VERNON—Charles Layton Weitz. LARCHMONT—Harold C. Tooker.

Wyoming County

ATTICA—Willard DeForest Preston. CASTILE—Harold Elmer Foster. GAINESVILLE—George Stephen Skiff. PERRY—Thos. M. Calladine Jr.; Milton Oren Houghton. WARSAW—James Frank Crawford. WYOMING —Arthur Willard Hubbard.

Yates County

BRANCHPORT—John Henry Rose. PENN YAN—Edwin Carlton Foster; Herbert Wood Matthews; Bernard Samuel Strait.

MEDICAL SOCIETY OF THE STATE OF
NORTH CAROLINA

Officers 1917-18

I. W. Faison, President.....Charlotte
William D. McNider, First Vice President.....Chapel Hill
Joseph B. Greene, Second Vice President.....Asheville
Ben F. Royall, Third Vice President.....Morehead City
Benjamin K. Hays, Secretary.....Oxford
W. M. Jones, Treasurer.....Greensboro

Councilor Districts and Officers

First District.—Currituck, Camden, Pasquotank, Perquimans, Gates, Chowan, Washington, Tyrrell, Dare and Hyde counties. W. H. Ward, Councilor, Plymouth.
Second District.—Hertford, Martin, Pitt, Bertie, Beaufort, Lenoir, Jones, Craven, Pamlico and Carteret counties. K. P. B. Bonner, Coun- cilor, Morehead City.
Third District.—New Hanover, Pender, Onslow, Duplin, Bladen, Samp- son, Columbus and Brunswick counties. Ernest S. Bulluck, Councilor, Wilmington.
Fourth District.—Northampton, Halifax, Nash, Edgecombe, Johnston, Wilson, Wayne and Grene counties. M. M. Salibar, Councilor, Wilson.
Fifth District.—Cumberland, Robeson, Scotland, Lee, Montgomery, Moore, Harnett and Chatham counties. Ben Hackney, Councilor, Bynum.
Sixth District.—Wake, Franklin, Warren, Vance, Granville, Person, Caswell, Alamance, Orange and Durham counties. A. C. Campbell, Coun- cilor, Raleigh.
Seventh District.—Anson, Union, Stanly, Macklenburg, Cabarrus, Lin- coln, Gaston, Cleveland and Rutherford counties. J. E. S. Davidson, Councilor, Charlotte.
Eighth District.—Guilford, Randolph, Forsythe, Stokes, Ashe, Rocking- ham, Yadkin, Alleghany, Wilkes and Surry counties. J. W. Ring, Coun- cilor, Elkins.
Ninth District.—Davie, Davidson, Rowan, Catawba, Burke, Watauga, Mitchell, Alexander, Iredell and Caldwell counties. M. R. Adams, Coun- cilor, Statesville.
Tenth District.—Buncombe, Yancey, McDowell, Madison, Polk, Hender- son, Haywood, Transylvania, Jackson, Swain, Macon, Grahame, Clay and Cherokee counties. Carl V. Reynolds, Councilor, Asheville.

HONOR ROLL

Alamance County

BURLINGTON—Rufus Samuel Vass; Charles Taylor Vernon. GRA- HAM—Julius Jackson Barefoot. SWEPSONVILLE—Presly Robinson Brown.

Anson County

WADESBORO—Charles I. Allen; James Madison Covington Jr.; James Matheson Davis.

Avery County

NEWLAND—Miles Thompson Long.

Beaufort County

WASHINGTON—Armistead K. Tayloe.

Bertie County

MERRY HILL—Harry Clay Willis. ROXOBEL—Edgar Powell Norfleet.

Bladen County

BLADENBORO—Ralph Calvert Sadler. CLARKTON—DeWitt Duncan Clark. COUNCIL—Andrew Byron Holmes. ELIZABETHTOWN—George Fletcher Bullard.

NORTH CAROLINA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Alamance.....	492	12.9	30,935	814	38	..	20	27	13	4
Alexander.....	289	57.8	12,054	2,410	5	..	5	5	3	..
Alleghany.....	234	39.0	7,745	1,290	6	..	5	5	1	..
Anson.....	556	30.9	28,090	1,560	18	..	11	16	1	3
Ashe.....	427	25.1	19,074	1,244	17	..	8	9	9	..
Avery.....	280	35.0	11,479	1,834	8	1	7	8	8	1
Beaufort.....	840	26.7	34,143	1,422	24	..	8	20	14	1
Bertie.....	703	40.2	24,864	1,657	15	..	8	12	3	2
Bladen.....	1,004	91.3	18,246	1,658	11	..	5	8	8	4
Brunswick.....	790	197.5	15,728	3,932	4	..	3	3	2	1
Buncombe.....	639	5.9	53,821	493	109	5	59	86	76	19
Burke.....	534	33.4	24,115	1,507	16	..	9	11	13	1
Cabarrus.....	390	13.9	29,002	1,035	28	..	17	22	28	2
Caldwell.....	512	39.4	23,200	1,784	13	1	10	10	6	1
Camden.....	220	110.0	5,762	2,881	2	..	2	2	2	..
Carteret.....	573	44.1	15,211	1,170	13	..	10	11	7	1
Caswell.....	402	67.0	14,858	2,476	6	..	..	3	4	..
Catawba.....	408	13.6	32,141	1,071	30	..	11	18	15	3
Chatham.....	696	53.5	22,635	1,741	13	..	4	7	9	1
Cherokee.....	454	34.9	15,797	1,215	13	..	6	11	10	2
Chowan.....	165	20.6	12,066	1,508	8	..	6	6	1	1
Clay.....	220	73.3	3,909	1,303	3	..	2	2	..	..
Cleveland.....	438	16.3	33,647	1,121	30	..	11	25	17	1
Columbus.....	933	58.3	32,944	2,059	16	..	15	15	8	4
Craven.....	660	30.0	26,640	1,210	22	..	18	20	13	4
Cumberland.....	1,013	33.8	33,719	1,123	30	..	21	28	17	4
Currituck.....	292	48.7	8,543	1,423	6	..	1	5	5	..
Dare.....	377	94.7	4,902	1,225	4	..	2	2	1	1
Davidson.....	549	24.5	33,785	1,535	22	..	17	21	20	1
Davis.....	258	36.8	14,327	2,046	7	..	3	5	3	..
Duplin.....	783	37.1	27,659	2,126	13	..	10	10	10	2
Durham.....	291	6.1	41,877	872	48	..	24	40	36	6
Edgecombe.....	509	10.2	35,966	719	50	1	36	41	26	9
Forsyth.....	376	5.8	66,106	1,032	64	1	48	54	42	9
Franklin.....	468	23.4	24,692	1,234	20	..	11	16	11	5
Gaston.....	371	9.3	42,818	1,070	40	1	21	34	24	6
Gates.....	359	44.9	10,485	1,310	8	..	3	7	1	2
Graham.....	298	59.6	5,046	1,009	5	..	1	1	1	..
Granville.....	503	27.9	26,444	1,469	18	..	8	14	15	2
Greene.....	252	42.0	13,846	2,307	6	..	2	4	5	..
Guilford.....	691	6.6	76,134	725	105	3	61	82	65	16
Halifax.....	676	25.0	42,650	1,579	17	..	14	20	9	5
Harnett.....	595	29.7	26,689	1,334	20	..	12	15	15	2
Haywood.....	546	28.4	24,523	1,290	19	..	6	16	11	17
Henderson.....	558	32.8	17,837	1,049	17	..	9	13	11	1
Hertford.....	341	31.0	16,270	1,479	11	..	6	8	4	1
Hoke.....	350	31.8	13,400	1,218	11	..	7	8	10	3
Hyde.....	617	69.5	8,840	982	9	..	5	8	1	2
Iredell.....	588	15.5	38,148	1,003	38	1	23	28	18	6
Jackson.....	494	98.8	13,834	2,766	5	..	4	5	4	2
Johnston.....	694	24.0	48,080	1,659	29	..	21	23	23	5
Jones.....	417	68.2	9,082	1,513	6	..	5	6	3	1
Lee.....	261	26.1	11,376	1,137	10	..	7	10	8	2
Lenoir.....	397	14.3	25,783	920	28	..	12	18	13	3
Lincoln.....	299	23.0	18,324	1,408	13	..	6	11	9	..
McDowell.....	443	36.9	14,245	1,187	12	..	7	9	6	1
Macon.....	513	51.3	12,255	1,225	10	1	3	6	5	2
Madison.....	436	27.2	20,132	125	16	..	6	9	9	2
Martin.....	438	24.3	19,558	1,086	18	..	11	15	15	3
Mecklenburg.....	597	5.1	75,617	6,082	117	2	66	96	70	29
Mitchell.....	371	61.8	10,263	1,710	6	..	4	4	1	1
Montgomery.....	498	41.5	15,530	1,819	12	..	6	10	10	3
Moore.....	639	37.6	17,010	1,000	17	1	10	10	8	1
Nash.....	586	30.8	39,747	2,091	19	..	10	16	9	3
New Hanover.....	216	4.5	36,601	762	48	..	36	42	32	12
Northampton.....	564	31.3	23,180	1,321	18	..	10	14	15	4
Onslow.....	743	92.9	15,719	1,964	8	..	2	5	5	..
Orange.....	390	32.5	15,338	1,278	12	..	8	13	9	3
Pamlico.....	350	70.0	11,368	2,273	5	..	4	4	4	1
Pasquotank.....	223	13.1	18,907	1,112	17	..	10	16	13	2
Pender.....	815	135.8	16,997	2,832	6	..	4	5	1	1
Perquimans.....	252	42.0	11,757	1,959	6	..	4	6	3	1
Person.....	391	27.9	17,846	1,227	14	..	9	10	11	2
Pitt.....	627	20.2	40,320	1,300	31	..	20	29	16	8
Polk.....	251	31.4	8,103	1,012	8	..	6	8	6	1
Randolph.....	803	28.7	30,409	1,086	28	..	10	21	12	1
Richmond.....	521	26.0	22,460	1,123	20	..	17	20	14	4
Robeson.....	1,051	27.0	52,964	1,358	39	..	27	32	19	4
Rockingham.....	579	22.3	38,836	1,493	26	..	18	24	9	3
Rowan.....	489	11.9	42,232	1,030	41	..	25	33	29	5
Rutherford.....	544	28.6	30,781	1,620	19	..	10	15	13	3
Sampson.....	922	51.2	32,612	1,811	18	..	12	13	12	0
Scotland.....	349	21.8	17,413	1,088	16	..	11	13	12	2
Stanly.....	416	21.9	23,332	1,228	19	..	11	17	15	6
Stokes.....	480	24.0	20,360	1,018	20	..	8	18	8	3
Surry.....	520	16.8	32,762	1,056	31	..	12	22	24	3
Swain.....	553	50.3	11,864	1,078	11	..	4	8	8	..
Sylvania.....	379	42.1	7,608	845	9	..	4	7	4	1
Tyrrell.....	390	145.0	5,392	2,696	2	..	2	2	2	..
Union.....	565	20.2	37,744	1,348	28	..	12	22	14	4
Vance.....	279	16.4	21,425	1,236	17	..	14	15	8	6
Wake.....	845	7.7	69,508	631	110	2	65	91	76	29
Warren.....	425	47.2	21,080	2,342	9	..	5	5	6	..
Washington.....	327	46.7	11,394	1,627	7	..	1	4	5	..
Watauga.....	342	31.1	11,493	1,044	11	..	7	7	..	..
Wayne.....	615	15.8	38,867	996	39	1	21	30	19	5
Wilkes.....	735	56.5	32,770	2,520	13	..	8	9	10	..
Wilson.....	384	13.7	31,679	1,131	28	..	21	25	24	5
Yadkin.....	324	27.0	16,408	1,367	12	..	7	9	1	1
Yancey.....	298	42.6	12,515	1,787	7	..	5	6	..	..
Totals.....	49,370	22.1	2,433,782	1,087	2,237	21	1,251	1,706	1,284	340

Brunswick County
SOUTHPORT—J. Arthur Doshier.

Buncombe County
ASHEVILLE—Everett Sperry Barr; Louis G. Beall; Thomas Patton Cheesborough; E. R. Cocke; Charles DeW. Colby; Marshall Hall Fletcher; Thompson Frazer; Joseph B. Greene; Lewis Muller Griffith; William Pinkney Herbert; Charles Simonton Jordan; Ben M. Meriwether; Arthur Thomas Priehard; William Henry Scruggs Jr.; Gaillard Tennent. CANDLE—John Calvin Rich. STOCKSVILLE—Burnice Earl Morgan; Grady Alexander Morgan.
ASHEVILLE—Paul Henry Ringer.

Burke County
MORGANTON—James William Vernon.

Cabarrus County
CONCORD—Sidney E. Buchanan; Joe Albert Hartsell.

Caldwell County
LENOIR—Clarence La Fayette Wilson.

Carteret County
MARSHALLBURG—James E. A. Siske.

Catawba County
HICKORY—Fleet S. Steele; Jacob Harrison Shuford. NEWTON—Matthew Locke McCorkle.

Chatham County
SILVER CITY—Frank R. Wrenn.

Cherokee County
ANDREWS—Cladius V. Orr. MURPHY—Noah Bunyan Adams.

Chowan County
TYNER—Murray Parmer Whichard.

Cleveland County
LAWNDALE—Thomas Byron Gold.

Columbus County
BOARDMAN—Herbert Frederick Munt. CERRO GORDO—L. Dowe Floyd. VINELAND—Richard Bidgood Whitaker. WHITEVILLE—Henry Byrne Maxwell.

Craven County
DOVER—Stephen James Hawes. NEWBERN—Robert D. Jones; Charles L. Lupton; Raymond Pollock.

Cumberland County
COOPER—Henry Cleveland Turlington. FAYETTEVILLE—James V. McGougan. STEDMAN—John B. Bullard.
FAYETTEVILLE—Owen Bailey Williams.

Dare County
BUFFALO CITY—James Shepard Milliken.

Davidson County
LEXINGTON—James Robert Hawkins.

Duplin County
KENANSVILLE—James William Farrior. WALLACE—John Daniel Robinson.

Durham County
DURHAM—Edwin Godwin Reade; Charles Haddon Shepard; Jos Anderson Speed; Geo. Thomas Watkins; Charles Augustus Woodward. WEST DURHAM—Baird Urquart Brooks.

Edgecombe County
CONETOE—Timothy Graham Williams. ROCKY MOUNT—Hugh Edga Clark; Alvin Clay McCall; Byrd C. Willis. TARBORO—William Will Green; William Lawrence Joyner; James Grover Raby; Thomas Hays Royster. WHITAKER—Joseph Henry Cutchin.

Forsyth County
WINSTON-SALEM—Thomas M. Chaney; Sylvester Douglas Craig Frederick Moir Hanes. Charles Salomon Lawrence; Everett August Lockett; Le Roy Salmons; John Carroll Wiggins; John C. Williamson. Wortham Wyatt.

Franklin County
FRANKLINTON—Russell Todd Uhls; Abram R. Winston. LOUISBURG—Hodge A. Newell. YOUNGVILLE—Claude Timberlake.
FRANKLINTON—Mack Canstuart King.

Gaston County
BELMONT—Charles Erwin McLean; John Mason Pressly. GASTON—Roland Smith Clinton; Lee Johnson. LOWELL—George Riddle Patrick. MT. HOLLY—Burmah Dixon Moore.

Gates County
SUNBURY—Harry Eskridge Brooks.
HOBBSVILLE—Thomas Leslie Carter.

Granville County
OXFORD—Benjamin Kingsey Hays; William Nelson Thomas.

Guilford County
GREENSBORO—Charles W. Banner; Joseph Henry Boyles; Walter Francis Cole; Booton Stover Compton; Mont Royal Farrar; Harold Roberts Lipscomb; John W. Long; Herbert Hammond Ogburn; Adh Stevenson Oliver; Frederick James Pate; Henry Frank Starr; Julia Graham Thomas. HIGH POINT—John T. Burrus; Thomas Mences Stanton; Frederick Raymond Taylor. SUMMERFIELD—Newton Graves Wilson.

Halifax County
GARYSBURG—Wester Ghio Suiter. HOBGOOL—Virgil Wilson Leggett. ROANOKE RAPIDS—Daniel Frank Patchin. ROSEMARY—Robert Payne Beckwith. SCOTLAND NECK—Allie Dexter Morgan.

Harnett County
DUKE—Frank Rexborough Ruff. LILLINGTON—Laurie J. Arnold.

Haywood County
CANTON—Francis M. Davis; Wiley C. Johnson; Robert W. S. Pe ram; Jesse M. Russell. SUNBURST—Burton Barrett Sturdivant. WAYNESVILLE—Joshua Fanning Abel; Joseph Howell Way.

1. Includes Winston-Salem, population 32,216; physicians 55 [M.R.C. 9].
2. Includes Charlotte, population 40,759; physicians 97 [M.R.C. 28].

Henderson County
EAST FLAT ROCK—B. F. Cline.

Hartford County
AHOSKIE—Rack F. Benhall.

Hoke County
RAEFORD—Albert R. Dickson. SANATORIUM—Reuben A. McBrayer; Sanford Webb Thompson Jr.

Hyde County
FAIRFIELD—Thomas Preston Burrus; Thos. A. Mann.

Iredell County
MOORESVILLE—Pinkney Jones Chester. STATESVILLE—R. A. Campbell; James Wagner Davis; John Calvin Dye; Coite Long Sherrill. SWEET ONE—Edward Steptoe King.

Jackson County
SYLVA—Charles Z. Candler; Grover Wilkes.

Johnston County
KENLY—George Stephenson Coleman; Grover Barney Woodward. WINCETON—Osear Eason. SELMA—William Edward Wilmerding. WITHFIELD—Thel Hooks.

Jones County
MAYSVILLE—Colln Shaw.

Lee County
JONESBORO—Evander McNair Melver. SANFORD—Charles L. Scott.

Lenoir County
KINGSTON—Mercer Parrott; Vanee Peery. LA GRANGE—George L. Itchard.

Macon County
HIGHLANDS—Geo. S. McPherson.
HIGHLANDS—George Sturtevant McPherson.

Madison County
MARS HILL—Oliver Linwood Stringfield.
SPRING CREEK—Allen G. Thurman Hipps.

Martin County
OAK CITY—Wooster Hassell House. WILLIAMSTON—Roderick Markle; Hugh Brantley York.

McDowell County
OLD FORT—Donald Munro McIntosh.

Mecklenburg County
CHARLOTTE—James Ramsey Alexander; William Allan; Dewitt Ray; James A. Bangle; Eli C. Boyette; Addison George Brenizer; Vanderbilt Brown.
Joseph H. Caldwell; Thomas Craven; John Donnelly; Albert Durham; Lawrence Merrill Fetner; Robert Miller Gallant; Marcus Calvin Houser; Lighton Watson Hovis; Baxter R. Hunter; Myers Hunter; Robert Frederick Leinbach.
John Wilson MacConnell; James Pleasant Matheson; Hamilton Witherston McKay; Robert Alexander Moore.
Samuel Albertus Rhyne; John Kirkland Ross; James W. Squires; Maurice Lyndon Townsend; William E. Wishart.
MATTHEWS—John William Law Orr.
CHARLOTTE—Parks McCombs King; Isaac William McLean.

Mitchell County
AKERSVILLE—Arthur David Gouge.

Montgomery County
TAR—Ernest Lee Dameron. TROY—Charles Wallace Armstrong; Charles Daligny.

Moore County
ARTHAGE—Charles Talmadge Grier.

Nash County
AILY—Malthus Reaumer Freeman. BATTLEBORO—Arthur Wood. NASHVILLE—John A. Winstead.

New Hanover County
ELMINGTON—Ernest Southerland Bullock; Herbert Augustus Codon; Andrew Howell Harriss; Joseph Ward Hooper; John Walcott Kay; Bunyan LeGwin.
James Farish Robertson; William Thomas Ruark; Egbert Theophilus; John Thames; John Eugene Wine.

Northampton County
ARYSBURG—Carl Putnam Parker. POTECASI—Paul G. Parker. I SQUARE—Joseph Clinton Vaughan. WOODLAND—Walter Raleigh.

Orange County
LAPEL HILL—Eric Alonzo Abernethy; Louis Harward Webb. HILLS—O—Robinette Burns Hayes.

Pamlico County
ANNAPOLIS—Randolph Edwin Watts.

Pasquotank County
ELIZABETH CITY—Claude Williams. WEEKSVILLE—Richard Boyd.

Pender County
KINSON—John Thomas Hoggard.

Perquimans County
RTFORD—Thomas Shelton McMullan.

Person County
XBORO—Samuel S. Montague; Benjamin Adams Thaxton.

Pitt County
DEN—George Grady Dixon. BETHEL—Cecil Garrenton. FARM—Herbert Pennell Mosely. GREENVILLE—Milton Thomas Edger. Cicero Jasper Ellen; James Cannon Greene; Charles O'Hagan Laughse; Karl B. Pace.

Polk County
ON—Marlon Cherigny Palmer.

Randolph County
RANDLEMAN—Henry Walter Tidmarsh.

Richmond County
HAMLET—Wm. Moncure Jr. POWELTON—Neill Graham Nicholson Jr. ROCKINGHAM—Frank Bernard Garrett; John H. Quick.

Robeson County
LUMBERTON—Russell S. Beam. RED SPRINGS—William P. McKay. ST. PAULS—John Fredk. Nash; Claude Terrel Poole.

Rockingham County
REIDSVILLE—Harvey Robinson. SPRAY—Samuel Walker Hurdle; Andrew F. Tuttle.

Rowan County
GOLDSBORO—Paul C. Carter. ROCKWELL—Glenn W. Choate. SALISBURY—Jacob Henry Rozelle; Carl M. Van Poole; Chalmers Van Poole.

Rutherford County
CAROLEEN—William Ernest Brackett. RUTHERFORDTON—Henry Norris; William Marvin Seruggs.

Sampson County
CLINTON—Bruce Fowler Butler; Eugene Ramsey Hardin; John Kerr Jr. GARLAND—William Henry Sloan. INGOLD—David B. Sloan. KERR—Grover Cleveland Beard.

Scotland County
GIBSON—Everett A. Livingston. LAURINBURG—Nicholas Boddie Canady.

Stanly County
ALBEMARLE—Jasper Neill Anderson; Lucius Victor Dunlap; Charles E. Lyday; Levin Freeland Mayruder; Floyd Caldwell Shugart. NORWOOD—Thomas A. Hatheoek.

Stokes County
GERMANTON—Paul Augustus Petree. PINNACLE—Bernard Holman. WALNUT COVE—Beverly Nicholas Jones.

Surry County
ARARAT—Alex Franklin Jones. MT. AIRY—Edward Clayton Ashby; Darius Cleveland Absher.

Transylvania County
BREVARD—Thomas Johnson Summey.

Union County
MONROE—Robert Lee Payne. WAXHAW—Lemuel Edwin Guin. WINGATE—Robert Jones Lovill; Edward Jerome Williams.

Vance County
HENDERSON—William Henry Bryant; Numa Haden Crews; Edwin F. Fenner; Leland Carson McIntosh; Thomas Clinton Tinsley. KITTRELL—Frederick Overton Swindell.

Wake County
CARY—Carlyle Edwards. HOLLY SPRINGS—Wiley Simon Cozart Jr. RALEIGH—Carl Wendell Bell; Alton Cook Campbell; Kelso Adair Carroll; Amzi Jefferson Ellington; Thomas Woodly Haywood; Wilbur Gibson Jenkins; Robert S. McGeachy; John Sasser McKee; Alfred Mordecai; Robert Primrose Noble; Arthur Sylbert Pendleton; Ivan M. Proctor; Hickman Ray; John E. Ray; Hubert A. Royster; Ralph S. Stevens; Hugh Alexander Thompson; Frank Johnson Thornton; Henry Gray Turner; Louis Nelson West; Thaddeus Earl Wilkerson. WAKE FOREST—Luther T. Buchanan Jr.; John Brewer Powers. WENDELL—John L. Moore. ZEBULON—Chas. Ely Flowers.
RALEIGH—Lemuel Thackara Delany.
WAKE FORREST—Wm. T. Carstarphen.

Wayne County
GOLDSBORO—Ralph L. Daniels; Marshall H. Hood; Richard Spicer. MOUNT OLIVE—George Blythe Morris. SAULSTON—Hector McLean Person.

Wilson County
WILSON—James Cornelius Braswell; Elijah Thomas Dickerson; Michael Saliba; Ernest Lee Strickland; Charles LeRoy Swindell.

Yadkin County
EAST BEND—John Thomas Benbow.

NORTH DAKOTA STATE MEDICAL ASSOCIATION

Officers 1917-18

G. M. Williamson, President.....Grand Forks
Edgar A. Pray, First Vice President.....Valley City
W. P. Baldwin, Second Vice President.....Cassleton
Fred Ewing, Third Vice President.....Kenmare
H. J. Rowe, Secretary.....Cassleton
W. F. Sihler, Treasurer.....Devils Lake

Councilor Districts and Officers

First District.—Cass and Ransom counties. Paul Sorkness, Councilor, Fargo.
Second District.—Benson, Pierce, Ramsey, Rolette and Towner Counties. W. D. Jones, Councilor, Devils Lake.
Third District.—Cavalier, Grand Forks, Nelson and Pembina counties. J. E. Countryman, Councilor, Grafton.
Fourth District.—Burke, Pierce (part), Ward and Williams counties. A. S. Nicholson, Councilor, Williston.
Fifth District.—Barnes and Griggs counties. W. P. Baldwin, Councilor, Cassleton.
Sixth District.—Adams, Burleigh, Emmons, Hettinger, McLean, Mercer, Morton and Stark counties. F. R. Smyth, Councilor, Bismarek.
Seventh District.—Stutsman County. G. Golseth, Councilor, Jamestown.
Eighth District.—Dickey, LaMoure, Richland and Sargent counties. L. B. Green, Councilor, Edgeley.
Ninth District.—Eddy, Foster and Wells counties. Chas. MacLachlan, Councilor, New Rockford.
Tenth District.—Traill and Steele counties. James Grasslick, Councilor, Grand Forks.

NORTH DAKOTA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total No. Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams.....	997	199.4	4,420	884	5	..	4	5	2	1
Barnes.....	1,510	75.5	18,996	944	20	..	12	20	17	4
Benson.....	1,364	80.2	12,715	747	17	1	11	14	7	2
Billings.....	3,404	.....	3,736	.....	..	..	..	..	..	..
Bottineau.....	1,681	112.0	17,355	1,157	15	..	12	14	12	1
Bowman.....	1,164	166.2	5,210	747	7	..	4	5	7	1
Burke.....	1,113	159.0	9,111	1,300	7	..	6	6	2	..
Burleigh.....	1,651	63.5	14,642	563	26	2	18	23	20	5
Cass.....	1,763	33.2	43,386	826	53	1	31	42	38	12
Cavalier.....	1,494	124.5	15,879	1,324	12	..	9	11	5	2
Dickey.....	1,142	114.2	10,209	1,020	10	..	7	9	4	..
Divide.....	1,270	158.7	10,199	1,274	8	..	8	8	6	1
Dunn.....	2,084	231.5	9,450	1,050	9	..	4	4	2	..
Eddy.....	651	162.7	6,085	1,521	4	..	3	3	3	..
Emmons.....	1,563	195.3	10,562	1,320	8	..	5	6	4	1
Foster.....	644	80.5	6,389	798	8	..	4	7	7	2
Golden Valley..	1,020	204.0	6,781	1,356	5	..	4	5	3	1
Grand Forks...	1,433	32.5	29,007	659	44	..	27	35	34	8
Grant.....	.....	.....	9,000	2,500	4	..	4	4	..	..
Griggs.....	717	119.5	6,700	1,116	6	..	5	6	6	..
Hettinger.....	1,132	226.4	8,232	1,646	5	..	4	5	4	2
Kidder.....	1,386	277.2	7,395	1,479	5	..	3	4	3	1
La Moure.....	1,147	95.5	11,784	982	12	..	9	12	8	3
Logan.....	997	997.0	7,431	7,431	1	..	1	1	1	..
McHenry.....	1,888	145.2	16,644	1,280	13	..	11	12	10	..
McIntosh.....	1,003	200.6	8,369	1,673	5	..	5	5	2	1
McKenzie.....	2,847	711.7	13,118	3,279	4	..	4	4	3	..
McLean.....	2,305	164.6	16,506	1,107	14	1	11	13	9	1
Mercer.....	1,110	277.5	7,717	1,929	4	..	4	4	3	2
Morton.....	4,742	316.1	19,586	1,305	15	1	10	14	11	1
Mountrail.....	1,914	174.0	12,334	1,121	11	..	8	9	6	4
Nelson.....	981	122.6	10,417	1,305	8	..	6	7	6	..
Oliver.....	720	720.0	4,276	4,276	1	..	1	1	1	..
Pembina.....	1,117	74.4	14,156	943	15	..	9	12	11	1
Pierce.....	1,055	105.5	9,687	968	10	..	8	9	3	2
Ramsey.....	1,205	708.8	15,011	883	17	..	12	16	13	4
Ransom.....	860	95.5	11,362	1,262	9	..	6	9	7	3
Renville.....	899	128.4	8,215	1,173	7	..	6	7	4	2
Richland.....	1,437	65.3	21,993	999	22	..	10	17	14	2
Rolette.....	918	153.0	9,755	1,625	6	..	6	6	6	1
Sargent.....	835	106.8	9,830	1,228	8	..	4	7	1	2
Sheridan.....	996	498.0	8,314	2,157	2	..	2	2	1	..
Sioux.....	1,050	262.5	2,338	584	4	..	2	4	1	1
Slope.....	1,272	636.0	5,717	2,858	2	..	2	2	2	..
Stark.....	1,356	96.8	15,037	1,074	14	..	10	11	11	3
Steele.....	717	239.0	6,744	2,248	3	..	3	3	3	1
Stutsman.....	2,282	103.7	26,769	1,216	22	1	18	21	15	3
Towner.....	1,037	129.6	9,230	1,153	8	..	6	8	4	2
Traill.....	865	96.1	12,971	1,441	9	..	7	8	9	..
Walsh.....	1,282	67.4	20,772	1,093	19	..	3	18	10	1
Ward.....	2,054	61.1	29,333	916	32	..	28	31	26	7
Wells.....	1,293	99.4	13,834	1,063	13	..	11	13	11	1
Williams.....	2,138	101.8	19,916	948	21	..	16	18	10	5
Totals.....	73,525	121.7	664,607	1,100	604	7	429	540	408	100

1. County recently organized; area included with that of other counties.

HONOR ROLL

Adams County	
HETTINGER—Carl Voss.	
Barnes County	
FINGAL—Alexander Campbell MacDonald. VALLEY CITY—Charles E. Hunt; Joseph Williams Livingstone; Alexander W. MacDonald.	
Benson County	
ESMOND—Louis Belfair Derdiger. OBERON—Chas. Ray Tompkins.	
Bottineau County	
OMEMEE—William Ginsberg.	
Bowman County	
BOWMAN—Mark Mizener.	
Burleigh County	
BISMARCK—Julius O. Arnson; John Alfred Halgren; Hugo Mella; Eric Peer Quain. REGAN—Philip G. Reedy.	
Cass County	
ARTHUR—Thomas Roy Campbell. CASTLETON—William P. Baldwin. FARGO—James Prentiss Aylen; Frederick Harris Bailey; Walter Darrow Bayard; Geo. Albert Carpenter; Frank Irons Darrow; Harry John Fortin; James Francis Hanna; Axel Oftedal; Martin Philip Rindlaub. HUNTER—Herbert M. Knudtson.	
Cavalier County	
LANGDON—Judd Harris Kirkham. MUNICH—Edward Rudolph Lindner.	
Divide County	
NOONAN—Joseph Allen Smith.	
Emmons County	
HAZELTON—George Monteith.	
Foster County	
CARRINGTON—Edwin Lincoln Goss; John Ross MacKenzie.	
Golden Valley County	
BEACH—Alexander Blake McNab.	
Grand Forks County	
GRAND FORKS—Wilhelm S. Anderson; Theodore Bratrud; Robert Donald Campbell; Henry Herbert Healy; John Arnason Johnson; Olaf Kittelson; Orville Newton Meland; Arthur Peake.	

Hettinger County	
MOTT—Fred Eli Redman; Fred T. Rucker.	
Kidder County	
DAWSON—Roscoe Conkling Pryse.	
La Moure County	
KULM—Jacob Frederick Brenckle. LA MOURE—Martin Daniel Westley. VERONA—Herbert Bertram Wentz.	
McIntosh County	
ASHLEY—Edwin Herman Maercklein.	
McLean County	
MERCER—Ralph Deming.	
Mercer County	
HAZEN—Leslie Guy Eastman. STANTON—Cecil Clifford Smith.	
Morton County	
MANDAN—Bernard Smith Nickerson.	
Mountrail County	
PARSHALL—Guy Samuel Frogner. PLAZA—Gustave Leander Rude. STANLEY—Frank Otis Joseph Brigham. WHITE EARTH—Edward Kennedy.	
Pembina County	
CAVALIER—Charles Augustus Short.	
Pierce County	
RUGBY—James Edward Cramond. WESTBY—Jesse Lot Norris.	
Ramsey County	
BROCKET—John Aldren Dean Engesather. DEVILS LAKE—Ca Fisher; George Vere Jamieson; William F. Sihler.	
Ransom County	
ENDERLIN—Arley John Ostrander. LISBON—Thomas C. Patterson Ernest E. Wands.	
Renville County	
GLENBURN—Knut Otto Knudson. SHERWOOD—John Percy Greave.	
Richland County	
HANKINSON—Dennis Edward Ryan. WYNDMERE—Kenneth Wa Wilder.	
Rollette County	
ROLLA—Bernard D. Verret.	
Sargent County	
COGSWELL—Charles E. Howard; Howard Lee Saylor.	
Sioux County	
SOLEN—Paul Frederick Rice.	
Stark County	
DICKINSON—William H. Long; Aloysius Patrick Nachtway; Vic Hugo Stickney.	
Steele County	
FINLEY—Andrew John Heimark.	
Stutsman County	
JAMESTOWN—Thomas Lloyd DePuy; William Albert Gerrish. MON PELIER—Joseph Henry Plant.	
Towner County	
BISBEE—Axel Waldemar Swenson. EGELAND—Wayne Paul O'Br	
Walsh County	
GRAFTON—John Edgar Countryman; Cyril John Glaspel. PA RIVER—Clarence Wm. Robertson; Frank Elmer Weed.	
Ward County	
BERTHOLD—Samuel Joseph Hillis. KENMARE—Neil McLean. MIN —J. Charles Jackman; Alexander J. McCannel; John Wesley Newl John Robert Pence; Frank E. Wheelou.	
Wells County	
SYKESTON—Ellis Frank Swarthout.	
Williams County	
EPPING—Dickenson Ober Wheelock. TIOGO—Simon Benhard Oll WILLISTON—Carlos Selby Jones; Hilmar Thorer Skovholt; Thomas J erson Strong.	

OHIO STATE MEDICAL SOCIETY

Officers 1917-18

E. O. Smith, President.....	Cincin
J. F. Baldwin, President-Elect.....	Colum
C. D. Selby, Secretary-Treasurer.....	Tol

Councilor Districts and Officers

Wm. E. Lower, Chairman, Cleveland; Wells Teachnor, Secret	
Columbus.	
First District.—Hamilton, Clermont, Brown, Adams, Butler, War	
Highland, Clinton and Fayette counties. Robert Carothers, Coun	
Cincinnati.	
Second District.—Logan, Preble, Montgomery, Greene, Darke, Ma	
Clark, Shelby and Champaign counties. John E. Hunter, Coun	
Greenville.	
Third District.—Van Wert, Auglaize, Allen, Hardin, Marion, Mer	
Wyandot, Hancock and Seneca counties. W. B. Van Note, Coun	
Lima.	
Fourth District.—Paulding, Putnam, Defiance, Henry, Wood, Sandu	
Williams, Fulton, Lucas and Ottawa counties. E. A. Murbach, Coun	
Archbold.	
Fifth District.—Erie, Huron, Lorain, Medina, Cuyahoga, Lake, Gea	
Ashtabula and Trumbull counties. J. E. Tuckerman, Councilor, Clevel	
Sixth District.—Summit, Portage, Mahoning, Stark, Wayne, Hol	
Ashland and Richland counties. Edgar J. March, Councilor, Canton.	
Seventh District.—Columbiana, Carroll, Jefferson, Harrison, Belm	

Monroe, Tuscarawas and Coshocton counties. James S. McClellan, Councilor, Bellair.
Eighth District.—Fairfield, Guernsey, Noble, Washington, Muskingum, Morgan, Athens, Licking and Perry counties. A. B. Headley, Councilor, Cambridge.
Ninth District.—Hocking, Vinton, Meigs, Pike, Jackson, Gallia, Scioto and Lawrence counties. J. S. Rardin, Councilor, Portsmouth.
Tenth District.—Crawford, Morrow, Knox, Union, Delaware, Madison, Franklin, Pickaway and Ross counties. Wells Teachnor, Councilor, Columbus.

HONOR ROLL

Adams County

MANCHESTER—Ralph Waldo Emerson Irwin. SEAMAN—John Walter Wm. WEST UNION—Samuel Jasper Ellison; Oliver Thoroman Sproull.

Allen County

BLUFFTON—Melville Dean Soash; Josiah S. Steiner. DELPHOS—John Wolfe. ELIDA—Gall E. Miller. LIMA—Harry F. Basinger; Joseph Cyrus Bradfield; Olen Edgar Chenoweth; Virgil H. Hay; Burt Hubbard; John Ray Johnson; Milton Jennea Longworth; Albert Pfeiffer; do Vernon Sibert; Edward D. Sinks; Claude Addison Tallman; Wilhelm Henry Vorbau; Matthias Ambrose Wagner; Edward George Weadock. WENCERVILLE—Charles D. Gamble.

Ashland County

ASHLAND—Ray Collins Ash; Daniel Lester Mohn. LONDONVILLE—Jacob Meyers Heyde.
ASHLAND—Clarke Campbell Patton.

Ashtabula County

ASHTABULA—Paul Josef Collander; Charles C. Crosby; Frederick S. Priscoll (colored); Azro J. Pardee; Neville Edward Stewart. CONAUT—William Haymaker Leet; Otto Nellis Warner; Harold Wilson. FINEVA—Zalmon Omar Sherwood. JEFFERSON—Orr Abraham Dickson. WELL—Robert Raymond Sellers. PIERPONT—George Willard Lewis. JACK CREEK—Chas. Scofield.

Athens County

AMESVILLE—George Elmer Flynn. ATHENS—Jay Randolph Crawford; Clarence Maurice Douthitt; Alfred G. Farmer; Emmett Lorenzo Cooper; James Thomas Merwin; Wiley True Sprague. GUYSVILLE—Edward Dorr Harper; Paul R. McLaughlin. NEW MARSHFIELD—German Elmer Grant Pedigo. TRIMBLE—Vernon Grossenor Danford.

Auglaize County

NEW BREMEN—George Albert Havemann. ST. MARY'S—William August Deerkake; Harry Spencer Noble. WAYNESFIELD—James Barton Day.

Belmont County

BARNESVILLE—Robert John Judkins. BELLAIRE—Chas. Lester Reed; Ed Snell Wright. SHADYSIDE—James Clark Berry.

Brown County

GEORGETOWN—Edwin David Jackson. RIBLEY—George Platt Tyler. SARDINIA—Herbert M. Chaney.

Butler County

HAMILTON—John A. Grafft; Wilmer Eli Griffith; Wm. Norwood Evers; Clement Dare Smedley; Chas. Albert S. Williams. SOMERVILLE—Wilbur Evans Beach.

Carroll County

ARROLLTON—Ralph Taylor Shipley. MALVERN—John Albert Rhiel.

Champaign County

RBANA—Henry Morgan Pearce; Maurice Leigh Smith. WOODSTOCK—Martin Earl Harrell.

Clark County

PRINGFIELD—Robert M. Andre; Fred Ellis Hall; Charles Butler Hama; Joseph Anthony Link; Joseph Webb.

Clermont County

MELIA—William M. Hicks. LOVELAND—John Dillon Wakefield. FORD—Jas. Edwin Kennedy; Clyde Byron Terwillegar. NEW RICHMOND—David Michael Roberts.

Clinton County

LANCHESTER—Robert Conard; Harold Eugene Gibson.

Columbiana County

OLUMBIANA—John A. Mellon. EAST LIVERPOOL—Oran Purdy Crews; Charles Hodge Bailey; Chas. Everett Lemmon; Merle D. McKeon. HANOVERTON—Joseph B. McHenry. LEETONIA—Strickon Conrad; Howard Engler Harman; LeRoy Stanton Hennen. LISBON—Robert Webster Bennett. SALEM—Henry Jerry John; James McDonalds McGeorge.

Coshocton County

SHOCTON—Willis H. Keenan; Jacob D. Lower; Jas. Garfield Hies. WALHONDING—Benjamin Fletcher Cureton.

Crawford County

CYRUS—Guthrie Olaf Burrell; Wilbur Glen Carlisle; Russel Jay; Wm. C. Gates; Chas. Hamlin Pelten. CHATFIELD—Karl Herbarth; Austin Ray Edwards. CHESTLINE—Ralph Raymond Harris. ION—Maurice Linsey Allen; Martin Lewis Helfrich; John Bennett; Paul August Murr.

Cuyahoga County

ECKSVILLE—Theo. Breck. CHAGRIN FALLS—Edwin Foster Wakefield. CLEVELAND—Albert Harold Aland; Fred Lee Andrews; Joseph Hies Avellone; Ulysses Morris Bachman; William R. Barney; Richard Hies; A. E. Biddinger; Clark S. Bogart; Joseph H. Boutwell; Charles Hies; John Thos. Boykin; Charles McChesney Bray; Ernest Hies; Frank E. Bunts; Theodore Burstein.
n. Hatfield Caine; Wilson Smith Chamberlain; Clyde Harrison Chase; rt Clarke Jr.; Byron Bartlett Colvin; Frederick Sturges Cooper; re W. Crilie; John Huys Crooks; Allen Greenleaf Crow; Franklin Cutler.
m Chas. Darby; Paul Franklin Davidson; Howard Hubbell Davis; Adam B. Deason; Richard Dexter; Arthur Lawrence Dippel; am Edward Dwyer; Arthur Bradley Eisenbrey; Frederick Arthur

OHIO										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commiss'd in M.R.C., etc.
Adams.....	546	20.2	24,755	916	27	..	8	20	19	4
¹ Allen.....	406	3.9	62,860	604	104	2	48	76	86	19
Ashland.....	421	10.5	24,281	607	40	..	13	24	20	4
Ashtabula.....	723	8.3	65,459	752	87	9	34	72	37	13
Athens.....	487	7.2	54,416	800	68	..	18	44	56	11
Auglaize.....	397	10.7	31,285	845	37	..	21	25	34	4
Belmont.....	630	7.9	88,520	1,106	80	..	36	55	70	4
Brown.....	481	11.2	24,832	730	34	..	13	20	13	3
² Butler.....	452	12.9	80,054	2,287	35	6	54	84	64	6
Carroll.....	387	21.5	15,761	875	18	..	4	8	4	2
Champaign.....	421	7.6	26,351	479	55	1	22	34	23	3
³ Clark.....	407	3.8	71,907	665	108	1	42	73	68	5
Clermont.....	465	8.6	29,551	547	54	..	17	27	14	5
Clinton.....	411	10.3	23,680	592	40	1	15	26	28	2
Columbiana...	534	5.7	82,480	886	93	2	43	55	66	12
Coshocton.....	558	13.1	30,693	876	35	1	10	23	24	4
Crawford.....	409	8.5	34,124	710	48	1	21	42	36	12
⁴ Cuyahoga....	463	0.3	782,179	718	1,089	37	751	965	549	162
Darke.....	586	8.8	43,225	654	66	..	25	46	56	5
Defiance.....	405	13.1	24,498	790	31	1	9	16	14	2
Delaware.....	445	9.9	27,751	616	45	2	10	22	29	4
Eric.....	256	5.4	38,819	825	47	1	20	30	28	8
Fairfield.....	495	8.1	42,806	701	61	2	30	44	40	10
Fayette.....	413	13.3	21,757	701	41	..	12	23	14	5
⁵ Franklin.....	517	0.9	263,253	450	584	13	271	440	297	91
Fulton.....	405	10.9	24,725	668	37	2	16	21	26	5
Gallia.....	449	12.7	25,745	715	36	2	11	21	25	3
Gauga.....	416	29.7	14,670	1,047	14	2	9	9	11	4
Greene.....	415	8.8	29,733	632	47	2	16	30	34	6
Guernsey.....	518	10.4	48,767	975	50	..	30	39	33	6
⁶ Hamilton.....	407	0.4	498,143	542	919	42	465	703	481	124
Hancock.....	535	9.7	37,860	683	55	2	16	32	38	8
Hardin.....	473	9.1	30,407	584	52	..	15	32	26	6
Harrison.....	401	13.8	19,076	657	29	1	8	19	21	5
Henry.....	414	12.5	25,119	761	33	..	11	26	27	5
Highland.....	549	4.5	28,711	233	123	6	17	85	82	4
Hocking.....	411	17.1	23,650	985	24	..	12	20	13	2
Holmes.....	418	18.2	17,909	778	23	..	15	15	13	3
Huron.....	494	9.7	35,576	697	51	4	22	33	20	7
Jackson.....	404	15.0	30,791	1,140	27	1	9	18	19	4
Jefferson.....	407	5.2	80,798	1,035	78	2	35	57	54	16
Knox.....	513	10.3	31,940	638	50	1	18	29	29	8
Lake.....	241	6.7	23,835	916	36	2	4	23	22	2
Lawrence.....	443	10.5	39,488	940	42	..	16	27	27	7
⁷ Licking.....	669	7.3	61,809	975	91	1	33	65	43	11
Logan.....	451	7.5	30,087	501	60	..	14	34	40	7
⁸ Lorain.....	497	4.8	91,497	889	104	4	43	71	70	15
⁹ Lucas.....	342	0.9	221,318	571	387	10	195	301	234	58
Madison.....	497	13.4	19,902	537	37	..	14	24	23	3
¹⁰ Mahoning....	427	2.3	149,742	805	186	3	141	151	128	38
Marion.....	409	6.7	37,835	620	61	2	23	41	45	6
Medina.....	435	13.6	24,795	774	32	..	15	19	25	5
Meigs.....	412	13.3	25,594	826	31	1	8	20	16	1
Mercer.....	450	12.8	27,536	786	35	..	11	21	26	4
Miami.....	408	5.5	46,464	627	74	1	35	48	53	2
Monroe.....	448	22.4	24,244	1,212	20	..	7	11	13	1
¹¹ Montgomery..	455	1.5	188,300	642	293	8	149	223	176	32
Morgan.....	402	20.1	16,097	804	20	3	11	11	14	1
Morrow.....	403	16.8	16,815	700	24	..	6	14	12	3
¹² Muskingum...	664	8.3	60,628	757	80	2	26	51	51	10
Noble.....	399	28.5	18,601	1,328	14	..	5	10	8	2
Ottawa.....	270	6.2	22,467	522	43	1	9	19	15	3
Paulding.....	413	17.2	22,730	947	24	..	9	20	20	5
Perry.....	399	11.1	37,991	1,055	36	..	18	28	23	3
Pickaway.....	490	12.6	26,158	670	39	..	9	25	24	2
Pike.....	428	35.7	15,723	1,310	12	..	4	7	10	1
Portage.....	521	11.1	31,079	661	47	1	11	20	28	4
Preble.....	416	12.6	23,921	724	33	..	12	19	20	3
Putnam.....	482	12.7	29,972	783	38	1	19	28	30	4
Richland.....	503	6.3	50,132	626	80	5	32	51	53	7
Ross.....	668	12.4	40,069	742	54	1	25	36	34	7
Sandusky.....	413	10.1	35,798	873	41	1	11	26	28	5
Scioto.....	623	8.5	53,924	738	73	1	31	57	57	10
Seneca.....	550	7.8	43,338	619	70	2	29	41	38	10
Shelby.....	413	10.9	24,690	649	38	2	13	20	19	4
¹³ Stark.....	566	3.0	143,600	767	187	3	85	108	130	12
¹⁴ Summit.....	408	1.7	134,924	559	241	3	96	198	190	35
Trumbull.....	673	7.4	57,271	673	85	3	35	59	40	10
Tuscarawas...	555	7.9	59,430	849	70	2	22	46	52	8
Union.....	446	16.5	21,871	810	27	1	15	18	18	4
Van Wert.....	406	9.0	29,119	647	45	1	17	29	35	7
Vinton.....	412	31.7	13,096	1,007	13	..	3	10	7	2
Warren.....	413	9.6	24,497	569	42	2	8	19	31	1
Washington...	630	8.2	45,422	589	77	2	14	34	50	8
Wayne.....	557	9.3	38,195	636	60	2	23	36	36	3
Williams.....	411	10.3	25,376	634	40	..	11	27	30	3
Wood.....	612	7.4	46,330	553	83	..	23	57	54	9
Wyandot.....	406	13.0	20,760	669	31	..	9	17	14	2
Totals.....	40,750	5.2	5,261,587	673	7,812	218	3,626	5,699	4,758	1,001

1. Includes Lima, population 36,124; physicians 79 [M.R.C. 16].
2. Includes Hamilton, population 41,338; physicians 53 [M.R.C. 5].
3. Includes Springfield, population 52,296; physicians 88 [M.R.C. 5].
4. Includes Cleveland, population 690,837; physicians 1,043 [M.R.C. 154].
5. Includes Columbus, population 220,035; physicians 531 [M.R.C. 89].
6. Includes Cincinnati, population 414,248; physicians 839 [M.R.C. 117].
7. Includes Newark, population 30,317; physicians 51 [M.R.C. 3].
8. Includes Lorain, population 33,266; physicians 34 [M.R.C. 3].
9. Includes Toledo, population 202,010; physicians 372 [M.R.C. 56].
10. Includes Youngstown, population 112,282; physicians 157 [M.R.C. 36].
11. Includes Dayton, population 128,939; physicians 248 [M.R.C. 26].
12. Includes Zanesville, population 31,320; physicians 51 [M.R.C. 7].
13. Includes Canton, population 62,566; physicians 85 [M.R.C. 6].
14. Includes Akron, population 93,604; physicians 189 [M.R.C. 27].

Roy Edwin Fallas; John Aloysius Filak; Paul F. Finch; Giordano Bruno Fliedner; Roy Parsons Forbes; Amos Emanuel Fried; Clerimont Friedman.

Francis J. Gallagher; Charles Herbert Garvin; Paul Crankshaw Gau chat; Frank Paul Geraci; William C. Gill; Robert Jas. Gillespie; George Frederick Glass; Isadore Jacob Goodman; Harold Jackson Gordon; Abraham Benjamin Grossman; Royal George Grossman.

Benjamin I. Harrison; Frederick Cowles Herrick; Rudolph Heym; Frank Ward Hickin; Walter Coit Hill; Merrill Fowler Hosmer.

John Marvin Ingersoll; Theron S. Jackson; Ignatius Edward Jasinski; Arthur Shade Jones; Frank Garrett Jones Jr.; Nathaniel Moore Jones; Thomas E. Jones.

Howard Thomas Karsner; Thomas Richard Kennerdell; Lester Wm. Krauss; Paul Hermann Krebs.

Charles Gerard La Rocca; Walter Magruder Leonard; Henry Allen Lichtig; John E. Linden; William E. Lower; Wm. Price Lowry.

Daniel Marsh MacDonald; Charles Henry MacFarland Jr.; Max Mahrer; David Marine; Nevin Calvin Hayer; John Maxwell McCleery; Joseph Edgar McClelland; Norman Percy McGay; Edgar Paul McNamee; John Amos Meek; Jos. Chas. Monnier; Gordon Niles Morrill; Patrick Sylvester Murphy.

Edward Patrick Neary; Eugene Phillips Neitz; Bernard Benjamin Neubauer; William Schmidlapp Nicholas; Campbell Freedom George Norlin; James T. T. Norton.

Martin Aloysius O'Brien; Lawrence Nephi Ossman; Lewis Augustav Oster.

Harry V. Paryzek; Leslie Joshua Paul; Roy Gentry Pearce; Harry Doremus Piercy; James Douglas Pilcher; Joseph Charles Placak.

Leonard Robert Ravitz; David Llewellyn Rees; George Hall Reeve; Rudolph Samuel Reich; Franklyn Augustus Rice; Maurice Leonard Richardson; Arthur Ellwood Robertson; William Frederick Rohland; Chas. Lounsbury Ruggles; Harold Oliver Ruh.

Henry L. Sanford; Bruno Jos. Sawicki; Henry Aloysius Schlink; Emmett Chas. Schoolfield; Rollo J. Shale; Lorin Guy Sheets; Leroy B. Sherry; Herman Shube; Thomas P. Shupe; Alvin O. Sibila; Ralph Henry Sill; Roland E. Skeel; Harry G. Sloan; Archibald Alfred Southwick; Anton Benjamin Spurney; John Mattern Steel; Alvin Alexander Stone; Chas. Walter Stone; Willard Cyrus Stoner; Abraham Strauss; Arthur L. Stotter.

Harold L. Taylor; Hadley H. Teter; Merthyn A. Thomas; Raymond Lee Thompson; John Wesley Tippie; Oscar Ewing Townsend; Charles David Treister; John Poag Tucker; Edward Von Den Steinen.

Harold F. Wagner; Harry Roswell Wahl; Thomas Edward Walker; Harry Holliday Ward; Herbert Vance Weibrauch; Robert W. Williams; Emil Edward Wolf; James Nicholas Wychgel; Ivan Isaac Yoder; Nicholas Lee Zinner.

COLDWATER—Clarence John Schirack. COLTON—George Estus Garwood. LAKEWOOD—Alvah Smith McClain. SOLON—Ralph Blaine Thompson. WARRENSVILLE—Carl Mulky.

WARRENSVILLE—Frank Cornelius Balderrey. CLEVELAND—Martin Luther Crawford; John Dexter Osmond; James Elmore Randolph.

Darke County

BURKETTSVILLE—Charles Peter Sullivan. GETTYSBURG—Harry Wm. Reck; Joyce Warwick Van Lue. GREENVILLE—Eugene George Husted; Albert Franklin Sarver.

Defiance County

EVANSPOORT—Merton Ray Kittredge. JEWELL—Jos. Edward Stephan.

Delaware County

DELAWARE—Floyd V. Miller; Franklin D. Posle; Victor B. Weller. OSTRANDER—Girard Edwin Robinson.

Erie County

HURON—Frederick Morell Houghtaling; Albert Franklin Kuhl. KELLEYS ISLAND—George Washington Manning. SANDUSKY—Henry Graefe Jr.; Ferdinand Joseph Leblcq; Parker Fletcher Southwick; Henry Lee Sowash; Ralph Thomas Saunders.

Fairfield County

BREMEN—Carl W. Brown; James Russell Driver. LANCASTER—Clark Gibson Axline; Pinckney Seymour Bone; Charles H. Hamilton; James M. Lantz; John James Silbaugh. STOUTSVILLE—Chas. A. Kefaurer. SUGAR GROVE—Wm. Reed Coleman. THURSTON—Chas. Ross Fishel.

Fayette County

JEFFERSONVILLE—John Harold French. SELDEN—Glen Nisley. WASHINGTON C. H.—Henry Alden Baughn; Herman Oliver Hodson; Luther Peterson Howell.

Franklin County

COLUMBUS—Richard Orin Adams; Elmore Ellsworth Adel; Nicholas A. Albanese; James Way Allbritain.

Robert Peter Bausch; Howard Ellsworth Boucher; Frank George Boudreau; Gilbert W. Brchm; Dora V. Burkett.

Edward M. Clark; Kenneth Atkinson Clouse. Paul Arthur Davis; Dudley T. Dawson; Clarence H. Denner; Verne A. Dodd; Joseph Mitchell Dunn; Nelson Cornelius Dysart.

John B. C. Eckstorm; Samuel David Edelman; Jesse C. Edwards; George Benjamin Faulder; William T. Fenker; Jonathan Forman.

Francis Thomas Galle; Lee Connel Gatewood; Sylvester J. Goodman; Elijah J. Gordon; Fred Browne Grosvenor.

Charles Sumner Hamilton; Forest Clayton Haney; Arthur Merl Hauer; Samuel Hindman; Arthur Handley Hixson; George Owen Hoskins; Rac E. Houke; Carl C. Hugger.

Romeo Arsburn Johnson; Daniel Webster Jones; Edgar Burnett Junkermann.

Jay Gould Keiser; Jeremiah Ervin Kerscher; John Donovan Kessler; Gerald P. Lawrence; Chas. Seymour Lehner; Edward C. Ludwig; Fred A. Lutz.

Roll Harrison Markwith; Chas. Levi Maxwell; Eugene Franklin McCampbell; Charles E. McClelland; John Roy McDowell; Walter Harold McKay; Joseph Dennis McNerney; John W. Means; William Franklin Millhon; Wm. Harries Morgan; John Herbert Nichols.

Anton W. Oelgoetz; Morse F. Osborn; Claren Emmett Pfeifer; David Patterson Phillips Jr.; Carlton David Postle.

Philip J. Reel; Andrew S. Robinson; Lacky H. Russell; George Christian Schaeffer; John Philip Scheib; Auston Henry Seeds; Edwin F. Shaffer; Elgie Raymond Shaffer; Clark Edward Sharp; John William Sheetz; Victor Roy Small; Edward E. Smith; Harry H. Snively; Harold Dale Strausbaugh; Timothy Joseph Sullivan.

William Neely Taylor; Robert Amos Thornton; Frank Sherman Van Dyke.

James Halford Warren; Charles Henry Wells; Starling Sullivant Wilcox; Frederick Williams; Philip Duncan Wilson; Frank Winders;

Earl Corson Wood; Halstead Robert Wright. HILLARDS—John Walter Renner. LINDEN HEIGHTS—Joseph Angevine Turner.

COLUMBUS—George Alfred Rowland.

Fulton County

ARCHBOLD—Clarence F. Murbach. DELTA—Archibald Moltz Wilkins. TEDROW—William Pleasant Valentine Evers. WAUSEON—Carl Floyd Hartmann; William Hendrix Maddox.

Gallia County

GALLIPOLIS—Everett Humphreys Morgan; Edwin Jehu Rose. VINTON—John William Clark.

Geauga County

BURTON—Theodore Frederick Myler. HUNTSBURG—Albert Dwight Williams. MONTVILLE—Amo Edward Bohm.

BURTON—Nell Avon Dayton.

Greene County

CEDARVILLE—Simpson Alexander Smith. NEW BURLINGTON—Harry Osborne Whitaker. XENIA—William Turner Darnell; Benjamin R. McClellan; Harold Clay Messenger; Lawrence Shields.

Guernsey County

BYESVILLE—Virgil Harrison Danford. CAMBRIDGE—Fred Warfield Lane; Harold Robbins Neeland. LORE CITY—Alexander Robert Johnson; Chas. Francis Shively. SENECAVILLE—Carroll Hallam Skeen.

Hamilton County

CINCINNATI—Matthew M. Applegate; Joseph Chas. Aub; Arthur C. Bachmeyer; Ellis Robert Bader; Edmund Michael Baehr; Earl Elias Baker; Chas. Worcester Beaman; Julien E. Benjamin; James Magee Bentley; Clarence Wilford Betzner; Oscar B. Biern; Herbert Adolph Brown; James S. Brummett; Julian Holt Buff.

John A. Caldwell; Ralph Goldsmith Carothers; Alfred Peter Coles. Louis Alexander Cornish; Harry Clifford Cragg; Frank Bradley Cross.

De Enna Darrell De Neen; John Benedict Doyle; Charles S. Dryer. Allen Henry Dunton.

Charles Kenneth Ervin; Jacob Benjamin Falk; Emmett Fayen; Adolphus William Foertmeyer; Starr Ford; Robin William Cummins Francis Albert H. Freiberg; William Louis Freyhof; Alfred Friedlander.

Raymond Erastus Gaston; Albert Connell Geringer; Rudolph Jacob Gieseler; William Gillespie; Edward Benjamin Gray; Claude D. Greene.

John Stewart Hagen; Claude Edwin Hale Jr.; Joseph A. Hall; Daniel Crumlick Handley; Ralph W. Hardinger; Walter H. Hatfield; Selma Frederick Hauser; Lewis Wade Heiser; Frank W. Hendley; Peter Hofmann Christian Rasmus Holmes; Nathan Hale Keller; Charles Edward Kiely; Edward King; Arthur E. Koch; Edward Kuck.

Benjamin H. Lamb; William Lee Layport; Duke Lee; Benjamin Franklin Lehman; Lauren Norton Lindenberger.

Robert D. Maddox; Charles Maertz; Leo Rudolph Majowski; Anthon Matuska; Merrick Fiefield McCarthy; Edwin Robert McGrath; George Tracy Mehan; Charles W. Metz; Louis A. Molony; Roger S. Morris.

Arthur Edwin Osmond; Franklin Johnson Owry; Russell H. Paden. Marcellus Leroy Peterson; Joseph Edward Pirrung; Philip Wilfred Place.

Louis Alfred Querner; Henry Benjamin Raman; Joseph L. Ranschoff. Thomas A. Ratliff; Goodrich Barbour Rhodes; Everett Chaney Robbins.

Dennis Rupp. Robert Ray Sattler; Frank Joseph Sauer; Louis Howard Schriver.

Charles Cornelius Shearer; Albert Freeman Snell Jr.; Sylvan Eppinger Sommer; Charles Thaddeus Souther; John D. Spelman; Ralph Wm. Staley; Henry Stanberry.

Horace Fred Tangeman; Neil Edison Taylor; Leon G. Tedesche; Sila Paul Tharp; William Joseph Topmoeller; David Andrew Tucker Jr.

Martin Harley Urner; Rufus A. Van Voast; Howard Jefferson Ware. Charles Henry Weintz; Andrew Louis West; Marion Whitacre; Henry Lynde Woodward; Paul Gerhardt Wooley; Louis Claud Wottring; Samuel Zielonka. ELMWOOD PLACE—Byron Hubert Nillaus. GLENDALE—Rufus Southworth. HARRISON—Frederick Conkling Swing; Ralph Boot Tate. NORWOOD—Elmer A. Klein; Charles A. Neal. READING—Alvin Henry Carr. WYOMING—Charles Moore Paul.

CINCINNATI—Davis Hunter Coleman; Barron Johns; Henry Melvin Lee; Alfred Lisle Mayfield; Oliver Henry Pinney; Ralph Henry Vance; Melville Frederick Walter; Hiram Bertram Weiss.

Hancock County

FINDLAY—Alfred Wickham Balsley; Edwin Harold Coopers; John Meeks Firmin; John Van Horn Hartman; Warren Brown Keator; P. C. Pennington; Allison Moore Van Horn. McCOMB—Calvin Deverde Todd.

Hardin County

ALLEN—Newton Wisely Jr. KENTON—Leroy Lorin Belt; Frank Baker Snodgrass. McGUFFY—Roy K. Evans. MT. VICTORY—Elmore Ellsworth Lynch.

KENTON—John D. Nourse.

Harrison County

FREEPORT—Wilbur Karl Black. HARRISVILLE—James Clay McClester. JEWETT—Raymond Lee Thompson. NEW ATHENS—James Adams McGrew. PIEDMONT—Walter Wilford Hall Curtiss.

Henry County

DESHLER—Orra Lee Norris. HOLGATE—Julius Ralph Bolles; James Franklin Earp. McCLURE—Irwin Henry Boesel. NAPOLEON—Charles Meigs Harrison.

Highland County

GREENFIELD—James Delmar Varney. HIGHLAND—John Loren McAnister. HILLSBORO—Henry M. Brown. NEW PETERSBURG—William Harris Ambrose.

Hocking County

LOGAN—Claud C. Lyon. MURRAY—Edwin Henry Hayman.

Holmes County

KILLBUCK—Frederick Parsons Purdy. MILLERSBURG—Atlee Ro Olmstead; Isaac Smith Putnam.

Huron County

BELLEVIEW—Charles Lee Harding. FITCHVILLE—Clement La Valandigham Bell. MONROEVILLE—Benjamin Charles Pilkey. NEW LONDON—James Walter Reese. NORTH FAIRFIELD—Angus Alexander MacIntosh. NORWALK—James Durley Coupland; Robert C. Gill.

Jackson County

JACKSON—Halder L. Gahm; Johnson Sherman Hunter. WELLSTON—Daniel William Davis; William Hadley Parker.

Jefferson County

AMSTERDAM—Zeddock Atwell. MINGO JUNCTION—Thomas McElroy. MT. STERLING—Roderick Blake Wittich. NEW SOMERSET—Robert Wilson Schilling. RAYLAND—John R. Caldwell. STEUBENVILLE—William Kerr Allsop; James Kester Biddle; Victor Biddle; Elsworth DeMarr Erskine; Charles Walter Maxson; James Edwin Miller; Joseph Russell Montgomery; Silas Warren Saxton. TILTONSVILLE—Paul Morrison. TORONTO—George A. Ferguson. WINTERSVILLE—William S. P. Doneho.

RAYLAND—John R. Caldwell.

Knox County

FREDERICKTOWN—John Howard Norrick. MT. VERNON—John B. Laypool; Carroll Dunham Conard; Edward Darwin Downs; Charles Herndon Haralson; Josiah Merton Pumphrey; William Cooper Russell; Samuel Workman.

Lake County

MADISON—Julian Vern Winans. PAINESVILLE—James Roy Davis.

Lawrence County

FRONTON—Edward Crescentus Goldcamp; Oscar Henry Henninger. EDRO—Orlyn Wiseman. ROCK CAMP—John Henry Ramey. SCOTT OWN—Irwin William Mayberry. SHERRITTS—Forrest Ray Stewart. SOUTH POINT—George W. King.

Licking County

ALEXANDRIA—Willoughby Dayton Bishop; Edgar Harvey Johnston. RANVILLE—Edgar Parsons Cook. HEBRON—Charles George Bozman. WINSTON—Gail Knorr Butt; Raymond Charles Mauger. NEWARK—Eaves Warren De Crow; Louis Albert Mitchell; Victor Roland Turner. F. LOUISVILLE—Lora Marason Marriott. UTICA—Edward M. Cass.

Logan County

BELLEFONTAINE—William Hamilton Carey; Arthur James McCracken; Robert Boyd Pratt; Clyde Kress Startzman; Guy Howard Swan. EAST BERTY—William Claude Davis. WEST LIBERTY—James Wilson Croft.

Lorain County

AMHERST—Bryce Alfred Miller. ELYRIA—George Gill; William Julius Hart; William Bowler Hubbell; Frank Alvin Lawrence; Julius Cesar Kramer; Henry M. Metcalf; Edwin Elmer Sheffield; Arthur Bushell Smith. LORAIN—William Frederick Dager; Theo. James Kasinski; to Mikolanda. NORTH RIDGEVILLE—Russell Adelbert Pease. OBERLIN—Carroll Lawrence Storey. WELLINGTON—Frank Benham Gregg.

Lucas County

MAUMEE—Roswell William Comstock. TOLEDO—Madison G. Baldwin; Walter Waldo Beck; Kurt C. Becker; Grace Kurtz Beckwith; James A. Belyea; Harry Albert Bennett; Clarence Berger; Squire S. Beverly; George Bertram Booth; Ray Burton Wen; Thomas Hartwell Brown; Burt George Chollett; Claud Bertrand le; William W. Conger; Fred L. Eystone; Charles Faber; Frank D. Meau; Frank Baker Ficklin; Karl Dean Figley; Sidney Dix Foster; Morris W. Gillette; Adolph J. Girardot; Lucius Barnes Goodyear; Jay Maurice Harrison; John Howard Harvey; Barney James Hein; George Hettler; Thomas Francis Higgins; Arthur Hadley Hixson; Daniel W. Reid; Philip M. Johnson; Peter Everett Kern; Robert E. Lawless; Ward James McCormick; Murray B. McGonigle; Hoyt Breen Meader; Lawrence Delano Miller; Daniel Cook Moor; Carl Seymour Mundy; Frank Lewis Newburg; Frank William Pilliod; Henry Levi Price; Owen Lanty Rees; Fred Lawville Rhodes; William Alfred Ricard; Philip Wilkin Rieg; Herman George Rosenblum; August H. Schade; William Morai Shapiro; Charles G. Souder; Willard John Stone; William Henry Rathman; Philip D. Werum; Grattian Philips Whitwham; Howard Wilkin Williamson; Dale Wilson. WHITEHOUSE—Harry Stone Hayes.

Madison County

ILLY CHAPEL—George McC. Kerr. LONDON—Harry V. Christopher; W. Parker.

Mahoning County

EAST YOUNGSTOWN—Francis Percival Fitzpatrick. STRUTHERS—William Fenton. YOUNGSTOWN—Clarence D. Barrett; Frederick J. Kamp; William McGranahan Blaine; Albion Earl Brant; Edward Braun; John Ure Buchanan; William Hall Bunn. John R. Clark; Earl W. Ciffe; George Dubarry Dunn; Jos. F. Elder; Ed Paul Hancuff; Maurice Paxton Jones. James Sidney Mariner; Max Marowitz; Sidney Morrill McCurdy; Charles Wallace McNamara; Nathan Nissau Meyer; Ralph Richard Morris; Charles Francis Morris; Charles Howard Moses. Jean Abbott Nesbit; George S. Nutt; George W. O'Grady; Henry Man- Osborne; Albin Morse Painter; David Barringer Phillips; Wesley Julius Redd; Colin McFarquhar Reed; James A. Sherbondy; David Benk Smeltzer; Arthur William Thomas; Everett Raymond Thomas; ter B. Turner; John Lewis Washburn; Charles Christian Woolferth.

Marion County

LEDONIA—Brett Battrick Hurd. LA RUE—Donald Da Sosta Shira. ION—Jacob Murray Hoskins; Sheridan Waterman Mattox; Walter z Weiser. ARION—Clifford George Smith.

Medina County

EDINA—Roy G. Strong. SEVILLE—John Loveless Beach; Roy Arthur Wall. VALLEY CITY—Alexander G. Appleby. EDINA—Hiram Paul Hugus Robinson.

Meigs County

TART FALLS—Herman L. Crary.

Mercer County

LINA—Frank Edwin Ayres; John Tipton Gibbons. FT. RECOVERY William Adam Lieser. ROCKFORD—James Oscar Wickerman.

Miami County

UA—Michael Robert Haley; Francis Willard Thomas.

Monroe County

LY—Carl Eugene Edwards.

Montgomery County

YTON—Robert Carlton Austin; Charles O. Bayless; Harry Webster et; Arthur Ward Carley; Carl Lane Cline; Chelsea Austin Coleman; Cecil George; Guy C. Giffen; A. E. Hewitt; Fred E. Kislig; Walter Cline; Harold Fredk. Koppe; John Klinghorn Lawson; William R.

Mansur; Albert Ward McCally; Harry Hugo McClellan; John William McKemy; William O. Roop; Frederick C. Rounds; Frank Lyon Sallsbury; Henry Anthony Springer; Leonard Ellsworth Stutsman; Thomas E. Walkup; Ralph LeMoyn Woodruff. MIAMISBURG—Charles Tilden Hunt. NAT'L MIL. HOME—Francis Eugene Demon; Courtney Perry Grover; Clinton Gallagher Lyons Jr.; Neely Cornelius Mashburn; Jaffrey Joseph Vega.

DAYTON—Franklin Winbert Roush; Homer Hamilton Williams.

Morgan County

McCONNELSVILLE—John Frederick Hill.

Morrow County

CARDINGTON—Walter S. Bennett. EDISON—Charles Salo Jackson. IBERIA—Delphus Brown Virtue.

Muskingum County

NASHPORT—Robert Ellsworth Wells. NEW CONCORD—John Gregory Martin. SONORA—Maurice Locbell. ZANESVILLE—Stanley Lincoln Allen; Edmund Russell Brush; Charles Henry Higgins; Harry Marion Rambo; Charles James Roach; Charles Philip Sellers; Alvin E. Walters.

Noble County

BELLE VALLEY—Frank Raymond Dew. CALDWELL—Ellis Dyson Kackley.

Ottawa County

PORT CLINTON—Carlton Culley Starkes; John Arthur True; Owen Payard Van Epp.

Paulding County

LOTTY—Ambrose Henry Mouser; Ray Henry Mouser. PAULDING—Lee Roy Fast. PAYNE—Clarence Henry Hyman; John Charles Miller.

Perry County

CORNING—Neville H. McNeerney. CROOKSVILLE—Edgar Dempsey Allen. SANTOY—John Rush Warren.

Pickaway County

ASHVILLE—Harold Vieman Postle. CIRCLEVILLE—Harry D. Jackson.

Pike County

PIKETON—Isaac Preston Seiler.

Portage County

KENT—Bradner Earl Gorham. RAVENNA—Worth Tyndall Gatchell; Bernard Henry Nichols; Lucius Warner Prichard.

Preble County

CAMDEN—Jerrard Willard Coombs. EATON—Horatio Zimmerman Silver. MORNING SUN—William Thomas Stewart.

Putnam County

KALIDA—John Denver Siddall; John Davis Watterson. OTTAWA—Otto James Owens; Benjamin Rappaport.

Richland County

BELLEVILLE—Caris Todd. MANSFIELD—Samuel Edwin Findley; Wayne Perry Mecklem; Edward Remy Jr.; George Chauncey Smith. PLYMOUTH—John Franklin Holtz. SHELBY—William Andrew Smith.

Ross County

CHILLICOTHE—Abraham Henry Dunn; Ralph Williams Holmes; Roy Baldwin Wynkoop. FRANKFORT—Warde Byron Smith; Lewis Martin Tinker. KINGSTON—Charles Cyrus Hatfield; Russell Eugene Lightner.

Sandusky County

CLYDE—Edwin A. Baker. FREMONT—William Ray Deemer; Sherman McKenny. GIBSONBURG—Albert Griffith Eyestone. WOODVILLE—Harvey Newell Trumbull.

Scioto County

NEW BOSTON—Alfred B. Mills. PORTSMOUTH—Challis Haddon Dawson; Herbert Morris Keil; David H. McCall; George Sylvester Mytinger; William Alexander Quinn; Harry F. Rapp; Joseph S. Rardin; Oriu Worrett Robc. SCIOTOVILLE—Carl Herman Graf.

Seneca County

FOSTORIA—Arthur John Fletcher; Harold Edgar Fruth; Virgil Jaye Fruth; Nathan Cleveland Hatfield; Addison Hayes Hattery; Charles Augustus Henry Jr.; William Leonard; Cecil James Johnston; Floyd Samuel Mowrcy. TIFFIN—Henry Lee Werner Jr.

Shelby County

ANNA—Bennie Logau Englerth. SIDNEY—John Frauklin Conner; Vernon Walker LeMaster; Arthur Silver.

Stark County

ALLIANCE—Benjamin C. Barnard; Homer Garfield Scranton. CANTON—Claude Dewes Hamilton; James Gerard Kramer; John Daniel O'Brien; Chester Moore Peters; Raymond B. T. Sweany; Joseph Llewellyn Todd. MASSILLON—Parker G. Borden; Joel Dubois Holston; John Hamilton Murray.

MINERVA—Lee E. Casey. NEW BERLIN—James Benjamin Dougherty.

Summit County

AKRON—Richard Ellison Amos; Henry E. Baremore Jr.; Edward W. Barton; Lucien Daniel Clark; Roy F. Drury; William Lyman Fox; Benjamin Harrison Gillespie; Jesse Grim; Howard R. Heckert; Ralph Samuel Hosler; Leroy Bromwell Humphrey; George Morrison Logan; Roy Vincent Luce; Orrin Clark McDowell; Harvey Huston Musser; Charles Clifford Pinkerton; Robert Swinton Postle; Ralph Edgar Powers; Fred Karl Read; Vest D. Reichelderfer; Everett T. Skeels; Carl Cleveland Smith; James Edward Stewart; Joseph Nathias Ulrich; Cloyd Frank Wharton; John H. Weber. BARBERTON—Walter Ernest Dapf; Germanus Elvery Gardner; Herbert A. Rodenbaugh; Howard Lee Smallman. COPLEY—Percy Burdett Long. CUYAHOGA FALLS—William Alouzo Searl. KENMORE—Earl Z. Alspach; Sydney Jerome Havre. AKRON—Smith Elliott McAdoo.

Trumbull County

BRISTOLVILLE—Jesse Eugene Thompson. GIRARD—Fred Charles Hunt. HUBBARD—Thomas Angelus Minaham Jr. KINSMAN—Luman Gordon Moore. NILES—Curtis Carrington Williams. WARREN—Melville S. Darwin Alles; Delbert Ellas Hoover; Moses T. Knappeuberger; William Charles Pontius; Chester Curtis Waller.

Tuscarawas County

DENNISON—Roy A. Wilson. DOVER—Burt Allen Marquand; Max Shaweaker. NEWCOMERSTOWN—Rollin Andrew Goudy. NEW PHILADELPHIA—Harrison Arthur Coleman; Kenneth Earl Shauwecker. URICHSVILLE—Henry Allan Back; Gale Clevenger Guthrie.

Union County

MARYSVILLE—William Mitchell Goff; Angus Maciver. MILFORD CENTER—John Dean Boylan. RICHWOOD—Roy Francis Jolley.

Van Wert County

OHIO CITY—Murray Emerson Reeder. SCOTT—Myron Hanna. VAN WERT—Charles G. Church; Robert Cornelius Flemming; Nolan Eugene Leake. WILSHIRE—Walter Curtis Roller. WREN—Francis Erastus Reed.

Vinton County

HAMDEN—William Herbert Henry. McARTHUR—Thurman Bishop Haas.

Warren County

MORROW—Clifford Paul Krohn.

Washington County

MARIETTA—Edgar Ward Hill Jr.; Walter William McMillan; James Brinton Penrose; William Walter Sauer; Timothy Gibson Sellew; Arthur Howard Smith; Harold Henry Theis. NEWPORT—Larry R. Gale.

Wayne County

DALTON—Charles Ross Deeds. ORRVILLE—Marion A. Blankenhorn; Donald Murphy Blizzard. SHREVE—Harry B. Bertollette; Kromer Columbus Ice. WEST SALEM—Milton Bronner Cohen. WOOSTER—Thomas Foster; Thomas Arthur Graven.

Williams County

BRYAN—James Wilkinson Long; Franz Emory Solier. EDGERTON—George Russell Curl.

Wood County

BOWLING GREEN—Frank V. Boyle; George Albert Gorsuch; Arthur M. Harrison; James W. Rae; Frank Atwater Stove. CUSTAR—Ivan Lester Biggs. GRAND RAPIDS—Earl Fray Peinert. PRAIRIE DEPOT—Lewis Richard Carr. WESTON—J. Cliff Wetherill.

Wyandot County

CAREY—Robert Carl Van Buren. UPPER SANDUSKY—J. Craig Bowman.

OKLAHOMA STATE MEDICAL ASSOCIATION

Officers 1917-18

W. Albert Cook, President.....Tulsa
McLain Rogers, First Vice President.....Clinton
G. F. Border, Second Vice President.....Mangum
Horace Reed, Third Vice President.....Oklahoma City
Claude A. Thompson, Secretary.....Muskogee

Councilor Districts and Officers

First District—Beaver, Cimarron, Ellis, Harper, Texas, Woods and Woodward counties. J. M. Workman, Councilor, Woodward.
Second District—Beckham, Blaine, Custer, Dewey, Roger Mills and Washita counties. Ellis Lamb, Councilor, Clinton.
Third District—Comanche, Cotton, Greer, Harman, Jackson, Kiowa and Tillman counties. G. P. Cherry, Councilor, Mangum.
Fourth District—Alfalfa, Garfield, Grant, Kay, Major and Noble counties. G. A. Boyle, Councilor, Enid.
Fifth District—Canadian, Kingfisher, Logan and Oklahoma counties. F. Y. Cronk, Councilor, Tulsa.
Sixth District—Caddo, Garvin, Grady, Jefferson, McClain and Stephens counties. C. M. Maupin, Councilor, Waurika.
Seventh District—Creek, Okfuskee, Okmulgee, Osage, Pawnee and Tulsa counties. N. W. Mayginnis, Councilor, Tulsa.
Eighth District—Cleveland, Lincoln, Payne, Pottawatomie and Seminole counties. H. M. Williams, Councilor, Welston.
Ninth District—Carter, Coal, Johnston, Love, Marshall, Murray and Pontotoc counties. J. T. Slover, Councilor, Sulphur.
Tenth District—Craig, Delaware, Mayes, Nowata, Ottawa, Rogers and Washington counties. R. L. Mitchell, Councilor, Vinita.
Eleventh District—Adair, Cherokee, Haskell, McIntosh, Muskogee and Wagoner counties. J. Hutchings White, Councilor, Muskogee.
Twelfth District—Hughes, Latimer, LeFlore, Pittsburg and Sequoyah counties. Ed D. James, Councilor, Miami.
Thirteenth District—Atoka, Bryan, Choctaw, McCurtain and Pushmataha counties. J. L. Austin, Councilor, Durant.

HONOR ROLL

Adair County

STILLWELL—Samuel Ray Evans. WESTVILLE—David Albert Beard.

Alfalfa County

BRYON—George Gano Harris. CARMEN—Roscoe Ratliffe Aulick; Walter Henry Dersch; John Evans Heatley. INGERSOLL—Ester Lee Jones.

Atoka County

STRINGTOWN—Charles Clarence Ross.

Beaver County

GATE—George Andrew Nyland.

Beckham County

ELK CITY—Glenn Luther Harker. ERICK—Robert Charles McCreery.

Blaine County

CANTON—Frank Reitz Buchanan.

Bryan County

DURANT—John H. Kay.

Caddo County

ANADARKO—Parkey Howard Anderson; Samuel T. Campbell; Milton Henry Edens; Reuben Worrell Williams. CYRIL—George Bonnas Coker. EAKLY—Claude Eugene Putnam. GRACEMONT—Earle Smith; James William Wheeler.

OKLAHOMA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Committed in M.R.C., etc.
Adair.....	587	53.4	14,201	1,291	11	..	6	11	8	2
Alfalfa.....	867	23.3	23,478	903	26	..	15	21	13	1
Atoka.....	997	76.8	18,185	1,398	13	..	8	9	2	1
Beaver.....	1,813	120.9	14,320	954	15	..	7	9	2	1
Beckham.....	917	41.7	24,710	1,123	22	..	12	17	16	..
Blaine.....	931	54.8	19,853	1,167	17	..	12	16	14	..
Bryan.....	928	16.3	34,988	613	57	..	31	34	33	..
Caddo.....	1,377	30.6	49,742	1,105	45	..	27	35	33	..
Canadian.....	891	27.8	32,256	1,008	32	1	14	26	17	..
Carter.....	831	16.6	25,358	507	50	1	22	38	29	..
Cherokee.....	791	52.7	23,245	1,549	15	..	8	11	10	..
Choctaw.....	780	21.3	33,539	906	37	..	23	27	14	..
Cimarron.....	1,849	924.5	4,553	2,276	2	..	1	1	..	..
Cleveland.....	554	17.9	19,832	639	31	..	18	22	15	..
Coal.....	525	25.0	16,416	781	21	..	9	13	13	..
Comanche.....	1,726	45.4	41,721	1,037	38	1	23	34	27	1
Cotton.....	652	38.3	24,946	1,467	17	..	10	13	6	..
Craig.....	757	23.6	23,727	741	32	..	16	19	16	..
Creek.....	962	12.5	46,513	604	77	2	39	63	25	..
Custer.....	998	49.9	35,504	1,775	20	2	13	17	15	..
Delaware.....	794	113.4	15,582	2,226	7	..	5	7	..	..
Dewey.....	989	52.0	16,205	852	19	1	9	14	4	..
Ellis.....	1,218	87.0	18,981	1,355	14	2	6	10	5	..
Garfield.....	1,061	18.3	45,314	781	58	1	26	40	34	..
Garvin.....	821	20.5	36,248	906	40	..	18	30	27	..
Grady.....	1,024	21.8	48,097	1,023	47	..	27	36	28	..
Grant.....	994	39.8	21,658	866	25	1	11	16	9	..
Greer.....	644	32.2	22,791	1,139	20	..	15	16	19	..
Harmon.....	548	36.5	15,701	1,046	15	..	8	13	11	..
Harper.....	1,033	114.8	8,448	938	9	..	6	7	4	..
Haskell.....	615	47.9	24,066	1,093	22	..	15	21	13	..
Hughes.....	855	21.9	34,615	810	39	..	21	23	9	..
Jackson.....	778	25.1	40,908	1,319	31	..	17	23	27	..
Jefferson.....	767	28.4	27,735	1,027	27	..	12	18	13	..
Johnston.....	658	22.7	16,734	577	29	..	15	19	13	..
Kay.....	934	21.7	32,788	762	43	..	20	30	16	..
Kingfisher.....	890	37.1	20,931	872	24	..	8	17	8	..
Kiowa.....	1,179	34.7	41,158	1,210	34	1	16	25	23	..
Latimer.....	735	56.5	16,436	1,264	13	..	4	7	9	..
Le Flore.....	1,614	33.6	40,615	846	48	..	29	41	22	..
Lincoln.....	950	27.9	34,779	1,022	34	..	20	29	16	..
Logan.....	739	15.7	34,397	731	47	2	18	27	16	..
Love.....	496	31.0	10,236	639	16	..	8	13	3	..
McClain.....	562	33.0	22,814	1,342	17	..	8	12	6	..
McCurtain.....	1,897	48.6	40,001	1,025	39	..	18	28	18	..
McIntosh.....	661	19.4	28,671	843	34	1	14	24	18	..
Major.....	937	59.2	17,678	1,104	16	2	7	8	4	..
Marshall.....	419	16.7	11,619	464	25	..	15	20	15	..
Mayes.....	676	12.7	20,135	379	53	1	9	19	12	..
Murray.....	424	22.3	14,799	778	19	..	4	10	11	..
Muskogee.....	814	7.5	92,188	845	109	5	69	80	54	..
Noble.....	734	45.9	16,874	1,054	16	..	9	13	9	..
Nowata.....	586	23.4	23,957	958	25	..	11	18	15	..
Okfuskee.....	623	23.1	31,356	1,161	27	..	12	18	13	..
2Oklahoma.....	717	3.2	161,101	712	226	7	126	150	118	..
Okmulgee.....	679	10.6	38,553	602	64	1	33	51	32	..
Osage.....	2,277	79.2	32,414	1,121	29	..	14	22	13	..
Ottawa.....	477	10.6	23,165	514	45	..	14	39	26	..
Pawnee.....	584	23.8	17,900	716	25	..	11	18	9	..
Payne.....	678	19.4	28,158	804	35	..	18	23	17	..
Pittsburg.....	1,370	25.3	73,400	1,265	58	3	38	52	39	..
Pontotoc.....	728	19.6	27,619	746	37	2	18	35	25	..
Pottawatomie.....	793	13.4	44,428	753	59	1	27	47	38	..
Pushmataha.....	1,430	102.1	14,825	1,058	14	..	8	9	3	..
Roger Mills.....	1,135	94.7	12,861	1,071	12	..	8	11	9	..
Rogers.....	730	18.2	23,546	588	40	..	17	32	20	..
Seminole.....	633	24.3	33,588	1,291	26	..	13	21	8	..
Sequoyah.....	693	23.8	31,475	1,085	29	..	15	26	14	..
Stephens.....	897	24.9	27,684	766	36	2	12	18	25	..
Texas.....	2,065	121.5	14,249	838	17	..	8	13	5	..
Tillman.....	733	22.9	33,576	1,049	32	..	14	27	22	..
3Tulsa.....	565	3.9	69,341	474	146	2	84	126	97	..
Wagoner.....	545	22.6	28,689	1,195	24	1	14	17	15	..
Washington.....	425	12.1	29,544	844	35	2	16	36	24	..
Washita.....	1,006	41.9	32,848	1,335	24	..	13	16	20	..
Woods.....	1,255	73.8	22,858	1,344	17	1	8	12	14	..
Woodward.....	1,233	53.6	21,746	945	23	..	11	19	17	..
Totals.....	70,069	26.6	2,315,180	866	2,672	47	1,366	2,001	1,432	..

1. Includes Muskogee, population 47,173; physicians 78 [M.R.C. 16].
2. Includes Oklahoma, population 97,588; physicians 206 [M.R.C. 45].
3. Includes Tulsa, population 32,507; physicians 120 [M.R.C. 14].

Canadian County

EL RENO—Fred H. Clark; Philip Frickeleton Herod; Ontie Hovenden; Daniel Miller Moore.

Carter County

ARDMORE—David Albertus Gregory; George Bennett Scott. HEATON—Charles Crawson Sims.

Cherokee County

PARK HILL—John Frank Duckworth. TAHLEQUAH—Houston Fite; Charles Arthur Peterson; Joseph Martin Thompson.

Choctaw County

HUGO—Edgar Allen Johnson; Henry Whitfield Maiers. SOPE Thomas Anderson Hartgraves.

Cleveland County

LEXINGTON—Clarence Edward Northcutt; John Lestrangle Rock; R. crt Edward Lee Thacker. NORMAN—Thomas Nadison Boyd; John L. Day; James Jackson Gable; Stephen H. Graham; Reuben Morgan I grove; Richard Emmett Thacker.

Coal County

COALGATE—Finis Ewing Rushing. TUPILO—William Thomas Blount.

Comanche County

CHATTANOOGA—William Brown Harned; George E. Kerr. FAXON—Chonner Polk Chumley. FT. SILL—William P. Lipscomb. LAWTON—George Stanley Barber; Jackson Brashear; Joseph T. Edward; James Arfield Janney; James Lang Lewis; Louis A. Milne; Cecil Elbert Tolle.

Cotton County

TEMPLE—Charles Watts Alexander.

Craig County

VINITA—Louis Bagby; Powell Lambert Hays; Will Wilson Jackson; Walter Roscoe Marks; Robert Lee Mitchell.

Creek County

BRISTOW—Joseph J. Nabhan. DRUMRIGHT—Charles Dallas Blachy; Matthew Karasek; William Penn Sims; Orange Walter Starr. KELSVILLE—Isaac Walter Rogers. MILFAY—Levi P. Murray. SAPULPA—Skine D. Johnson.

Custer County

CLINTON—Monte Cristo Comer. THOMAS—William Joseph Omer.

Dewey County

OAKWOOD—Esley Elwood Lawson. VICI—Charles Edward Houser.

Ellis County

ARNETT—Albert Alonzo Stoll. FARGO—Fred Lindley Patterson.

Garfield County

ENID—Wallace Andrew Aitkin; Lyman Lyndon Bunker; Frank Glenn aneiseo; Charles Edward Thompson. HUNTER—Waldo Bee M. B. well. LAHOMA—Harry Fitzgerald Vandiver.

Garvin County

LINDSAY—Samuel Warren Wilson. PAULS VALLEY—Galvin Luther nson. STRATFORD—Marion McDowell Webster. WYNNEWOOD—bert Lee Baker.

Grady County

BRADLEY—William R. Barry. CHICKASHA—Harry Clifford Antle; wis Edgar Emanuel. VERDEN—George Madison McVey; Woodward berts Mitchell.

Grant County

BALKO—William Stout. WAKITA—William Emery Harrington.

Greer County

GRANITE—Thomas Junior Nunnery. MANGUM—Rufus Leroy Holt; ank Harrison McGregor.

Harmon County

FOULD—William G. Husband. LOUIS—Oscar Johnston Street.

Harper County

CHARLESTON—Elmer Ethelbert Hedy. ROSTON—Hardin Walker.

Haskell County

ENTERPRISE—Jarrett Jeffrey Billington. KINTA—Jesse Ray Waltrip. IGLER—Frank A. Fannin; Samuel Erskin Mitchell; Harry James Sims.

Hughes County

DUSTIN—Jesse William Smith. LAMAR—Georgia M. Combest. WE-MKA—Casper A. Hicks.

Jackson County

ALTUS—James Jackson Caviness; Raymond H. Fox; Davy Lewis Gar-t; Samuel Houston Landrum. BLAIR—Herman August Laforce.

Jefferson County

ASTINGS—Henry DeWitt Shankle. RYAN—Lisby Lucius Wade.

Johnston County

ONNERVILLE—William J. Rogers.

Kay County

BLACKWELL—Alonzo Pit Gearhart; James Clinton Hawkins. NEW-K—Abraham Lincoln Hazen. TONAWA—Ethan Estey Waggoner.

Kingfisher County

ASHION—James Robert Bost; Francis Ray First. KINGFISHER—n Winston Pendleton.

Kiowa County

OOPERTON—Paul Raymond Siberts. GOTEBO—Barton Hiram Wat-ns. HOBART—James Milton Bonham; Jesse Benjamin Hollis; Henry y Lloyd. LONE WOLF—William Melwain. MOUNTAIN VIEW—vin Edward Bradley. SNYDER—Julius A. Muller; Green Lee Rea.

Latimer County

ILBURTON—Garnett A. Kilpatrick.

Le Flore County

OWE—Arthur Guy Hunt. POTEAU—Novel Walter Campbell. SPIRO-George Ewin Hartshorne. TALHINA—Robert Melvin Shepard.

Lincoln County

HANDLER—James Elston Adams; Walter Griswold Bisbee. DAVEN-T—Ulus Edgar Nickell. KENDRICK—Joseph Mitchell Hancock. ARKS—Frederick C. Brown.

Logan County

UTHRIE—William Ward Rucks; Thomas H. Wright. MARSHALL—ry Charles Tyler Richmond. WIRT—Thomas Maxwell Toler. UTHRIE—Robert Elliott Long.

Love County

ARIETTA—Alfred Edwin Martin. THACKERVILLE—William Wesley tfoot.

Marshall County

INGSTON—Orange Elbert Welborn. WOODVILLE—James Allen Rut-e.

Mayes County

RYOR—Joseph William Garrett; Carl Puckett; George Washington r; William Jerry Whitaker.

McClain County

WASHINGTON—Ernest Ezra Nunnery.

McCurtain County

BROKEN BOW—Clarence Randle McDonald. OAK HILL—William G. Baird.

McIntosh County

CHECOTAH—Alexander Boyd Montgomery. EUFAULA—Daniel Eras-tus Little; John Norris Shauny.

Murray County

SULPHUR—Howson Clark Bailey; William Medwin Tucker.

Muskogee County

MUSKOGEE—Benjamin Henton Brown; Albert Nila Earnest; William Otto Fischer; William P. Fite; James Grady Harris; Charles William Heitzman; Roland Howlin Holcombe; Edward David Morrison; Robert William Motley; Pleasant Pomeroy Nesbitt; Joseph Glass Noble; Joseph Roy Sanford; Charles Ersey Smith; Joseph Harry Stolper; Claude A. Thompson; Floyd Edward Waterfield. WEBBERS FALLS—Eugie A. Campbell.

Noble County

BILLINGS—James Marshman Cannon; Thomas Franklin Renfrow. REDROCK—Charles Percy Murphy.

Nowata County

ALLUWE—John Gordon Thomas. NOWATA—Russell Lenoir Kurtz.

Okfuskee County

OKEMAH—Jesse Monroe Pemberton.

Oklahoma County

EDMOND—Samuel Newton Stone. OKLAHOMA CITY—Frank Marion Bailey; Archie Bee; Abraham Lincoln Blesh; Floyd J. Bolend; Rex George Bolend; Charles Arthur Brake; Frederick Albert Cochran Jr.

Albert Ewing Davenport; Francis Asbury DeMand; Robert Berry Gib-son; Austin Lee Guthrie; James Worrall Henry; Albert Clifford Hirsh-field; Merle Quest Howard; Robert Mayburn Howard; George Hunter.

Lewis E. Inman; Benjamin George Jones; Wann Langston; Thomas LeRoy Lauderdale; Clarence Edward Lee; Ross David Long.

John Charles Mahr; Aelphar A. Marsteller; George Davidson McLean; John Z. Mraz; Littleton Alexander Newton; David Dare Paulus.

Howard L. Reed; Marion Mansfield Roland; Lloyd M Sackett; Fenton Mercer Sanger; Herbert V. L. Sapper; Frank Bruner Sorgatz; Marvin Elroy Stout; Simon E. Strader; Elijah Stover Sullivan; Duke William Vincent; Roy Abner Webb; Curt Otto von Wedel; Willis Kelly West; Lee Roy Wilhite; Earl Leroy Yeakel; Andrew M. Young; Antonio Debord Young.

Okmulgee County

COALTON—Clarence Lovejoy Wellman. HENRYETTA—Harry A. Briggs; John Lee Riley. MORRIS—James Otto Wails. OKMULGEE—Virgil Berry; Charles Morris Ming; Harvey Ollis Randel; Robert Leland Westover.

Osage County

AVANT—Isaac F. Clark. GRAINELA—Edward Louis Miller.

Ottawa County

MIAMI—Guy Peery McNaughton. TAR RIVER—Elmer Franklin Gar-lington.

Pawnee County

CLEVELAND—Harman Brewer McFarland; Elam Theodore Robinson. HALLETT—Robert Elice Calhoun. RALSTON—Earl Duwain McBride.

Payne County

STILLWATER—James Henry Mallory; Harry McQuown.

Pittsburg County

ALDERSON—Marion Hope Foster. HAILEYVILLE—Pendleton Gardner. HARTSHORN—Robert Sales Riley. INDIANOLA—John Howard Baker. McALESTER—Sidney B. Bellinger; Louis Clifton Kuyrkendall; Leonard Scott Willour; Thomas Jefferson Palmer.

Pontotoc County

ADA—George Arthur Akers; Miles Leslie Lewis; Waller Cornelius Threlkeld. FREDERICK—Charles Hicks Howell.

Pottawatomie County

MAUD—Roland Reed Culbertson. SHAWNEE—Gardner Henry Apple-white; Clyde Ferdinand Loy; Edgar E. Rice; Tazwell David Rowland; Cecil Ben Shrout; Howard Alonzo Wagner; John Asa Walker.

Rogers County

CLAREMORE—James Foster Means. COLLINSVILLE—Hubert Wil-liam Callahan; Loren Cecil Presson.

Seminole County

WEWOKA—Guy Barton Van Sandt.

Sequoyah County

SALLISAW—James A. Cheek; James Bee Ferguson. VIAN—Cecil Bryan.

Stephens County

DUNCAN—Julius William Niewig.

Texas County

GUYMON—Daniel Schenk Lee. TYRONE—William Walter Dolan Akers; Joseph Henry Jansing.

Tillman County

FREDERICK—Charles C. Conley; Burton Fain. GRANDFIELD—Wil-liam C. Foshee.

Tulsa County

BROKEN ARROW—Francis Charles Myers. OWASSO—Daniel Wilson Humphreys. TULSA—William Washington Brodie; Paul Richard Brown Jr.; Henry Silas Browne; John F. Capps; Lawrence Heard Carleton; William Richard Clement; George Henry Clulow; J. Donald Enfield; Joel Samuels Hooper; Hector G. Lareau; Ralph Vernon Smith; Jackson Smith-erman; Alba Jesse Whitley; William Albert Cook.

Wagoner County

WAGONER—Grover Cleveland Moore.

Washington County

BARTLESVILLE—John Vanmore Athey; Samuel J. Bradfield; Walter Edwin Koppenbrink; Frederick Roscoe Sutton; Herman Eugene Yazel. OCHELATA—Joseph Thomas Gunter; Raymond Gessell Sherwood. RAMONA—Walter Morris Sykes.

Washita County

DILL—Edward Sherman Weaver.

Woods County

ALVA—William Ebert Simon; Oscar Ellsworth Templin.

Woodward County

MOORELAND—Thomas Burke Triplett. SUPPLY—Roy Keene Goddard; Herman E. Stecher. WOODWARD—James Lindley Patterson; Floyd Horace Racer; Charles Worman Tedrowe.

OREGON STATE MEDICAL ASSOCIATION

Officers 1917-18

E. E. Straw, President.....Marshfield
J. A. Best, First Vice President.....Pendleton
Aaron Tilzer, Second Vice President.....Portland
H. J. Clements, Third Vice President.....Salem
C. J. McCusker, Secretary.....Portland
K. C. Manion, Treasurer.....Portland

Councilors

C. J. Smith, Portland; Paul Rockey, Portland; W. T. Williamson, Portland; C. S. White, Portland; J. A. Pettit, Portland; F. G. Swendenburg, Ashland; R. J. Pinkington, Astoria; George S. Whiteside, Portland; A. W. Baird, Portland; Mae H. Cardwell, Portland.

OREGON

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Baker.....	3,060	109.2	19,886	710	28	4	15	21	12	4
Benton.....	688	62.5	13,551	1,231	11	1	7	7	6	2
Clackamas.....	1,864	71.6	37,429	1,439	26	..	14	19	9	6
Clatsop.....	821	35.6	18,543	806	23	2	13	17	17	5
Columbia.....	662	60.1	13,751	124	11	1	7	9	..	1
Coos.....	1,628	67.8	23,532	980	24	1	13	21	11	7
Crook.....	7,778	1,296.3	4,108	684	6	..	2	2	4	1
Curry.....	1,498	499.3	2,174	724	3	..	2	2	1	1
¹ Deschutes.....	.....	.....	3,536	442	8	1	6	8	4	..
Douglas.....	4,922	158.7	23,402	754	31	3	19	28	6	5
Gilliam.....	1,201	300.2	4,066	1,016	4	..	2	2	1	..
Grant.....	4,520	753.3	5,607	934	6	..	5	6	3	2
Harney.....	9,933	1,241.6	5,127	640	8	2	3	7	2	..
Hood River.....	543	36.2	11,323	754	15	..	4	9	4	3
Jackson.....	2,836	69.1	34,558	842	41	2	16	32	17	6
Jefferson.....	2,150	537.5	5,578	1,394	4	..	1	4	1	..
Josephine.....	1,751	154.5	11,063	851	13	1	4	11	7	3
Klamath.....	5,999	428.5	11,900	850	14	1	12	12	10	1
Lake.....	7,920	880.0	5,979	664	9	..	6	8	1	3
Lane.....	4,612	90.3	44,133	760	58	2	28	42	28	16
Lincoln.....	1,008	252.0	7,056	1,764	4	..	..	2	..	1
Linn.....	2,243	72.4	25,626	854	30	..	14	20	14	2
Malheur.....	9,883	823.5	11,810	984	12	1	10	11	3	3
Marion.....	1,194	183.6	48,590	747	65	6	38	55	35	13
Morrow.....	2,025	405.0	4,508	901	5	..	4	5	4	2
² Multnomah.....	451	0.8	316,114	625	505	44	250	394	286	97
Polk.....	709	50.6	16,058	1,147	14	2	7	10	8	3
Sherman.....	836	167.2	4,800	960	5	..	2	5	3	..
Tillamook.....	1,125	125.0	7,577	841	9	2	5	8	5	..
Umatilla.....	3,173	36.1	21,959	665	33	..	21	25	16	7
Union.....	2,087	74.5	16,279	581	28	2	17	25	7	7
Wallowa.....	3,145	285.9	10,427	947	11	..	7	26	6	..
Wasco.....	2,343	234.3	21,169	2,116	10	..	7	8	8	2
Washington....	731	24.3	26,672	889	30	1	17	21	13	2
Wheeler.....	1,704	568.0	2,513	837	3	..	2	2	..	1
Yamhill.....	714	34.0	21,835	1,039	21	1	11	17	10	7
Totals.....	97,757	86.8	862,239	764	1,128	80	591	901	562	203

1. County recently organized; area included with that of other counties.
2. Includes Portland, population 308,399; physicians 500 [M.R.C. 90].

HONOR ROLL

Baker County

BAKER—Clifton Leonard Blakely; Thomas Joseph Higgins; Albert William Tiedemann. HAINES—Roger Biswell.

Benton County

CORVALLIS—Harry J. Anderson; Emile Casper Joseph.

Clackamas County

MILWAUKEE—William Ray Taylor. OREGON CITY—Walter East Hempstead; Frank Reid Mount; Orel Alvin Welsh. OSWEGO—Eugene Watson Rocky. WILSONVILLE—Willis Dole Butler.

Clatsop County

ASTORIA—Arthur Alexander Finch; Alfred E. Kinney; Eldred B. Waffle. SEASIDE—Lance E. Briscoe; Frank Van Doren.

Columbia County

CLATSKANIE—James Leonidas Wooden.

Coos County

BANDON—Smith J. Mann. COQUILLE—George Earl Low. MARSHFIELD—Everett Mingus; Howard Messenger Shaw; Edwin Ephraim

Crook County

PRINEVILLE—John Henry Rosenberg.

Curry County

GOLD BEACH—Carl William Robbins.

Douglas County

RIDDLE—Arthur Jesse Fawcett. ROSEBURG—George E. Houck; Frank H. S. Vincil; Charles B. Wade. SUTHERLIN—Orra Edgar Patterson.

Grant County

CANYON CITY—Leo W. Chilton. LONG CREEK—Philip L. Newmyer.

Hood River County

HOOD RIVER—Vestal Raul Abraham; John Wesley Sifton; Justin Miner Waugh.

Jackson County

ASHLAND—Arthur Wilham Boslough; S. Gordon MacCracken. GOLD HILL—William Parmer Chisholm. MEDFORD—Robert Wellington Clancy; Clark Edw. Saunders; Eberle Randolph Seely.

Jefferson County

WARMSRING—Clarence Dale Fulkerson.

Josephine County

GRANTS PASS—Julian Philip Johnson; Frederick David Stricker; Jesse P. Truax.

Klamath County

KLAMATH FALLS—Riden Roy Hamilton.

Lake County

LAKEVIEW—Ernest Day Everett; Mearle C. Fox. NEW PINE CREEK—John Lucius Garner.

Lane County

COTTAGE GROVE—Charles E. Frost. EUGENE—George Ernest Darrow; Reuben Harrison Fields; Wilbur Thomas Gulion; John Eberle Kuykendall; Thomas Horace Miller; Sam Clarence Standard Amos O. Waller; Edw. L. Zimmerman. JUNCTION CITY—Merle George Howard; Daniel Patterson Love. MABEL—C. Harold Palmer. SPRINGFIELD—Joseph Randolph Barr; Eugene Kester; William Howard Pollard. EUGENE—Benjamin Franklin Scaife.

Lincoln County

NEWPORT—Walter Cayley Belt.

Linn County

LEBANON—Joll C. Booth. SCIO—Will Hale Potter.

Malheur County

VALE—Carl Jackson Bartlett. JUNTURA—William Elias Hedges. ONTARIO—Jacob Prinzing.

Marion County

JEFFERSON—Joseph Olin Van Winkle. MOUNT ANGEL—James Ellsworth Webb. SALEM—Charles Elmer Bates; Roy Dean Byrd; Harry Elwin Clay; Julius Herman Garnjobst; Lloyd H. Mott; Dick Raymond Ross; William Carlton Smith. SILVERTON—Floyd D. Lewis; Henry William Steelhammer. WOODBURN—William W. Kettle; Victor L. Rocho.

Morrow County

HARDMAN—George Garber Gaunt. HEPPNER—Harold T. Allison.

Multnomah County

BRIDAL VEIL—Sam Frank Le Fevre. PORTLAND—John George Abele; Elmer Everett Anderson; Robert Louis Benson; Nathan Morris Benyas; Linford Shephard Besson; Charles Billington; Varillas C. Birney; Arther Trew Blachly; Charles Delos Bodine; Amos Watt Botkin; Isadore C. Brill; Lloyd Wesley Brooke. Roscoe William Cahill; William Maxwell Campbell; T. Homer Coffen; Isadore Henry Cramer; Ernest Charles Dalton; Ferdinand H. Dammasch; Richard Benjamin Dillehunt; Chester Arthur Downs. Ralph Albert Fenton; Eric Julian Gambee; Robert St. Clair Gaffis; Daniel Grant; Herbert Merton Greene; Albert Allen Grossman; Fred Gullette; Frank Cleveland Hart; Ernest D. Hitchcock; John Adam Hughes; Garrett Lee Hyson. Richard F. James; Marion Jacobs Jones; Thomas Martin Joyce; Joseph Edward Kane; William Sidney Knox. Fred Adcock Lieualten; Kenneth Alexander J. MacKenzie; James Lorne Manion; William Orville Manion; Marius B. Marcellus; Charles Rafferty McColl; Clarence Joseph McCusker; Frank Raymond Menne; Percy F. McMurdo; Dwight F. Miller; Harry B. Moore; Karl Peterson Moran; Earl Vincent Morrow; Edwin Woodbridge Morse. Benjamin L. Norden; Charles Cowan Osborn; Dorwin L. Palmer; Joseph August Pargon; Ray Emmett Pomeroy. David Nathaniel Roberg; Alpha E. Rockey; Paul Rockey; Horace Louis Rosenberg; Arthur Samuel Rosenfeld. Spiro Sargenitch; Eweidas Kallistas Scott; William George Scott; Charles Edwin Sears; Lawrence Selling; John James Sellwood; William Albert Shea; Robert Archie Sherwood; Harry Everett Shoot; William Henry Skene; Clarence U. Snider; Ernst August Sommer; John Archibald Stewart; William Edgar Stewart; George Burnside Story; Ernest Hamilton Streit; John Guy Strohm; Karl Joaum Swenson. Archie Clifford Van Cleve; William Henry Vose; Benjamin Newton Wade; Joseph Robbins Wetherbee; Calvin Stuart White; George Shattuck Whiteside; Otis Buckminster Wight; George Flanders Wilson; Louis Jacob Wolf; Joseph Frederick Wood; Robert Clark Yenney; Edward Frank Ziegelman.

PORTLAND—Ernest Nathaniel Crockett; William Boyd Hamilton; William Charles Munly; Leon E. Story; Richard Howells Wellington.

Polk County

DALLAS—Lenthal A. Bollman. FALLS CITY—Glenn Edw. Prime. INDEPENDENCE—Chas. Francis Cropp.

Umatilla County

HERMISTON—Clyde Otis Waincott. PENDLETON—James Archibald Best; Hillis Hall Hattery; James D. Plamondon. PILOT ROCK—Lansford Monroe Spalding. WESTON—Charles Henry Smith; Henry Zophar Tharp.

Union County

COVE—Arthur Clifford McCown. HOT LAKE—Frank Earnest Butler. IMBLER—Carl Sinclair Moore. LA GRANDE—Harry Matthew Bouvy. Frank Leslie Ralston; Herbert Lyman Underwood; George Rudolph Vehrs

Wasco County

MAUPIN—John Lewis Elwood. THE DALLES—Thompson Coberth.

Washington County

BUXTON—Prince C. Page. FOREST GROVE—Charles Edwin Hawke.
ORENCO—John Bell Dinsmore.

Wheeler County

FOSSIL—Hugh Samuel McKenzie.

Yamhill County

McMINNVILLE—Edgar Hayes Brown; Charles L. Williams. NEW-
BERG—Harris Augustus Littlefield; John Silas Rankin. YAMHILL—
Howard Ernest Carruth; Roy Bennett Craver.

**MEDICAL SOCIETY OF THE STATE OF
PENNSYLVANIA**

Officers 1917-18

Walter F. Donaldson, President.....Pittsburgh
B. Franklin Roger, 2d Vice President.....Harrisburg
David N. Demuls, 3d Vice President.....Erie
Walter J. Leaman, 4th Vice President.....Leaman Place
Cyrus Lee Stevens, Secretary.....Athens
Christian B. Longnecker, Asst. Secretary.....Philadelphia
Geo. W. Wagoner, Treasurer.....Johnstown

Councilor Districts and Officers

Horatio W. Gass, Chairman, Sunbury.
First District.—1st and 3d Censorial Districts.—Berks, Chester, Dela-
ware, Montgomery, Philadelphia and Schuylkill counties. Ira G. Shoe-
maker, Councilor, Reading.
Second District.—4th and 5th Censorial Districts.—Adams, Cumberland,
Dauphin, Franklin, Fulton, Lancaster, Lebanon and York counties. Frank
G. Hartman, Councilor, Lancaster.
Third District.—2d and 18th Censorial Districts.—Bucks, Carbon, Lack-
awanna, Lehigh, Luzerne, Monroe, Northampton, Pike and Wayne coun-
ties. Harry W. Albertson, Councilor, Scranton.
Fourth District.—6th and 7th Censorial Districts.—Columbia, Hunting-
ton, Juniata, Mifflin, Montour, Northumberland, Perry and Snyder coun-
ties. Horatio W. Gass, Councilor, Sunbury.
Fifth District.—7th and 15th Censorial Districts.—Bedford, Blair, Cam-
bria, Center, Clearfield, Fayette, Somerset and Westmoreland counties.
Spencer M. Free, Councilor, DuBois.
Sixth District.—14th and 16th Censorial Districts.—Bradford, Clinton,
Lycoming, Sullivan, Susquehanna, Tioga, Union and Wyoming counties.
Donald Guthrie, Councilor, Sayre.
Seventh District.—8th and 9th Censorial Districts.—Allegheny, Beaver,
Greene, Lawrence, Mercer and Washington counties. Irwin J. Moyer,
Councilor, Pittsburgh.
Eighth District.—10th and 11th Censorial Districts.—Cameron, Craw-
ford, Elk, Erie, McKean, Potter and Warren counties. James Johnston,
Councilor, Bradford.
Ninth District.—12th and 13th Censorial Districts.—Armstrong, Butler,
Clarion, Forest, Indiana, Jefferson and Venango counties. J. B. F. Wyant,
Councilor, Kittanning.

PENNSYLVANIA

Adams County

EAST BERLIN—Edgar Allen Miller. GETTYSBURG—John McCrea
Dickson. HAMPTON—Robert Dubs Swab.

Allegheny County

AVALON—John. Walter Frey. BELLEVUE—John Paul McComb.
BRADDOCK—Marion Starr; Alvin Edwards Bulger; Christopher Gard-
ner; Thomas Sheldon Hicks; Harold Henry Lamb; Thomas Henry Snow-
white. BRIDGEVILLE—Harry G. Clarke. BUNOLA—Elmer O'Neill
Peterson. CARNEGIE—Thomas Edward Brown Jr.; Thomas Irving Cot-
ton; John Edward Moore. CASTLE SHANNON—Howard Henry Permar.
CORAOPLIS—Ernest John Aten; Sloan A. Brown; Edward M. Iland;
Henri Schmid. CRAFTON—Noss Dean Brant; John Nagle Hayes. CUR-
TISVILLE—David E. Hemphill. DORMONT—John Francis Golden.
DUQUESNE—Stephen Shaffer Landis; William Woolshaer Mills; Dennis
Eugene Szabo. EAST McKEESPORT—Walter Lowry Henderson. ELIZA-
BETH—Ivo Ernest Rowland. EMSWORTH—Thomas McSwiney Barrett;
John Shaffer Plumer. GREENOCK—Edward Theodore Greutzner. HOME-
STEAD—Sidney Kallaway; Scott Allan Norris; Harry Joseph Treshler.
HOMEWOOD—Thomas L. McCullough. IMPERIAL—Fred Lyle Patter-
son. McKEESPORT—Milton H. Bachman; Edward Ellis Evans; Samuel
Firestone, Jr.; Samuel Goldberg; Louis Jay Goldblatt; William Christian
Heisey; Samuel Itscowitz; David Pollock McCune Jr.; Edward Y. Ord;
Ralph Leyda Rutledge; Frank George Ungerman; Joseph Coulter Wilcy.
McKEES ROCKS—Robert William Cotton; Charles G. Eicher; Hubert
J. Goddlich; James Clinton Hawkins; John Huey Humes; Charles Leslie
Piper; Chester S. Sierakowski. MT. OLIVER—Carl William Truter;
Charles W. Vates. OAKMONT—Joseph Calvin Edgar. PITTSBURGH—
Samuel Herbert Adams; John Harrison Alexander; Charles William
Allen; Charles Clark Ammerman; Thomas Shaw Arbuthnot; Russell
Bigler Armour; Nathan Ashinsky; Ralph John Askin; Paul Gregory
Atkinson; Charles Howard Aufhammer.
Frank Raymond Bailey; Joseph Shannon Baird; Moses Haven Baker;
Cirk Bentley Barb; William Piper Barndollar; Harry Floyd Baumann;
Andrew Ludwig Benson; Ferdinand Landilin Benz; Carl Franklin
Bizey; Owen Henry Binkley; James Daniel Blevins; Max A. Blumer;
David Alexander Boggs; John Welch Boyce; David Hartin Boyd; Claude
Lee Bradford; Mark Averill Bradford; Charles Raymond Brenner;
Robert Bahner Brown; Walter Earl Brown; Paul Cooper Bruce; Albert
Joseph Bruecken; Edward Porter Buchanan; Clarence John Buck; Alfred
Joseph Buka; Wallace Bulford; William Thomas Burleigh; Charles
Francis Butler.
Bert W. Caldwell; John Charles Calhoun; Verner Bickart Callomon;
Donald W. Cameron; Robert John Campbell; Waid Edwin Carson;
Lender Zelotes Cashman; Burns Stoddard Chaffee; Edgar Thomas
Latham; Edward Perry Clark; Nelson H. Clark; Roy Sidney Clark;
Joseph Julius Clarke; Robert Miller Cochrane; Morris Aaron Cohen;
Joseph Harry Collins; Alexander Hunter Colwell; William Judd Crook-
ton; George Smith Cunningham; William Louis Cunningham; Clyde
Leslie Currel.
Robert Edward Davison; Ewing Wilbur Day; Walter Alfred Dearth;
James John Dickinson; Clegg Arthur Dillinger; William Paul Dodds;
Ertram Foster Duckwell; Alfred William Duff; John Park Duggan;
Andrew Peter D'Zmura.
Samuel Isaac Eber; Thomas Perrine Edmundson; James Franklin
Edwards; Augustus Hartje Eggers; Cortlandt Whitehead Elkins; Robert
Organ Entwistle; Russell Morrison Evans.

Sydney Kineman Fenollosa; Joseph Johnson Ferner; Harrison Horton
Fisher; Eben Winslow Fiske; Lawrence Henry Fitzgerald; Henry Clement
Flood; Austin C. Frank; John Washington Fredette; Morris Frishman;
Raymond Joseph Frodey; Daniel Wadsworth Frye; Brown Frazer Fulton.
Charles H. Gano; Shaul George; Henry James Gles; James Lee Gll-
more; Carl Gochring; Joseph Brand Gold; Edward Graver; Thomas
Wray Grayson; George Garland Grazier; William Harvey Guy.
Homer Emil Halferty; Henry Martin Hall Jr.; John Pugh Hall;
Edward Everett Hamer; Samuel Hamilton Jr.; James Marshall Ham-
mett; William Card Harmount; George Randolph Harris Jr.; Fred Hazard
Harrison; Clifford Clinton Hartman; Frederick A. Hartung; Walter Ben-
jamin Harvey; John Allen Hawkins; Theodore Lyle Hazlett; James
Delevan Heard; Howard Carrington Heilman; Robert Charles Hibbs;
Abram Verner Hicks; Harry Albert Holland; Robert Thurlow Hood;
Daniel F. Jackson; Elmer Chase Jackson; Frederick Murray Jacob;
Thomas Gotthart Jenny; George Coffin Johnston; Herbert Le Roy Jones.
Milton Boyd Katzenstein; David Dickey Kennedy; Herbert Francis
Kenny; James Purdy Kerr; Russell Henry King; Samuel Victor King;
Roscoe Texter Kline; Donald Reed Kunkleman.

George Rufus Lacy; Samuel Earle Lambert; Lyndon Holt Landon;
Fred Campbell Larimore; Cyril Francis Lauer; Francis Victor Laurent;
Harry Minhern Lavelle; Edward Clyde Leslie; Simon Ashe Levey;
Frederick Victor Lichtenfels; James Adams Lindsay; John Marshall
Lipscomb; Lawrence Litchfield; James Clarke Logan; James Stewart
Logan; John Adams Logan; Herbert Milton Long; Samuel Earle Lyon.
Archibald A. MacLachlan; Charles Buckley Maits; Richard Smart
Major; John William Mann; Charles Howard Marcy; John Laughlin
Martin; Harry Oliver Mateer; Edward Joseph McCague; Gilpin Montith
McCaln; Henry Eugene McClenahan; William John McConnell; Bernard
John McCormick; Clayton Lloyd McCoy; David Coyle McCulloch; John
Fife McCullough; William Craig Meanor; Louis Oliver Meckel; Evan
William Meredith; Lee Watson Milford; James Martin Miller; Laird
O'Neill Miller; Robert Talbott Miller; John Davidson Milligan; Charles
Core Moore; James A. Munster; Harry Lavelle Murphy; Howard Samuel
Myers.

Thomas Gibbons Nelan; A. Boynton Nevling; John Edward Newhouse.
Norman Charles Ochsenhirt.
William Theodore Palchanis; Samuel Bemis Pearce; Reuben Harry
Pearlman; James Kingsland Morange Perrine; Ward Irving Pierce;
Henry Thompson Price.

Donald George Rafferty; David Louis Rapport; Wm. Burton Getty Ray;
Wm. Edward Rectenwald; Maurice Snowden Redmond; Fred Dawson
Reynolds; Dewayne Greenwood Richey; Stanley Marshall Rinehart;
James William Robinson; Ralph Vincent Robinson; Wilton H. Robinson;
Frank Conrad Rote; James Andrew Merle Russell.

Daniel E. Sable; Frederick Scott Salisbury; Hugo Nicholas Sarchet;
Arthur Phillip Schaefer; Howard Gustav Schleiter; Walter William
Schmid; Thomas Schubb; Karl McCormick Scott; Carroll Jenkins Scurry;
Simon Seegman; John Howard Seipel; Alfred Roman Seraphin; Byron
Earl Shaw; Nicolas G. L. Shillito; George H. Shuman; Paul Rothrock
Sieber; Charles Norman Silman; David Silver; Frank Farrow Simpson;
John Reid Simpson; Karl Stanley Simpson; Sumner Clelland Simpson;
Roy Ezra Sleppy; Morris Abel Slocum; Henry MacVicker Smith; Stanley
Sinclair Smith; Roy Ross Snowden; John Joseph Sosnowski Jr.; Marcus
S. Spiro; Thomas Mervin Stahlman; Paul Beadle Steell; John Logan
Steffy; Lawrence Lorraine Stepp; William John Stewart; Richard Ernest
Stifel; Salvador Peter Sunseri.

Eugene John Truschel; George Wilson Van Gorder; Vite Edgar Van-
Kirk; Carey Judson Vaux; James Kerchner Wagenseller; Albert Adolph
Wagner; Clark Woodworth Wakefield.

George S. Wallace; Paul Hartmayer Walter; William Summers Wat-
son; Maximilian Hugo Weinberg; Benjamin Weiner; George Allan Wes-
ley; Harry Clarkson Westervelt; Earl Philips Wickerham; William Tell
Wildhaber; Nathaniel William Winkelman; Walter Holmes Wishard;
Charles Hormel Wolfe; Edward William ZurHorst. SEWICKLEY—Frank
Lynn McCready; DeWitt Baldwin Nettleton; Charles Krauth Shanor.
SHARPSBURG—Norman Robert Graham; Snowden Kennedy Hall.
SWISSVALE—William Thomas Pyle; Carl Kaiser Wagener. TAREN-
TUM—George Wilbur Getze; Paul G. L. Hoch. TURTLE CREEK—
Edward Jewett Meley. WILKINSBURG—Carl J. Cubbison; Jacob Wil-
liam Earl Ellenberger; George H. Kirkpatrick; William Ody Markell;
William Joline Martin; William John McGregor.

James Morgan McNall; Benjamin Howard Patterson; Edward Alex-
ander Pitcairn; Clyde Wilfred Sample; Wilder Judd Walker; James Har-
vey Whitecraft; James Edward Wyant. WILMERDING—Harry Oliver
Pollock; Randall Zimmerman. WILSON—Austin Lynch Cort. WOOD-
VILLE—Ralph L. Hill.

CARNEGIE—Joseph Elmer Magee.

McKEESPORT—Andrew Hunter.

PITTSBURGH—Joseph Armstrong Baird; Guy Sedgwick Vogan.

Armstrong County

ADRIAN—James Earle Quigley. APOLLO—Ray Nelson Lewis. FORD
CITY—Carl Howard Robinsteen; Ellis Calvin Winters. KITTANING—
Charles H. Furnce; Andrew James Sedwick; Thomas Newton McKee;
Edward Heilman McClister. SEMINOLE—Benjamin Joseph Longwell.
WIDNOON—Thomas R. Hillard.

Beaver County

BEAVER—Fred Blanchard Harrington; Fred Bailey Wilson. BEAVER
FALLS—John Muntz Jackson; William J. Sterrett; Jesse Howard Swick;
Leroy Stewart Townsend. FREEDOM—George Fay Boal; Francis Howard
McCasky. MONACO—John Huber Wagner. NEW BRIGHTON—Wil-
liam Frederick Beitsch; Ralph H. Boots; Samuel Henry Pettler. WOOD-
LAWN—George Walworth Mellon.

Bedford County

BEDFORD—Wilnot Ayres. BREEZEWOOD—Frank Gullard. CUM-
BERLAND VALLEY—Alvin Zenas Stoner. DEFIANCE—Samuel Thomas
McCabe. LOYSBURG—James Andrew Shaffer. OSTERBURG—Thomas
Wood Cook Jr. SHELLBURG—John C. Anderson Jr.; Maurice Victor
Brant.

Berks County

BIRDSBORO—Franklin Pierce Lytle. BOYERTOWN—Charles Brewer
Datterer; Henry Edgar Keely. CENTERPORT—Lewis R. Tryon. DOUG-
LASSVILLE—Walter Jordan Sener. GIBRALTER—DeForest Ballou Jr.
HAMBURG—Adams Miller Robinhold. MORGANTOWN—Joseph Allen
Zook. READING—H. Melvin Allen; Walter Melot Bertolet; Charles
Solomon Cantough; Roy Douglas Champlin; Leon Galvin Darrah; Agnew
Fritz Frankhauser; Paul Henry Gerhardt; Simon Benjamin Glick;
Edward Knight Golding; David Solomon Grim; Clifford Leslie Kaucher;
John Glenwood Knauer; George William Krick Jr.
Wellington Alfred Lebkicher; William Leiser; William Samuel Long;
David William Morgan; Henry Isaac Newcomet; Addison May Rothrock;
Henry Franklin Schantz; Ira Goff Shoemaker; Thomas Millette Snyder;

Robert Eugene Strasser; Charles Alvin Yocum. SINKING SPRING—James Gicker Matternes. TEMPLE—Abner Henry Bauscher. WOMELSDORF—John Elias Livingood.

Biair County

ALTOONA—George Ellsworth Alleman; Fred Herman Bloomhardt; Samuel Isett Bloomhardt; Daniel Bohn; Arthur St. Clair Brumbaugh; John Hughes Galbraith; Andrew Jackson Williams Handwork; John Dan Hogue; Ernest Justin Hoover; Logan E. Hull.

David Kaufman; Don Cameron Kyper; Charles Henry Manlove Jr.; Claude Edwin Snyder; John Robert Thompson Snyder; James Swan Taylor. BELLWOOD—Brooklyn Boyer Lavengood. HOLLIDAYSBERG—Webster H. Calvin; Roy Deck; Arthur King Lotz; Samuel Calvin Smith. ROARING SPRINGS—Wilfred Lorenz Hair. TYRONE—Carey Clarence Bradin; John Blaisdell Nason.

PENNSYLVANIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams.....	528	13.9	34,319	903	38	..	14	25	26	3
¹ Allegheny.....	725	0.4	1,196,138	699	1,710	50	1,031	1,226	1,099	345
Armstrong.....	653	9.1	79,068	1,098	72	1	42	48	57	10
Beaver.....	429	3.7	94,355	799	118	3	62	83	66	13
Bedford.....	1,026	23.9	38,879	904	43	..	21	33	22	7
² Berks.....	865	3.4	200,454	779	257	8	128	180	109	35
³ Blair.....	534	3.8	126,202	888	142	5	75	95	87	24
Bradford.....	1,145	15.9	54,526	757	72	1	31	44	53	11
Bucks.....	608	5.3	80,428	793	114	6	45	74	69	10
Butler.....	790	8.7	84,169	924	91	1	52	69	59	7
⁴ Cambria.....	717	4.2	210,874	1,240	170	5	118	140	106	27
Cameron.....	392	65.3	8,079	1,346	6	..	3	5	4	..
Carbon.....	406	9.0	58,931	1,309	45	..	24	33	29	7
Center.....	1,146	20.8	43,810	796	55	3	16	32	36	10
Chester.....	777	5.1	119,082	788	151	7	70	97	91	25
Clarion.....	601	13.1	38,356	833	46	1	23	36	31	8
Clearfield.....	1,142	12.4	103,371	1,123	92	..	52	64	67	13
Clinton.....	878	27.4	33,259	1,039	32	..	15	22	25	5
Columbia.....	478	8.4	54,725	960	57	..	26	34	50	10
Crawford.....	1,038	13.5	61,565	799	77	3	36	50	45	13
Cumberland.....	528	6.5	57,499	737	78	4	26	52	49	15
⁵ Dauphin.....	421	2.4	151,998	710	214	9	122	156	154	22
⁶ Delaware.....	185	0.9	134,800	687	196	18	92	137	106	36
Elk.....	806	29.7	38,038	1,408	27	2	14	17	22	1
⁷ Erie.....	781	4.1	127,960	680	188	8	104	135	127	39
Fayette.....	795	5.0	209,083	1,319	158	6	102	131	116	38
Forest.....	423	60.4	9,435	1,347	7	..	4	6	3	..
Franklin.....	751	9.7	63,331	810	78	4	39	57	51	14
Fulton.....	402	57.4	9,703	1,386	7	..	4	7	6	1
Greene.....	574	13.3	29,320	681	43	1	17	29	19	2
Huntington.....	918	19.5	40,971	871	47	1	19	34	33	7
Indiana.....	829	10.6	83,474	1,070	78	1	43	57	52	13
Jefferson.....	661	13.2	65,992	1,739	50	..	37	48	40	10
Juniata.....	392	26.1	15,013	1,000	15	..	4	8	13	2
⁸ Lackawanna...	451	1.5	307,556	1,049	293	8	176	217	174	59
⁹ Lancaster.....	941	4.2	172,712	771	224	15	100	143	132	22
¹⁰ Lawrence.....	360	3.6	79,512	819	97	5	49	78	60	14
Lebanon.....	360	4.5	63,753	807	79	1	27	46	36	6
¹¹ Lehigh.....	344	2.2	137,035	867	158	2	78	112	92	14
¹² Luzerne.....	892	24.5	406,009	1,134	358	7	203	280	207	79
¹³ Lycoming.....	1,220	10.4	84,571	722	117	3	45	78	82	11
McKean.....	987	15.7	47,868	759	63	1	28	43	49	8
Mercer.....	700	6.9	92,526	907	102	3	52	57	64	16
Mifflin.....	598	10.2	31,160	798	39	2	7	32	26	3
Monroe.....	623	18.3	24,239	712	34	4	12	21	23	7
¹⁴ Montgomery...	484	1.2	191,921	489	392	19	128	190	155	50
Montour.....	130	7.2	14,868	782	19	1	11	15	16	3
¹⁵ Northampton..	372	2.1	148,089	831	178	3	88	131	130	60
Northumberland	454	8.3	126,390	1,469	86	4	48	74	73	12
Perry.....	564	25.6	24,136	1,097	22	1	10	13	17	3
¹⁶ Philadelphia....	133	0.4	1,735,517	502	3,453	262	2,025	2,629	1,779	767
Pike.....	544	90.7	8,033	1,338	6	..	2	3	4	..
Potter.....	1,071	42.8	29,729	1,118	25	2	9	18	16	4
Schuylkill.....	777	4.2	233,419	1,261	185	4	114	154	105	44
Snyder.....	311	14.8	16,800	800	21	1	9	14	15	4
Somerset.....	1,034	14.2	81,042	1,111	73	..	37	54	50	8
Sullivan.....	458	38.2	11,293	941	12	1	4	10	9	2
Susquehanna...	824	20.1	37,746	920	41	..	13	29	20	5
Tioga.....	1,142	20.0	42,829	751	57	2	20	37	36	7
Union.....	305	14.5	16,249	773	21	1	6	15	16	1
Yenango.....	661	8.9	61,257	827	74	2	36	57	50	7
Warren.....	902	16.7	40,029	740	54	3	23	42	37	9
Washington....	862	4.8	181,271	879	206	..	96	148	122	25
Wayne.....	739	23.8	29,236	943	31	1	13	26	26	3
Westmoreland..	1,039	4.0	283,225	1,106	256	10	122	182	166	60
Wyoming.....	397	17.3	15,509	674	23	..	9	16	19	2
¹⁷ York.....	903	5.5	150,997	909	166	2	79	114	122	23
Totals.....	44,831	3.01	8,783,728	761	11,539	518	6,190	8,342	6,750	2,022

- Includes McKeesport, population 48,299; physicians 61 [M.R.C. 13], and Pittsburgh, population 586,196; physicians 1,170 [M.R.C. 258].
- Includes Reading, population 111,607; physicians 162 [M.R.C. 24].
- Includes Altoona, population 59,712; physicians 89 [M.R.C. 16].
- Includes Johnstown, population 70,473; physicians 98 [M.R.C. 18].
- Includes Harrisburg, population 73,276; physicians 146 [M.R.C. 14].
- Includes Chester, population 41,857; physicians 68 [M.R.C. 14].
- Includes Erie, population 76,592; physicians 129 [M.R.C. 29].
- Includes Scranton, population 149,541; physicians 212 [M.R.C. 41].
- Includes Lancaster, population 51,437; physicians 87 [M.R.C. 16].
- Includes New Castle, population 41,915; physicians 66 [M.R.C. 9].
- Includes Allentown, population 65,109; physicians 102 [M.R.C. 12].
- Includes Wilkes-Barre, population 78,334; physicians 147 [M.R.C. 32].
- Includes Williamsport, population 34,123; physicians 71 [M.R.C. 6].
- Includes Norristown, population 31,969; physicians 52 [M.R.C. 8].
- Includes Easton, population 30,854; physicians 74 [M.R.C. 6].
- Includes Philadelphia, population 1,683,664; physicians 3,450 [M.R.C. 764].
- Includes York, population 52,770; physicians 53 [M.R.C. 15].

Bradford County

ATHENS—Carlos Pennington Holcomb; Reuben Louis Leverton. OVERTON—Arthur Judson Bird. SAYRE—Donald Guthrie; Carlyle Newton Haines; John Mark Higgins; Walter Edward Lundblad. SYLVANIA—Grant Harden Gustin. TOWANDA—Guy Truman Holcombe. WYALUSING—George Hiram Blakeslee Terry. WYSOX—Howard Cornelius Down.

Bucks County

BRISTOL—Charles Shewell Abbott; William Cooper Le Compte; James Frederick Wagner. DOYLESTOWN—Percy Musgrave. EDDINGTON—John Morris Carter. LANGHORNE—Samuel LeRoy Ridge. MORRISVILLE—Stephen Smith Percy Wetmore. NEWTOWN—George Albert Barker Jr. SPINNERSTOWN—Victor K. Marsteller. TULLYTOWN—James Monroe Klenk.

Butler County

BUTLER—Ephriam E. Campbell; Clarence Henry Ketterer; Claude Albert Robb; Roy Logan Stackpole. MARS—Alois Frank Seifries. PROSPECT—Walter Thompson Lowry. SLIPPERY ROCK—Frank Dickson Campbell.

Cambria County

BARNESBORO—Albert Frank Dunsmore; Harry Franklin Garman. CONEMAUGH—Albon Ellsworth Fichtner. CRESSON—James Albert Lynch; Neill Duncan MacArtan. ELMORA—Clarence Eugene King. JOHNSTOWN—John Walter Bancroft; Kent Amos Bowman; Edwin Charles Boyer; Bennett Arthur Braude; Moses Clayborne; Charles Glassmire; William Edward Grove; Charles Elliott Hays; Homer LeRoy Hill. John Bodine Lowman; Louis Henry Mayer Jr.; Joseph John Meyer; Arthur Miltenberger; Harry Hartzell Penrod; Daniel Patteo Ray; Frank Scharmann; Francis M. B. Schramm; Bernard Pierre Widmann. NANTY GLO—William Walter Wilkinson. SOUTH FORK—Edward Pardoe. ST. MICHAEL—Esra Pope Dickinson.

Carbon County

BEAVER MEADOWS—Paul M. Hunsicker. LANSFORD—Joseph John Bellas; Russell R. Jones; Robert Harrison Kistler; Maurice Henry Neumuller. PALMERTON—Roger Putnam Batchelor; Harold Edwards Hersh.

Centr County

BELLEFONTE—David Dale; Scott M. Huff; Thomas Rogers Morgan. MILLHEIM—John Andrew Hardenbergh. PHILLIPSBURG—Andrew Jackson Griest; Samuel Marks; Harry Hartsock Thompson. PT. MATILDA—Joseph Walter Harshberger. STATE COLLEGE—Peter Hoffer Dale. WOODWARD—George Potter Ard.

Chester County

ATGLEN—Frederick Lewis Baker. BERWYN—Frank L. Richards. CHATHAM—Lawrence Clayton Moore. CHESTER SPRINGS—Frank Happersett Wells. COATESVILLE—William Gifford Francis; De Haven Hinkson; Oscar J. Kingsbury; Charles Ira Pratt. KENNETH SQUARE—John Whitfield Merryman; Jacob Julius Schwegler. MALVERN—Clarence S. Kurtz. OXFORD—Chester Barry.

PAOLIE—Robert Coffman Hughes. PARKER FORD—Charles Dimm Dictterich. PHOENIXVILLE—Mark Calvin Rabert. STRICKERSVILLE—James A. Buchanan. WEST CHESTER—John Aloysius Farrell; Vincent J. Grauten; Israel Pemberton P. Hollingsworth; Charles Rees Palmer; Henry Pleasants, Jr.; Henry Abraham Rothrock; George King Strode; William Wellington Woodward; Walter Webb.

Clarion County

CLARION—Charles Arnold Fitzgerald; William Barr Hetzel; Franklin Pearce Phillips. CURLLSVILLE—Charles Arthur Mooney. FOXBURG—John Notley Camp. MONROE—Elmer C. Texter. NEW BETHLEHEM—William Otta Dougherty; William Charles Keller.

Clearfield County

BECCRIA—Frank Klare Miller. BOARDMAN—James Hudson Fiscus. BURNSIDE—William C. Browne. CLEARFIELD—Arthur Donald Cowdrick; William Scott Piper; Lever Flegal Stewart. COALPORT—Bradley Hartman Hoke. FALLS CREEK—Archie Bernice McConnell; Arthur Foster McCormick. HOUTZDALE—William Raymond McKenzie. KYLER-TOWN—George Breen Kirk. OSCEOLA MILLS—Austin Chalmers Lynn. TYLER—Harry Arthur Vosburg Jr.

Clinton County

BEACH CREEK—Perry McDowell Tibbins. CHATHAM RUN—Joseph Mackay Corson. LOCK HAVEN—John Burnworth Critchfield; George Dorsey Green; James Louis Lubrecht.

Columbia County

BERWICK—Edward Lowndes Davis; William C. Hensyl. BLOOMBURG—Henry Bierman; Jacob Ralph Brobst; John Tremper Macdonald; Donald Barton McHenry; James Robert Montgomery Jr.; Charles Benjamin Yost. MILLVILLE—James Robert Gemmill. NUMIDIA—Allen Vincent Carl.

Crawford County

CAMBRIDGE SPRINGS—Charles E. Mullin. CONNEAUT LAKE—Harry Lee Brush. CONNEAUTVILLE—Samuel James Dickey. GENEVA—Arne Wilbur Clouse. MEADVILLE—Edwin Ellsworth Brophy; Frank Allison Clawson; William Emory Hyskell; Joseph Charles McFate; George Adrien Poux; Andrew Ignatius Rosenberger; William Barton Skelton. TITUSVILLE—Valentine Burton Eiler; Albert Claudius Shannon.

Cumberland County

CARLISLE—Elmer A. Hudson; William Tell Phillipy; Edward Robert Plank; William Starick Ruch; Harry Allen Spangler; Walter Scott Taylor; Parker U. Wagoner. HUNTSDALE—Selden Sylvester Cowell. LEMOYNE—Edgar Shuman Everhart. MECHANICSBURG—Henry Albert Smith; Richard Rockefeller Spahr. MT. HOLLY SPRINGS—Harry B. Fralic. NEW CUMBERLAND—John Linn Good. NEWVILLE—Perry William McLaughlin. SHIPPENSBURG—John Bruce McCreary.

Dauphin County

ELIZABETHVILLE—Robert Edwin Barto; Floyd Troutman Romberger. HALIFAX—Frederick C. Smith. HARRISBURG—William James Basler; Carson Coover; William Tyler Douglass. Jesse Luther Lenker; George Reily Moffitt; Roscoe Livingston Perkins; Frank Fredk. Dunott Reckford; James Merle Robbins; Benjamin F. Rorer; George Abraham Treiman; Richard Yoffe; George Abram Zimmerman. LINGLESTOWN—Frank Landis Shenk. MIDDLETOWN—William Powell Evans. OBERLIN—Frederick Webster Byrod. STEELTON—Jacob Mark wood Peters; Robert McGuigan Hursh. HARRISBURG—Gilbert Lagoria Dailey; John William MacMullen.

Delaware County.

CHESTER—Ethan Allen Campbell; John O. Crist; William Benedict Evans; William Knowles Evans; John Schofield Eynon; Robert Anthony Kilduffe Jr.; Frank Richard Nothnagle; Adrian Van Bracklin Orr; James Ray Parker; Ralph Edward Pilgram; Charles Andrew Rowland; George C. Webster. CLIFTON HEIGHTS—Estes Paine. COLWYN—Clark Samuel Long. EDDYSTONE—George L. Armitage; Alexander Donald Ferguson. ELWYN—Percival M. Kerr. GLEN OLDEN—Claude Pasamere Brown; Harry Gallagen. LANDSDOWNE—Eugene A. Case; John Aloysius McKenna. LLANERCH—William F. Moore; Isaac Burton Roberts. MARCUS HOOK—Harry Thomas Stockton; Walter John Whitehouse. MEDIA—Isaac Ivisen Parsons. MORTON—Alfred G. Tinney. NORWOOD—Samuel Beveridge Harris. RUTLEDGE—Norman Davis Smith. WALLINGFORD—William Henry Furness; Casper Wistar Miller. WAWA—Peter McCall Keating. WAYNE—Clarence Wyman Lincoln; Cyrus Walter Truxal Jr.

(CHESTER—Anthony Maurice Bennardi; Albin Roman Rozplock.

Elk County

JOHNSONBURG—Eugene Bellantyne Sharp.

Erie County

ALBION—LeRoy Umburn. CORRY—Ninde Troy Gillette; Theodore Alvin Little. CRANESVILLE—John Franklin Rutherford. EDINBORO—Harold Alfred Ghering. ERIE—Martin Clement Barrett; Ignatius Aloysius Bednarkiewicz; John Eastman Belding; Guy Cluxton Boughton; James Elmer Croop; Arthur George Davis; Joseph Edward Dudenhofer; Scott Dillon Gleeten.

Ralph Emerson Henry; Elmer Hess; James DeWitt Jackson; Charles Cochran Kemble; Lemuel Abraham Lasher; Carl Blaine Lininger; John Hepburn Lloyd; Ray Henry Luke.

Frank Peter McCarthy; Whitman Carlisle McConnell; Richard Oliver Miller; John Joseph O'Donnell; George Arthur Reed; William Ridgway Reiche; George William Schlindwein; James Robert Smith; Joseph Armin Stackhouse; Jesse Cunningham Stille; James T. Strimple; Frank Alfred Trippe; Elmer Grant Weibel. FAIRVIEW—Walter Raymond Krauss; Harry Eugene Lyons. North East—James Louis Heard. NORTH GIRARD—Adelbert Boyd Miller. WESLEYVILLE—Ross W. Thompson.

Fayette County

ALICIA—George Washington Lang. ALLISON—W. Sturgis Frankenburg. BROWNSVILLE—George Fulton MacDonald. CONNELSVILLE—William James Bailey; Don Dickinson Brooks; Edward W. Douglas; Elliott Bard Edie; James Lester Junk; Alexander Robert Kidd; Robert S. McKee. DUNBAR—James B. Carroll; Samuel Clarke Dowds; Francis Joseph King. FAIRCHANCE—William Proudfoot Patterson. GRINDSTONE—Alexander White Spears. HILLCOKE—Walter Teed Messmore. MASONTOWN—Harry Brady; John Lindsey Messmore; Edgar Kenneth Wells. NEW SALEM—Carton Harold Davidson; David Earl Lowe. POINT MARION—Charles James Devlin. REPUBLIC—Charles Calvin Ryan. SMITHFIELD—Horace B. Guher; Jesse Lazear McCracken. SOUTH BROWNSVILLE—Arthur Keys Oldbert. SOUTH CONNELSVILLE—Paul Goewey Dick. UNIONTOWN—Samuel Austin Baltz; Charles Dana Bierer; Albert Edward Coughanour; Benjamin Perkins Doran; Robert Harrison Jeffrey; Clark McEwen Luman; William Aristead McHugh Jr.; Peter Burrill Mulligan; George H. Robinson Jr.; Charles Hervey Smith. WHITSETT—Don Cameron Fosselman.

Franklin County

CHAMBERSBURG—Charles Core Gans; Lewis Hiram Seaton; Michael Webster Stofer. FORT LOUDON—Richard Penn Smith. MONT ALTO—John Berry; Henry Adam Carskadden; Henry Aloysius Gorman; John Albert Berchard Lowry; Jacob Sam Posner Makler; Augustine Joseph Mulligan; Nathaniel George Shafritz; Maurice Theodore Sloane; William Wilson Woods. WAYNESBORO—David Miller Shoemaker; Samuel Brown Thomas.

Fulton County

BUCK VALLEY—James Malcolm McKibbin

Greene County

JEFFERSON—John Charles Kerr. WAYNESBURG—Hersey Elroy Orloff.

Huntingdon County

ALEXANDRIA—James Roy St. Clair. DUDLEY—Howard Dovey. LUNTINGTON—Samuel Oscar Brumbaugh. MAPLETON—Frederick Pratt Simpson. ORBISONIA—Raymond Rudolf Decker. PETERSBURG—John Maulfair Keichline Jr. MOUNT UNION—James Robert Morrow.

Indiana County

CLYMER—J. Merle Everwine. BLACK LICK—William Charles Widlowson. HOMER CITY—Charles Henry Kirk; Melville Mack Palmer. INDIANA—Medus Monroe Davis; William Dunn Gates; William Henry Jix. LUCERNE MINES—James Ward. MARION CENTER—John Murreck Stewart. PLUMVILLE—Clark Monroe Smith. ROSSITER—Waldo Emerson Preston. SALTSBURG—Abraham Jerome Kaiser. WATERLAN—Leon Jermain Camche.

Jefferson County

BROOKVILLE—David McAllister Aikman; Wayne Lawson Snyder. ELANCEY—Charles Robert Stevenson. PUNXSUTAWNEY—Fred Wallace Black; Jeremiah Alexander Klotz; Guy Musselman Musser. RAMA-TOWN—Walter Dick. SUMMERVILLE—Alverdi John Simpson. IMBLIN—Harry Weaver Allison. WISHAW—Willis D. Hall.

Juniata County

RICHFIELD—Percy Edward Deckard. VAN DYKE—Henry Stanley erchner.

Lackawana County

ARCHIBALD—John Vincent Kearney; Patrick Joseph McDonnell; John Inton Moss. CLARK'S SUMMIT—Herbert Eugene Simrell. DALTON—Howard Locke Vall. DUNMORE—Eugene Augustine Curtin; Frank Michael Ginley; Almon Cyrus Hazlett. GLENBURN—Elwood Linnell avls. MAYFIELD—Thomas Patrick Martin. OLD FORGE—John Lawrence Loftus. OLYPHANT—John Joseph Bendick. PECKVILLE—Miln Irving Pentecost; Clarence Leonard Young. SCRANTON—John Vincent Allen Jr.; George Brown Beach; Frank Andrew Carroll; Daniel Edward Berney; John Decker Butzner; Harvey Burton Cornell; John Hiss Corser; Arthur Eggleston Davis; Earle Rice Davis; Fred Whitney avls; William Joseph Leo Davis; James Nelson Douglas. Leo Patrick Gibbons; Howard Winslow Gibbs; Harry Goodfriend; Iare Helmer Hanley; Harry Kane Hobbs; Heister Vanderslice Hower; avld John Jenkins; William Edwin Keller; Thomas Gore Killen; Harry Michael Kraemer; James Davis Lewis; Jacob John Lonsdorf Jr.

Connell Edward Murrin; James Edward O'Toole; Lewis Herbert Raymond; Earl Herb Kilhorn; Linford Brooks Roberts; John Isaac Robison; James Peter Haggerty Ruddy; Elmer Bryant Shaul; Matthew J. Shields; Isadore Edward Smigelsky; James Stein; Frank Paul Strome; Robert E. Thomas.

Jonathan M. Wainwright; Frank Robert Wheelock; Robert Vandenberg White; Albert Jefferson Winebrake; John Francis Zychowicz. QUARRYSVILLE—De La Ray Signor. WAVERLY—Robert Bliss Mackey. PECKVILLE—Ralph Harrison Armstrong.

Lancaster County

CHRISTIANA—John Ross Smith Martin. COLUMBIA—Milton Valentine Miller; Charles Joseph Shillott. LANCASTER—Theodore Burton Appel; Charles A. Cohn; Henry Blaine Davis; Harry Culbertson Fulton; Harry Gilmore Hassenplug; Samuel H. Heller.

William Hubley Herr; William Henry Jones Jr.; Harry Pomerantz; Gardner Atlee Savres; Grover Cleveland Schwartz; William Erdman Seibert; Charles P. Starr; Grant B. Weaver. LITITZ—John Lincoln Hertz. MANHEIM—Pursifor Frazier Guie.

LANCASTER—Percy Clark Joy; John Hazlett Turner, III.

MT. JOY—Wm. McC. Workman.

Lawrence County

ELLWOOD CITY—Colin M. Dumm; Charles McClellan Iseman; Boyd Willamber Schaffner; David Clair Vosler. HARLANSPURG—William David Cleland. NEW CASTLE—James Magee Blackwood; Thaddeus Clair Brown; Jesse Robert Cooper; Louis Ward Grossman; Benjamin Franklin Haines; Howard C. Harper; Don Carlos Lindley; Frank E. Urey. NEW WILMINGTON—Charles James Smyser.

Lebanon County

ANNVILLE—John Edward Marshall. LEBANON—Adam George Heilman; Alfred Desch Strickler. NEWMANSTOWN—David M. Voga. PALMYRA—Simeon David Bashore. REXMONT—John Dohner Bogert

Lehigh County

ALLENTOWN—Quintin David Arner; Warren H. Butz; George Solomon Deibert; Ralph Andrew Fisher; William Frederick Herbst; Martin Seler Kleckner; Walter Emery Lang; Harold Frederick Lanshe; Ruben Axel Emanuel Peterson; Charles Benjamin Reitz; Thomas Lawrence Smyth. CATASANSQUA—Harry L. Baker. COOPERSBURG—Frank H. Long.

ALLENTOWN—Clarence Calvin Rogers.

Luzerne County

ASHLEY—Daniel Francis Frederick. CONYNGHAM—Robert Ottens Koons. DORRANCETON—Marshall Cloyd Rumbaugh; Frank Donaldson Thomas; Laurence M. Thompson. EDWARDSVILLE—Isaiah C. Morgan. FORTY FORT—Daniel Guy Robinhold. FREELAND—Charles Seymour Dickinson; John Clarence Gabel; Albert Augustus Redelin; Roy Truckenmiller. GLENYON—Albert Meredith Thomas. HAZLETON—Ralph Emerson Buckley; John Rose Dyson; Peter Edward Fagan; John A. Hugo; Joseph Clement Kochezynski; Henry J. Owens; Otto Carl Reiche. KINGSTON—Abe Albert Dattner; Francis Brian Gryczka; Walter Leonard Lynn; Lewis Leonidas Rogers Jr.; Charles Layton Shafer; Frank Paul Summa; Edward Inman Wolfe. MINERS MILLS—John J. Hislop. MINERSVILLE—Hiram Grant Straub. NANTICOKE—Frederick William Hoyer. NESCOPECK—Benjamin Biscombe Cook. PITTSTON—Joseph Peter Burke; August Gustav Hinrichs; James Thomas Madden; John Joseph Madden; Charles Everett Nicholson; Francis Clement O'Malley; Herbert LeRoy Ransom; Harry Rubinstein. PLAINS—William Fuller Harrison; Joseph James Kocyan. PLYMOUTH—James Edward James; Charles Frederick Netzel; William Clifton Stiff. SCRANTON—Robert Joseph Flynn. SUGAR NOTCH—John Joseph Caffrey. SWOYERSVILLE—John Leonard Lavin. WILKES-BARRE—Erick Archibald Adams; Francis Lopatto Alexaitis; Thompson McDonald Baird; Edward W. Bixby; Xavier R. Collmann; John Webster Cressler; William John Davis; Francis Edward Donnelly; William Joseph Doyle.

Wilmer Clayton Dreibelbics; Elijah M. Ellsworth; Carl Wood Espy; Stanley Leopold Freeman; Thomas Reed Gagon; Morgan Everett Griffith; Austin Ladimar Hauslohnner; Cyrus Jacobosky; Francis John Krajewski.

Joseph Leo McGinley; Patrick Francis McHugh; Thomas Vincent McLaughlin; Leo Clement Mundy; Robert Harrison Murdock Jr.; Charles Hayden Phillips; William C. Reese; Simon Warren Reichard; Nathaniel Ross; George Ario Shuman; Harry Alexander Smith; Max Tischler; Raymond L. Wadhams; Clark H. Yeager. WYOMING—A. Burton Smith.

Lycoming County

ELLENTON—Barton Brown. JERSEY SHORE—Lee McCloskey Goodman. MONTGOMERY—Wilbur Emerson Turner. MONTTOURSVILLE—Floyd Edward Muaster. ROARING BRANCH—Galen David Castlebury. WILLIAMSPORT—Waldo Willard Hull; Milfert Weaver Meyers; John Budd Nutt; Charles Allen Pryor; Robert K. Rewalt; Robert Fitzsimmons Trainer.

McKean County

BRADFORD—William C. Hogan; Benjamin F. White Jr. ELDRED—Earle McCormick McLean. PT. ALLEGANY—Albert Jackson Colcord; William Jackson McGranor. SMITHPORT—Robert Hamilton; William Alonzo Ostrander; Everell Verni Chadwick.

Mercer County

FARRELL—William Griffith Berryhill; Lawrence Norman Breene; William Morgan Witt Jr. GREENVILLE—Frederick Oliver Batteiger; Lewis W. Glatgen; Clarence Wilson McElhaney. GROVE CITY—Edwin Marshall McConnell; Homer Smith Wilson. JAMESTOWN—Carl Henry Bailey. MERCER—William Waddle Richardson. SHARON—Orlando A. Jones; Harry William Millikin; Augustus Michael O'Brien; John Francis Spearman. SHARPESVILLE—Benjamin Allen Frye. STONEBORO—Clarence Jay Buckley.

Mifflin County

BURNHAM—Llewelyn Ivor Thomas. LEWISTOWN—Charles Milton McCoy; Frederick Augustine Rupp.

Monroe County

DELAWARE WATER GAP—John Henry Stearns. EAST STROUDSBURG—Carl Benjamin Rosenkrans. KRESGEVILLE—Robert Albert Christman. STROUDSBURG—Charles Stewart Flagler; Harry Sydenham Van Etten. SWIFTWATER—Richard Slee. TOBYHANNA—Alfred Lawrence Rhoads.

Montgomery County

ABINGTON—Harry A. D. Baer; Albert Nichols Baggs; Albert Vincent Crosby. AMBLER—Andrew Godfrey; Isaac High Shelly. ARDMORE—Herbert A. Arnold; James Harold Austin; Joseph Howard Cloud; Edwin Spooner Potter. BETHAYRES—Thomas Luther Coley. BRYN ATHYR

—Charles Lewis Olds. BRYN MAWR—Henry Culps Earnshaw; Francis Betterly Eveland; George Henry Miller; William Chambers Powell; David Duer Reynolds. CHESTER—Clifford Hood Arnold. CONSHOHOCKEN—Aaron Leidy Ruth. CYNWYD—Edward Foulke Corson; Theodore LeBoutillier; Charles Williamson Luders. ELKINS PARK—Charles James Cole Jr. ERDENHEIM—William Coronado Sheehan. GLENSIDE—Elmer Ellsworth Wilson. HARLEYVILLE—Russell Raudenbush Keeler. HAVERFORD—John Semple Sharpe. HUNTINGTON VALLEY—David G. Harvey. JENKINTOWN—Richard Dale Hopkinson. KULPSVILLE—Henry Nathaniel Scholl. LANSDALE—John Warren Bauman. NORRISTOWN—Walter Allen Blair; Samuel Jaffe; James Aloysius McCracken; George Wm. Miller; Theodore Peters; Herbert Benjamin Shearer; John Christopher Simpson; Walter A. Yeakle. NORTH WALES—Frederick Blunt Allen. OGONTZ—Lawrence Hughes Bloom; Robert Shoemaker. POTTSTOWN—Barton K. Thomas; William A. Toland. ROYERFORD—Alexis Merritt Melvin. RYDAL—Frederick D. Owsley. SCHWENKVILLE—Henry Croskey Allen. WILLOW GROVE—Archie Wallace Dunn; William Henry Marburger Imhoff. WYNCOTE—Edward J. Gordon. WYNNEWOOD—Walter S. Lucas.

Montour County

DANVILLE—James S. Hammers; Raymond Jack Hauser; John Edmund Struthers.

Northampton County

BETHLEHEM—Geo. Lord DeSchweinitz; Thomas Benj. Kern; Stuart Emmart Rauch. EASTON—George Keyser Angle; Foster Aaron Beck; Francis Stapleton Chambers; Albert Knecht Detwiler; Rollo Howard Hoey; Harvey Claude Updegrave. HECKTOWN—Sem Grim Beck. PEN ARGYLE—William Earnest Andrew. SOUTH BETHLEHEM—Walter Joseph Cathrall; William Lawrence Estes Jr.; James Bertrand McAvoy; George Albert Parker; Norman Albertus Timmons.

Northumberland County

KULPMONT—Charles Culp Cooner; Raymond Clair Fagley. MT. CARMELO—Thomas James McNells; Edmund Roger Samuel. NORTHUMBERLAND—Stoddard S. Berg. SHAMOKIN—Adna Sawyer Jones; Oscar Eisenhart Salter; Richard Henry Simmons; James Gardner Strickland. SUNBURY—George Albert Deitrick; Charles Meade Thomas. TREVORTON—Boyd Edwin Wilkinson.

Perry County

BLAIN—Harvey Wharton Woods. LIVERPOOL—George Henry Milton Bogar. NEW BLOOMFIELD—Maurice Isaac Stein.

Philadelphia County

BYBERRY—Abram Halprin. PHILADELPHIA—Alexander Crever Abbott; Frank C. Abbott; Lewis Harry Adler Jr.; Herman Emil Albrecht; Markley Connell Albright; Emory Graham Alexander; John Alexander; Herman Bryden Allyn; Robert Swan Alston; Andrew Anders; James M. Anders; Horace B. Anderson; William Honeyford Annesley; Harold Taylor Antrim; Thomas Morrel Armstrong; James Horatia Arnett; Joseph David Aronson; Edward L. Artman; Astley P. C. Ashhurst; William E. Ashton; Eugene Jacob Asnis; Joseph Aspel; George Mason Astley; James Paul Austin; Ira Ayer.

William Wayne Babcock; Harry Bachman; Benjamin F. Baer Jr.; George Frederick Baer Jr.; William Hotchkiss Bailey; Harry W. Baily; Matthew Carroll Barnes; Harold Frederick Baker; Frederick Baldi; James Harvey Baldwin; Chester Arthur Bardsley; Abraham I. Baron; Samuel Baron; Charles Albert Barron; Frank F. Barthmaier; Othmar F. Barthmaier; Charles Orrin W. Bartine; Sidney E. Bateman; William Bates; Frank D. Baumann; William D. Baun; Edward J. G. Beardsley; Allen Garfield Beckley; Charles Augustus Behney; William Parks Belk; Basil Raphael Beltran; Franklin Duffield Benedict; Albert Page Berg; David H. Bergey; Leo Heller Bernd; James Bebout Bert; John Allan Bertolet; John Percy Bethel; Sydney Geoffrey Biddle; Charles A. Bigler Jr.; Aaron Lafayette Bishop; James Douglas Blackwood Jr.; Julius Abraham Blasser; Frank Benton Block; George Homer Bloom; James Wiley Bodley; Arthur E. Bogart; John Waldo E. Boggs; Reuben Arnold Bogia; Russell Sage Boles; Zera Exley Bolin; Robert H. Bolling; Earl Danford Bond; Francis Frank Borzell; Frank Erdman Boston; Samuel Clifford Boston; Clement Remington Bowen; Charles Jacob Bowne; George Melick Boyd; Samuel Harold Boyd; Irvine Manning Boykin; Hugh Cotter Boyle; Charles P. Brady; John William Bransfield; William Ramsey Bready Jr.; William Cullen Bridges; Frank A. Bridgett; Ward Brinton; Randolph G. Broadus; Ralph Shepleard Bromer; Macy Brooks; Harold Shoemaker Broomall; Benjamin Brown; George Andrew Brown; Henry Paul Brown Jr.; Franklin Cotton Brush; David Budin; Robin Carl Buerki; Frank Walton Burge; Joseph Patrick Burns; Michael Anthony Burns; Stillwell Corson Burns; Howard Sherwood Busler; Albert Butler; Benjamin Franklin Busby.

William B. Caldwell; Raymond Flood William Campbell; Harris M. Carey; Harry Stober Carmany; Horace Leedom Carneross; John B. Carnett; Chapin Carpenter; John Baker Carson; Arthur E. S. Casey; Henry Ware Cattell; Burton K. Chance; William Herbert Chandlee; William Calvert Chaney; Samuel Chartock; Harry Norton Cherashore; Samuel Julius Chermaik; William Edgar Christie; Frederick David Clair; George Houghton Clapp; Jefferson H. Clark Jr.; Edward Lamar Clemens; Frank Cleveland; James Broomfield Clinton; Charles Higginson Cloud; Oscar Ray Clovis; Charles A. Codman; Leon Solis Cohen; Myer Solis Cohen; Isadore Franklin Cohn; Abraham Edward Colcher; Albert Newton Cole; Charles Aloysius Coll; Edward Wilson Collins; Joseph Francis Comerford; Alexander J. P. Conlen; Joseph Vincent Connole; John Michael Connolly; John Roy Conover; Philip Lewis Cook; Edwin Stanley Cooke; James Norman Coombs; Herbert Cooper; Donald Bruce Coover; Asa Fenton Copeland; William M. L. Coplin; Michael Patrick Corcoran; Walter Stewart Cornell; Clinton Franklin Costenbader; Alfred Cowan; William Vincent Coyle; William Frederic Craig; George Sumner Crampton; Joseph Raymond Criswell; Harry W. Croop; William Henry Crowley; John M. Cruice; Kirksey Louis Curd; John Dougherty Joseph Curran; John C. Da Costa.

Judson Daland; Walter John Daly; Adam Peter Dambrauckas; Clarence D'A. Daniels; Arthur Mansbach Dannenberg; Arthur Dare; Harold Stern Davidson; John Rumsey Davies Jr.; Edward Parker Davis; Richard Sharpless Davis; Alexander Heron Davison; Arthur C. Dean; John B. Deaver; Percy De Long; Joseph William Dennin; Francis Joseph Dever; Robert T. Devereux; Henry Kuhl Dillard; Edward Saunders Dillon; Vincenzo Maria Diodati; John Leo Donahue; Daniel Joseph Donnelly; John Delvin Donnelly; Robert T. M. Donnelly; William Murray Donovan; George Morris Dorrance; Ernest Michael Dorsett; Rae Shepard Dorsett; William Drayton Jr.; Thomas William Druce; Amos Keeler Du Bell; Royal Elwood Durham; Guy Edward Dutton; Frank Moir Dyson.

Preston M. Edwards; Thomas Ford Edwards Jr.; Paul C. Eiseman; Eldridge Lyon Eliason; Jacob Edgar Ellinger; John Dean Elliott; Walter

Gray Elmer; William Cromwell Ely; Jacob L. Engle; Ralph L. Engle; Louis Daniel Englerth; George Alexander Enion; Erwin Huber Erney; Matthew Shayne; Robert H. Eshleman; Augustus Adolph Eshner; Omer R. Etier; William Julius Ezickson.

Clifford Bailey Farr; William Wilberforce Farr; Joseph Davidson Farrar; Leon Feldman; Vincent John Fenerty; Donald Renwick Ferguson; Francis Scoffin Ferris; Alfred Aloysius Ferry; Wilfred B. Fetterman; Alexander Garrison Fewell; Charles Andrew Fife; Cedrick Eugene Filkins; Harry Crawford Fish; Andrew Flanagan Jr.; John Bernard Flick; Clement A. Fogerty; Douglas Newton Forman; John R. Forst; Edgar Newton Fought; Charles Stewart Fox; Herbert Fox; Albert Philip Francine; Clarence Payne Franklin; Charles Harrison Frazier; LeRoy Walley Frederick; Frank E. Freeman; Michael Freeman; Leonard David Frescoln; Charles J. Fries; Irvin Augustus Fries; Victor B. Fries; Charles Leroy Fulmer; Charles Lincoln Furbush; Milton H. Fussell.

John Patrick Gallagher; Sigmund Leon Gans; Henry Kennedy Gaskill; Arthur H. Gerhard; William Francis Gerhart; John H. Gibbons; Burgess Allen Gibson; Ben Clark Gile; Gershon Ginsburg; Jack Claxton Gittings; Ellis Edgar Willits Given; Edward B. Gleason; Henry Granville Godfrey; Maurice Goldberg; Nathan Ralph Goldsmith; Jacob S. Goldstein; Edward H. Goodman; Harry William Goos; Amos Wilson Gottschall; Francis Vincent Gowen; Charles Prevost Grayson; Harrison Adams Greaves; Toby Anthony Greco; Sigmund S. Greenbaum; Frank N. Greene; Robert Bruce Grimes Jr.; Malcolm Cummings Grow; William F. Guilfoyle Jr.; Bruce Hetrick Guistwhite; Frank Boid Gummy.

Herve Martin Hagedorn; John E. Haigh; John B. Haines; Charles Townsend Hamaker; Percy Gatlin Hamlin; William Hannum; James Clayton Harding; Hobart Amory Hare; William John Harrison; Richard Hickman Harte; Arthur Hartley; John Calvin Hartman; Wilfred Wetherill Hawke; David Bittle Hawkins; Arthur Winfred Hebert; William Frederick Hebsacker; Henry Heilemann; Edward Peter Heller; Isidore Hendel; Ira M. Henderson; John N. Henry; Charles Albert Hensley; John Frederick Herbert Jr.; Ray Russell Hetherington; William Hewson; Harry Z. Hibshman; Richard Franklin Hill; William Marshall Hinkle; Drury Hinton; Otto Christian Hirsch; Edward B. Hodge; Charles Biddle Hollis; William Clarence Hollopeter; Thomas B. Holloway; Frederick Miller Hopkins; Ulrich Peter Horger; Daniel M. Hoyt; Francis Russell Hoyt; Charles Ralston Hughes; John Elias Hume; Charles Jack Hunt; Robert John Hunter; Frank Humbert Hustead; James Pemberton Hutchinson.

Henry B. Ingle; Horace Wesley Jack; Thomas Wright Jackson; Leopold Max Jacobs; Rutherford Lewis John; Elmer Ellsworth Johnson; Lloyd William Johnson; William N. Johnson; Isaac Hampshur Jones; John F. X. Jones; John H. Jopson Jr.; William Michael Joyce; Henry Draper Jump; John D. Jungmann.

Edwin Jacob Kalodner; Clinton Austin Kane; Leo Anthony Kane; Howard Francis Keating; Joseph Clarence Keeler; William Williams Keen; Andrew Joseph Keenan Jr.; Floyd Elwood Keene; Robert Andrew Kelty; Elmer Edgar Keiser; Francis Joseph Kelly; Thomas M. Kelly; Edgar William Kenner; John Pressly Kennedy; William F. Kennedy; Joseph Miller Kenworthy; William Conrad Kessler; Baldwin Longstreth Keys; George Christopher Kieffer; Ralph Dunleavy Killen; Joseph Victor Klauder; Thomas Klein; William Oscar Kleinstuber Jr.; Oram Roscoe Kline; Austin F. Klutz; I. Warner Knight; Frank Crozer Knowles; Andrew Knox Jr.; Carl Frederick Koenig; David Warren Kramer; Edward Bell Krumbharr; Karl John Kurz.

John M. LaFerty; Heiner Maxwell Langdon; Daniel Joseph Langton; Ernest Laplace; Octavus P. Large; Joseph Roscoe Latham; Jackson S. Lawrence; George Malcolm Laws; La Barre Jayne Leany; Frederick Headley Leavitt; Robert Le Conte; Walter Estell Lee; John Leedom; Clarence Fontains Maury Leidy; Joseph Leidy; Samuel Leopold; Simon Stein Leopold; William Walsh Lerman; James Walter Levering; Abram Levy; Frank David Levy; Clarence J. Lewis; Paul A. Lewis; Jay Dever Linton; Louis J. Livingston; Walter R. Livingston; Charles Elroy Llewellyn; Edwin P. Longaker; Horace George Longaker; Hiram R. Louz; Baldwin H. Edward Wilhelm Lucke; Robert McDowell Lukens; Clifford Bell Lull; John J. Lynch; William Joseph Lynch; Bethuel B. Vincent Lyon.

Douglas MacFarlan; Anthony S. Maciejewski; William Herbert Gordon Mackay; Charles Francis Mackel; Arthur L. MacKenzie; Louis Mackler; William Joseph MacMurtrie; Charles Percy Major; Jacob L. Manasses; Willis Fastnacht Manges; Vincent Marcucci; Jacob K. Marks; Alexander Tertius Martin; Edward Martin; James R. Martin; Wallace Marsh Martin; John Peter Maus; Cornelius Theodore McCarthy; Daniel Joseph McCarthy; Edward W. McCloskey; John Francis McCloskey; Robert S. McCombs; Albert McConaghy; James Collier McConaughy; Grayson Prevost McCouch; Francis Joseph McCullough; John Harvey McCutcheon; Morton McCutcheon; James Edward McDowell; Joseph McFarland; George Edward McGinnis; Joseph Aloysius McGinnis; Charles Stein McGivern; Benjamin Meredith McIntire; William Page McIntosh; Robert Boyd McIver; John Joseph McKenna; Benjamin Whitehead McKenzie; Howard Allison McKnight; John Douglas McLean; Thomas M. McMillan; James William McMonagle; Richard Langdon McNeer; John E. Medley; Theodore Melnick; William Jackson Merrill; Washington Merscher; David Gregg Metheny; Samuel Alexander Sterrett Metheny; Harry Philip Metzger; Julian Erdreich Meyer; Henry B. Mikelberg; Charles Scott Miller; Morris B. Miller; Richard Jonathan Miller; Robert Lee Miller; Thomas Grier Miller; Thomas David Mills; George S. Mintzer; Joseph Myers Mirman; Albert Graeme Mitchell; Charles F. Mitchell; Henry Keller Mohler; Charles Mortimer Montgomery; Allen H. Moore; Charles H. Moore; Edward Kemp Moore; Eugene Aloysius Moore; Philip Henry Moore; Sterling Walker Moorhead; Arthur Caradoc Morgan; Marshall Blair Morgan Jr.; Samuel M. Morse; William Francis Morrison; Dudley Jay Morton; Percy Daniel Moulton; Donald Grosch Moyer; Henry G. Munson; James Gordon Murfin; Douglas Power Murphy; Eugene Clement Murphy; Frank Geo. Murphy; Francis Herron Murray; John Herr Musser Jr.; Dennis Alexis Myers.

Charles Francis Nassau; Gilbert Newburger; William Steel Newcomet; Arthur Newlin; William Nichols; William Garrison Noe; George W. Norris; Philip Norris; Charles Quay North.

John Patrick O'Brien; Andrew Allison O'Daniel; James Marye Odell; Thomas Ignatius O'Drain; Herbert Old; Abraham E. Oliensis; Joseph Francis O'Neill; Charles Aloysius O'Reilly; Abraham Maurice Ornstein; Alfred James Ostheimer; George Whitney Outerbridge; Hubley Raborg Owen; Richard Owen.

Francis R. Packard; Robert Paine; Charles S. Pancoast; Benjamin D. Parish; John Fisk Park; William N. Parkinson; Clarence Anderson Patten; Ross Vernett Patterson; James Hale Paul; John Davis Paul; Jacob Pearl; Ralph Pemberton; John Pennington; Oliver Hazard Perry Pepper; William Pepper; John Douglas Perkins Jr.; Joseph Ashbridge Perkins; William Harvey Perkins; Joseph Anthony Pessolano; Frederick Chalfonte Peters; William Francis Peters; Orlando H. Petty; Damon Beckett Pfeiffer; Horace Phillips; Henry Leon Picard; George Morris Piersol; Charles Edward Pike; Albert Pilkington; George Platt Pilling Jr.; Edmund Brown Piper; Michael Platt; Eli Harmon Porch;

Joseph Walter Post; William Courbet Thomas Poulson; Marion Henderson Powers; Malcolm L. Pratt; Reginald Lloyd Prees; George Elmer Price; Solomon Winfred Pleaux; Linnaeus Hodgson Prince; Walter William Propst; John Purdy; George Morehouse Purves.

William Elkin Rakeu; Frank McCracken Ramsey; Alexander Randall; Edward Randall Jr.; John Herbert Reading Jr.; Howard Reed; Robert Pierson Regester; Martin Eml Rehfuß; Stanley Philip Reimann; Sidney Joseph Reppler; Charles Barnett Reynolds; John Henry Wallace Rhein; Solon Lafayette Rhode; Booker E. Rhudy; Joseph Francis Richards; David Rlesman; Harvey M. Righter; Linwood Layton Righter; Walter Bright Rile; Grady Rudisill Roberts; Benjamin Robinson; George Ernest Robinson; John Augustus Roddy Jr.; Edwin William Rodenheiser; John S. Rodman; Harry Frank Roepke; Phillip S. Rosenblum; Thomas C. Ross; Charles Selmer Rottner; James T. Rugh; William Ruoff; Eugene Rush; Carlton Nelson Russell; Jacob James Rutberg; William Cyril Ryan.

Joseph Saller; Charles Dudley Saul; John Shelley Saurman; Edwin Stanton Schaele; Leo Francis Scanlan; Charles Solomon Schafer; James Evans Scheelle; Truman Gross Schnaber; Joseph Henry Schoenfeld; Guy Daniel Schoonmaker; Edward Aamin Schumann; George Jacob Schwartz; Frank William Schwartz; Charles Schwinn; Louis Segal; Morris Segal; James Stuart Seitz; Louis Seligman; Lemuel Taylor Sewell; Charles Emory Gould Shannon; Francis Patrick Shannon; Hugh Murdoch Shannon; Morris Samuel Shapiro; Abraham Maxwell Sharpe; William Ker Shea; Philip Atlee Sheaff; James A. Shelly; William Smith Shimer; Vincent Talbott Sibley; William Toy Shoemaker; Furman Robbins Shute; Edward Rufus Sibley; Alvin Siegel; Samuel Singer; Elijah H. Siter; Penn Gaskell Skillern Jr.; Ross Hall Skillern; Samuel Ruf Skillern Jr.; Alexis Dupont Smith; Allen J. Smith; Arthur Donaldson Smith; Barney Barr Smith; Mieczyslaw Edward Smoczynski; George Touch Snead; Raymond Lock Sommers; Louis A. Spaeth; John Speese; Robert Douglas Spencer; Israel Spiers; Ellis Meyer Spoon; Samuel Stalberg; Camille Joseph Stamm; Daniel E. L. Stedem; Edward Maples Steger; Edward Austin Steinhilber; Charles G. Steinmetz Jr.; Thomas Cook Stellwagen Jr.; Alfred Stengel; George L. Stephan; Charles Midwood Stiles; Francis Augustus Stiles; Cheney M. Stimson; Carl Stoepler; William Hoy Stoner; Edwin G. Stork; Albert James Storm; Philip Samuel Stout; Edward Adam Strecker; Charles M. Strotz; William Daniel Stroud; Ashbury Clarke Stroup; Samuel Booth Sturgis; Roy Dewitt Sumner; William Blaine Swartley; Joshua E. Sweet; William I. Sweet; William M. Sylvis.

Charles Hill Tait; James E. Talley; John D. Target; Isaac Samuel Tassman; William J. Taylor; Frank Wister Thomas; Thomas Turner Thomas; William H. Thomas; Ross H. Thompson; William LeRoy Thompson; Morris Clayton Thrush; Morris Hancock Tindall; John Hart Toland; Joseph James Toland Jr.; James Francis Tompkins; John A. Topper; Eugene W. Torrey; Abraham Trasoff; Philip Adam Trau; Stuart Trowbridge; Henry Tucker; Stephen Wilner Tunnell; Joseph Turner; George Kay Tweddel; Everett Allen Tyler; Ralph McGuire Tyson.

Harry Edward Ungerleider; George Milton Underwood; William Pennail; Claire F. Vale; Warren Van Derveer; William W. Van Dolson; William Van Korb; Julius Richardson Vann Jr.; John Adams Vanalzah; Louis Charles Vattier; Norris Wistar Vaux; Henry Christian Vereck; Adolph Emil Voegelin.

Herschell Cary Walker; Thomas Holmes Walker; Warren Walker;olph Augustus Walkling; George Bush Walp; William Henry Walsh; Adolph Albert Walther; John Francis Watkins (col.); Charles James Watson; William Newbold Watson; Charles Channing Watt Jr.; Robert Watt; Abe Kipp Weaver; Charles Henry Weber; John Malcolm Weber; Edward Weiss; William Weiss; John Murray Welch; James Ralston Wells; John Wilson West; William Francis Whelan; William Whitker; Howard King White; Hilton Addison Wick; Henry Wilderman; Louis Russell Wiley; DeForest Porter Willard; Horace James Williams; Philip Francis Williams; Ernest Gotshall Williamson; Harry and Wilmer; George Wilson; Samuel Milliken Wilson; Sydney Louis Ingrade; Russell Garth Witman; Paul Carl Wittman; John Bloss Wolfe; George Bacon Wood; Walter A. Wood; Alan Churchill Woods; Arthur Roy Woods; John H. Woolridge; Lester Elgin Woormer; Whittier oward Wright.

Arthur Wells Yale; Joseph Charles Yaskin; Louis Brinton Yerger; Charles Houston Young; Carl Crossman Yount; Myron Albert Zacks; Arthur John Zimlick; Jay Donald Zulick.

PHILADELPHIA—Mortimer Warren Blair; Josiah Travilla Bunting; Jacob Morris Cahan; Claude Edward Case; Henry Carl Sangree; Stephen Dana Weeder.

Potter County

COUDERSPORT—Philip Luther Hatch; Ross H. Jones. GALETON—Albert Laye. SHINGLEHOUSE—Robert Mayne Richards.

Schuylkill County

ASHLAND—Jonathan C. Biddle; Robert McReynolds Biddle; Rudolph lam Constien; John Louis Hoffman; William Harrison Leffler; Harryarrison Lewis; James Purdy Roth. COALDALE—William Henry well. CRESSONA—George Oliver Oscar Santee. FOUNTAIN RINGS—Albert Wellington Fisher; Edward Earl Marsh; Roscoe Fredck Mauser; James Jos. Monahan; Joseph Harrison Wyatt. FRACKLE—John Joseph Donohue. GIRARDVILLE—Michael George Dewey; liam Joseph Monaghan. HECKSCHERVILLE—John Joseph Swency. MONOY CITY—Joseph Francis Dolphin; Ivor David Fenton. ANILA—Benjamin F. Fridge Jr. NEW RINGGOLD—Henry Bley. CARBON—John Wesley Conrad. POTTSVILLE—Alfred Morton rgstein; Gouverneur Boyer; Alexander Liddell Gillars; James Beyel ller; Michael Joseph McCarthy; John J. Moore; Lewis Mayer Shultz; in George Striegel; Charles V. Wadlinger. SIENANDOAH—Joseph in Austra; John C. Miller; Leo Thomas Mullahey; William John idy. TAMAQUA—Arthur Bowles Fleming; Frederick B. Harding; ver Kidwell Speer. TOWER CITY—David Jackson Hawk. TREMONT Thomas Lawrence Doyle; Theodore Charles Fegley; Joseph Timothy rphy; Arthur Elmer Simonis.

Snyder County

FREEBURG—Dwight Elmer Long. SELINGSGROVE—Elmer Raymond ker; Latimer Small Landis. SHAMOKIN DAM—Charles Napoleon istus.

Somerset County

BERLIN—Harry Glenn Eskin; Gustave Gordon Kalmutz. GARRETT—lace Roy McClellan. SOMERSET—James Earle Dull; John H. Ross ninger; Snyder John Henry Louther; Fred B. Shaffer. WINDER—t James Smith.

Sullivan County

ILLSGROVE—James Sherman Mosher. MILDRED—James Joseph onnor.

Susquehanna County

BROOKLYN—Thomas Oliver Williams. FOREST CITY—Davis Reese. HARTFORD—Franklin Chapman Hill. NEW MILFORD—William Edwin Park. SUSQUEHANNA—Arthur John Denman.

Tioga County

BLOSSBURG—Edward McIntyre Haley. LAWRENCEVILLE—Elmer John Presper. LEETONIA—Michael Richard Long. MANSFIELD—John Horton Doane. TIOGA—Fay Xavier Field; Lee Westlake Hughes. WELLSBORO—Francis S. Bodine.

Union County

ALLENWOOD—Norman Robert Davis.

Venago County

DEMPSEYTOWN—Audley Weller Ricketts. FRANKLIN—Ardus Clair Thompson; Clyde E. Tibbens. OIL CITY—Elmer Llewellyn Dickey; Edward Glenn Henry; Philip Joseph Sheridan. POLK—Norman Stewart Reed.

Warren County

CLARENDON—William Patrick Clancy. COLUMBUS—Roy Clark Meals. SUGAR GROVE—George Monroe B. Bradshaw. WARREN—George Smith Condit; William Cleveland Miller; Melbourne Jabez Pond; Paul Bryant Stewart. YOUNGSVILLE—Frank Camden Willard. WARREN—Ira Alphonse Darling.

Washington County

CANONSBURG—David Major Bell; Louis De Haven Donaldson; Esten Luellen Hazlett. CHARLEROI—Edwin McKay; Harry Joseph Repman. CLAYSVILLE—Elbin Jordan Johnson. DONORA—Torrence John Hanlon; John Joseph Kolski. ELLSWORTH—William Lester Botkin; Samuel Alden Kamerer. MARIANNA—Freeman Floyd Cobb. McDONALD—William S. Stewart. MONONGAHELA—Harry Francis Bailey; George Kennedy Hays; C. Francis Linn; Porter Morrison Wall. VESTABURGH—Perry Clare Smith. WASHINGTON—James Lennon Brennon; Robert Arthur Knox; Homer Persell Prowitt; Stacy Herman Rinehardt; Walter Black Rogers; Richard Austin Stewart. WEST BROWNSVILLE—Howard Lester Farquhar. WESTLAND—Walter J. Shidler.

Wayne County

HAMLIN—Oscar James Mullen. HAWLEY—Frederick Anthony Lobb. HONESDALE—William Thomas McConville.

Westmoreland County

ALVERTON—George T. McNish. BOLIVAR—Charles S. Hendricks. BRADENVILLE—James Willard Stillmann. CLARIDGE—Harry Joseph Stockberger. DERRY—Charles C. Crouse; Floyd D. Lohr. GREENSBURG—Louis John Carrick Bailey; Hugh Bailey Barclay; Lawrence Leonard Blackburn; Walter Michael Bortz; Thomas Porter Cole; Robert Jones Hunter; Claud Worth McKee; Dennis Ray Murdock; Irwin J. Ober; Carl Freeman Pierce; William Joseph Potts; Charles Robert Reiners; John Johnson Singer. HANNASTOWN—Adam Seanor Kepple. JEANNETTE—William Trall Doncaster; Charles Archle Goble; Urban Henry Reidt; Clarence Glenn Robinson; Lee Monte Sankey; Robert Lewis Wilson. LATROBE—Nicholas E. Abbaticchio; Arthur Byron Blackburn; Garnett P. Morison; Stephen William Nealon; Bert Frank Ober; Le Roy Allen Scholl. MADISON—Charles McLaughlin Sloan. MONESSEN—Ralph Edmund Conn; Clifford Farquhar; William David Hunter; Edgar Blackburn Slotterbeck; Arthur Raymond Wilson. MT. PLEASANT—John Lewis Burkholder. NEW KENSINGTON—John Walter Goodsell; Frank Clark Katherman; George Lawrence Kreiger; William Patrick Nolan; Warren Thomas O'Hara; Elmer Noah Piper; Frank Edwin Smith; J. F. Marchand Snyder; Lyden Frederick Wilson; Michael M. Wolfe; Raymond Alvin Wolf. RUFFSDALE—Charles Henry Poole. SCOTTSDALE—Samuel Brown Gray; David Ernest Griffith. SOUTHWEST—David Allison Walker. TRAFFORD—Frank Milton Pogue. UNITED—Martin Wesley Freas. VANDERGRIFT—Walter J. Lace. VANDERGRIFT HEIGHTS—William Armor Copeland. YUKON—Howard Bassett Emerson.

Wyoming County

MESHOPPEN—Asa Lee Hickok. NICHOLSON—VanCleft Decker.

York County

DALLASTOWN—Clarence Wilson Frey. DILLSBURG—William L. Crawford. EAST PROSPECT—Serrcl Roscoe Hanigan. ETTERS—Sylvia Jeremiah Roberts. FAWN GROVE—Samuel Winchester Reeves. GLEN ROCK—Jeremiah Fletcher Lutz; Pius Albertus Noll. NEW FREEDOM—Stewart Cole Bowers. YORK—John H. Bennett; John Gilbert; Robert Hostetter; Charles Henry May; Joseph Stanley Miller; Brantly Fuller Parker; Harry Malcolm Read; William Heinly Schellhamer; Arthur Blair Shatto; Gibson Smith; Harry David Smyser; James Elwood Throne; Louis Schneider Weaver; Francis Roman Wise. YORK—Lawton Mervale Hartman Jr.

RHODE ISLAND MEDICAL SOCIETY

Officers 1917-18

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Gardiner T. Swarts, First Vice President.....Providence
John M. Peters, Second Vice President.....Providence
James W. Leech, Secretary.....Providence
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Kent District.—B. J. Butler, East Providence Center.
Newport District.—D. P. A. Jacoby, Newport.
Pawtucket District.—Chas. H. French, Pawtucket.
Providence District.—J. M. Bennett, Providence.
Washington District.—Alex B. Briggs, Ashaway.

HONOR ROLL

Bristol County

BRISTOL—Harold DeWolf. WARREN—Fred P. Drowne; Marcius H. Merchant.

Kent County

APPONANG—Philip C. Means. EAST GREENWICH—Fenwick Gordon Taggart. RIVERPOINT—Charles S. Christie.

RHODE ISLAND										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comms'd in M.R.C., etc.
Bristol.....	24	0.7	21,923	685	32	..	10	16	13	3
Kent.....	174	4.8	41,051	114	36	1	16	25	21	3
¹ Newport.....	117	2.6	46,033	1,022	45	2	35	38	31	7
² Providence.....	430	0.7	494,820	821	602	18	339	506	325	88
Washington....	325	7.4	27,678	629	44	1	19	40	18	5
Totals.....	1,067	1.4	631,505	832	759	22	419	623	408	106

1. Includes Newport, population 32,061; physicians 29 [M.R.C. 6].
2. Includes Pawtucket, population 60,666; physicians 44 [M.R.C. 6], also Providence, population 259,895; physicians 362 [M.R.C. 68], also Woonsocket, population 45,365; physicians 31 [M.R.C. 6].

Newport County
BLOCK ISLAND—Charles Freeman Perry. NEWPORT—Norman Brown Cole; John L. Healy; Rollo Hutchinson; Royal K. Joslin; Edward Merritt; Arthur William Stevenson.

Providence County
CENTRAL FALL—William Phillippe Bernard. EAST PROVIDENCE CENTER—Benjamin Joseph Butler. EDGEWOOD—Vernon Edgar Babington. ESMOND—John Sprague Hodgson. PASCOAG—Thomas V. Daley. PAWTUCKET—George P. Bertholet; Patrick Aloysius Durkin; Arthur Jean Baptiste Falcon; Charles H. Holt; John Francis Kenney; James Lucas Wheaton Jr. PROVIDENCE—Arthur Forest Anderson; Herbert H. Arnington; Albert A. Barrows; James Hugh Bartley Jr.; Francis H. Beckett; Joseph Louis Belliotti; Frederick L. Blair; Howard Everett Blanchard; Robert H. Breslin; Byron J. Brown Jr.; Harry Henderson Brown Jr.; William H. Buffum; Alexander M. Burgess; John Thomas Burns; Ernest Allen Burrows; Bertram H. Buxton.

Alfred A. Caldarene; Remington Pendleton Capwell; Kenneth Churchill; Harry Duffield Clough; Charles Michael Collins; Nat Hawkins Copenhaver; Anthony Corvese; William Walter Cummings.

Murray Snell Danforth; Halsey De Wolf; William Henry Dyer; George A. Eckert; John Burnham Ferguson; Alvah Arlington Fisher; John Leroy Fisher; Joseph Arthur Gagnon; Henry Joseph Gallagher; George Warren Gardner; Charles Francis Gormly; Tancredi Giovanni Granata.

James Hamilton Jr.; Roland Hammond; Daniel S. Harrop; Joseph Francis Hawkins; Frederic Hussey; John William Keefe; Jacob Sleeper Kelley; Lucius C. Kingman.

Simon Geilech Lenzner; Winthrop Clinton Lincoln; Charles Leo Lynch; George Matteson; Richard Metcalf; Edward William Mulligan; William Aloysius Mulvey; Ira Hart Noyes; Joseph C. O'Connell; Walter Joseph O'Keefe; Myer Arthur Persky; Herman Canfield Plitts; Lewis B. Porter.

Joseph E. Raja; George Arnold Rice; Arthur Hiler Ruggles; Thomas Francis Scanlan; John Lazear Sly; Boris J. Sohn; William Walter Street; John W. Sweeney; Robert Holmes Whitmarsh; Roswell Storrs Wilcox; Thomas Clarke Wyman. RIVERSIDE—Theodore C. Hascall. WOONSOCKET—Cornelius Barry; Thomas F. Baxter; Edward Earle Fitzpatrick; Thomas Stephen Flynn; Walter Claver Rocheleau; Allen A. Weeden.

PROVIDENCE—Edward Halton Mason.

Washington County
WAKEFIELD—John Paul Jones; Malford Wilcox Thewlis. WESTERLY—John Champlin; Charles Albert Farrell. WICKFORD—Patrick John Manning.

SOUTH CAROLINA MEDICAL ASSOCIATION

Officers 1917-18
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S. M. Pitts, Second Vice President.....Saluda
W. T. Hall, Third Vice President.....Aiken
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Fifth District.—Cherokee, York, Chester, Fairfield, Lancaster and Kershaw counties. A. E. Baker, Councilor, Charleston.
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HONOR ROLL

Abbeville County
ABBEVILLE—John Ebenezer Evans; Emory Wallace Richie.
CALHOUN FALLS—George Calhoun Pruitt.

Aiken County
AIKEN—Theodore Croft Stone. GRANITEVILLE—Jesse Cleveland Pearce. WAGENER—MacWilliams Webb. WINDSOR—William Robert Johnson.

Anderson County
ANDERSON—Herbert Harlan Harris; William V. Kay; Harrison Almus Pruitt; Clyde Fenton Ross; Lucius Carl Sanders; Wade Thompson. BELTON—Ashley Barrington Weathersbee. HONEA PATH—Eugene Abercrombie; James Pelham Knight; John Wesley Williams. PELZER—Carlton M. Tripp. TOWNVILLE—Jeff Newton Webb. WILLIAMSTON—Erlu Erwin Epting.

SOUTH CAROLINA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comms'd in M.R.C., etc.
Abbeville.....	678	30.8	27,935	1,269	22	..	11	17	11	3
Aiken.....	1,100	42.3	43,904	1,683	26	..	17	18	12	4
Anderson.....	758	10.8	79,670	1,138	70	..	40	55	47	13
Bamberg.....	371	23.1	19,454	1,215	16	..	8	13	10	2
Barnwell.....	890	35.6	34,309	1,372	25	..	14	16	8	4
Beaufort.....	920	83.6	29,602	2,691	11	..	4	8	3	1
Berkeley.....	1,238	247.6	23,487	4,697	5	..	4	4	..	1
Calhoun.....	391	39.1	18,534	1,853	10	..	4	7	6	1
¹ Charleston....	685	6.2	89,022	809	110	2	61	95	73	22
Cherokee.....	373	62.1	29,698	4,949	6	..	3	3	2	3
Chester.....	592	22.7	30,017	1,154	26	..	14	24	20	6
Chesterfield....	887	41.8	30,607	1,530	20	..	13	16	8	2
Clarendon.....	717	31.1	35,110	1,526	23	..	14	19	14	5
Collston.....	1,333	57.9	36,804	1,600	23	..	11	15	12	4
Darlington.....	605	18.9	39,904	1,247	32	..	21	24	17	3
Dillon.....	471	26.1	25,686	1,482	18	..	14	14	3	3
Dorchester.....	613	32.2	19,058	1,003	19	..	8	14	12	3
Edgefield.....	700	36.8	28,096	1,478	19	..	9	11	10	2
Fairfield.....	792	49.5	29,454	1,840	16	..	8	13	2	2
Florence.....	607	21.6	40,925	1,461	23	..	21	22	8	7
Georgetown....	828	138.0	22,270	3,711	6	..	5	5	1	2
Greenville.....	761	40.0	79,244	4,170	19	..	10	13	10	15
Greenwood.....	508	28.2	32,636	1,813	13	..	14	15	10	6
Hampton.....	958	38.3	18,545	741	25	..	12	19	10	4
Horry.....	1,158	105.2	29,646	2,695	11	..	9	10	10	1
Jasper.....	620	206.6	7,593	2,531	3	..	2	3	..	1
Kershaw.....	673	33.6	30,003	1,500	20	..	11	18	14	1
Lancaster.....	515	39.6	28,358	2,181	13	..	6	9	5	1
Laurens.....	690	20.9	44,593	1,351	33	..	14	20	20	4
Lee.....	407	23.9	28,010	1,647	17	..	12	13	10	2
Lexington.....	833	28.7	62,743	2,163	29	..	13	20	17	2
² McCormick....	.....	.....	10,008	909	11	..	3	3	3	1
Marion.....	529	29.3	23,386	1,299	18	..	12	16	7	4
Marlboro.....	519	27.3	33,780	1,777	19	..	12	16	16	2
Newberry.....	601	11.1	37,801	700	54	..	17	26	19	4
Oconee.....	650	34.2	30,041	1,581	19	..	8	14	13	4
Orangeburg....	1,131	19.5	36,135	623	58	..	30	40	28	6
Pickens.....	539	23.4	29,836	1,297	23	..	11	19	20	4
³ Richland.....	611	5.9	62,115	603	102	3	62	86	73	19
Saluda.....	435	36.2	22,385	1,865	12	..	5	9	9	2
Spartanburg...	765	9.1	96,534	1,149	84	2	52	71	45	5
Sumter.....	574	18.5	42,564	1,373	31	1	19	28	22	8
Union.....	492	21.3	33,120	1,440	23	..	10	20	14	4
Williamsburg..	1,006	50.3	41,962	2,098	20	..	15	15	8	4
York.....	651	14.7	52,122	1,184	44	1	27	34	30	7
Totals.....	31,115	25.1	1,646,615	1,169	1,237	9	690	950	692	204

1. Includes Charleston, population 61,041; physicians 96 [M.R.C. 22].
2. County recently organized; area included with that of other counties.
3. Includes Columbia, population 35,165; physicians 94 [M.R.C. 19].

Bamberg County
BAMBERG—Augustine Smythe Weekly. OLAR—Cecil Browning Ray.

Barnwell County
BARNWELL—Edward Lawrence Patterson. WILLISTON—Axelander Stephens Blanchard; John G. Smith.
BARNWELL—David Johnson Dixon.

Beaufort County
BEAUFORT—R. W. Hughes.

Berkeley County
ST. STEPHEN—John Davis Colson.

Calhoun County
ST. MATTHEWS—Thomas Henry Symmes.

Charleston County
CHARLESTON—Ladson Dantzler Boone; Francis G. Cain; Joseph H. Cannon; Robert Cathcart; Dove Walter Green; William Henry Johnson; Charles Wilson Kollock; Thomas Ezekiel Miller Jr.; William Cyril Patrick O'Driscoll; Francis Le Jau Parker; Thomas A. Pitts; Robert West Preston; James Jervy Ravenel; Robert Barnwell Rhett; William Atmar Smith; Julius C. Sosnowski; E. H. Sparkman; Augustus R. Taft; Pressley S. Thomas John C. Wieters; Lester Arnold Wilson; Joseph D. Guess.

Cherokee County
BLACKSBURG—Adolphus Lamar Little; Victor Marion Roberts. GAFFNEY—Robert Thrift Ferguson.

Chester County
CHESTER—Lucius Gaston Gage; Samuel Glenn Love; Ralph Hope McFadden; Charles Andrew McLurkin; Hugh Madison Ross Jr.; Hilland Bernard Thomas.

Chesterfield County
CHESTERFIELD—Robert Lee Gardner. JEFFERSON—Joseph E. Thomas.

Clarendon County
JORDAN—Oscar Winborne Nettles. MANNING—Edward Wilson Barron; Charles Blum Geiger. PINWOOD—Frank Madison Harvin. TURBETVILLE—Isham Watson Pittman.

Colleton County
COTTAGEVILLE—Connor J. Miller. WALTERBORO—William Boswell Ackerman; Charles Isham Goodwin. WIGGINS—Robert Victor Ackerman.

Darlington County
DARLINGTON—Oscar Albertus Alexander; Julian Terrell Coggeshall. LAMAR—Gary Lacy Boykin.

Dillon County

DILLON—Lawrence Rosboro Cralg. LAKE VIEW—William Evans Lester. LATTI—Everett Carlisle Major.

Dorchester County

RIDGEVILLE—Collins Elihu Smith. SUMMERVILLE—Francis J. Carroll; William Frederic Graham.

Edgefield County

JOHNSTON—Aubin Tilden King; William C. Stone.

Fairfield County

ROCKTON—Reuben Gilliam Hamilton. RIDGEWAY—James Furman Dobson.

Florence County

CLAUSSEN—John Rudolph Claussen. FLORENCE—John M. Barnwell; C. E. Houston; Lonnie Malcolm McMillan; John D. Smyser; Rosko Jerome Wilson. LAKE CITY—Julius David Eaddy.

Georgetown County

GEORGETOWN—Samuel S. Brington; Morgan Preston Moor.

Greenville County

GREENVILLE—James Ernest Daniel; Curran Bertram Earle; Charles Wofford Gentry; Carl Albert Neves; James Lawrence Orr Jr.; Walker Hallburton Powe; James Marvin Wallace; William Edward White; Thomas Robert Waters Wilson. GREER—Theron Otis Walker; Landrum W. Wood. MAULDIN—Dalmar Rowley Blakely. PIEDMONT—Joe Pell Jewell. SIMPSONVILLE—Maney Coke Smith. TRAVELLERS REST—Charles Prue Benson.

Greenwood County

GREENWOOD—Arthur D. Burnett; John D. Harrison; John Francis Simmons. NINETY SIX—James Sample Fouche; John Holloway Pratt.

Hampton County

ESTILL—Preston Joseph Johnston; Johnston Peeples. FURMAN—John King Garuett Tuten. SCOTIA—Charles Carroll Fishburne. TROY—Raymond Neel Davis.

Horry County

CONWAY—James Arthur Norton.

Jasper County

RIDGELAND—Isaac Hobart Grimball.

Kershaw County

LUGOFF—William J. Burdell.

Lancaster County

HEATH SPRINGS—Melvin S. Stover.

Laurens County

CLINTON—Leslie St. Clair Hays; Theodore James Peake. CROSS HILL—George Fred Klugh; Claude Benjamin Mills.

Lee County

BISHOPVILLE—Lacy Wood Corbett; Harvey McNair McLure.

Lexington County

BATESBURG—Joseph Benjamin Edwards. LEESVILLE—Carl Lafayette Able.

Marion County

MARION—Carroll Sumner Howell; George Madison Truluck. MULINS—Alex. Brailsford Jr. NICHOLS—Claudius Franklin Bullock.

Marlboro County

BENNETTSVILLE—Lawrence Randolph Kirkpatrick; Daniel Deronda Strauss.

McCormick County

CLARKS HILL—Ben Tillman Sharpton.

Newberry County

NEWBERRY—William Ernest Bickley; Frank Duane Mower; John Sachman Setzler. WHITMIRE—Thomson Butler Woods.

Osborne County

CLEMSON COLLEGE—Thomas Craig Redfern. NEWRY—William Clinton Marett. WALHALLA—Bayliss Frank Sloan; John David Veruer Jr.

Orangeburg County

EUTAWVILLE—Rembert James Coney. NEESES—Grover Cleveland Solin. ORANGEBURG—Benton McQueen Montgomery; Henry P. Moore; Henry Timrod Schifley. SPRINGFIELD—Olin D. Busbee.

Pickens County

EASLEY—James Carl Pepper; John Wallace. LIBERTY—Clark Wales Smith. PICKENS—Lewis Franklin Robinson.

Richland County

COLUMBIA—Benjamin H. Baggot; Clarence Witherspoon Barron; George Benet; John Radford Boling; Francis A. Coward; Robert Blakely Durham; Thomas Cyrus Galloway; Emmet Merrick Harrison; James A. Ayne; George Kaigler Nelson; Lindsay Peters; James E. Poore; Floyd Wright Rodgers; Isadore Schayer; John La Bruce Ward; Carl Alexander West; Samuel Edward Wheeler; Marion Hay Wyman; Edward C. L. Davis.

Saluda County

MONETTA—Bouldridge Edward Kneese. RIDGE SPRING—Laoml Josiah Smith.

Spartanburg County

CAMPOBELLO—Charner LeRoy Stevens. FAIRMONT—Thurman Gregory Wright. SPARTANBURG—Walter Brackett Lancaster; Cecil Rigby; William O. Wrightson.

Sumter County

HAGOOD—Thomas Mellichampe Moore; Frank Butler Sanders. AYESVILLE—Hawkins W. Corbett. OSWEGO—Benjamin Franklin Wyman. SUMTER—Warren Hamilton Burgess; William Sydney Burgess; Carl Belden Epps; William W. Felder.

Union County

BUFFALO—Fitzhugh Prothero Salley. LOCKHART—William Stewart Murray. SANTUCK—James Thomas Jeter. UNION—Theodore Maddox.

Williamsburg County

KINGSTREE—Clarence David Jacobs. NESMITH—Allston Moore Willcox. OUTLAND—Oscar Lucas Bruerton.

York County

CLOVER—James W. Campbell; Ebenzer Widman Pressly. McCONNELLSVILLE—John Walker Moore. ROCK HILL—William Robert Blackmon; Robert Hope Crawford. SHARON—James Luther Blair. YORK—Philip Williams Hunter.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Officers 1917-18

H. J. G. Koobs, President.....Scotland
D. L. Seanlon, First Vice President.....Volga
Harry T. Kenney, Second Vice President.....Pierre
R. D. Alway, Secretary-Treasurer.....Aberdeen

Councilor Districts and Officers

Wm. Edwards, President, Bowdle; Harry T. Kenney, Secretary, Pierre.
First (Aberdeen) District.—Roberts, Marshall, Day, Brown, Spink, Faulk, Edmonds, McPherson, Campbell, Walworth, Potter, Dewey, Grant (north half), and Corson counties. Wm. Edwards, Councilor, Bowdle.
Second (Watertown) District.—Cordington, Grant (south half), part of Deuel, Hamlin (north half) and Clark counties. L. G. Hill, Councilor, Sioux Falls.

Third (Brookings) District.—Brookings, Kingsbury, Lake (north half), Miner (north half) and Beadle counties. N. K. Hopkins, Councilor, Arlington.

Fourth (Pierre) District.—Hand, Hyde, Hughes, Sully, Buffalo, Stanley and Tiebach counties. H. T. Kenney, Councilor, Pierre.

Sixth (Mitchell) District.—Davison, Hanson, McCook (west half), Aurora, Brule, Lyman, part of Hutchinson, part of Turner, part of Sanborn and Jerauld counties. Fred Treon, Councilor, Chamberlain.

Seventh (Sioux Falls) District.—Minnehaha, McCook (east half), Lincoln, part of Moody and part of Turner counties. G. G. Cottam, Councilor, Sioux Falls.

Eighth (Yankton) District.—Yankton, Clay, Union, Bon Homme, part of Turner, Douglas, Charles Mix, part of Hutchinson, Gregory, Tripp and Todd counties. James Roane, Councilor, Yankton.

Ninth (Black Hills) District.—Butte, Lawrence, Meade, Fall River, Bennett and Pennington counties. F. E. Ashcroft, Councilor, Deadwood.

Tenth District.—H. R. Kenaston, Councilor, Bonesteel.

HONOR ROLL

Aurora County

WHITE LAKE—John Clifford Rogers.

Beadle County

HITCHCOCK—Alvin Perry Scheib. HURON—Tillison James Wood; Oscar Reilly Wright.

Bon Homme County

SCOTLAND—Gustav Adolph Laudmann; Isaac Wellman Leighton. TYNDALL—Eugene Herbert Boon.

Brookings County

AURORA—Jess W. Foster. BROOKINGS—Roscoe Roby Fisk. BRUCE—George Edward.

Brown County

ABERDEEN—William E. Clark; James Harry Vetter. GROTON—John Edward Dunn.

Brule County

CHAMBERLAIN—Robert Archie Crawford.

Buffalo County

CROW CREEK—Archie McCallister.

Butte County

BELLE FOURCHE—Alexander Otto Fasser; Oscar William Tulisalo. NISLAND—Francis Everett Townsend.

Charles Mix County

DANTE—Francis Edward Bonza. LAKE ANDES—Charles Seymour Langley. PLATTE—Edward T. Anderson; Cleveland F. Brooks. WAGNER—Pierre Romeo Piuard.

Clay County

VERMILION—John Lawrence Brookman; Iver Stoland.

Codington County

FLORENCE—Raymond William Mullen. HENRY—James Day Edgar. SOUTH SHORE—Francis Thomas Read. WATERTOWN—William August Kriesel; Harry Clifford Parsons.

Davison County

MITCHELL—William Reaves Ball; Edward William Jones.

Day County

WEBSTER—Albert Edward Brown; Mads Johnson Fiksdal.

Douglas County

ARMOUR—Frank Delos Wilson.

Fall River County

HOT SPRINGS—James Acker Mattison.

Grant County

MILBANK—William James Ferguson; Charles Hugo McKenna.

Gregory County

BURKE—Robert Joseph Quinn.

Hamlin County

CASTLEWOOD—James Harry Crawford.

Hand County

MILLER—Port McWhorter. REE HEIGHTS—James Franklin Paddleford.

SOUTH DAKOTA									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
¹ Armstrong.....	.....	.....	231	.....	..	..	..	..	..
Aurora.....	719	143.8	6,990	1,398	5	..	5	5	1
Beadle.....	1,250	59.5	16,182	770	21	..	10	17	3
¹ Bennett.....	1,291	.....	1,488	.....	..	..	..	..	..
Bon Homme....	573	38.2	11,775	785	15	..	7	13	3
Brookings.....	791	52.7	16,131	1,075	15	..	5	11	3
Brown.....	1,750	53.0	26,012	788	33	..	21	31	3
Brule.....	837	93.0	6,344	704	9	..	5	7	1
Buffalo.....	479	239.5	1,485	742	2	1	1	2	1
Butte.....	2,289	228.9	6,280	628	10	..	2	7	3
Campbell.....	774	387.0	4,888	2,444	2	..	1	2	..
Charles Mix....	1,134	81.0	14,790	1,056	14	..	9	13	5
Clark.....	974	108.2	10,670	1,185	9	..	5	5	..
Clay.....	403	36.6	9,420	856	11	1	6	8	2
Codington.....	701	27.0	15,664	602	26	..	13	20	5
Corsen.....	2,526	1263.0	3,419	1,709	2	..	..	1	..
Custer.....	1,573	524.3	3,020	1,006	3	..	..	3	..
Davison.....	432	22.7	13,597	715	19	..	10	14	2
Day.....	1,061	58.9	14,235	790	18	..	10	15	2
Deuel.....	632	105.3	8,856	1,476	6	..	5	5	..
Dewey.....	1,907	317.8	2,271	378	6	..	1	4	..
Douglas.....	435	72.5	6,741	1,123	6	1	3	4	1
Edmunds.....	1,158	193.0	6,498	1,083	6	..	2	5	..
Fall River.....	1,756	125.4	5,282	377	14	..	6	11	1
Faulk.....	1,018	127.2	5,265	658	8	1	1	6	..
Grant.....	691	115.1	10,548	1,758	6	..	3	5	2
Gregory.....	1,032	79.4	11,919	916	13	1	3	9	1
Haakon.....	4,100	1025.0	3,553	888	4	..	..	3	..
Hamlin.....	520	65.0	7,925	990	8	..	5	6	1
Hand.....	1,426	285.2	7,036	1,407	5	..	1	3	2
Hanson.....	432	86.4	6,349	1,269	5	..	1	4	1
Harding.....	2,682	894.0	5,075	1,691	3	..	2	3	1
Hughes.....	759	108.4	5,055	722	7	..	4	6	1
Hutchinson.....	817	81.7	13,429	1,342	10	1	7	8	1
Hyde.....	866	216.5	2,685	671	4	..	3	3	1
Jackson.....	2,120	530.0	2,077	518	4	..	1	4	..
Jerauld.....	531	106.2	5,340	1,068	5	..	3	5	1
Jones.....	.....	.....	2,378	1,189	2	..	1	2	1
Kingsbury.....	814	67.8	11,947	995	12	..	7	9	3
Lake.....	562	35.1	12,360	772	16	..	8	12	1
Lawrence.....	797	28.5	19,694	703	28	..	18	23	5
Lincoln.....	574	41.1	13,930	1,071	13	..	11	12	1
Lyman.....	2,625	656.2	7,412	1,853	4	..	3	3	1
McCook.....	573	63.7	10,195	1,021	9	..	7	8	1
McPherson.....	1,157	385.7	6,848	2,282	3	..	1	3	..
Marshall.....	889	127.0	8,459	1,065	7	..	5	6	2
Meade.....	3,491	498.7	28,724	1,246	7	..	6	6	4
¹ Mellette.....	1,228	.....	4,168	.....	..	..	..	..	..
Miner.....	568	94.7	8,154	1,259	6	..	4	4	..
Minnehaha.....	815	13.8	41,043	695	59	3	33	45	3
Moody.....	527	75.3	10,111	1,444	7	..	1	5	1
Pennington.....	2,792	174.5	9,004	562	16	1	6	11	2
Perkins.....	2,914	364.2	11,348	5,674	8	..	5	6	..
Potter.....	898	179.6	3,648	729	5	..	1	5	2
Roberts.....	1,111	85.5	15,987	1,229	13	..	8	12	4
Sanborn.....	576	115.2	7,708	1,541	5	..	3	3	1
¹ Shannon.....	.....	.....	964	.....	..	..	..	..	..
Spink.....	1,511	65.7	15,981	694	23	..	10	16	4
Stanley.....	4,156	415.6	2,251	2,251	1	..	1	1	..
Sully.....	1,058	105.8	2,462	2,462	1	..	1	1	..
Todd.....	1,279	639.5	2,505	1,252	2	..	1	2	1
Tripp.....	1,629	325.8	11,094	2,218	5	..	5	5	3
Turner.....	617	34.3	14,978	832	18	2	12	13	9
Union.....	452	34.0	11,761	904	13	1	4	8	3
Walworth.....	742	106.0	6,488	926	7	..	4	6	..
¹ Washabaugh....	.....	.....	1,146	.....	..	..	..	..	..
¹ Washington.....	.....	.....	1,157	.....	..	..	..	..	..
Yankton.....	523	24.9	15,588	742	21	2	9	18	3
Ziebach.....	1,985	198.5	2,571	2,571	1	1	..	..	..
Totals.....	80,246	124.4	597,331	909	646	16	335	513	92

1. Armstrong, Bennett, Mellette, Shannon, Washabaugh and Washington counties, no physicians reported.

Hanson County
FULTON—George Henry Lowthian.

Harding County
BUFFALO—Daniel Deronda Raber.

Hughes County
PIERRE—Harry Thomas Kenney.

Hutchinson County
PARKSTON—James Gilbert Carney.

Hyde County
HIGHMORE—Glen Vernon Sigler.

Jerauld County
WESSINGTON SPRINGS—Fred Floyd Keene.

Jones County
MURDO—William Moody Hunt.

Kingsbury County
DE SMET—Burt Alvano Dyar. IROQUOIS—Charles Hall Cowgill.
OLDHAM—Gebhard Joseph Long Jr.

Lake County
MADISON—Emerson William Goldman.

Lawrence County
DEADWOOD—Felix E. Ashcroft; Thomas W. Moffitt; Maurice Orcar Pemberton. LEAD—William Edward Fehlman; Charles Koenigsberger.

Lincoln County
CANTON—Roy F. Sackett.

Marshall County
BRITTON—Frederick Otto Kaps; Dennis William Sullivan.

McCook County
MONTROSE—Lindsay Z. Fletcher.

Meade County
FAITH—Harry Charles Durkee. FT. MEADE—Luke Baker Peck.
STURGIS—John Wallace Brackett; John Doshier Brooks.

Minnehaha County
SIOUX FALLS—Thomas Edward Jones; George Alfred Stevens; Thomas Gottfried Thompson.

Moody County
FLANDREAU—Frederick Angier Spafford.

Pennington County
RAPID CITY—William S. Bentley; Henry James Toppin Ince.

Potter County
GETTYSBURG—John Joseph Mertens.

Roberts County
SISSETON—James Everett Dyson; Wallace Isaac Longstreth. WHITE ROCK—Sigfred Engh. WILMOT—Carl Norman Harris.

Sanborn County
WOONSOCKET—Floyd Smelson Kidd.

Spink County
CONDE—Lester Richard Herman. DOLAND—Charles Augustus Williams. REDFIELD—Jacob Gemmill Chichester; Dewey Sutton.

Todd County
ROSEBUD—Leo Louis Elliott.

Tripp County
CARTER—Robert M. Malster; Carl O. Reed. WINNER—Archie Percival Kimball.

Turner County
PARKER—Harley Dore Newby.

Union County
BERESFORD—Arastus Vernon Elliott. ELK POINT—John Henkin; Walter Chafey Moodie.

Yankton County
VOLIN—Irving Miller. YANKTON—Frank Conger Smith; James Augustus Wood.

TENNESSEE STATE MEDICAL SOCIETY

Officers 1917-18

E. T. Newell, President.....Chattanooga
Vice Presidents:—
H. M. Cass.....Johnson City
T. G. Pollard.....Nashville
W. O. Sullivan.....Newbern
Olen West, Secretary.....Nashville
J. F. Gallagher, Treasurer.....Nashville

Councilor Districts and Officers

First District.—Claiborne, Hancock, Hawkins, Sullivan, Grainger, Greene, Washington, Carter, Unicoi, Johnson, Cocke and Sevier counties. C. P. Fox, Councilor, Greenville.

Second District.—Scott, Campbell, Union, Anderson, Roane, Knox, Loudon, Blount, Jefferson and Hamblen counties. S. R. Miller, Councilor, Knoxville.

Third District.—McMinn, Monroe, Polk, Meigs, James, Bradley, Hamilton, Marion, Sequatchie, Bledsoe, Van Buren, White, Warren, Grundy and Franklin counties. J. A. Hardin, Councilor, Sweetwater.

Fourth District.—Rhea, Cumberland, Morgan, Fentress, Putnam, Overton, Pickett, Jackson, Clay, Smith, Macon, Trousdale, Wilson and Sumner counties. Z. J. Shipley, Councilor, Cookeville.

Fifth District.—Lincoln, Marshall, Bedford, Rutherford, Cannon, De Kalb, Coffee and Moore counties. F. B. Reagor, Councilor, Shelbyville.

Sixth District.—Stewart, Montgomery, Robertson, Cheatham and Davidson counties. W. C. Dixon, Councilor, Nashville.

Seventh District.—Houston, Humphries, Dickson, Williamson, Hickman, Maury, Lewis, Lawrence, Giles and Wayne counties. M. A. Beasley, Councilor, Hampshire.

Eighth District.—Carroll, Henderson, Madison, Decatur, Perry, Hardin, Chester, McNairy, Henry and Benton counties. A. B. Dancy, Councilor, Jackson.

Ninth District.—Weakley, Gibson, Obion, Lake, Dyer, Lauderdale, Crockett and Haywood counties. R. W. Griffin, Councilor, Tiptonville.

Tenth District.—Tipton, Shelby, Fayette and Hardeman counties. W. T. Black, Councilor, Memphis.

HONOR ROLL

Anderson County
ANDERSONVILLE—Fred Oscar Stone. COAL CREEK—Carl Ralph Martin.

Bedford County
SEBELBYVILLE—Samuel Shaw Moody. UNIONVILLE—Daniel Carr Haggard. WARTRACE—George Elmer Horton.

Benton County
CAMDEN—James Max Smith.

Blount County
MARYVILLE—James Ellis Carson; Sam Wright Donaldson.

Bradley County
CLEVELAND—Thos. E. P. Chambers; Dabney Minor; Carl Thomas Speck.

TENNESSEE											
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	
Anderson.....	337	11.2	17,777	592	30	1	6	13	7	3	
Bedford.....	514	10.7	22,667	755	30	1	15	21	4	3	
Benton.....	456	26.8	12,864	756	17	1	2	5	1	1	
Bledsoe.....	391	55.8	6,329	904	7	1	3	6	1	1	
Blount.....	571	17.8	21,979	655	32	1	13	26	18	2	
Bradley.....	336	13.4	16,756	670	25	1	10	17	9	3	
Campbell.....	464	11.9	34,738	967	39	1	19	34	22	1	
Cannon.....	268	24.4	10,825	984	11	1	4	5	3	1	
Carroll.....	619	15.9	23,971	614	30	1	19	25	25	3	
Carter.....	353	18.6	22,138	1,165	19	1	6	15	15	1	
Cheatham.....	314	17.5	10,851	638	17	1	4	9	1	1	
Chester.....	313	26.1	9,090	757	12	1	6	6	7	1	
Claiborne.....	468	15.1	25,553	824	31	1	14	20	6	2	
Clay.....	254	28.2	9,437	1,047	9	1	2	6	2	1	
Cocke.....	427	22.5	19,580	1,030	19	1	6	14	2	3	
Coffee.....	443	19.3	15,552	676	23	1	6	14	13	3	
Crockett.....	267	9.9	15,228	601	27	1	15	19	11	1	
Cumberland.....	655	109.2	10,068	1,678	6	1	3	4	4	86	
Davidson.....	511	1.3	168,942	444	350	5	216	301	148	20	
Decatur.....	288	32.0	10,093	1,121	9	1	4	6	6	1	
DeKalb.....	311	19.4	15,434	964	16	1	7	10	1	2	
Dickson.....	549	23.9	20,919	909	23	1	11	17	14	1	
Dyer.....	500	9.6	30,600	588	52	1	31	42	37	2	
Fayette.....	618	18.2	30,662	901	34	1	23	31	19	5	
Fentress.....	486	81.0	8,424	1,404	6	1	4	4	1	1	
Franklin.....	575	16.0	20,564	571	36	1	15	23	14	3	
Gibson.....	633	10.5	43,253	720	60	1	26	36	27	5	
Giles.....	628	13.9	32,629	725	45	1	24	25	26	6	
Grainger.....	307	27.9	13,888	1,262	11	1	5	7	4	2	
Greene.....	613	15.7	31,436	806	39	1	18	27	23	3	
Grundy.....	375	41.7	8,701	966	9	1	3	7	8	1	
Hamblen.....	158	7.9	14,321	716	20	1	11	16	5	2	
Hamilton.....	409	2.1	109,393	560	195	3	102	148	112	20	
Hancock.....	228	57.0	10,778	2,694	4	1	2	3	2	1	
Hardeman.....	697	20.5	23,036	677	34	1	22	27	16	3	
Hardin.....	582	25.3	17,521	761	23	1	10	13	1	1	
Hawkins.....	482	13.4	23,587	655	36	1	8	16	15	1	
Haywood.....	508	16.4	26,436	852	31	1	13	23	14	7	
Henderson.....	536	17.2	17,030	549	31	1	11	15	28	2	
Henry.....	626	17.8	26,328	752	35	1	15	21	14	4	
Hickman.....	570	35.6	16,642	1,640	16	1	6	9	8	2	
Houston.....	197	19.7	6,224	622	10	1	2	6	2	1	
Humphreys.....	451	22.5	14,279	713	20	1	2	7	2	1	
Jackson.....	301	18.7	15,036	939	16	1	3	11	12	1	
James.....	165	23.6	5,210	744	7	1	5	7	1	1	
Jefferson.....	312	10.4	17,755	591	30	1	8	22	22	1	
Jennings.....	294	26.7	15,089	1,371	11	1	6	8	10	1	
Knox.....	504	2.6	108,702	569	191	1	104	147	115	32	
Krueger.....	122	11.1	9,677	879	11	1	8	11	8	1	
Kutherford.....	456	10.8	21,105	502	42	1	23	37	30	5	
Lawrence.....	611	23.5	19,150	736	26	1	16	18	1	2	
Leake.....	286	57.2	7,184	1,436	5	1	1	3	1	1	
Lincoln.....	587	14.3	25,908	705	41	1	14	26	26	4	
Loudon.....	219	12.9	15,637	913	17	1	8	12	8	2	
Madison.....	432	21.6	22,420	1,121	20	1	10	15	11	2	
McNairy.....	588	21.0	16,356	584	28	1	12	20	15	1	
Meigs.....	286	26.0	15,783	1,434	11	1	4	7	7	1	
Memphis.....	552	7.2	41,563	539	77	1	40	50	35	6	
Monroe.....	504	21.9	19,943	867	23	1	12	16	4	4	
Morgan.....	378	14.5	16,872	648	26	1	6	6	21	2	
Murphy.....	582	9.1	40,456	663	61	1	26	42	36	10	
Nashville.....	199	14.2	6,131	437	14	1	4	5	1	1	
Newbern.....	674	39.6	22,271	1,310	17	1	13	15	11	1	
Newton.....	516	13.2	33,672	863	39	1	15	29	14	3	
North.....	141	70.0	4,800	2,400	2	1	1	1	1	1	
Polk.....	529	44.1	12,822	1,068	12	1	10	12	8	1	
Putnam.....	552	10.4	31,157	587	53	1	15	34	27	5	
Randolph.....	446	27.9	17,678	1,104	16	1	7	11	8	1	
Reynolds.....	487	32.5	8,825	588	15	1	7	11	1	3	
Rhea.....	162	54.0	5,087	1,695	3	1	1	2	1	1	
Rockwell.....	432	24.0	16,128	846	18	1	10	11	6	1	
Sevier.....	404	14.4	22,308	796	28	1	9	18	12	1	
Shelby.....	365	19.2	16,206	852	19	1	10	16	9	1	
Smith.....	388	11.1	22,948	655	35	1	13	26	20	4	
Stewart.....	455	13.4	25,783	758	34	1	11	22	21	5	
Sullivan.....	614	13.1	33,199	706	47	1	23	33	23	6	
Tipton.....	550	55.0	14,310	1,431	10	1	8	8	6	1	
Union.....	264	88.0	4,840	1,613	3	1	2	2	1	1	
Van.....	587	32.6	22,496	1,249	18	1	9	11	7	1	
Warren.....	801	1.9	219,090	4,661	470	3	310	391	228	113	
Washington.....	296	9.9	18,548	618	30	1	11	18	15	1	
Wayne.....	449	37.6	14,860	1,238	12	1	8	10	1	1	
West.....	436	6.8	30,444	475	64	1	26	42	37	8	
White.....	558	15.5	25,621	711	36	1	19	28	14	7	
Wilson.....	442	9.8	29,594	657	45	1	28	34	27	3	
Yadkin.....	106	9.6	5,874	534	11	1	4	7	2	1	
York.....	201	22.3	8,185	909	9	1	4	8	7	1	
Zachary.....	235	15.7	11,414	760	15	1	8	9	1	1	
Zachary.....	293	293.0	2,784	2,784	1	1	1	1	1	1	
Zachary.....	423	21.1	16,624	831	20	1	9	14	7	1	
Zachary.....	325	7.2	33,611	746	45	1	23	32	28	6	
Zachary.....	749	57.6	12,062	927	13	1	4	8	6	1	
Zachary.....	580	12.6	31,929	694	46	1	18	32	20	4	
Zachary.....	363	20.2	16,342	907	18	1	6	11	13	2	
Zachary.....	586	17.7	24,213	733	33	1	15	22	15	3	
Zachary.....	613	17.0	25,394	705	36	1	16	25	13	2	

Totals..... 53,282 15.3 2,238,729 646 3,481 20 1,733 2,235 1,660 444

Includes Nashville, population 118,136; physicians 362 [M.R.C. 86].

Includes Chattanooga, population 61,575; physicians 152 [M.R.C. 19].

Includes Knoxville, population 39,052; physicians 155 [M.R.C. 28].

Includes Memphis, population 151,877; physicians 408 [M.R.C. 109].

Campbell County
BLOCK—Samuel D. Johnson; Clyde Russell. CARYVILLE—Robert Lee Gallaher. LA FOLLETTE—Wm. Harold Delap; Thomas Jennings; Edgar Sharon Turner.
WESTBOURNE—Edward Lee Inman.

Carroll County
HUNTINGDON—Roy Archie Douglas; James H. McCall. TREZEVANT—Tate Benton Collins.

Carter County
ELIZABETHTON—Geo. Edward Campbell.

Chester County
HENDERSON—Wm. Thos. Buck.

Claiborne County
CUMBERLAND GAP—James H. S. Morison. NEW TAZEVELL—James Caloway Carr.

Cocke County
NEWPORT—John Erwin Hampton; William Edgar McGaha; John Oscar Woods.

Coffee County
BEECH GROVE—Homer Clytus Wysong. HILLSBORO—Walter Lee McCaleb. TULLAHOIA—Charles Marion Griffith.

Crockett County
BELLS—Elisha Farrow.

Davidson County
NASHVILLE—Chas. Franklin Anderson; Rufus Herve Bacote; Richard A. Barr; Roy Wallace Billington; John Frey Binkley; James Elliott Blayders; James Brew Jr.; Frank Benton Brewer; Charles Watkins Brown; Emmett Ezra Brown; Robert Bates Brown; James Lesslie Bryan; George Washington Bugg; Lucius E. Burch.
Jere W. Caldwell; Maurice L. Connell; Samuel C. Cowan; Carl R. Crutchfield; Albert S. Dabney; Owen Scott Deathridge; William Clarence Dixon; Frank Bumpass Dunklin; Leonard Wright Edwards; Howard Merchant Francisco; Ernest Mitchell Fuqua.
Thurman Boyd Givan; Fleetwood Gruver; William David Haggard; Oliver Leslie Hambrick; Albert Wynne Harris; Morris D. Hartman; George Abram Hatcher; Sterling Buchanan Hinton; James Harvill Hite; David Hamilton James; Jesse Arvin James; Andrew Blucher Jones; William Gilliam Kennon; Leon Martin Lanier; John Henry Lassiter; Jesse Leonidas Leach; John Moore Lee; James Dunn Lester; Joseph Henry Litterer.
John Owsley Manier; Isiah Herbert Martin; Elmer Stephens Maxwell; William Michael McCabe; Herbert H. McCampbell; Frank McClenton; James Hunter McClure; Matthew Charles McGannon; Thomas Dempsey McKinney; Thomas Orville Menees; Thos. W. Menees; Edwin Evans Miller; Charles Samuel Morrow; Eugene Orr; David Richards Pickens; Rueben Lester Richardson; Joseph Ward Russell.
Joseph Perry Schell; Enoch Corruith Seale; Matthew Wilson Searight; Harrison H. Shoulders; Larkin Smith; Joe Harold St. John; Hugo Benton Stokes; Claude Chauncey Sullivan; Robert E. Sullivan Otho Buel Taylor; Holland McTyeire Tigert; Harlin Guilford Tucker; Henry Harvey Walker; Charles Douglas Walton; William B. Ward; Leo Edward Welker; Hugh Dickson White; William Henry Witt; Thomas Volney Woodring; Randall Everett Wyatt. WOODBINE—Constantine Perkins Waller.
NASHVILLE—William Porter Bowen; Oval Nelson Bryan; John Ewell Hall; David Robertson Neil.

De Kalb County
ALEXANDRIA—Leon D'Castro Cotten; James Benton Neil.

Dickson County
BURNS—Henry Petway Spencer.

Dyer County
BOGOTA—D. T. Austin. DYERSBURG—Robert Lyle Motley Jr.

Fayette County
LACONIA—William Herman Ballard. MOSCOW—Orville Hulcee Cribbins; Compton Ncy Crook. OAKLAND—Cleveland Payne. SOMERVILLE—John W. Morris.

Franklin County
COWAN—John Hartwell Marable. SEWANEE—Reynold Marvin Kirby-Smith; Allen Lawrence Lear.

Gibson County
BRADFORD—Starnes E. Walker. HUMBOLDT—John Walter Oursler. MEDINA—Thomas Munsey Harper. TRENTON—Kuebel Bryant; Edward Corter Matthews.

Giles County
ASPEN HILL—Rogers Nathaniel Herbert. BETHEL—Louis A. Edmundson. ELKTON—Wendell Phillips Baugh; Joe Bradford Wright. FRANKEWING—Walter Joe Johnson. PULASKI—John Henry Morris.

Grainger County
IDOL—Barney Langford McDonald. TAMPICO—Granville Dexter LeQuire.

Greene County
BAILEYTON—Chas. Young Bailey. GREENVILLE—Jas. Franklin Lane. MOHAWK—Lloyd Elmer Dyer.

Hamblen County
MORRISTOWN—Claude J. Fuller; William Erastus Howell.

Hamilton County
CHATTANOOGA—Herman Jackson Barnett; Eli Milton Delay; William Wuche Dickey; William J. Hidas; Eugene R. Hochstetter; Albert Thompson Ingalls; Hiram Adoniram Laws Jr.; Stewart Lawhill; Samuel Herman Long; Fred Cameron McIsaac; James Douglas McHeeters; Ray Morrison Means; Edward Dumber Newell; Leopold Shumacker; Chester Arthur Skelton; John Black Steele; Davis King Summers; Carl August Gunner Sundstrom. EAST CHATTANOOGA—Jesse Cleveland Eldridge.

Hardeman County
BOLIVAR—Victor H. Miller; William Claude Sain. WHITEVILLE—Thomas Whitson Rhodes.

Hardin County
GILLISES MILLS—Granville Inman Walker.

Hawkins County
CHURCH HILL—Guy McClellan Reeser.

Haywood County

BROWNSVILLE—Thomas Crowder Chapman; Clarence M. Gloster; William Vesey Pruett; Charles Edwin Sevier. RUDOLPH—John Montgomery Gill. STANTON—William B. Nash; Lonnie Otto Wilkerson.

Henderson County

DARDEN—E. Gecovia Maxwell. LEXINGTON—Samuel Thomas Parker.

Henry County

COTTAGE GROVE—Charles Headley. PARIS—George Randle McSwain; Milton C. Wiggins; William J. Ezell.

Hickman County

CENTERVILLE—William Kenneth Edwards. LYLES—James Clagett Fly.

James County

APISON—Harry Edgar Hall.

Jefferson County

JEFFERSON CITY—Walter Samuel E. Hardy.

Johnson County

LAUREL BLOOMERY—Walter Winfield Widener.

Knox County

BALL CAMP—William R. Cross. BEARDEN—Hugh Lawson Peters. KNOXVILLE—Harley Leland Acuff; Herbert Acuff; Hugh Walden Allan; John David Carr; Daniel W. Crawford; Robert Crittenden Davis; Ernest V. Edwards; Claude A. Frazier; Joseph Johnson Greer; James Decatur Henderson; Lucius D. Hill; Samuel Hunt; Howard Aiken Ijams; Thomas Ap. Roger Jones; Robert Bruce Layman; Forrest Shetterly LeTellier; Harry Laurin Lott; Virgil Elwood Massey; Thomas Peacock Miller; Robert Haller Newman; Beecher Lavator Ogle; Reese William Patterson; Cary Alexander Snoddy; James M. Troutt; William H. L. White; Robert Miller Young. MASCOT—Kyle Cornett Copenhaver. VESTAL—Benjamin J. Cogdill.

KNOXVILLE—William P. Atchley; William Henry Landon White.

Lake County

RIDGELY—Willis Socrates Alexander.

Lauderdale County

GATES—Grover Cleveland Conyers; Russell Bate Wilson. GOLD DUST—Russell Brooks Kilpatrick. HALLS—Joseph Charles Blankenship; Youra Spence Brown.

Lawrence County

IRON CITY—Clyde Crawford Hardison. SUMMERTOWN—Edward Starter Stewart.

Lincoln County

ELORA—Alfred Luther Griffith. FAYETTEVILLE—William Aaron Cashion; Charles L. Goodrich; Boone E. Noblitt.

Loudon County

LENOIR CITY—Gid Malcolm Hall. LOUDON—Halbert Robinson.

Madison County

JACKSON—Benjamin C. Arnold; Dorsey B. Granberry; Thomas Patrick Haralson Jr.; Julius A. Johnson; Fleming James O'Connor; William Gilchrist Saunders.

Marion County

COPENHAGEN—Jere Williams Kirkpatrick. JASPER—Justin Ernest Lacy. SOUTH PITTSBURGH—Samuel Newton Anderson; George M. Wampler.

Marshall County

CHAPEL HILL—David De Will Moncrief. LEWISBURG—William Everett Troxler.

Maury County

COLUMBIA—Percy Dake Biddle; Benjamin Franklin Davis; Paul Hamlin Faucett; Lucius Hough Gilmore; Robert Pillow Jr.; James Porter; George Cuthbert Williamson. HAMPSHIRE—James Henry Jones. MT. PLEASANT—Grover Cleveland English. WILLIAMSPORT—Henry Osgood Anderson.

McMinn County

ATHENS—James R. Nankivell. ETOWAH—William Daniel Richards.

Meigs County

DECATUR—William Ross Arrants.

Monroe County

TELLICO PLAINS—William Huffman Niles.

Montgomery County

CLARKSVILLE—William Haller Brandau; George Edward Vaughan. WOODLAWN—Manton S. Shelby.

Obion County

RIVERS—Phillip John Trench. UNION CITY—Marvin A. Blanton; Orville Barnes Chandler; Benjamin F. Loring; Ira Oscar Park.

Perry County

FLATWOODS—William Earl Boyce; Thomas H. Sharp. LOBELVILLE—William Dave Cagle.

Putnam County

COOKEVILLE—William Albert Howard.

Rhea County

SPRING CITY—Joseph M. Clark.

Roane County

CARDIFF—George Edward Wilson. HARRIMAN—Albert Victor Keebler; Fred Adolphus Neergaard. OLIVER SPRINGS—William Asa Shelton.

Robertson County

CEDAR HILL—Miles W. Barnes. GREENBRIER—William Winfred Winters. SPRINGFIELD—Frederick Wilson Lee; Heddy S. Shoulders. SPRINGFIELD—Heddy S. Shoulders.

Rutherford County

MURFREESBORO—Vernon King Earthman; Aareiel Ellis Goodloe; William Bruce Lunsford; Mathias Brickell Murfree; William Thomas Robison; Asa D. Sharp.

Scott County

ONEIDA—Francis Marion Boyatt.

Sevier County

SEVIERSVILLE—John Harison Huff.

Shelby County

CAPLERVILLE—Robert Griffin Latimer. EADS—Guy Collins Anderson; Green Warren McConathy. LUCY—Wilbur Turner Blackshare; Leslie Turner Bolton. MEMPHIS—Albert Shields Abernathy; Warren Grady Alford; Ernest Lynne Anderson; Conrad O. Bailey; William H. Baldwin; Clyde McKay Beck; Clarence Angelo Bell; Charles Alexander Bender; William Blackwell; Charles Decatur Blassingame; Salvatore Leon Bocolato; William Ausborn Brewer; Stanley Needham Brinson; Charles Walter Brown; George L. Brown; Martin Edward Bry; Kinsey Mansfield Buck.

Edward Guy Campbell; William A. Carnes; Grover Carter; James Parvin Carter; Lyman Harvey Chapman; William Franklin Clary; William Campbell Colbert; Arthur Fredmand Cooper; Thomas Nelson Copledge; Thomas Francis Coughlin Jr.; John Wesley Cunningham; John R. Drake; Buford N. Dunavant.

Samuel Lee Edwards; Edward Coleman Ellett; Sidney S. Evans; James Surran Fleming; Samuel Evander Frierson; Edwin Cyril Gillespie; Clarence Hays Grover; James Frank Graham; Roy Granberry.

Emmett Russell Hall; David Max Hensing; Jack Phillips Henry; John Hansell Herring; Joel Jones Hobson; James William Hose; Thomas Harkins Ingram; Mark Mitchell Jetton; Joseph Edward Johnson; Max Kaplan; Lawrence Larry Keller; Charles Coffield King; Waldo Briggs Lain; Gilbert Joseph Levy; Joseph Grady Ligon.

William Battle Malone; Hiram Bradford Mann; Robin Ferguson Mason; Noah Morgan McFarland; John Lucius McGehee Jr.; Bernard Cornelius McMahon; Alphonse Herman Meyer; Leon Leopold Meyer; John Samuel Miller; Edward Clay Mitchell; J. Logan Morgan; Norwin B. Norris.

James Patrick Owens; Percy A. Perkins; John Wilson Ragsdale; Charles Thomas Richardson; Joseph Esthner Robinson; Lisle Benjamin Robinson; Walker Lee Rucks.

Abner Potts Hubert Sage; Benjamin Lucky Schoolfield; Milton Barney Seligstein; Curtis R. Senter; John Joseph Shea; Lawrence Robert Shearin; Gettis Troy Sheffield; Frank D. Smythe; Frank Ward Smythe; William Glassell Somerville; Marcus Gustavus Spingarn; James Butt Stanford; Lee Alexander Stone; Charles Kincaid Summers; Walter Thomas Swink; Claude Allen Symons.

John Quill Taylor; James Rodefer Thomas; Edward Gilmer Thompson; Robert B. Underwood; James Albert Vaughan; Frank Cady Venn; Samuel Lewis Wadley; Howard Lombard Walker; Raymond Roscoe Wall; Cecil Everett Warde; Edwin Dial Watkins; William Alexander Watson; Grover Cleveland Webb; Joseph H. White; Benjamin Bernard Wright. NORMAL—Louis Francis Verdel.

MEMPHIS—Hamilton Pope Calmes; Raphael Eustace Semmes.

Sullivan County

BRISTOL—William R. C. Booher; L. W. Newland; William Kirkpatrick Vance Jr. EMMETT—Edgar Charles Hawkins. FORDTOWN—Ernest Blanton Bowery. KINGSPORT—Hugh J. Baker; Milton Maceo Cloud; Charles Pender Edwards.

Sumner County

BETHPAGE—Thomas Edward Wright. GALLATIN—Wm. Nicholas Lackey; Jonathan Nathaniel Rucker; Homer Reese. PORTLAND—James Matthew Oliver. WEST MORELAND—William Porter Law.

BETHPAGE—Thomas Edward Wright.

Tipton County

COVINGTON—Lawrence Johnson Lindsey; Walter Wynne Sale. MUNS-FORD—John Carlyle Witherington.

Union County

MAYNARDSVILLE—James Stirling Skaggs.

Warren County

IRVING COLLEGE—Polk Duncan Brown.

Washington County

FALL BRANCH—John R. McCrary. NATIONAL SOLDIERS HOME—Emmett Earl Byrd. JOHNSON CITY—Llewellyn Moore Dykes; James Gaines Moss; Edwin Wiley Reeves. WASHINGTON COLLEGE—Samuel Bruce Greenway.

Weakley County

GARDNER—Henry Gideon Edmonson. GLEASON—Ira Jackson Tatum. MARTIN—Richard Mobley Little. SHARON—Alexander Joshua Bryant.

White County

BON AIR—Eustace Cosmo Mason. RAVENSCROFT—Grady Monroe Allison.

Williamson County

ARRINGTON—Joseph Peter Delaney Jr. FRANKLIN—Daniel B. Gliffe; Beverly Toon Nolen.

Wilson County

LEBANON—Nelson A. Bryan; Walter Scott Dotson.

STATE MEDICAL ASSOCIATION OF TEXAS**Officers 1917-18**

E. H. Cary, President.....Dallas
S. R. Rice, President-Elect.....Marlin
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F. U. Painter.....Corpus Christi
T. K. Proctor.....Sulphur Springs
Holman Taylor, Secretary.....Ft. Worth
W. L. Allison, Treasurer.....Ft. Worth

Councilor Districts and Officers

First (El Paso) District.—Brewster, El Paso, Jeff Davis, Loving, Pecos, Presidio, Reeves, Terrell, Ward and Winkler counties. Felix P. Miller, Councilor, El Paso.

Second (Big Springs) District.—Andrews, Borden, Cochran, Crane, Dawson, Dickens, Ector, Fisher, Gaines, Garza, Glasscock, Haskell, Howard, Hockley, Jones, Kent, King, Knox, Lynn, Martin, Midland, Mitchell, Nolan, Scurry, Stonewall, Taylor, Terry, Upton and Yoakum counties. J. G. Wright, Councilor, Big Springs.

Third (Panhandle) District.—Armstrong, Bailey, Briscoe, Castro, Carson, Cottle, Childress, Collingsworth, Crosby, Deaf Smith, Dallam, Donley, Floyd, Foard, Gray, Hale, Hall, Hardeman, Hemphill, Hutchinson, Hansford, Hartley, Lamb, Lipscomb, Lubbock, Motley, Moore, Ochiltree, Odham, Parmer, Potter, Randall, Roberts, Sherman, Swisher, Wheeler, Wichita and Wilbarger counties. C. R. Hartsook, Councilor, Wichita Falls.

Fourth (San Angelo) District.—Brown, Coke, Concho, Crockett, Coleman, Iron, Kimble, Lampasas, Menard, Mills, McCulloch, Reagan, Runnels, Schleicher, Sterling, Sutton and Tom Green counties. J. E. Aldy, Councilor, Lampasas.

Fifth (San Antonio or Western) District.—Atascosa, Bandera, Bexar, Comal, Dimmit, Edwards, Frio, Gillespie, Gonzales, Guadalupe, Karnes, Kendall, Kerr, Kinney, La Salle, Maverick, Medina, Uvalde, Val Verde, Wilson and Zavalla counties. C. S. Venable, Councilor, San Antonio.

Sixth (Corpus Christi or Southwest) District.—Aransas, Bee, Cameron, Duval, Encinal, Hidalgo, Jim Wells, Kleburg, Live Oak, McMullen, Neches, Refugio, San Patricio, Starr, Webb, Willacy and Zapata counties. N. Wardlaw, Councilor, Kingsville.

Seventh (Austin) District.—Bastrop, Blanco, Burnet, Caldwell, Hays, Lee, Llano, Mason, San Saba, Travis and Williamson counties. T. J. Bennett, Councilor, Austin.

Eighth (De Witt) District.—Calhoun, Colorado, De Witt, Fayette, Goliad, Jackson, Lavaca, Matagordo, Victoria and Wharton counties. John W. Burns, Councilor, Cuero.

Ninth (Southern Texas) District.—Austin, Brazoria, Brazos, Burleson, Chambers, Ft. Bend, Galveston, Grimes, Harris, Madison, Montgomery, Parker, Waller and Washington counties. J. H. Foster, Councilor, Houston.

Tenth (Southeastern) District.—Chambers, Hardin, Jasper, Jefferson, Liberty, Nacogdoches, Newton, Orange, Polk, Sabine, San Augustine, Shelby, Smith, Tyler and Van Zandt counties. M. F. Bledsoe, Councilor, North Arthur.

Eleventh (Eastern) District.—Anderson, Angelina, Cherokee, Freestone, Harrison, Houston, Leon, Panola, Rusk, Smith and Trinity counties. C. Nash, Councilor, Palestine.

Twelfth (Central) District.—Bell, Bosque, Comanche, Coryell, Erath, Gillespie, Hamilton, Hill, Hood, Johnson, Limestone, McLennan, Milam, Pecos, Robertson and Somervell counties. Arthur C. Scott, Councilor, Temple.

Thirteenth (Northwestern) District.—Archer, Baylor, Callahan, Clay, Comal, Jack, Palo Pinto, Parker, Shackelford, Stephens, Throckmorton and Young counties. C. B. Williams, Councilor, Mineral Wells.

Fourteenth (Northern) District.—Collin, Cooke, Dallas, Delta, Denton, Ellis, Fannin, Grayson, Hopkins, Hunt, Kaufman, Lamar, Montague, Pecos, Rockwell, Tarrant, Van Zandt and Wise counties. A. W. Carnes, Councilor, Dallas.

Fifteenth (Northwestern) District.—Bowie, Camp, Cass, Franklin, Gregg, Harrison, Marion, Morris, Red River, Titus, Upshur and Wood counties. E. Seale, Councilor, Daingerfield.

TEXAS									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Anderson.....	938	22.3	30,844	734	42	15	31	23	6
Andrews.....	1,565	782.5	1,624	812	2	1	2	1	..
Angelina.....	940	31.3	20,789	692	30	11	20	20	2
Aransas.....	240	120.0	2,390	1,195	2	1	1	1	..
Archer.....	872	174.5	9,458	1,891	5	3	4	2	1
Armstrong.....	903	180.6	3,759	751	5	2	2	2	1
Atascosa.....	1,358	113.2	12,092	1,007	12	8	11	5	2
Austin.....	723	40.4	17,699	983	18	12	17	15	..
Bailey.....	1,030	1030.0	537	537	1	..	..	1	..
Bandera.....	983	245.7	4,507	1,126	4	1	2	2	..
Bastrop.....	867	37.7	23,344	1,014	23	11	14	13	1
Baylor.....	880	110.0	12,322	1,540	8	11	5	7	..
Bee.....	856	57.1	15,280	1,018	15	4	12	14	1
Bell.....	1,083	12.3	51,851	589	88	2	44	60	13
Bexar.....	1,263	5.0	156,360	615	254	7	146	176	51
Bosque.....	750	125.0	4,311	718	6	..	4	5	1
Brazoria.....	895	..	1,832	..	..	..	..	..	..
Brazos.....	975	31.4	20,197	651	31	9	21	18	5
Brewster.....	873	17.5	40,776	815	50	1	21	28	2
Briscoe.....	1,340	55.8	13,299	554	24	1	7	17	3
Brown.....	597	24.9	18,963	790	24	1	10	17	10
Burnet.....	5,935	539.5	7,311	664	11	..	8	8	3
Burrhead.....	903	301.0	2,826	942	3	..	2	..	..
Burnet.....	..	..	4,580	1,526	3	..	2	1	..
Brewster.....	956	19.5	27,982	573	49	17	37	33	5
Brazos.....	684	40.1	18,920	1,112	17	..	4	10	7
Brewster.....	974	60.9	10,922	682	16	..	8	11	5
Brewster.....	511	21.3	26,040	1,085	24	..	9	20	5
Brewster.....	563	70.4	4,539	567	8	..	5	5	3
Brewster.....	854	50.2	16,044	943	17	..	5	9	..
Brewster.....	2,434	83.9	32,767	1,129	29	..	21	27	15
Brewster.....	207	14.2	9,848	703	14	..	6	10	7
Brewster.....	893	111.6	3,338	417	8	..	4	6	5
Brewster.....	951	31.7	31,051	1,035	30	1	16	24	19
Brewster.....	896	896.0	2,910	2,910	1	..	1	1	1
Brewster.....	618	88.3	5,101	728	7	..	2	3	4
Brewster.....	1,049	26.2	31,873	796	40	1	22	31	28
Brewster.....	733	38.6	14,939	786	19	..	11	14	12
Brewster.....	1,158	50.3	22,746	988	23	..	11	14	14
Brewster.....	931	116.4	8,587	1,073	8	..	5	6	2
Brewster.....	1,290	43.0	31,774	1,059	30	..	9	20	14
Brewster.....	878	9.6	49,021	538	91	1	34	52	45
Brewster.....	898	81.6	8,137	748	11	..	6	6	9
Brewster.....	972	57.2	18,897	1,111	17	..	9	13	16
Brewster.....	559	69.9	9,474	1,184	8	..	5	6	8
Brewster.....	948	36.5	30,236	1,162	26	..	6	12	16
Brewster.....	918	229.5	10,468	2,617	4	..	4	2	3
Brewster.....	902	19.2	26,603	566	47	2	19	16	27
Brewster.....	1,085	31.9	21,992	646	34	..	20	16	23
Brewster.....	1,012	144.6	6,874	982	7	..	5	6	6
Brewster.....	878	..	534	..	..	..	..	..	..
Brewster.....	3,215	1607.5	1,296	648	2	..	2	2	2

Includes San Antonio, population 128,215; physicians 251 [M.R.C. 50].
County recently organized; area included with that of other counties.

TEXAS—Continued									
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society Commis'd in M.R.C., etc.
Crosby.....	870	96.7	2,479	275	9	..	2	7	2
² Culberson.....	.....	.....	2,172	1,086	2	..	1	1	1
Dallam.....	1,532	80.6	6,814	358	19	1	3	7	4
³ Dallas.....	859	2.3	174,451	479	364	11	209	286	184
Dawson.....	903	150.5	3,986	664	6	..	5	5	4
Deaf Smith.....	1,549	309.8	6,204	1,240	5	..	1	4	..
Delta.....	261	9.7	14,566	539	27	..	14	24	18
Denton.....	952	15.1	33,404	530	63	..	17	15	36
Dewitt.....	879	20.4	25,100	583	43	..	18	32	32
Dickens.....	881	180.1	4,509	563	8	..	3	8	3
Dimmit.....	1,360	272.0	5,177	1,035	5	..	2	3	4
Donley.....	906	82.4	7,130	648	11	..	6	7	9
Duval.....	1,825	456.2	9,100	2,275	4	..	3	3	2
Eastland.....	925	21.5	27,400	637	43	..	12	22	17
Ector.....	892	892.0	1,761	1,761	1	..	1	1	1
Edwards.....	2,352	1176.0	2,764	1,382	2	..	..	1	3
Ellis.....	975	13.7	52,235	555	94	..	46	70	62
⁴ El Paso.....	9,331	68.6	80,801	597	136	..	80	119	87
Erath.....	1,083	36.1	33,649	1,121	20	..	16	23	18
Falls.....	745	16.5	37,333	829	45	..	17	30	25
Fannin.....	838	11.6	44,801	622	72	..	21	50	46
Fayette.....	968	37.2	29,796	1,146	26	..	10	17	11
Fisher.....	885	52.0	19,085	1,122	17	..	4	12	12
Floyd.....	1,011	77.7	6,549	503	13	..	6	9	4
Foard.....	612	76.5	8,762	1,095	8	..	3	6	4
Fort Bend.....	792	41.7	19,358	1,018	19	..	10	13	11
Franklin.....	289	41.3	9,810	1,401	7	..	3	3	6
Freestone.....	882	40.1	21,760	989	22	..	12	17	16
Frio.....	1,124	112.4	12,321	1,232	10	2	6	7	7
Gaines.....	1,540	513.3	2,131	710	3	..	1	2	1
⁵ Galveston.....	395	3.9	44,754	438	102	6	57	7	62
Garza.....	870	217.5	3,315	828	4	1	3	4	3
Gillespie.....	1,109	100.8	10,336	939	11	..	7	7	4
Glasscock.....	866	866.0	1,769	1,769	1	..	..	..	..
Goliad.....	799	61.5	11,079	852	13	..	4	3	7
Gonzales.....	1,020	30.0	28,055	825	34	1	16	19	21
Gray.....	899	128.4	5,540	791	7	..	3	5	4
Grayson.....	942	8.5	67,699	609	111	..	67	83	70
Gregg.....	312	13.0	15,452	643	24	..	12	14	10
Grimes.....	812	30.1	21,205	785	27	..	9	18	15
Guadalupe.....	703	54.1	27,487	2,114	13	..	8	10	11
Hale.....	1,036	49.3	11,863	564	21	..	7	14	14
Hall.....	901	56.3	13,102	818	16	..	8	12	12
Hamilton.....	833	37.9	16,626	755	22	..	9	15	13
Hansford.....	882	294.0	1,496	478	3	..	2	3	1
Hardeman.....	761	38.0	16,745	837	20	1	7	10	15
Hardin.....	862	43.1	18,713	935	20	..	13	14	9
⁶ Harris.....	1,654	6.1	153,582	570	269	8	130	203	162
Harrison.....	872	19.4	41,158	914	45	1	24	32	24
Hartley.....	1,507	1507.0	1,969	1,969	1	..	..	..	..
Haskell.....	923	43.9	26,184	1,246	21	..	12	14	10
Hays.....	623	28.3	16,521	750	22	..	10	18	13
Hemphill.....	873	124.7	4,888	698	7	..	5	4	5
Henderson.....	946	37.8	20,247	809	25	..	11	20	18
Hidalgo.....	2,276	87.5	17,565	752	26	..	15	17	15
Hill.....	966	11.9	50,704	625	81	..	37	58	55
Hood.....	405	28.9	10,636	759	14	1	4	5	10
Hopkins.....	813	17.3	33,292	708	47	..	17	28	32
Houston.....	1,231	31.6	32,565	835	39	..	13	21	21
Howard.....	891	81.0	13,517	1,228	11	..	4	10	11
⁷ Hudspeth.....	.....	.....	1,152	576	2	..	2	2	1
Hunt.....	893	10.9	48,715	594	82	..	28	52	49
Hutchinson.....	879	.....	1,321	.....	..	..	1	..	..
Irion.....	998	998.0	1,601	1,601	1	..	..	1	1
Jack.....	962	56.6	12,979	763	17	..	8	11	11
Jackson.....	893	111.6	6,746	843	8	..	3	5	4
Jasper.....	978	51.5	19,746	1,039	19	..	8	12	13
Jeff Davis.....	2,263	754.3	2,063	687	3	..	2	1	1
Jefferson.....	920	10.9	55,659	602	84	..	45	81	55
Jim Hogg.....	.....	.....	5,745	2,872	2	..	..	2	..
Jim Wells.....	.....	.....	10,436	1,304	8	..	4	5	6
Johnson.....	740	14.0	34,929	659	53	1	23	31	37
Jones.....	922	27.9	36,888	1,117	33	..	12	28	25
Karnes.....	692	38.4	19,513	1,084	18	..	9	13	16
Kaufman.....	834	12.4	36,744	548	67	..	28	47	49
Kendall.....	598	149.5	4,820	1,205	4	..	2	2	3
Kent.....	875	175.0	3,937	687	5	..	4	3	..
Kerr.....	1,197	108.8	5,413	492	11	..	6	8	8
Kimble.....	1,301	216.8	3,815	635	6	..	2	2	5
King.....	867	.....	1,043	.....	..	..	..	..	..
Kinney.....	1,312	1312.0	4,097	4,097	1	..	2	1	..
Kleberg.....	.....	.....	4,319	431	10	..	5	6	7
Knox.....	862	50.7	14,956	879	17	..	10	11	11
Lamar.....	945	11.8	46,544	581	80	..	30	52	45
Lamb.....	1,022	1022.0	912	912	1	..	..	1	..
Lampasas.....	740	43.5	10,194	499	17	..	6	10	11
Lasalle.....	1,567	522.3	6,530	2,176	3	..	3	3	3
Lavaca.....	950	73.1	26,418	2,032	13	..	7	11	11
Lee.....	562	40.1	13,132	938	14	..	2	2	6
Leon.....	1,101	50.0	16,583	753	22	..	14	16	19
Liberty.....	1,160	82.8	12,573	898	14	1	7	12	6
Limestone.....	974	31.4	36,175	1,166	31	..	11	20	23
Lipscomb.....	888	296.0	3,980	1,326	3	..	3	3	2
Live Oak.....	1,116	279.0	4,300	1,075	4	..	1	3	2
Llano.....	971	80.9	6,520	543	12	..	4	5	7
Loving.....	753	.....	407	.....	..	..	..	..	..
Lubbock.....	868	62.0	6,054	432	14	1	8	8	10
Lynn.....	864	108.0	2,951	368	8	..	5	8	2
McCulloch.....	1,073	67.1	20,298	1,268	16	..	11	15	10
McLennan.....	1,049	6.2	83,089	491	169	2	83	121	109

TEXAS—continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
McMullen.....	1,302	1302.0	1,140	1,140	1	..	..	1	..	..
Madison.....	495	14.2	10,318	859	12	..	7	10	8	1
Marion.....	391	39.1	10,472	1,047	10	..	1	2	7	..
Martin.....	904	452.0	2,437	1,218	2	..	1	1	1	..
Mason.....	969	121.1	5,763	720	8	..	3	4	2	..
Matagorda.....	1,136	56.8	19,066	953	20	1	6	16	14	4
Maverick.....	1,251	208.5	5,944	990	6	..	8	4	3	..
Medina.....	1,353	104.1	17,526	1,348	13	..	6	12	8	2
McNard.....	914	228.5	3,214	803	4	..	4	..	..	2
Midland.....	887	147.3	4,721	775	6	..	3	4	3	1
Milan.....	959	22.3	36,780	855	43	..	23	32	31	8
Mills.....	696	69.6	11,039	1,103	10	..	2	4	4	..
Mitchell.....	885	110.6	13,411	1,676	8	..	3	6	8	1
Montague.....	929	29.0	25,360	792	32	..	10	18	15	1
Montgomery.....	1,017	67.8	15,679	1,045	15	..	11	11	8	1
Moore.....	921	460.5	817	408	2	..	..	..	1	..
Morris.....	259	17.3	12,090	804	15	..	8	11	12	..
Motley.....	1,030	257.5	3,226	806	4	..	3	4	1	1
Nacogdoches.....	1,059	31.1	29,409	864	34	..	14	21	22	2
Navarro.....	1,060	15.6	49,767	731	63	..	27	54	40	8
Neuces.....	2,275	65.0	15,606	445	35	..	19	29	28	7
Newton.....	885	63.2	13,453	960	14	..	5	12	5	1
Nolan.....	880	44.0	18,851	942	20	1	12	16	13	6
Ochiltree.....	891	445.5	2,576	1,288	2	..	..	..	..	..
Oldham.....	1,543	308.6	1,151	230	5	..	2	4	..	..
Orange.....	363	20.2	12,172	676	18	..	6	14	15	..
Palo Pinto.....	958	24.6	24,773	633	39	..	9	23	18	1
Panola.....	842	35.1	20,424	888	24	..	11	12	7	1
Parker.....	875	22.5	26,702	785	34	..	8	20	13	4
Parmer.....	902	451.0	2,666	1,333	2	..	1	2	2	1
Pecos.....	4,134	133.5	2,564	641	4	..	2	1	2	1
Polk.....	1,217	55.3	19,659	893	22	..	14	17	14	1
Potter.....	934	33.3	20,165	720	28	..	12	21	23	7
Presidio.....	3,812	544.6	6,345	906	7	..	5	7	4	2
Rains.....	267	53.4	7,268	1,453	5	..	5	4	1	..
Randall.....	937	244.2	5,026	1,256	4	..	1	2	2	1
Reagan.....	1,071	1071.0	1,572	1,572	1	..	1	1	..	1
Real.....	..	..	2,077	692	3	..	2	3	..	..
Red River.....	1,039	22.1	28,564	607	47	..	24	36	7	1
Reeves.....	2,781	695.2	6,250	1,562	4	..	6	4	3	..
Refugio.....	740	123.3	3,670	611	6	..	6	5	5	3
Roberts.....	882	220.5	1,189	297	4	..	1	2	2	..
Robertson.....	872	29.1	27,454	915	30	..	10	18	16	2
Rockwall.....	149	9.3	8,072	504	16	..	4	9	9	..
Runnels.....	1,083	45.1	32,155	1,339	24	..	15	18	15	1
Rusk.....	983	27.3	27,564	737	36	..	10	20	20	3
Sabine.....	589	36.7	10,177	636	16	..	7	8	10	..
San Augustine.....	622	23.9	13,329	512	26	..	6	26	2	1
San Jacinto.....	602	100.3	9,542	1,590	6	..	2	4	3	..
San Patricio.....	676	48.3	10,909	778	14	..	7	10	9	2
San Saba.....	1,116	65.6	13,927	819	17	..	10	10	6	..
Schleicher.....	1,387	693.5	2,898	2,449	2	..	1	..	..	..
Scurry.....	887	49.3	15,862	881	18	..	8	12	11	5
Shackelford.....	947	157.8	5,470	911	6	..	2	2	..	..
Shelby.....	833	23.1	30,781	855	36	..	16	27	18	4
Sherman.....	935	935.0	2,304	2,304	1	..	..	..	..	..
Smith.....	920	16.7	44,939	817	55	..	20	35	31	3
Somervell.....	184	30.7	4,246	707	6	..	2	1	1	..
Starr.....	2,675	668.7	7,603	1,900	4	1	3	3	2	..
Stephens.....	925	132.1	9,084	1,297	7	..	1	4	4	..
Sterling.....	948	316.0	1,760	586	3	..	1	2	1	..
Stonewall.....	852	170.4	7,608	1,521	5	..	5	5	2	2
Sutton.....	1,521	304.2	1,569	313	5	..	1	2	..	..
Swisher.....	898	147.3	6,045	1,007	6	..	4	4	2	..
Tarrant.....	903	3.6	149,593	595	251	1	109	123	176	34
Taylor.....	908	23.3	37,820	969	39	..	22	30	29	2
Terrell.....	2,635	1317.5	1,770	885	2	1	1	1	1	1
Terry.....	870	435.0	2,513	1,256	2	..	..	..	..	..
Throckmorton.....	879	175.8	6,616	1,323	5	..	2	3	3	..
Titus.....	398	15.9	19,435	777	25	1	7	18	19	..
Tom Green.....	1,454	33.8	26,073	606	43	1	16	30	27	6
Travis.....	1,004	9.6	61,631	592	104	4	57	71	74	15
Trinity.....	716	31.1	14,074	611	23	..	12	16	15	3
Tyler.....	908	90.8	10,250	1,025	10	..	4	7	..	..
Upshur.....	600	23.1	22,656	640	26	..	12	11	14	..
Upton.....	1,195	1195.0	831	831	1	..	1	1	..	..
Uvalde.....	1,589	105.9	16,041	1,065	15	..	4	10	9	1
Valverde.....	3,083	385.4	11,057	1,382	8	..	3	8	6	3
Van Zandt.....	831	25.9	25,774	805	32	..	11	22	18	3
Victoria.....	890	46.8	15,947	839	19	..	6	13	15	4
Walker.....	791	65.9	16,241	1,353	12	..	4	10	9	1
Waller.....	519	51.9	12,138	1,213	10	..	3	4	5	..
Ward.....	827	206.7	3,074	768	4	..	2	3	3	1
Washington.....	628	24.1	25,561	983	26	..	15	21	7	4
Webb.....	3,219	123.4	22,979	883	26	1	16	19	15	4
Wharton.....	1,112	52.9	24,173	1,151	21	..	10	16	13	2
Wheeler.....	895	99.4	8,632	959	9	1	5	8	6	2
Wichita.....	604	14.0	23,603	548	43	..	24	37	35	7
Wilbarger.....	928	46.4	16,556	827	20	1	13	13	12	..
Willacy.....	..	..	2,468	2,468	1	..	1	1	1	1
Williamson.....	1,129	17.4	45,261	741	65	..	34	39	47	13
Wilson.....	813	54.2	19,331	1,288	15	1	4	8	4	1
Winkler.....	844	844.0	719	719	1	..	..	..	..	..
Wise.....	863	23.3	26,450	714	37	1	20	33	29	2
Wood.....	657	13.1	25,146	502	50	..	24	33	24	1
Yoakum.....	879	439.5	1,020	510	2	..	..	1	..	..
Young.....	875	58.3	18,851	1,256	15	..	9	10	10	3
Zapata.....	1,288	..	2,972	..	..	..	..	..	..	..
Zavalla.....	1,348	449.3	2,639	896	3	..	2	3	..	..
Totals.....	259,862	41.6	4,557,957	730	6,236	74	2,871	4,039	3,731	788

HONOR ROLL

Anderson County

ELKHART—Joseph Harkess Hicks. MONTALBA—Ellery McRae Outlaw. PALESTINE—Louis Hampton Cockerham; Elliott V. Converse; Robert Henderson McLeod; George Washington Wilhite.

Angelina County

LUFKIN—Benjamin Franklin Gibson; Jesse W. Hawkins.

Archer County

ARCHER CITY—John Marion Hooper.

Armstrong County

CLAUDE—William Arthur Warner.

Atascosa County

PLEASANTON—Roger Atkinson; George Newton Ricks.

Bastrop County

CEDAR CREEK—William Edgar Campbell.

Bee County

BEEVILLE—Newton Harrison Bowman; Orville E. Egbert; Jesse Harper Lander; Houston Neeley; Robert Marion Prather. MINERAL—John William McMahon.

Bell County

KILLEEN—John W. Ellis; Roy G. Giles. TEMPLE—Henry Carroll Bailiff; Richard Carleton Curtis; Edmund Choille Hancock; Jesse Gee Jenkins; Robert Lee Kimmins; Victor M. Longmire; William Earl McKinney; Kincy Julius Scott; Saunders James Thompson; Edward Frank Yeager. TROY—James L. Crawford.

Bexar County

SAN ANTONIO—Scott Carter Applewhite; William M. Bassett; William Feuilleateau Bonner; Paul Newkirk Bowman; Joseph C. Breitling; Alexander Aaron Brown; Karl Trueblood Brown; Dewitt Clinton Burkes; Edward J. Burnett; Howard Marion Bush; Charles Craig Cade; Archibald Fletcher Clark; Frederick John Combe; John Niven Darrough; Robert Lee Dinwiddie; Malone Duggan.

Douglas Saunders Edwards; William Robert Fickessen; John Francis Gibson; John William Goode; Frank Nicholas; Haggard; William Huard Hargis; William Thomas Harris; Walter Christian Hirzel; Thomas Terrell Jackson; Isidore Stanley Kahn; Casimir Boleslaus Kitowski.

Llewellyn East McAdon; Alfred Clifton McDaniel; Joseph Edwin McDonald; William Francis McManus; Zack Jackson Moore; George Adolph Mueller; William Edward Nesbit; Henry Houston Ogilvie; Frank Paschal; Witten Booth Russ.

Lieuton Moss Rogers; Bradford R. A. Scott; Charles Elain Scull; Thad Shaw; Bernard Fletcher Smith; Cole Fro Smith; Ernest Jackson Steves; Oliver H. Timmins; Charles Scott Venable; John Manning Venable; Homer T. Wilson; Henry Otto Wyneken; Charles Philip Yeager. VON ORRMY—Henry Brooks.

Blanco County

William Marshall Barron.

Bosque County

CLIFTON—Jacob C. Carpenter. MERIDIAN—Gordon Grimland; John Frank McDonald; Fred W. Standefer. WALNUT SPRINGS—James Andrew Murray.

Bowie County

TEXARKANA—William Kimball Read; Harry Herr Smiley.

Brazoria County

ALVIN—Albert Johnson Pollard; Foster Reed Winn. ANGLETON—Jefferson Davis Motheral.

Brazos County

BRYAN—William Arthur Hammond; Albert Ludwin Mondricks; Bartlett U. Sims.

Brewster County

ALPINE—J. Frank Clark. MARATHON—Frank E. Thompson. TERLINGUA—Richard A. Wilson.

Brown County

BROWNWOOD—William Leo Hester; Isaac Dudley Jackson; Wendell Arthur H. Paige. MAY—Paul DeWitt Robason. WINCHELL—Harry Loy Locker.

Burleson County

CALDWELL—Thomas Luther Goodnight; William Joseph McLean.

Burnett County

BERTRAM—Jesse Lee Hall. BURNETT—Charles Hansford Brownlee.

Caldwell County

LOCKHART—Lon Lemuel Hewlett; Edwin Grover Schwarz. LULING—Sidney Joseph Francis. MARTINDALE—George Walden Douglas. MAXWELL—Cranz Nichols.

Cameron County

BROWNSVILLE—Casper R. Byars; Ezra E. Dickason; Harry K. Loew; James Asa Simpson. HARLINGEN—George Albert McBride. SAN BENITO—William Jonathan Vinsant.

Carson County

GROONE—William Judson Kesterson.

Cass County

ATLANTA—Jesse Harmon Herndon. BRYANS MILL—William C. Kidwell. MARIETTA—James Walter Shaddix.

Cherokee County

FROST—Howard Banks Orr. JACKSONVILLE—Edward Baxter Jones. RUSK—William P. Barron.

Childress County

CHILDRESS—Cleve Carrington Odom; John William Snyder; Robert Bonner Wolford. TELL—Grover Cleveland Fox.

Clay County

BYERS—Frank Dennis Shepard. HENRIETTA—Thaddeus Kosciusko Jones.

Coleman County

COLEMAN—Robert Bailey; Robert Henry Cochran; Edgar Vernon Henry. SANTA ANNA—Marshall Albert Ramsdell; Thomas Richard Sealy.

8. Includes Fort Worth, population 100,597; physicians 207 [M.R.C. 31].
9. Includes Austin, population 35,612; physicians 94 [M.R.C. 12].

Collin County

CELINA—Doe Milner Speer. FARMERSVILLE—William Carver Wright. RISCO—Eugene Alphonse Frechet; Douglas Shearer Dunean. McKINLEY—Howard Crosby Curtis; Benjamin Franklin Largent; Arthur Q. Shirley.

Collingsworth County

WELLINGTON—Elmer W. Jones.

Colorado County

COLUMBUS—Wills George Youens. EAGLE LAKE—Thomas P. Doole. AKLAND—Ross Edwin Pridgen. WEIMAR—Otto James Potthast.

Comal County

NEW BRAUNFELS—Rennie Wright.

Comanche County

GUSTINE—Eli Edwin Brown. SIDNEY—Perry Grant Hays.

Concho County

EDEN—Jesse Polk Lockhart.

Cooke County

BRONTE—William Frank Chambers. GAINESVILLE—Edgar L. Gilchrist; Roy Eugene Hughes; John Riley Lewis; Oregon Frank Strong; Charles Herbert Warren. MYRA—Aaron L. Roberts. ROSSTON—William Morgan Walter Johnson. VALLEY VIEW—Ozro White Cunningham; Osce Louis Dawson. WOODBINE—Michael Monroe Risinger.

Coryell County

ONESBORO—James Harvey Hamilton.

Crosby County

RALLS—Frank Harrison.

Dallam County

DALHART—Charles H. Tillotson. TEXTLINE—C. Zeno Holt. DALHART—Robert Lee Owens.

Dallas County

CANTON—Horace Hampton Hilliard. DALLAS—Roy Lee Aiguier; John Thomas Bernard; Edgar Rufus Boren; Thomas C. Brewer; Elmore G. Pittain; Byron S. Bruce; George Lawson Carlisle; Marcus Miller Carr; William Beall Carrell; Manton Marble Carrick; Richard King Cole; Mes Thomas Colwick; Dolphus Edward Compere; Van Cookerly; Jackson Stewart Cooper; Robert Walter Cowart; John H. Dorman; Miles Duncan; John Henry Erwin; Lewis William Fetzer; Knight William Field; John Folkner Ford; Emory V. Fulton; James Hal Gammell; Richard Theodore Hamilton; Benjamin Everette Howell; William Hubbert; Melvin Lafayette Hutcheson. Harry B. Jablow; Reuben Wright Jackson; Walter Lee Jackson; Harry Lham Leggett; Edgar Webb Loomis; Mark Eugene Lott; Royal Shepardving; Ezra Hinman Mathewson; Robert Bartholow McBride; Joseph McCall; John Cano McLaurin; Lafayette Miller; Charles La Fayette Morgan; Walter H. Moursand. Philip Henry Nevitt; Ernest William Nitsche; Eugene Mack Parrish; stavus Schaub; Hall Shannon; William White Shortal; DeWitt Smith; ury Templeton Smith; Hester Brewer Smith; Wren Edgar Smith; eed Strong; Roland T. Travis; Robert Augustus Trumbull; Raleigh us Usry; John Clyde Wade; Thomas Spaulding Williams; George rman Wymann. EAGLE FORD—Thomas Barnett Sappington. GARNND—Clarence Sydney Brown. LANCASTER—Charlie Campbell Parks. SOITE—Emmett B. Bruton. DALLAS—Hester Brewer Smith.

Dawson County

AMESA—William Henry Bennett.

Delta County

EN FRANKLIN—Thomas Richardson Morehead. COOPER—Thomas rtin Darwin; Erastus Baxter Wheat.

Denton County

DENTON—Ernest Winfred Breihan.

De Witt County

UERO—John Metcalf Triple. WESTHOFF—Sterling Price Boothe. AKUM—Russell L. Harper; Robert M. Milner. YORKTOWN—Leon ncleslau Nowierski.

Dimmit County

ARRIZO SPRING—Edward Jackson Burns.

Eastland County

ISCO—George Wayne Griswold. EASTLAND—Shelby Poe Roaten; ris Diaz Whittington. GORMAN—Edward Charles Blackwell; Elmore ee Gilbert. RANGER—Caleb O. Terrell.

Ector County

DESSA—Rufus Garland Wilson.

Ellis County

OYCE—Joseph Edward Jones. BRITTON—Harry Davis Nifong. ENNIS ederick Lee Story. MIDLOTHIAN—William Claiborne Browne. FORD—Hugh Earl Rogers. ROCKETT—Herbert Donnell; James ard Munchus. WAXAHACHIE—Herbert Donnell; Osce Pierce att; Wm. Collins Tenery; Clute Edward Rayburn.

El Paso County

L PASO—Charles Paul Austin; Frank Oliver Barrett; Arthur Howard er; Eugene R. Carpenter; Erwin Jephtha Cummins; Herbert Othello all; Hugh M. Helm; Charles McChristie Hendricks; William Ross eson.

avid Henry Laurence; Thomas Clark Liddell; William Henry Lloyd; n David Lynch; Claude H. Mason; Thomas J. McCamant; William unney; John Thompson McLean; Irving McNeil; Nathaniel Taylor re; Phau Rivers Outlaw; Scuray Latimer Terrell; Edgar Emell Ward; y Barton Wesson Jr. FORT BLISS—Penrose Herr Shelley. SIERRA CA—Bonaparte Preston Norvell.

Erath County

BLIN—Herbert Nawlin Barnett; Thomas Ford Bryan. HUCKABAY illiam Bainbridge Foster. STEPHENVILLE—Mark Leonidas Stricklin. RBER—Elmer Abraham Rowley; James Allen Shackelford.

Falls County

DURANGO—Franklin B. King. LOTT—Farley C. Parrott. MARLIN—Walter Alvin Black; Saunders Leon Chandler; Andrew Leroy Hunter; Edgar Powell Hutchings; William K. Logsdon; Frank Hawthorn Shaw. OTTO—Isaac Arnett Dix. ROSEBUD—Robert F. Aycock; William Amos Chernosky; Benjamin Oliver White. TRAVIS—Daniel Heard Brook.

Fannin County

BONHAM—Ralph C. Davis; Elden H. H. Foster. HONEY GROVE—Omer Oral Gain; Albert Harry McRuffin; John Howard Nesbitt. LADONIA—Gordon Burnett McFarland. LAMASCO—John James Gill; Orren Packenhams Goodwin. SAVOY—Charles Sherman Carter.

Fayette County

WESTPOINT—Lyle Gunn Thornton.

Fisher County

ROBY—Robert Russell Allen; Daniel Herbert Reeves; Mouldon Smith. SYLVESTER—Robert Irwin Grimes.

Floyd County

LOCKNEY—Don Paul Jones.

Foard County

CROWELL—Hines Clark.

Freestone County

DEW—David Leslie Lowry. TEAGUE—William Proyor Harrison. WORTHAM—Thomas P. McLendon.

Frio County

DILLEY—Ellis F. Gates. PEARSALL—John William Brown.

Ft. Bend County

RICHMOND—Levy Steven Johnson; Arthur Elbert Jones; John Mark O'Farrell. ROSENBERG—Arthur George Neighbor.

Galveston County

FRIENDSWOOD—Wilmer Amos Hadley. GALVESTON—Munsell Lee Adair; William H. Cade Jr.; Jared E. Clarke, Scott Stuart Fay; William Comstock Fisher Jr.; J. Flaunt; James Graham Flynn; Allen George Heard; Wade L. Hoecker; Joseph Schoofield Jones. Edwin Bailey Kenner; Oscar T. Kirksey; Moise Dreyfus Levy; Percy Edgar Luecke; Tarleton Flemming Moore; Daniel Hall Raney; William Boyd Reading; Henry Reid Robinson. Benjamin Franklin Smith Jr.; William Fielding Spiller; Jamie D. Stephens; James Edwin Thompson; Benjamin O. Thrasher; William Charles Wedemeyer. TEXAS CITY—Seaton Norman. GALVESTON—Miles Edgar Hastings.

Garza County

POST—David Cash Williams.

Gillespie County

FREDERICKSBURG—Edwin Roy Townsend; Wesley John Charles Wiemers.

Goliad County

GERMANTOWN—Talmage Oliver Wooley.

Gonzales County

BELMONT—Joseph C. Smith. GONZALES—William Thomas Dawe; Theodore Dorsett; William Townsend Dunning; Gideon Graham; Theodore Hudson Harrell; Louis Julius Stahl. SMILEY—Robert Wynne Horton.

Gray County

PAMPA—Walter Purviance.

Grayson County

BELLS—Frank Price Miller. DENISON—Joseph G. Ellis Jr; William Arthur Lee; Alfred Kahn; Charles McGregor; Murphy M. Morrison; John Frank Stein. SHERMAN—Hubert Lee Brown; Wilbur Carter; Edmond D. Neer; Henry Crozier Ricks; Davis Spangler; Douglas Randolph Venable; Sidney Carrington Venable. VAN ALSTYNE—Joseph Alfred Lewis Wolfe. WHITESBORO—George Parrish Acton; Robert Henry Coleman. WHITE WRIGHT—John B. Bauguss.

Gregg County

KILGORE—Elizab Arthur Calloway; Ernest Hubbard Hamilton. LONGVIEW—Charles Cleveland Adams.

Grimes County

PLANTERSVILLE—Charles Malone McMillan. SHIRO—Charles Davis

Guadalupe County

KINGSBURY—Hershall Loforge. SEGIN—Arthur William C. Bergfeld Jr.

Hall County

ESTELLINE—Vester Varden Clark. LAKEVIEW—George Lucene Langworthy. MEMPHIS—James Morgan Ballew. NEWLIN—Russell Earle Tyler.

Hamilton County

HAMILTON—Charles Culberson Cleveland. HICO—James Daniel Currie. POTTSVILLE—Melvin Oscar Rea. SHRIVE—Charles Edgar Chandler.

Hardeman County

BIBLES—Carl K. Arnold. QUANAH—Charles Brooks Jones; Robert Ray McDoniel.

Hardin County

HONEY ISLAND—James Arnold Bledsoe. SOUR LAKE—Tilghman Opta Darby.

Harris County

CEDAR BAYOU—John Gaillard Schilling. GOOSE CREEK—William Louis Culpepper. HOCKLEY—Roy Leighton Akehurst. HOUSTON—Enga M. Arnold; Charles M. Aves; Charles W. Aydam; Ernest William Bertner; Claude C. Cody Jr.; Edward Fenton Cooke; Earl Mitchell Culter; Peyton R. Denman; Richard M. Fancher; H. C. Feagin; Arthur Fliekwer. Jesse Franklin Gamble; James Philip Gibbs; Frank Scott Glover; Everett Logan Goar; Virgil David Greer; Lucius Lamar Handly; Franklin Brevard King; Lane Bruce Kline; Lyle J. Logue; Frederick Rice Lummis; William C. Lyon.

Bathune McDonald; James Ward McKee Jr.; Herbert Lee McNeil; William Page Meredith; Jeffrey Charles Michael; George S. Milnes; Solon Milton; James M. Mitchner; Carroll Lucas Moore; Harry Kell Morrison; Michael Victor Moth; Arthur Josephus Mynatt; James Howard Park Jr.

Charles F. Payne; Ira Elbert Pritchett; W. Wallace Ralston; Wallace Nelson Shaw; Clifford Talbot Smith; Albert Edwin White; Warren Muldrow Wier; William Orin Williams; Roy DeLisle Wilson; Carl Buchanan Young Jr. **HUMBLE**—Whitmel Harley Jones. **SEABROOK**—Delano Richard Aves.
HOUSTON—F. G. Parkhill; Wm. E. Ramsay; Emory West Reeves.

Harrison County

MARSHALL—John B. Baldwin; James Rucker Dickson; St. Julien R. Murchison; Elisha Houston Roberts.

Haskell County

HASKELL—Silas Green Cain. **WEINERT**—James Frank Cadenhead.

Hays County

SAN MARCOS—Asa Belvin Pritchett.

Hidalgo County

DONNA—Lum Marion Davis. **MISSION**—Thomas R. Burnett. **PHARR**—Albion McD. Coffey.

Hill County

BRANDON—Benjamin Clinton Smith. **HILLSBORO**—Karl Adolphus Anderson; Francis W. Carruthers; Charles Houston Haggard; William Cullen Spaulding. **HUBBARD**—Roscoe Etter; Robert Kaskie Lowry. **ITASCA**—Dutch Kilgo Robison.

Hood County

TOLAR—John Franklin Crawford.

Hopkins County

BRASHEAR—Archer Ben Worsham. **SULPHUR SPRINGS**—James Jefferson Johnson; Henry William Pickett.

Houston County

CROCKETT—William N. Lipscomb; Monroe A. Thomas.

Howard County

BIG SPRINGS—Raleigh Lester Davis.

Hunt County

CELESTE—Eugene William Rufus Williams. **COMMERCE**—John Russell Holderness; Columbus Hyder. **GREENVILLE**—Charles E. Cantrell; William Mason Dickens; James Jefferson Handley. **LANE**—William Elbert Cravens. **LONE OAK**—Jack Homer Hall; Roderick Cambrell Lander. **WOLFE CITY**—Olie Washington McPeters.

Jack County

WIZARD WELLS—Verner Iona Baugh.

Jackson County

GANADO—James Cole Dobbs. **LOLITA**—Jessie Lee Womack.

Jasper County

JASPER—Karl Chambers.

Jefferson County

BEAUMONT—Carmotte Ashley Cobb; James William Garth; Burns Pitts Holland; William Frank Tyler; James Carroll Wallace. **POB**—ARTHUR—Thomas C. Brackeen; Norman Albert Bussey.

Jim Wells County

ALICE—Newell Wrigley Atkinson; Maury Johnson Perkins. **PREMONT**—Edward Everett Collins.

Johnson County

ALVARADO—Frederick D. Cooke. **BURLESON**—Robert Early Forrester. **CLEBURNE**—James Hutchinson Happel; Albert Emerson Punche. **KEENE**—Charles Christopher Cooke.

Jones County

ANSON—Frederick Edward Hudson; Amos M. Jones; William Joseph McCreight. **STAMFORD**—Dallas Southard.

Karnes County

KARNES CITY—Jefferson Woolsey. **KENNEDY**—Charles Michael Kent. **RUNGE**—Thomas Alexander Pressly.

Kaufman County

FORNEY—Ralph Waldo Emerson Bledsoe. **KAUFMAN**—William Green. **MABANK**—J. L. Pierce; Robert Eldridge Hearn. **TERRELL**—Paul Richard Eddins Sheppard; Charles Herbert Standifer; Henry Ulrie Woolsey; Charles Whitefield Castner.

Kendall County

BOERNE—John Francis Nooe.

Kieberg County

KINGSVILLE—Glenn Bartlett; Joseph J. Robertson. **RIVIERA**—Clarence E. Drake.

Lamar County

BLOSSOM—James Sidney Marshall. **DEPORT**—Edmond Harris B. Steele. **PARIS**—William W. Fitzpatrick; Lucian Nicholson; Ernest H. Stark; Arlander Selman Graydon.

Lampasas County

LOMETTA—Jesse Cortena McKean.

Lavaca County

MOULTON—John Guido Guenther. **SHINER**—Emile Clemons Schulze.

Lee County

GIDDINGS—Charles Henry Christian; Charles Shackelford Gates Jr.

Leon County

JEWETT—Vinny L. Smith. **OAKWOOD**—Coleman J. Carter.

Limestone County

BEN HUR—Walter Raymond Russell. **COOLEIDGE**—Joseph John Anderson. **MEXIA**—Marion Martin Brown; Albert A. Jackson.

Lipscomb County

LIPSCOMB—Coleman Ashton Newland.

Live Oak County

THREE RIVERS—Wesley Shropshire Neal.

Lubbock County

LUBBOCK—Charles Fielding Clayton.

Lynn County

TAHOKA—Ebner Holmes Immon; Lewis Edward Turrentina.

Madison County

MADISONVILLE—Paul James Connor.

Matagorda County

BAY CITY—Albert S. Morton. **BLESSING**—Lincoln Frank Putnam. **PALACIOS**—John Whitworth Harrison; Henry Hofmann Loos

McCullough County

MERCURY—Samuel B. Locker.

McLennan County

AXTELL—George McAlpin Liddell. **EDDY**—William E. Lucey; Marcus Polk Smartt. **KINGSVILLE**—Joseph Harrison Shelton. **LEROY**—Nicholas Charles Boethel. **MART**—Ira Franklin Cannon; James Elmore Cooke. **MCGREGOR**—Emmett Lemmel Graham; Allen Johnston; Garnett Miller. **MOODY**—Pere Moran Kuykendall. **WACO**—Edward C. Brannon; William Lafayette Crosthwait; Doyle L. Eastland; Isaac Andrew Gordon; Joseph Henry Graves; Henry Elwood Hoke; Eren Duffin Hodges; Sullivan Ross Jones; John Edons Lattimore; Troy Lee McGlasson.

Paul C. Murphey; John Edward Quay; Charles P. Schenck; George Herbert Stagner; Emanuel Toomin; Allen Deering Wages; Wallis S. Witte; William Ferris Currau; Howard Rush Dudgeon; John Edens Lattimore.

MART—Thomas Edison Dixon.

Medina County

DEVINE—George Sidney Woods. **HONDO**—William Hale Smith.

Menard County

MENARD—Joseph Vincent Dozier; George Brady Miller.

Midland County

MIDLAND—Woods Walker Lynch.

Milam County

BUCKHOLTS—William Carrigan Weir. **CAMERON**—John L. Denson; David Brougham McGee; Dana Elbra Monroe; Thomas George Van Zandt. **GAUSE**—Denver Francis Gray. **MAYFIELD**—James William Reid. **MINERVA**—Royal Kendall Stacey.

Mitchell County

LORAIN—Charles William Stevenson.

Montague County

MONTAGUE—William Walter Davis.

Montgomery County

WILLIS—Earl Levi Sharp.

Motley County

MATADOR—Roscoe Lee Hamilton.

Nacogdoches County

APPLEBY—Charles Henry Tindall. **NACOGDOCHES**—Arthur E. Sweatland.

Navarro County

BLOOMING GROVE—James Arthur Wilkinson. **CORSICANA**—Thomas V. Fryar; Fred W. Horn; Dubart Miller; Earl Homer Newton. **KERENS**—Eugene Phillip Norwood. **PURDON**—Sampson Cunningham. **ROANE**—Joshua Powell Wood.

Newton County

CALL—Frank Teeple Blow.

Nolan County

MARYNEAL—Hartson Dustin Fillmore. **SWEETWATER**—William Edward Burk; Lemartine O. Dudgeon; Wilbur Abuer Dupree; Charles Luther Monk; William Franklin P'Pool.

Nueces County

CORPUS CHRISTI—Everette Odell Arnold; William C. Barnard; Victor E. Bonelli; Herbert Caldwell; Albert H. Eber; John L. Redmond. **ROBSTOWN**—Noah Dildford Carter.

Palo Pinto County

LUYRA—Thomas Hill Standlee.

Panola County

CARTHAGE—Allen M. Baker. **CLAYTON**—Joseph Edwards Adams.

Parker County

WEATHERFORD—Henry Solomon Bunch; Albert Lester Jones; Austin Felix Leach. **WHITT**—Edward Clayton Foster.

Parmer County

FARWELL—Clarence Lucien McClellan.

Pecos County

FT. STOCKTON—Marvin Luther Turney.

Polk County

CAMDEN—Iverson Grimes.

Potter County

AMARILLO—Charles E. Fitzsimmons; Robert Dennis Gish; Dave T. Hanson; George Stewart Murphy; Bascomb M. Puckett; George Thaddeus Thomas; Roy Leonard Vineyard.

Presidio County

MARFA—Martin Luther Fuller; Luther D. Parnell.

Randall County

CANYON—Sam Randall Griffin.

Reagen County

BIG LAKE—Brooks Collins Grant.

Red River County

CLARKSVILLE—George Maury Munchus.

Refugio County
REFUGIO—George Edward Glover; Charles Gregory Wright. TIVOLI—Wallace Benton Guinn.

Robertson County
FRANKLIN—Clsero Jackson Connor; Seth A. McConnell.

Rockdale County
TRACY—William Hartford Lyon.

Runnels County
WINTERS—Thomas Vollio Jennings.

Rusk County
HENDERSON—Giles Arthur Deason. LANEVILLE—Allan Hubert Galloway Jr. OVERTON—William Peyton Barton.

San Augustine County
SAN AUGUSTINE—George Percy Rawls.

San Patricio County
MATHIS—Henry Ebehart Luehrs. SINTON—Homer Thurel Elkins.

Scurry County
DUNN—William Henry Morrow. SNYDER—James Madison Bannister; Charles Ross Bullock; Robert Lee Howell; William Riley Johnson.

Shelby County
HASLAM—Charles A. Wyatt. TENEHA—Artemus Homer Martindale. TIMSON—P. C. Clements; Othel Jefferson Gee.

Smith County
TYLER—Joseph F. Baldwin; William R. Cain; Joseph Jerome Livingston.

Starr County
HAMA—John N. Merrick.

Stonewall County
ASPERMONT—David C. Wylie. SWENSON—Richard D. Price.

Tarrant County
ARLINGTON—Joseph Don Collins; Robert Tisdle Spencer. FT. WORTH—Joe C. Alexander; C. B. Austin; Arthur Berry Bordero; James Davidson Bozeman; Charles F. Carter; Marion Lee Compton; Giles Warren Day; Doc Grisso; Fred Andrew Haggard; Pierre Francis Higgins; William Sullivan Horn; Charles Oliver Hurley.
Harry Allan Logsdon; Jesse Carlos May; Rogers William McKean; James Thomas Montgomery; Young J. Mulkey; Edwin Lethridge Myrick; William Henry Ogden; John J. O'Reilly; Clifford Charles Parrish; Clyde Harry Pember; John Potts; Eugene Vernon Powell; Frank Gay Sanders; Guy C. Shirey; Edward White; Henry Franklin Wilkins. MANSFIELD—Oliver Abraham Smith.
FORT WORTH—Milton Thomas Asberry; Thomas Burke Bond.

Taylor County
ABILENE—Arthur S. Brown; William Edgar Brown; W. Anda Vee Cash; Thomas Wade Hedrick; Lawrence William Hollis; John Paul Howser; Walter James Mathews; Edgar F. McCall; Luther James Pickard. BUFFALO GAP—James Thomas Risinger.

Terrell County
SANDERSON—Ivy Stansell.

Tom Green County
CARLSBAD—Charles Richard Gowen. SAN ANGELO—Arthur Joseph Boyd; Hubbard Kavanaugh Hinde; James Percy McAnulty; Clarence Ross Miller; Roy Alene Olive.

Travis County
AUSTIN—Albert Fitzhugh Beverly; Hugh Jefferson Davis; George Gilbert; Thomas William Glass; Benjamin Franklin Jones; Matthew Ferdinand Kreisle; Addeson L. Linecum; Edgar Gordon Mathis; Robert Vincent Murray; Zachary T. Scott; Roger Allen Tharp; William Elliott Watt. DELVALE—Edwin Taylor Morris. MANCHACA—Reese F. Currie. MANOR—Frank C. Gregg.

Trinity County
GROVETON—Clarence S. Murphy. SARON—James Weaver Conley. WESTVILLE—Leland Frazier.

Uvalde County
UVALDE—Clarence Riggs Myrick.

Valverde County
DEL RIO—Shadrack Lawrence Boren; George Harvey Garrett; Walter C. Johnson.

Van Zandt County
CANTON—Willard Clifton Harin. GRAND SALINE—V. Bascom Ozby. WILLS POINT—D. Leon Sanders.

Victoria County
GUADALUPE—George Smythe Beaty. VICTORIA—Lytton Gray Ament; Charles Austin Whittier Jr.; George M. Wilkins.

Walker County
HUNTSVILLE—Eugene H. Bayliss.

Ward County
BARSTOW—Isaac Mayhugh.

Washington County
BRENHAM—Robert A. Hasskarl; Robert Finney Miller; Robert F. Leiss. BURTON—Fred Henry Hodde.

Webb County
LAREDO—Horace Curlin Hall; John T. Halsell; Thomas William Penose. SANTO THOMAS—Henry Shackelford Keller.

Wharton County
EL CAMPO—Charles Washington Gray; Joseph Kopecky.

Wheeler County
MOBEETIE—Harold Earl Nicholson. SHAMROCK—Joseph Exter McDowell.

Wichita County
WICHITA FALLS—Milton Hall Glover; Everet F. Jones; Oliver Birdell Niel; Quincy Brown Lee; Edward Taylor Miller; Walter S. Tyson; Michael M. Walker.

Willacy County
SARITA—William Henry Cooley.

Williamson County
BARTLETT—Robert Spashe Sutton. GEORGETOWN—Gustave E. Henschen; Rupert Kingsley McHenry; Vivien Peyton Randolph. GRANGER—Ralph McLoughlin. HUTTO—Orville Taylor Bundy. LIBERTY HILL—Wirt Dee Fowler; Asa Nowlin. ROUND ROCK—Forest Frances Fowler. TAYLOR—Robert E. Bledsoe; John Calhoun Thomas; Thomas Davis Vaughan. THRALL—Y. Frank Hopkins.

Wilson County
FLORESVILLE—John Vaughan Blake.

Wise County
ALVORD—John H. Walker. PARK SPRINGS—John Norrlis.

Wood County
WINNSBORO—William Lafayette Baber.

Young County
GRAHAM—Charles B. Gant; William O. Padgett. NEWCASTLE—Oscar W. Wilson.

UTAH STATE MEDICAL ASSOCIATION

Officers 1917-18
Fred Stauffer, President.....Salt Lake City
Vice Presidents—
A. J. Stewart.....Provo
Edw. I. Rich.....Ogden
Ernest Van Cott.....Salt Lake City
W. Brown Ewing, Secretary.....Salt Lake City
F. A. Goultz, Treasurer.....Salt Lake City

Councilor Districts and Officers
First District.—Boxelder, Cache and Morgan counties. E. H. Smith, Councilor, Ogden.
Second District.—Summit, Davis, Salt Lake and Tooele counties. Thos. C. Gibson, Councilor, Salt Lake City.
Third District.—Utah and the counties not given in other districts. H. G. Merrill, Councilor, Provo.

UTAH										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Beaver.....	2,660	443.3	5,523	920	6	..	3	6	1	..
Boxelder.....	5,444	453.7	16,729	1,394	12	..	12	12	4	1
Cache.....	1,164	52.9	26,655	1,411	22	..	14	21	12	2
Carbon.....	1,487	82.6	11,266	625	18	..	12	18	8	3
Daggett.....	275	30.5	11,792	1,310	9	..	5	7	1	1
Davis.....	2,460	410.0	6,564	1,094	6	..	4	5	1	1
Duchesne.....	4,453	1,113.2	8,278	2,069	4	..	3	3	..	..
Emery.....	5,234	5,234.0	3,848	3,848	1	..	1	1	1	..
Garfield.....	3,692	1,816.0	1,920	960	2	..	1	1	..	..
Grand.....	3,256	651.2	4,215	843	5	..	5	5	..	..
Iron.....	3,410	310.0	11,155	1,014	11	..	8	9	3	..
Jaub.....	4,215	2,107.5	1,652	826	2	1	..	..	..	..
Kane.....	6,604	1,320.8	6,438	1,287	5	1	3	4	..	..
Millard.....	626	208.7	2,775	925	3	..	2	2	1	..
Morgan.....	763	381.5	1,734	867	2	..	2	2	..	1
Piute.....	1,027	1,027.0	1,883	1,883	1	..	1	1	..	..
Rich.....	756	3.2	170,626	722	236	9	142	210	155	43
Salt Lake.....	7,761	..	3,366	..	..	..	..	..	..	..
San Juan.....	1,564	173.8	16,988	1,897	9	..	8	9	4	1
Sanpete.....	1,978	219.8	10,741	1,193	9	1	3	7	6	..
Sevier.....	1,862	310.3	8,200	1,366	6	..	3	5	..	..
Summit.....	6,849	1,141.5	8,335	1,389	6	..	3	5	3	1
Tooele.....	5,235	523.5	7,483	748	10	3	6	9	6	3
Unita.....	2,034	65.6	41,496	1,919	31	..	18	27	24	6
Utah.....	4,354	1,451.3	5,406	1,802	3	..	3	3	1	..
Wasatch.....	2,465	410.8	5,495	915	6	1	2	4	..	..
Washington...	2,475	1,237.5	1,749	874	2	..	2	2	1	1
Wayne.....	541	11.0	42,434	957	49	1	32	38	28	11
Weber.....	..	..	..	..	..	..	..	..	..	..
Totals.....	82,184	172.3	444,746	932	477	17	298	417	260	75

- 1. Newly organized; area and population included in Uinta county.
- 2. Includes Salt Lake City, population 121,233; physicians 207 [M.R.C. 37].
- 3. No physicians reported in this county.
- 4. Includes Ogden, population 32,343; physicians 47 [M.R.C. 10].

HONOR ROLL

Box Elder County
GARLAND—Joseph Edward Day.

Cache County
LOGAN—Weaver Aldus Rush. SMITHFIELD—Ralph Teancum Merrill.

Carbon County
PRICE—Edwin F. Chamberlain; Ralph Elijah Cloward. SUNNYSIDE—John Oliver Cook.

Davis County
KAYSVILLE—Clarence Snow Gardner.

Duchesne County
ROOSEVELT—William Jonathan Browning.

Piute County
MARYSVALE—Clifford Jackson Heath.

Salt Lake County
BINGHAM CANYON—Charles Ellsworth Henneberger. HOLLIDAY—Guy Clifford Emery. MAGNA—Arthur Anson Bird; George Edmund McBride. MURRAY—Arthur D. Knott; Harve Bayard Spangler. SALT LAKE CITY—Robert Julien Alexander; David Kimball Allen; Robert W. Ashley; Samuel Clifton Baldwin; William Francis Beer Sr.; Chauncey M. Benedict; Benjamin W. Black; Charles Edward Brain; Willard Christopherson; Kenneth Allen Crismon; George von Pultinger Davis. John Oscar Evans; William Brown Ewing; George Joseph Field; Robert Welles Fisher; Thomas A. Flood; John Joseph Galligan; Robert Roy Hampton; Ira K. Humphrey; Frederick I. Jansen; Robert T. Jellison. Hyrum L. Marshall; Harry N. Mayo; Woodward Bruce Mayo; Clarence Ambrose Nyvall; William Bowker Preston; Hyrum Young Richards; George F. Roberts; Carl Ludvick Sandberg; Harry Seaver Scott; John F. Sharp; Hugh B. Sprague; Thomas William Stevenson; Clarence Golden Stigall; Francis Carrillo Tyree; Guy Van Scoyoe; Ray Taliaferro Woolsey.

Sanpete County
EPHRAIM—David Oral Beal.

Tooele County
IBAPAH—Joseph Howard Peck.

Uinta County
VERNAL—George H. Cruikshank; George Wesley Green; Homer Erasmus Rich.

Utah County
LEHI—George Wallace Hanks. PAYSON—Lynn D. Stewart. PROVO—Leroy Calkins Potter; Frederick Whitaker Taylor. SPRINGVILLE—George Willis Clarke; Frederick Dunn.

Wayne County
FRUITA—James Madison Graham.

Weber County
HUNTSVILLE—Howard Tilghman Wickert. OGDEN—Henry Grady Adams; Frank Kaiser Bartlett; William Riley Brown; Frederick George Clark; George Fred Davis; Ezekiel Ricker Dumke; Royal A. McCune; Leroy Rich Pugmire; Lorin Farr Rich; Walter Edward Whalen.

VERMONT STATE MEDICAL SOCIETY
Officers 1917-18
Clayton H. Bartlett, President.....Bennington
William Lindsay, Vice President.....Montpelier
William Gray Ricker, Secretary.....St. Johnsbury
Edw. H. Martin, Treasurer.....Middleburg

Councilor Districts and Officers
First District.—James N. Jenne, Councilor.....Burlington
Second District.—Schuyler W. Hammond, Councilor.....Rutland
Third District.—Frank E. Farmer, Councilor.....St. Johnsbury
Fourth District.—Clinton J. Rumrill, Councilor.....Randolph

VERMONT										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Addison.....	756	24.3	20,010	645	31	1	12	20	23	5
Bennington.....	661	15.0	21,378	485	44	..	19	29	21	8
Caledonia.....	618	13.4	27,235	592	46	1	19	33	30	9
Chittenden.....	543	4.6	44,524	377	118	1	64	91	62	22
Essex.....	638	70.8	7,384	820	9	..	3	4	2	..
Franklin.....	652	12.7	29,866	585	51	1	19	35	36	3
Grand Isle.....	83	11.8	3,761	537	7	..	..	4	3	..
Lamoille.....	436	22.9	12,801	673	19	..	8	16	11	2
Orange.....	676	25.0	18,703	692	27	..	11	19	13	3
Orleans.....	688	18.5	24,296	656	37	1	18	23	15	6
Rutland.....	911	12.3	51,007	689	74	1	31	54	55	12
Washington....	719	11.0	45,422	698	65	..	32	46	46	6
Windham.....	795	16.7	27,130	577	47	2	22	30	26	4
Windsor.....	948	14.8	34,743	542	64	3	30	49	34	6
Totals.....	9,129	14.2	368,260	576	639	11	288	453	377	86

HONOR ROLL
Addison County
MIDDLEBURG—Jacob J. Ross; Walter James White. ORWELL—Leonard Blake Rowe. VERGENNES—John M. Caisse; William Godfrey Watt.

Bennington County
ARLINGTON—George Albert Russell. BENNINGTON—Anselme Ephrem Houle; John D. Lane. MANCHESTER CENTER—Luther John Calahan. MANCHESTER DEPOT—James Lyman Lovejoy. NORTH BENNINGTON—William Arthur Flood; Edward A. Tobins. POWNAL—John David Thomas.

Caledonia County
DANVILLE—Charles Emerson Libbey. EAST HARDWICK—Albert Clark Kinney. GROTON—Nathan Penwick Caldwell; Henry Latimer Tillotson. HARDWICK—Bert Dutton George; George Clark Rublee. LYNDONVILLE—Dennis John Sheehan. ST. JOHNSBURG—John Woods Harvey; John Patrick Tierney.

Chittenden County
BURLINGTON—Bertrand F. Andrews; Sidney Moore Bunker; Albin H. Cecha; Frederick E. Clark; Alan Daniel Finlayson; Horatio N. Jackson; Arthur Leo Lerner; George Eugene Latour. Robert Leland Maynard; Donald G. McIvor; Patrick Joseph McKenzie; Walter Franklin McKenzie; Edward Francis Murray; Chester Lewis Smart; George Twitchell; John B. Wheeler. SHELBURNE—William Hayes Mitchell. WILLISTON—Harry Leslie Frost. WINOOSKI—Martin J. P. Paulsen. BURLINGTON—Edward Anthony Flynn; Walter Hale Squires. RICHMOND—Sidney Mitchell Jr.

Franklin County
EAST BERKSHIRE—Herbert Bill Hanson. ENOSBURG FALLS—Ray Brown Thomas. MONTGOMERY CENTER—Rollin Duane Worden.

Lamoille County
MORRISVILLE—George Lucian Bates. CAMBRIDGE—George Herbert Newton.

Orange County
RANDOLPH—Frank C. Angell. WASHINGTON—William Orrin Hutchinson. WILLIAMSTOWN—Albion Arthur Cross.

Orleans County
DERBY—Fred Noble Aldrich. GLOVER—Percy Erastus Buck. NEWPORT—Victor Patrick Genge. NORTH TROY—Rowley Smith Flagg; William Henry White. WEST DERBY—Henry Elijah Somers.

Rutland County
CASTLETON—Frank Henry Everett. DANBY—Edward V. Farrell. PITTSFORD—Thomas J. Hagan. POULTNEY—Edward Crofutt. RUTLAND—Nicholas J. Delahanty; George Guerin Marshall; Ray E. Smith; William Stickney; William Warren Townsend. SUDBURY—Berms Dennis Colby. WALLINGFORD—Sherwin Aldrich Cootey. RUTLAND—Hugh Henry Hanrahan.

Washington County
BARRE—Joseph Arthur Wark. MONTPELIER—Mitchell Daniel Carey; Charles Porter Chandler; Julius Edward Dewey; Frederick Whitmore Harriman. WATERBURY—Stewart Louis Goodrich.

Windham County
BRATTLEBORO—Thomas Rice; Herbert W. Taylor. GRAFTON—Frank Leslie Gilbert. SAXTONS RIVER—Windsor De Forest Bowen.

Windsor County
CHESTER—George I. Roberts. LUDLOW—John P. Kerrigan. SHARON—Everett Jos. Stone. SPRINGFIELD—Albert Joseph Greenwood. WINDSOR—Arthur Washington Burnham. WOODSTOCK—Henry Chester Jackson.

MEDICAL SOCIETY OF VIRGINIA
Officers 1917-18
Ennion G. Williams, President.....Richmond
S. W. Dickinson, First Vice President.....Marion
Harry T. Marshall, Second Vice President.....University
C. D. Barksdale, Third Vice President.....Sutherland
Paulus A. Irving, Secretary-Treasurer.....Farmville

Councilor Districts and Officers
First.—Clarence P. Jones.....Newport News
Second.—R. E. Whitehead.....Norfolk
Third.—A. G. Brown.....Richmond
Fourth.—E. L. Kendig.....Victoria
Fifth.—S. T. A. Kent.....Ingram
Sixth.—John R. Garrett.....Roanoke
Seventh.—Hunter McGuire.....Winchester
Eighth.—P. C. Riley.....Markham
Ninth.—Isaac Peirce.....Tazewell
Tenth.—Chas. H. Davidson.....Lexington

At large—
Chas. V. Carrington.....Richmond
Powhatan Mancure.....Beaeton
H. Stuart MacLean.....Richmond
Geo. J. Tompkins.....Lynchburg
A. L. Gray.....Richmond
F. H. Hancock.....Norfolk

VIRGINIA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Aecomac.....	502	11.9	39,628	943	42	..	20	31	31	6
Albemarle.....	751	11.4	25,868	391	66	..	26	49	39	11
Alexandria.....	32	0.9	11,791	346	34	..	22	22	20	6
Alleghany.....	458	14.8	15,212	490	31	..	15	28	21	4
Amelia.....	371	30.9	8,490	707	12	..	6	8	6	4
Amherse.....	470	27.6	19,712	1,159	17	1	10	15	9	2
Appomattox...	342	57.0	8,352	1,392	6	..	3	5	4	..
Augusta.....	1,006	16.0	33,700	534	63	2	38	48	39	8
Bath.....	545	14.9	7,226	555	13	..	5	8	9	1
Bedford.....	791	29.3	29,549	1,094	27	..	8	19	18	3
Bland.....	360	90.0	5,154	1,283	4	..	3	3	4	..
Botetourt.....	548	36.5	18,140	1,209	15	..	8	9	8	..
Brunswick.....	557	29.3	19,995	1,052	19	..	7	15	13	1
Buchanan.....	514	171.3	14,263	4,754	3	..	..	1	1	..
Buckingham....	584	64.9	15,204	1,689	9	..	3	5	8	1
Campbell.....	557	7.5	26,624	359	74	..	40	54	54	9
Caroline.....	529	40.7	16,596	1,276	13	..	6	9	10	1
Carroll.....	458	45.8	22,439	2,243	10	..	7	8	5	..
Charles City....	188	37.6	5,409	1,081	5	..	4	5	3	..
Charlotte.....	496	49.6	16,108	1,610	10	..	8	8	8	1
Chesterfield....	471	39.2	18,197	1,516	12	..	3	11	8	2
Clarks.....	171	15.5	7,468	678	11	1	5	9	5	2
Craig.....	333	111.0	5,016	1,672	3	..	3	3	2	1
Culpepper.....	384	22.6	13,472	792	17	..	6	12	10	1
Cumberland....	293	73.2	9,340	2,334	4	..	3	4	3	1
Dickenson.....	325	54.2	10,260	1,700	6	..	4	5	4	..
Dinwiddie.....	521	9.3	15,491	206	56	..	35	48	34	11
Elizabeth City..	54	2.0	22,513	804	28	2	17	24	11	10
Essex.....	258	64.5	9,105	2,276	4	..	4	4	3	..
Fairfax.....	417	20.8	21,154	1,057	20	..	6	13	16	6
Fauquier.....	666	23.8	22,526	804	28	1	12	22	20	8
Floyd.....	376	37.6	14,092	1,409	10	..	4	8	5	..
Fluvanna.....	285	40.7	8,323	1,189	7	..	4	5	5	2
Franklin.....	697	43.6	26,864	1,679	16	..	8	13	8	2
Frederick.....	435	18.1	12,787	532	24	..	13	15	17	3

1. Includes Lynchburg, population 33,497; physicians 55 [M.R.C. 9].

VIRGINIA—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Giles.....	369	30.7	12,230	1,019	12	1	9	9	9	3
Gloucester.....	223	18.6	12,218	1,018	12	..	6	9	4	..
Goodland.....	287	47.8	9,237	1,269	6	..	2	6	5	..
Grayson.....	425	21.2	22,048	1,102	20	..	9	13	7	..
Greene.....	155	38.7	7,464	1,866	4	..	1	2	2	..
Greensville.....	307	30.7	13,447	1,344	10	..	9	9	8	1
Halifax.....	814	29.1	42,122	1,504	28	..	11	22	15	1
Hanover.....	512	30.1	16,897	935	17	..	10	15	8	..
Henrico.....	277	0.8	171,113	503	340	7	235	298	216	92
Henry.....	444	26.1	18,459	1,085	17	1	8	12	14	1
Highland.....	422	70.3	5,317	759	7	..	5	5	4	1
Isle of Wight...	314	20.9	16,264	1,084	15	..	8	10	8	1
James City.....	164	18.2	6,779	753	9	1	5	8	6	..
King and Queen	320	52.3	9,802	1,633	6	..	4	5	4	..
King George.....	180	60.0	6,378	2,126	3	..	2	3	..	1
King William...	263	21.9	8,669	722	12	..	5	7	6	..
Lancaster.....	130	13.0	10,337	1,033	10	1	4	6	6	1
Lee.....	446	17.8	26,746	1,069	25	..	7	13	6	..
Loudoun.....	510	14.0	21,167	572	37	..	16	25	19	4
Louisa.....	516	28.6	16,621	812	18	..	8	11	8	..
Lunenburg.....	430	39.1	13,564	1,233	11	1	10	10	6	1
Madison.....	324	27.0	10,055	922	12	..	5	9	9	1
Mathews.....	94	15.7	9,419	1,569	6	..	5	5	4	1
Mecklenburg.....	669	29.1	30,711	1,335	23	..	17	18	16	2
Middlesex.....	146	16.2	9,313	1,034	9	..	5	5	7	2
Montgomery...	401	14.3	18,300	653	28	6	14	20	18	3
Nansemond.....	423	22.3	29,665	1,613	19	..	14	14	15	1
Nelson.....	473	31.5	17,365	1,157	15	..	6	9	11	1
New Kent.....	191	27.3	4,682	668	7	..	5	6	3	1
Norfolk.....	414	1.7	137,762	583	236	4	149	214	137	36
Northampton...	239	13.3	18,790	1,043	18	..	15	15	14	1
Northumberland	205	20.5	11,455	1,145	10	..	4	7	5	1
Nottoway.....	310	18.2	14,262	837	17	..	8	12	11	2
Orange.....	359	22.4	14,152	884	16	..	11	11	10	2
Page.....	322	26.8	14,404	1,200	12	..	4	6	8	..
Patriek.....	485	80.8	18,501	3,083	6	..	3	3	4	..
Pittsylvania....	1,015	17.8	54,154	950	57	..	29	46	34	7
Powhatan.....	273	68.2	6,099	1,524	4	..	2	2	3	2
Prince Edward...	356	20.9	14,266	839	17	1	8	12	13	2
Prince George...	294	9.2	4,000	125	32	..	23	31	13	9
Princess Anne...	279	25.4	11,769	1,069	11	..	5	7	9	..
Prince William...	345	20.3	12,691	746	17	..	5	9	9	6
Pulaski.....	333	17.5	19,171	1,009	19	..	11	12	16	4
Rappahannock...	275	34.4	8,044	1,005	8	..	2	5	6	..
Richmond.....	204	40.8	7,653	1,530	6	..	3	3	3	1
Roanoke.....	305	2.5	77,024	626	123	2	74	102	76	25
Rockbridge.....	616	29.3	21,171	1,008	21	..	15	17	11	2
Rockingham....	876	18.2	35,905	748	48	..	17	37	35	3
Russell.....	496	20.7	27,446	1,143	24	..	17	20	10	4
Scott.....	543	34.0	24,630	1,539	16	..	11	11	4	4
Shenandoah....	510	19.6	21,444	824	26	1	9	17	21	2
Smyth.....	435	21.7	22,665	1,133	20	3	12	17	16	4
Southampton...	604	26.3	28,823	1,253	23	..	16	19	21	1
Spotsylvania...	413	18.8	10,441	474	22	..	11	18	10	4
Stafford.....	274	39.1	8,070	1,152	7	..	2	4	4	..
Surry.....	278	34.7	10,623	1,327	8	..	6	6	7	1
Sussex.....	515	39.6	14,817	1,139	13	..	6	9	11	2
Tazewell.....	531	13.6	26,085	668	39	..	26	28	26	7
Warren.....	216	13.5	8,589	536	16	..	3	9	12	3
Warwick.....	69	1.7	4,880	122	40	1	19	37	26	7
Washington....	604	15.5	35,627	913	39	..	19	31	24	8
Westmoreland..	252	28.0	9,363	1,040	9	..	6	8	2	3
Wise.....	720	17.1	44,751	1,065	42	..	32	34	21	9
Wythe.....	474	18.2	20,372	783	26	..	10	18	13	3
York.....	136	22.7	7,767	1,292	6	..	4	4	1	1
Totals.....	40,262	49.9	2,023,600	806	2,509	37	1,411	1,551	1,971	394

2. Includes Richmond, population 158,702; physicians 326 [M.R.C. 89].
3. Includes Norfolk, population 91,148; physicians 177 [M.R.C. 38], and Portsmouth, population 40,693; physicians 41 [M.R.C. 7].
4. Includes Roanoke, population 46,282; physicians 100 [M.R.C. 22].

HONOR ROLL

Accomac County

CHINCOTEAGUE—Clay Miller Easter. GREENBACKVILLE—Herbert Clifford Mallory. NEW CHURCH—Charles Edward Critcher. ONAN-OCK—James C. Doughty. PARKSLEY—Ira Hurst. TANGIER—Grover Aehe Gill.

Albemarle County

CHARLOTTESVILLE—Bernard L. Jarman; Hugh T. Nelson Jr.; Chas. olville Tennant. GREENWOOD—William Wilson. RED HILL—Richard D. Anderson. UNIVERSITY—William Hall Goodwin; Minor Carson ile; Rockwell Emerson Smith; Dan Hiter Witt; Hunter Saml. Woodbery. COVESVILLE—Francis Page Nelson.

Alexandria County

ALEXANDRIA—Samuel Broders Moore; Llewellyn Powell. BALLSTON—Williamson Crothers Welburn. CHERRYDALE—James Howard Walton. T. MEYER—Julian M. Cabell. LINCOLNIA—Thomas Franklin Dodd.

Alleghany County

CLIFTON FORGE—Claude Holson Rucker; James Neal Williams; Frank Laird Wysor. IRON GATE—Achilles Douglas Tyree.

Amelia County

AMELIA—Wm. Reld Putney. AMON—James Loving Hammer. JETERS-ILLE—Robert John Styers. MATTOAK—Leslie Clyde Burton.

Amherst County

AMHERST—Basil Ellis Strode. NEW GLASGOW—Waverly Stafford ucker.

Augusta County

FISHERVILLE—Harry F. White. MT. SOLON—Jas. Wright Clarkson. TAUNTON—Richard P. Bell; James Lemuel Martin; Wilbur Moorehead

Phelps; Alexander F. Robertson Jr. STUARTS DRAFT—Isaac Roy Wagner. WAYNESBORO—Harvey R. Livesay; Wm. Patterson.

Bath County

WARM SPRINGS—Thos. H. Massey.

Bedford County

BEDFORD—Wm. Isam Laughon; Geo. L. A. Pogue. HOLCOMBS ROCK—Jas. Addison Meriwether.

Brunswick County

BARROWS STORE—Bernard Barrow.

Buckingham County

DILLWYN—Chas. A. Brown.

Campbell County

ALTAVISTA—John Arnold Board. LYNCHBURG—John Wesley Carroll; John W. Davis; Thomas Newman Davis; Arthur Hamilton Deekens; Bernard Hewett Kyle; Jos. James Ligon; Wm. Henry Roberts (colored); Simon Harry Rosenthal; James Joseph Ligon.

Caroline County

NEW LONDON—John Randolph Travis.

Charlotte County

PHENIX—Ray Atkinson Moore.

Chesterfield County

BON AIR—Barton Bates McCluer. MIDLOTHIAN—John Lloyd Tabb Jr.

Clarke County

GAYLORD—Lewis Mlmes Allen. MILLWOOD—McClure Scott.

Craig County

NEW CASTLE—Bernie R. Caldwell.

Culpeper County

RACCOON FORD—Jas. Oscar Mundy Jr.

Cumberland County

CUMBERLAND—Wm. L. Varn.

Dinwiddie County

McKENNEY—Edgar Williams Young. PETERSBURG—Chas. Royal Alexander; John Rochester Booth; Walter M. Brunet; Hampden Burke; John Bernard Halligan; Douglas Beverly Johnson; Wm. Baird McIlvaine; Mason Romaine; Jas. Thos. Shelburne; Wm. Amos Trevette.

Elizabeth City County

HAMPTON—Joseph Wilton Hope; Harry Dresser Howe; William Edward Knewstep; Paul Jones Parker; Jas. Otho Parramore; Marshall Wray Sinclair; Edward Neth Schillinger; Thomas M. Wood. NATIONAL SOLDIERS HOME—Frederick Elmer Jenkins. PHOEBUS—Ruppert A. B. Lloyd.

Fairfax County

FAIRFAX—Howard Fletcher. FALLS CHURCH—James McNelledge Fadeley; Tunis C. Quick. FT. HUNT—Edwin W. Patterson. VIENNA—Arthur G. Coumbe; Stewart Maxwell Grayson

Fauquier County

MARKHAM—Philander Chase Riley. MORRISVILLE—Wm. Dehart Fitzhugh. PARIS—Edgar Ackley Moore. RECTERTOWN—Edgar Bentley Noland. THE PLAINS—Robert B. Shackelford. WARRENTON—Walter Gordon Trow.

Fluvanna County

COLUMBIA—John James Nelson. KENTS STORE—Booker Lee.

Franklin County

TAYLORS STORE—Louis C. S. Haynes. UNION HALL—Frederick Pelham Sutherland.

Frederick County

CLEAR BROOK—Chauncey Elmo Dovell. GORE—Charles Augustus Young. WINCHESTER—Walter Cox; Jerome Thurston Quirk.

Gloucester County

BENA—Merritt W. Healy. GLOUCESTER—Landon Elwood Stubbs. WARE NECK—Thomas Rollins Marshall.

Grayson County

INDEPENDENCE—Wayne McLean Phipps. GALAX—Whitfield Painter Davis.

Greenville County

NORTH EMPORIA—Hugh Benjamin Mahood.

Halifax County

SOUTH BOSTON—John Jennette Neal.

Henrico County

ASHLAND—Allen J. Chenery; Edward Le Baron Goodwin. GLEN ALLEN—Alexander McLeod. RICHMOND—Edward Turner Ames; Meriwether L. Anderson; Paul V. Anderson; George E. Barksdale; Quintus Harper Barney; Archie A. Barron; Greer Banghman; Oliver Francis Blankenship; Wyndham Bolling Blanton; James Gordon Boiseau; Marshall L. Boyle Jr.; Oliver C. Brunk; Robert Coalter Bryan.

Calvin Childress; John A. Cloyd; Milton Buell Coffman; Giles B. Cook; Cornelius Byrd Courtney; Baxter Lindsay Crawford; Beverly Fitzwilson Eckles; John M. Emmett; Gerald A. Ezekiel.

John Blair Fitts; Edward L. Flanagan; Frederick Peter Fletcher; Roy Clyde Fravel; Joseph Francis Geisinger; William Wallace Gill; W. Armestead Gills; John Stewart Gilman; Isaac Harry Goldman; Charles F. Graham; Kenneth Dawson Graves; Alfred Leftwich Gray.

Harrison Llewellyn Harris; Horace Taylor Hawkins; Henry Jackson Hayes; Alvah Livingston Herring; Blanton Hillsman; Frederick Murchison Hodges; Raymond Cottrell Hooker; Erasmus Guy Hopkins; William Benjamin Hopkins; Julius I. Hulcher; Jas. Morrison Hutcheson; Charles Howard Lewis; Frank William Hicks Logan.

Jos. Levering McCabe; John McGuire; Stuart McGuire; Joseph Thompson McKinney; Chas. Wilbur Mercer; Waller Nelson Mercer; John Garnett Nelson; John O'Brien Jr.; Thomas Helm Odeneal; William Lowndes Peple; Charles Phillips; William Branch Porter; Robert Sheffey Preston.

Frank Harrell Redwood; William A. Reese; Charles Louis Rudasill; Turner Southall Shelton; Walter D. Simmons Jr.; Fayette Allen Sinclair; James Henderson Smith; Lewis Botty Staton; Henry S. Stern; Bronson E. Summers.

Robert Edward Timberlake; Albert Pierce Traynham; Dorsey Goodwin Tyler; Francis W. Upshur; Junius Ernest Warinner Jr.; Francis K. T. Warrick; Talmadge Weatherly; William Robert Weisiger; Beverly Randolph Wellford; Geo. Washington White; Lawther Jackson Whitehead; Robert Graham Wiatt; Leslie B. Wiggs; Carrington Williams; Wm. Franklin Williamson; Robert Grant Willis; Robert Herbert Wright. RIO VISTA—Patrick Michael Carroll.

RICHMOND—John Willis Martin; Roscoe Franklin Thornhill.

Henry County

MARTINSVILLE—Dana Olden Baldwin.

Highland County

CRABBOTTOM—John Franklin Stover.

Isle of Wight County

SMITHFIELD—Samuel Abram Riddick.

King George County

FERRELL—Veola O. Caruthers Jr.

Lancaster County

KILMARNOCK—Morgan E. Norris.

Loudon County

ASHBURN—George Annistead Noland. LOVETTSVILLE—Carroll Edward Foley. PURCELLVILLE—Ralph Mortimer Thompson. WATERFORD—Leslie T. Rusmiselle.

Lunenburg County

DUNDAS—Robert Lucas Ozlin.

Madison County

UNO—Early B. Dovell.

Mathews County

CARDINAL—Eric Theophile Sandberg.

Mecklenburg County

CHASE CITY—Edward Ballard Brooks; Adam T. Finch.

Middlesex County

HARMONY VILLAGE—James Allen Bennett. LOT—Benjamin Blanton Dutton.

Montgomery County

CAMBRIA—Ollie Allison Ryder. EAST RADFORD—Jacob C. Bowman. RADFORD—Wm. O. Poindexter.

Nansemond County

SUFFOLK—Wm. Theodore Gay.

Nelson County

AVON—James Filmer Hubbard.

New Kent County

NEW KENT—John Bolling Vaiden.

Norfolk County

BERKLEY—George B. West. NORFOLK—James W. Anderson; Wm. E. Bailey; Henry Colmore Bradford; Israel Brown; Samuel Elkan Brown; Rhodric W. Browne; George B. Byrd; Clarence Wills Cowper; John Daugherty; Charles Joseph Devine; Stephen Rodzel Donohoe Jr.; Herbert R. Drewry; Wilson Elliott Driver.

Garland E. Faulkner; Lomax Gwathmey; Frank H. Hancock; Charles Hatcher; Joseph Stewart Hume; Claude Dalby Kellam; Beverly Randolph Kennon; Burnley Lankford; John Marion Love; Junius F. Lynch; Robt. Holman Noell.

Andrew Lyman Paey; George Alley Renn; Nathaniel F. Rodman; Harry Ralph Seelinger; Charles C. Smith; Herbert Drew Snyder; Robert S. Spilman; Daniel Trigg; John Quincy Adams Webb; Robert Edward Whitehead; Readding Lloyd Williams; Thomas V. Williamson. PORTSMOUTH—Sherwood Dix; Joe Clinton Dunford; Gray G. Holladay; Samuel Poindexter Oast Jr.; Wilson Pendleton; Lonsdal Joseph Roper.

NORFOLK—Marion Stevenson Fitchett; Claiborne Willcox.

PORTSMOUTH—William Karp.

Northampton County

EASTVILLE—William Bell Trower.

Northumberland County

WICOMICO CHURCH—Samuel Downing.

Nottoway County

BLACKSTONE—Arthur Hooks. BURKEVILLE—Robert Emmett Jones Jr.

Orange County

ORANGE—Isaiah Allan Jackson; Frank Garrett Scott Jr.

Pittsylvania County

DANVILLE—Henry A. Brady; Samuel Tilden Elliott; Wm. B. Fowlkes; Edward Howe Miller Jr.; Albert Lincoln Winslow. MUSEVILLE—Oscar E. Hedrick. SUTHERLIN—Clyde Lester Bailey.

Powhatan County

BALLSVILLE—Roscoe C. Carnal. TOBACCOVILLE—Otis Hillsman Whitlock.

Prince Edward County

FARMVILLE—Charles Bledsoe Crute; Thomas Griffin Hardy.

Prince George County

CITY POINT—Maurice Arthur Selinger; Hubert Lee Wyatt. HOPEWELL—James Spencer Burger; Jeffrey Neese Elder; Robert Julius Evans Jr.; Frank Levinson; Joash Yohannan; Roscoe W. H. Buckner; Seth Bridgman Perry.

Prince William County

HAYMARKET—Wade Cleveland Payne. MANASSAS—William Fewell Merchant; Walter A. Newman; John Downing Williams. QUANTICO—Charles L. Fackler; Edgar D. Smith.

Pulaski County

DRAPER—Edgar Clay Harper. PULASKI—Charles Ewing Dyer; James Walker Tipton. SNOWVILLE—Forrest T. Summers.

Richmond County

NEWLAND—John Hampton Hare.

Roanoke County

AIRPOINT—Charles Edward Sears. CATAWBA SANITARIUM—Dear Baldwin Cole. HOLLINS—Alen Jackson Black. ROANOKE—John Otto Boyd; Samuel Beverly Cary; Paul Davis; Douglas Shelburne Divers; Frank Albert Farmer; Everett Russell Ferguson; Clifford Algernon Folks; Hugh Johnson Hagan; Elijah Maxie Hicks Jr.; George Samuel Hurt; William Shirey Kelster; James Warren Knepp.

George Madison Maxwell; Ernest Helm Muse; William Leven Powell; Lewis Geo. Richards; James H. Roberts; Richard Gordon Simmons; Car Otto Wolff. SALEM—Guy B. Denit.

ROANOKE—Lylburn Clinton Downing; Alfred Power Jones; Hugh Henry Trout.

Rockbridge County

LEXINGTON—John William Hobbs Pollard; Reid White.

Rockingham County

DAYTON—George Frank Hollar. ELKTON—Ernest Brubaker Miller. HARRISONBURG—Thomas Clinton Firebaugh.

Russell County

CLEVELAND—James Menifee Talbee. CLINCHFIELD—Samuel Benjamin Nickels. DANTE—Rolan Eldridge Stump Taylor. LEBANON—Samuel Merriman Ford.

Scott County

CLINCH—A. Null Osborne. CLINCHPORT—Eugene Patrick Cox. Charles Radford Fugate. GATE CITY—Edwin M. Corns.

Shenandoah County

FORESTVILLE—Allen Casper Biller. WOODSTOCK—Carl William Shaffer.

Smyth County

CHILHOWIE—Ezra Eugene Neff. MARION—Ray Carrington Blankenship; Francis Beattie Hutton Jr.

CHATHAM HILL—David Jackson Buchanan.

Southampton County

BOYKINS—George Harrison Musgrave.

Spotsylvania County

FREDERICKSBURG—Joseph Nicholson Barney; Urban F. Bass; Frank Cushing Pratt. SPOTSYLVANIA—William A. Harris.

Surry County

CLAREMONT—George Washington Lacey.

Sussex County

STONY CREEK—Andrew Daniel Parson. WAVERLY—Hartwell Graham Stoneham.

Tazewell County

NORTH TAZEVELL—Jack Walter Witten. POCAHONTAS—David Alexander Haller; Martin Luther Sowers. POUNDING MILL—George Luther Zimmerman. RAVEN—Merwin B. Moore. RICHLANDS—John Marvin Ratliff. SHAWVER MILL—James Thornton Neel.

Warren County

BROWNTOWN—Charles Franklin Updike. FRONT ROYAL—Robert P. Cooke; William Justin Olds.

Warwick County

NEWPORT NEWS—Otis Taylor Amory; Walter Cleveland Caudill; Robert Allen Davis; Thomas J. Kagey; Royal Howard McCutcheon; Robert Whitehead; Frank Delaplaine Willis.

Washington County

ABINGDON—David Leighton Kinsolving; George Victor Litchfield Jr. William Wallace McChesney; James Coleman Motley. BRISTOL—Nicholas Ivan Ardan; Hamil Smyth Scott; William Scarff Wiley. LODI—William Hervey Remline.

Westmoreland County

COLONIAL BEACH—Wm. Landon Brent; George Blight Harrison. HAGUE—Richard T. Arnest.

Wise County

APPALACHIA—William Byrdwill Peters Jr.; Harry Richard Smith. COEBURN—Isaac E. Wolfe. GLAMORGAN—John Thomas Ramsey. NORTON—Alonzo Walter Sounders. PULASKI—Wm. Andrews Lucas. RODA—John Adolph Rollings. STONEGA—George Garland Rhudy. TOMS CREEK—Charles Clay Carr.

Wythe County

MAX MEADOWS—Lewis Sidney Herndon. RURAL RETREAT—Alfred Bryson Greiner. WYTHEVILLE—Edward Percy Odendihal.

York County

GRAFTON—Stanhope B. Berkley.

WASHINGTON STATE MEDICAL ASSOCIATION

Officers 1917-18

G. M. Horton, President.....Seattle
C. Stuart Wilson, President-Elect.....Tacoma
W. D. Read, First Vice President.....Tacoma
R. T. Condon, Second Vice President.....Wenatchee
C. H. Thompson, Secretary-Treasurer.....Seattle
J. H. O'Shea, Assistant Secretary-Treasurer.....Spokane

HONOR ROLL

Adams County

RITZVILLE—Lewis Adolphus Lavanture.

Benton County

KENNEWICK—LeGrande Spaulding. RICHLAND—Claire Dutton Hoppel.

WASHINGTON										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams.....	1,912	191.2	15,359	1,535	10	..	4	9	3	1
Asotin.....	606	101.0	7,631	1,271	6	..	3	3	..	..
Benton.....	1,671	185.7	7,937	881	9	1	6	7	..	..
Chelan.....	2,900	96.7	23,261	775	30	3	14	21	15	3
Clallam.....	1,726	156.9	7,595	690	11	..	9	9	5	1
Clarke.....	634	24.4	35,333	1,360	26	4	11	21	12	5
Columbia.....	853	78.0	7,042	640	11	..	6	6	1	3
Cowlitz.....	1,153	104.8	15,980	1,452	11	1	6	9	10	3
Douglas.....	1,787	223.4	9,227	1,163	8	..	5	6	1	2
Ferry.....	2,220	555.0	4,974	1,243	4	..	1	1	..	..
Franklin.....	1,206	201.0	8,559	1,426	6	..	5	6	..	2
Garfield.....	694	115.7	4,403	733	6	..	4	5	..	..
Grant.....	2,720	302.2	8,698	966	9	..	3	7	2	..
Grays Harbor..	1,927	47.0	50,530	1,232	41	..	25	36	27	14
Island.....	208	52.0	6,774	1,693	4	..	4	4	2	1
Jefferson.....	1,747	145.6	10,253	854	12	..	5	7	3	2
King.....	2,111	3.9	412,077	771	534	31	271	436	346	88
Kitsap.....	371	17.7	25,589	1,219	21	..	13	19	8	5
Kittitas.....	2,329	110.9	25,027	1,191	21	..	15	16	4	2
Klickitat.....	1,825	152.1	10,180	848	12	1	4	9	2	2
Lewis.....	2,369	67.7	44,514	1,271	35	..	20	27	23	5
Lincoln.....	2,302	83.5	21,606	881	26	1	17	21	17	3
Mason.....	930	232.5	6,137	1,534	4	..	..	2	3	..
Okanogan.....	5,221	307.1	18,871	1,110	17	2	9	13	..	3
Pacific.....	895	81.4	17,312	1,573	11	..	8	8	10	2
Pend Oreille....	1,320	220.0	7,655	1,275	6	..	4	6	..	1
Pierce.....	1,701	9.2	168,476	915	184	7	94	137	124	42
San Juan.....	178	22.2	4,095	511	8	..	3	4	3	1
Skagit.....	1,774	47.9	40,168	1,085	37	..	23	33	25	11
Skamania.....	1,685	561.7	3,761	1,253	3	..	..	1	..	..
Snohomish.....	2,064	29.5	84,946	1,212	70	2	39	53	47	12
Spokane.....	1,756	7.8	199,160	840	237	9	134	198	147	37
Stevens.....	3,866	168.1	28,412	1,235	23	..	8	18	13	4
Thurston.....	709	39.4	23,168	1,287	18	3	11	16	9	3
Wahkiakum....	267	89.0	3,625	1,208	3	..	2	2	2	..
Walla Walla....	1,265	32.4	41,604	1,066	39	1	13	25	11	4
Whatcom.....	2,082	39.3	68,048	1,284	53	..	30	42	30	4
Whitman.....	2,108	45.8	39,062	849	46	3	25	37	23	10
Yakima.....	5,059	84.3	41,709	694	60	3	45	54	44	6
Totals.....	66,836	39.9	1,558,808	9,245	1,673	72	899	1,334	974	284

1. Includes Seattle, population 366,445; physicians 491 [M.R.C. 82].
2. Includes Tacoma, population 117,446; physicians 148 [M.R.C. 35].
3. Includes Everett, population 37,205; physicians 32 [M.R.C. 6].
4. Includes Spokane, population 157,656; physicians 210 [M.R.C. 33].
5. Includes Bellingham, population 34,362; physicians 38 [M.R.C. 4].

Chelan County

CASHMERE—Harry Martin. WENATCHEE—August Edward Gerhardt; Alexander Wood Seibert.

Clallam County

PORT ANGELES—Frederick T. Hyde.

Clarke County

CAMAS—Walter Winfield Looney. RIDGEFIELD—Ralph Spencer Stryker. VANCOUVER—Joe Bennett Blair; Herbert Clay Liesser; Clair Marion Wilcox.

Columbia County

PAYTON—Ransom J. Chase Jr.; Diedrich George Brunjes. John Cush-an Lyman.

Cowlitz County

CASTLE ROCK—Eben Wesley White. KELSO—Floyd Alvah Bird; Charles R. Glenn.

Douglas County

BRIDGEPORT—George Waltham Phillips. MANSFIELD—Edward

Franklin County

CONNELL—Harry Edmond Wilson. PASCO—Shirley Quincy Elmore.

Gray's Harbor County

ABERDEEN—Oliver R. Austin; Leon Lewis Goodnow; Lawrence Hop-son; John B. Kinne; Howard C. Randolph. ELMA—Charles Worley nes. HOGUAM—Arvid E. Anderson; Randolph F. Hunter; George Ira urley; John F. MacDonald. MONTESANO—Max William Brachvogel; ay Elliott Marcy; Walter Byrd Swackhamer. McCLEARY—Berton E. Fleming.

Island County

COUPEVILLE—Earl Francis Ristine.

Jefferson County

FT. WORDEN—Frank J. Lemon; William Henry Payne.

King County

AUBURN—William H. Brandt. BLACK DIAMOND—John Anderson wles. BOTHELL—Richard Henry Lyon. KENT—Arthur Richard uld. KIRKLAND—Ernest Collett McKibben. SEATTLE—Harry Eu-ne Allen; Roy Chester Baumgarten; George W. Beeler; Charles Chester mediet; Charles Allen Betts; Ernest Leslie Bickford; George Irvin rehfield; Forest A. Black; Theodore Lawrence Borden; Hubbard omas Buckner; Carl M. Burdick; Henry Clay Burson. Arthur Phinney Calhoun; Frank M. Carroll; William George Cassels; E. Coe; Willis Hiram Corson; Charles Basil Cowan; William Fred-tek Cunningham; William O. Cutcliffe; Francis Joseph Delaney; Charles Eaton; James B. Eagleson; Orange Edwards; Bruce Elmore; Walter erly. Fred Julius Fassett; Edward Paul Flick; Frank Pierce Gardner; Wilho vld Groenlund; David Connelly Hall; Marco M. Hansen; Arthur Elias nby; John Maurice Henderson; Stuart Hooker; John Wilson Hunt; illam Edwin Joiner; Everett Orville Jones.

William Carlyle Kanter; Walter Kelton; William Charles Kintner; Howard James Knott; Ertle C. Lauter; Constantin Y. Lapidensky; Albert Lessing; John Albert Mapes; Frank T. Maxson; Charles Fletcher Max-well; Joseph Andrew McKee; Walter D. Merritt; Walter Arthur Monnich; Marion Michael Null; Herbert C. Ostrom; Willard Grant Palmer; Ivan A. Parry; Alexander Hamilton Peacock; Richard Wilbert Perry; Reginald Copeland Plummer; Nevln Breisbach Pontius.

Hiram Martin Read; Ernest Slemmons Reedy; Waldo Richardson; Samuel Boyd Ross; Joseph Henry Sayer; E. B. Schrock; Ivan James Daniel Shuler; Austin U. Simpson; Edmund Howard Smith; Robert Percy Smith; Robert M. Stilth; George Wilkins Swift.

Harold Benjamin Thompson; Robert Newton Tooker; Donald Vanglin Trueblood; Paul A. Turner; Pearl Caleb West; Kenelm Winslow; Clare-ence B. Wood; Nathan P. Wood. SELLECK—Ralph Lincoln Sweet.

SEATTLE—Cline Fleming Davidson; Harry Hiram Hewitt; Sher-man Rogers.

Kitsap County

BREMERTON—Walter V. Jones; Ray Schutt; Charles M. Tinney. FT. WARD—Charles H. Stearns. PORT BLAKELEY—Cecil C. Kelam. PORT GAMBLE—Edmond Gottlob Klanke.

Kittitas County

ELLENSBURG—Albert L. McClanahan. ROSLYN—Victor Piro.

Klickitat County

GOLDENDALE—Frank Hayward Collins. WHITE SALMON—John Whitfield Gearhart.

Lewis County

CENTRALIA—Herbert Yeomans Bell; Frank James Bickford; Emory Leroy Kniskern. NAPAVALINE—Frederick John Cullen. WINLOCK—Earle Vernon Sheafe.

Lincoln County

ALMIRA—John Franklin Knox. EDWALL—Joseph C. Brugman. SPRAGUE—Eugene Henry McCaffrey.

Okanogan County

OKANOGAN—Lorenzo Simeon Dewey. TONASKET—Harry B. Clough. TWISP—James Burton Couche.

Pacific County

RAYMOND—Edward Randolph Perry. SOUTH BEND—Francis W. Anderson.

Pend Oreille County

METALINE FALLS—John Hiatt.

Pierce County

FT. STELLACOOM—Albert Cross Stewart. Frank Tozer Wilt. PUY-ALLUP—Shirley D. Barry Warner Melvin Karshner. SUMNER—Whit-ing Benoni Mitchell. Carl Lockwood Taylor; William Winfield Wick. TACOMA—Robert Aurand Allen; Harry Clyde Blair; Christian J. Bro-beck; Paul Irving Carter; Thomas Benjamin Curran; Charles Herman DeWitt Jr.; C. P. Gammon; Warren Jeremiah Hough; Edwin W. Jones; Hinton Denney Jones; Joseph Patrick Kane; Charles Reuben McCreery; William Bernard McNeerhney; William Alexander Monroe; Edwin Ash-bury Montague; Roy Adelbert Morse; Alvia George Nace; Burton E. Paul; Warren B. Penney. Wilnot DeLeo Read; Edwin Bruce Rhea; Edward Antoine Rich; Fred-erie Henry Schroeder; Leslie Bennet Sims; Joseph Sebastian Smeall; Karl Sutherland Staatz; Joseph R. Turner; Roscoe Samuel Van Pelt; Ernest Catron Wheeler; Horace J. Whitacre; Harry Gaylord Willard; Charles Stuart Wilson; James R. Yocum. TACOMA—Hiram S. Argue; Stephen Andrew De Martini.

San Juan County

FRIDAY HARBOR—Conner Ouerbacke Reed.

Skagit County

ANACORTES—Samuel Gordon Brooks; Austin Shaw. CONCRETE—Ezra Franklin Mertz. LYMAN—Faris Morell Blair. McMURRAY—Hur-bert Livingstone Miller. MT. VERNON—Rufus J. Cassel; Harry T. D'Arc; Adolph Jacob Osterman. SEDROWOOLEY—Charles Morris Fra-zee; Charles Carlton Harbough; Joseph Hehir.

Snohomish County

EVERETT—Thomas Greene Clarke; Albert Plummer Duryee; Harry Preston Findley; Irving W. Parsons; James Spencer Purdy; John K Stewart. MARYSVILLE—John Dillon Thompson. MONROE—Edward W. Cox; Charles Harold Soll. SNOHOMISH—James A. Durrant; Harvey Loud Eldridge. SULTAN—Henry Webster Bortner.

Spokane County

CHENEY—John Fassett Edwards. FAIRFIELD—George Washington Ensley. FT. GEORGE WRIGHT—Ralph N. Newton. SPOKANE—Arthur Betts; C. E. Butts; John G. Byrne; Max Rosecrans Charlton; Isaac Sid-well Collins; Charles Franklin Elkenbary; Robert Howard Farley; Wil-liam S. Frost; Roscoe L. Ghering; James Chapman Graves Jr. Robert North Hamblen; Walter Webster Harrington; Ralph Hendricks; Frank L. Hubbard; Roy Lee Laird; Samuel E. Lambert; Irving Martin Lupton; James Green Matthews; William Hutchinson Morse; Fred Buck-lin Nather; Rufus Ingalls Newell. William Michael O'Shea; Russell Clifton Parr; William Jonathan Pen-nock; William R. L. Reinhardt; Paul Cole Ridpath; Harry Hungate Rob-inson; Pius Aloysius Rohrer; Frank Rose; Frederick Good Sprowl; Her-bert Edward Wheeler; Fred J. Whittaker. SPOKANE—Howard Rouse. DEER PARK—Henry Herbert Slater.

Stevens County

CHEWELAH—Charles Anderson Hauber; Duncan Daniel Monroe. COL-VILLE—Ralph Frank Goetter; William John Jones.

Thurston County

OLYMPIA—Kenneth Lawrence Partlow; Nathaniel Embury Roberts. TENINO—Frederick William Wichman.

Walla Walla County

TOUCHET—John William Rose. WALLA WALLA—Frank Crawford Robinson; Wallace Alexander Pratt; Charles Edwin Montgomery.

Whatcom County
BELLINGHAM—Spencer Stoddard Howe; Isaac William Powell; Jacob Shrader Smith. SUMAS—Harry Will Shryock.

Whitman County
COLFAX—Frank Adolph Bryant; Rolla Bennett Hill; William Albert Mitchell. ELBERTON—Asher W. VanKirk. LYNDEN—Frank Leighton Wood. PULLMAN—Eliphalet T. Patee. ST. JOHN—Douglas McIntyre. TEKOA—Charles B. Clizer. UNIONTOWN—Walter August Burg. ROSALIA—William Wells Brand.

Yakima County
FT. SIMCOE—Thomas Everett Griffith. NORTH YAKIMA—William Herbert Boone; George Walter Cornett; Alfred Joseph Helton; William L. McClure; Julius Girard Newgord.

WEST VIRGINIA STATE MEDICAL ASSOCIATION

Officers 1917-18
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Charles O'Grady, First Vice President.....Charleston
W. J. Judy, Second Vice President.....Belleville
J. Howard Anderson, Secretary.....Marytown
H. G. Nicholson, Treasurer.....Charleston

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First District.—Brook, Hancock, Marion, Marshall, Ohio, Taylor and Wetzel counties. H. R. Johnson, Fairmont, Councilor.
Second District.—Barbour, Berkely, Grant, Hampshire, Hardy, Jefferson, Mineral, Monongalia, Morgan, Pendleton, Preston, Randolph and Tucker counties. T. K. Oates, Martinsburg, Councilor.
Third District.—Braxton, Clay, Calhoun, Doddridge, Gilmer, Harrison, Nicholas, Lewis, Ritchie, Upshur and Webster counties. M. T. Morrison, Sutton, Councilor.
Fourth District.—Cabell, Jackson, Mason, Putnam, Pleasants, Roane, Tyler, Wood and Wirt counties. Geo. D. Jeffers, Parkersburg, Councilor.
Fifth District.—Lincoln, Logan, McDowell, Mercer, Mingo, Monroe, Summers, Wayne and Wyoming counties. Wade H. St. Clair, Bluefield, and J. E. McDonald, Logan, Councilors.
Sixth District.—Boone, Fayette, Greenbrier, Kanawha, Pocahontas and Raleigh counties. P. A. Haley, Charleston, and H. L. Goodman, McKendree, Councilors.

WEST VIRGINIA										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Barbour.....	348	21.7	17,070	1,066	16	..	9	9	12	1
Berkeley.....	325	9.1	23,845	662	36	2	15	24	22	2
Boone.....	506	56.2	11,890	1,321	9	..	6	8	7	2
Braxton.....	517	25.8	26,030	1,301	20	..	17	18	10	2
Brooke.....	89	4.7	13,930	733	19	1	13	13	12	3
¹ Cabell.....	261	2.6	59,409	594	100	2	52	84	70	14
Calhoun.....	286	28.6	11,981	1,198	10	..	4	7	4	1
Clay.....	332	41.5	11,683	1,460	8	..	4	7	3	3
Doddridge.....	317	28.8	12,672	1,152	11	..	6	7	6	1
•Fayette.....	667	8.8	66,441	874	76	..	48	65	46	9
Gilmer.....	331	25.5	11,379	875	13	..	4	11	2	2
Grant.....	461	65.8	8,250	1,178	7	..	4	4	5	..
Greenbrier.....	998	31.2	27,862	870	32	..	12	24	18	1
Hampshire.....	648	81.0	11,694	1,461	8	..	4	5	4	..
Hancock.....	83	5.2	13,220	826	16	1	12	15	13	4
Hardy.....	574	95.7	9,684	1,614	6	..	2	5	3	1
Harrison.....	416	3.8	63,484	577	110	6	59	91	69	7
•Jackson.....	461	23.0	20,956	1,047	20	..	9	15	5	2
Jefferson.....	211	8.8	15,889	662	24	..	6	12	23	1
² Kanawha.....	860	5.3	100,593	627	161	4	95	134	96	34
Lewis.....	393	12.3	19,231	600	32	..	16	27	20	3
Lincoln.....	418	29.8	24,183	1,727	14	..	4	9	4	2
Logan.....	458	10.9	19,966	499	40	..	27	37	23	3
McDowell.....	533	8.3	69,105	1,079	64	..	49	60	45	7
Marion.....	315	4.0	50,359	645	78	1	36	57	59	7
Marshall.....	310	7.4	36,727	874	42	1	23	30	28	7
Mason.....	475	21.6	23,019	1,046	22	..	10	16	6	3
Mercer.....	419	6.4	49,574	762	65	..	51	61	50	8
Mineral.....	• 349	16.6	19,442	925	21	..	13	17	15	2
Mingo.....	416	14.3	25,322	935	29	..	22	28	24	7
Monogalia.....	358	7.6	28,192	599	47	..	24	31	28	7
Monroe.....	457	25.9	13,055	727	18	1	10	11	7	1
Morgan.....	233	21.2	8,253	750	11	..	6	8	5	..
Nicholas.....	680	24.3	22,295	792	28	..	17	25	3	3
³ Ohio.....	107	1.0	64,541	603	107	..	61	81	86	11
Pendleton.....	699	63.5	9,482	862	11	..	5	11	2	2
Pleasants.....	132	14.5	8,074	897	9	..	4	4	4	1
Pocahontas.....	904	47.6	19,241	1,012	19	..	14	14	8	2
Preston.....	650	20.3	28,979	905	32	..	25	26	19	3
Putnam.....	336	22.4	19,503	1,300	15	..	4	9	1	1
Raleigh.....	597	13.9	35,264	820	43	1	32	40	33	4
Randolph.....	1,036	27.3	32,127	871	38	..	16	29	27	6
Ritchie.....	453	19.7	17,875	777	23	..	12	15	19	4
Roane.....	522	24.9	22,776	1,084	21	..	14	19	5	6
Summers.....	369	19.4	19,991	1,052	19	..	15	19	10	3
Taylor.....	175	10.3	17,703	1,041	17	1	6	11	9	2
Tucker.....	405	23.8	22,502	1,323	17	..	12	12	10	2
Tyler.....	260	13.0	16,211	810	20	..	11	12	12	3
Upshur.....	351	17.5	18,039	901	20	..	10	15	13	1
Wayne.....	517	25.8	24,418	1,228	20	..	5	17	7	1
Webster.....	583	64.8	10,276	1,141	9	..	5	8	5	..
Wetzel.....	357	15.5	24,567	1,068	23	1	10	15	12	2
Wirt.....	218	36.3	9,047	1,507	6	..	3	4	2	..
Wood.....	364	5.2	40,550	579	70	1	36	53	39	2
Wyoming.....	502	71.7	11,860	1,694	7	..	5	5	..	1
Totals.....	24,024	13.7	1,420,151	807	1,759	23	994	1,394	1,070	213

1. Includes Huntington, population 47,686; physicians 90 [M.R.C. 14].
2. Includes Charleston, population 31,000; physicians 90 [M.R.C. 20].
3. Includes Wheeling, population 43,657; physicians 95 [M.R.C. 10].

HONOR ROLL
Barbour County
CENTURY—John Pickering Farson.

Berkeley County
MARTINSBURG—Ernest H. Bitner; Calvin E. Clay; Charles Stuart Cowie; William Thornton Henshaw; Marvin Hallida Porterfield; David Tressler Williams; Samuel Gray.
INWOOD—Victor Leslie Glover.

Boone County
MADISON—David Abshire. SETH—Mark Sutpin.

Braxton County
BOWER—Geo. Leedom Pierce. GASSAWAY—Finly Kyle Vass. Burke; Leo Huth.

Brooke County
COLLIERS—Raymond Leslie Pocer. FOLLANSBEE—Charles Perry

Cabell County
HUNTINGTON—Ray Maxwell Bobbitt; Charles M. Buckner; Denis Joseph Cronin; William M. Dickerson; Henry Drury Hatfield; James Oscar Hicks; Cassius C. Hogg; Jones Ross Hunter; Harry W. Keatley; Isaac Richard Le Sage; Joseph Wm. Lyons; Julius C. Schulz; James Fred Van Pelt; Robert Johnson Wilkinson.

Calhoun County
DOUGLAS—Robert Fulton Ellison.

Clay County
BENTREE—Rufus Emory Woodall. WIDEN—Richard H. Eanes. WIDEN—John Edward Miller.

Doddridge County
BLANDVILLE—John O'Brien Jr.

Fayette County
CANNELTON—John Samuel Shaffer. CAPERTON—Stanley White Barber. HARVEY—Harry Howard Bolton Jr. GAMOCA—George Floyd Grisinger. KINGSTON—Charles Gordon Willis. MARTING—Frank J. Broschart; Ivy G. Shirkey. MONTGOMERY—Orlando Waldo Hodges. QUINNIMONT—Wm. D. Lewis.

Gilmer County
CONINGS—Harry Dixon Law. SAND FORK—John Ervin Corkrean.

Greenbrier County
LEWISBURG—Harry Lee Beard.

Hancock County
WEIRTON—Israel Levendorf; John Benedict Makin; Harold Henderson; Charles Augustus Clemmer.

Hardy County
LOST CITY—Harry West Rollings.

Harrison County
CLARKSBURG—Solomon Leon Cherry; Irving Delbert Cole; Herbert H. Haynes; Robert Gerhart Hood; Walter Allen Johnson. SALEM—Edward Davis. WOLF SUMMIT—John Eldon Corbin.

Jackson County
RIPLEY—Ray Kessel. TOPINS GROVE—Willie Herbert Howell.

Jefferson County
KABLETOWN—Alexander H. S. Rouse.

Kanawha County
CHARLESTON—Maury Anderson; Thomas Maxfield Barber; Timothy L. Barber; Henry Geo. Bieler; George H. Barksdale; John Egerton Cannaday; Lewis Clyde Covington; Eugene A. Davis.
Patrick Lamb Gordon; Curtis Thos. Hayden; Earl Bennett Henson; Atlee Mairs; Morris Isidore Mendeloff; John William Moore; Alvah Londus Parsons; Lawrence A. Petty; Walter W. Point; Howard Cecil Sarver; Wilbur Fisk Shirkey Jr. CLENDENIN—Mark Edgar Caldwell. HANDLEY—Howard M. Batson. HANSFORD—Leroy Jefferson Butler; Ira Moser Derr; Chas. P. S. Ford; Chas. R. Irving; Edw. Chadwick McClees. MALDEN—Arthur Wise DeBell. QUINCY—Wyndham Bolling Robertson. SHARON—William Clifford Mays. SOUTH CHARLESTON—Asahel Clarence Lambert.
CARBON—Julian Warrington Ashby.
CHARLESTON—William Loraine Jones.
HANSFORD—Joseph Culvrain Ford; Harry Easley Whaley.

Lewis County
CAMDEN—William Henry Greene. ROANOKE—Frank Calphon Shafer. WESTON—Aubrey Francis Lawson.

Lincoln County
IVATON—Rush Floyd Farley. WOODVILLE—Dennis Bliss Jarrell.

Logan County
HOLDEN—Ottis Peyton Chapman; John Shackelford Gibson. OMAR—Watson Staley Rowan.

Marion County
FAIRMONT—Andrew J. Harness; James Wilson McDonald; John E. Offner; Rawley Holland Powell; Colin Reed Weirich.
BARRACKVILLE—Etley Price Smith.
WORTHINGTON—Waitman Willey Orr.

Marshall County
CAMERON—William Phillips Sammons. McMECHEN—Archie Bower Rinehart. MOUNDVILLE—Alfred F. Compton; David B. Ealy; John Henry Luikart. NUSS—Esley Taylor Lake. SHERRARD—Joseph Har Ferguson.

Mason County
HENDERSON—Ulysses Grant Arnett. LEON—Charles Thomas White side. POINT PLEASANT—Edward McElfresh.

McDowell County

ALGOMA—William Edward Cook. ASHLAND—David Patteson Scott. EYSTONE—Thomas Gooch Tickle. KIMBALL—Harlow Richard Conell. WELCH—Malcolm Peel Dillard; Milton Easley Jones. James M. Huler.

Mercer County

BLUEFIELD—William Oswald Hearn; William Clary Slusher; Harry George Steele; Thurman Elroy Vass. CRYSTAL—Richard Ovid Rogers. LAWATIA—Fred William Barger. PRINCETON—Robert King Buford; Henry Clay Hays.

Mineral County

KEYSER—William E. Ford. RIDGELEY—Joseph Kile Cowherd.

Mingo County

EDGARTON—William B. Hite. GILBERT—Rufus Maurice Musick. ATEWAN—William Hansford Triplett. WILLIAMSON—James Elra Atfield; Harry Robinson Parker; Russell Arthur Salton; James Malachuk Hittico.

Monongalia County

MORGANTOWN—Richard H. Edmondson; James William Hartigan; David Hott; Thomas Judson MeBee; Harvey C. Powell; John Nathan Simpson; Washington Waters Stonestreet.

Monroe County

ALDERSON—Charles Francis Mahood.

Nicholas County

CRAIGSVILLE—Adlai E. Callaghan. RICHWOOD—Walter Funderberg Leech. SUMMERVILLE—Herbert Clark Kineaid.

Ohio County

ELM GROVE—Reece Means Pedicord. WHEELING—Andrew Linn Hyle; Leech Key Cracraft; William Allen Cracraft Jr.; Lowell Sidney Hoin; Eugene Augustus Hildreth; Wm. Eugene Masters; William Hay Clahu; Emerson Megrail; Charles Menger Truschel; Ferdinand William Iche.

Pendleton County

FRANKLIN—George Price McCoy; UPPER TRACT—Charles Lloyd Moore.

Pleasants County

ST. MARY'S—Homer Willard Grimm.

Pocahontas County

MARLINTON—Norman R. Price. MINNEHAHA SPRINGS—Raymond Lockridge.

Preston County

MASONTOWN—Ernest Jacob Wichterman. RAWLESBURG—Foster Harmon Howard. TUNNELTON—Barrick Samuel Rankin.

Putnam County

HURRICANE—Grover Cleveland Roberson.

Raleigh County

AFFINITY—George Fordham. DOROTHY—Benjamin Lewis Pettry. EMBERTON—Wm. Crockett Covey. RALEIGH—McRay C. Banks.

Randolph County

BEVERLY—William Glen Harper. ELKINS—Hoddie Wilbur Daniels; Charles Henry Laws; Harry Knight Owens. MILL CREEK—Bayard Lee Eggett. BLOOMFIELD—Waitman W. Orr.

Ritchie County

ELLENBORO—Emmett Addis Corbin. HARRISVILLE—Gordie C. Patton; William Everett Whiteside. PENNSBORO—Latimer Porter Nes.

Roane County

ANIMA—Clyde Harper. SPENCER—Stephen W. Bull; Ross Dodson; John Ewell McQuain; Charles O. Staats. STERLING—Richard Lowmstry Eltings.

Summers County

HINTON—Maurice Clayton James; Harry Clay Lynch. PENCE RINGS—George Lewis Pence.

Taylor County

GRAFTON—Emmet Richelleu Bucklew; Dorsey C. Peck.

Tucker County

BEN BUSH—John Smyth Cayce; Charles Wesley Myers.

Tyler County

SISTERSVILLE—Ralph Homer Bolce; Frederick Eugene Keller; Robt. Frederick Thaw.

Upshur County

BUCKHANNON—James A. Rusmisel.

Wayne County

WAYNE—John Richard Keesee.

Wetzel County

HUNDRED—Krank M. Kearns. SMITHFIELD—Chas. L. Bates.

Wood County

PARKERSBURG—Oliver D. Barker; Walter Scott Link.

Wyoming County

MULLENS—Byron William Steele.

Councilor Districts and Officers

First District.—Dodge, Jefferson, Washington and Waukesha counties. M. R. Wilkinson, Councilor, Oconomowoc.

Second District.—Kenosha, Racine and Walworth counties. G. Windesheim, Councilor, Kenosha.

Third District.—Columbia, Dane, Green, Rock, Marquette and Sauk counties. F. T. Nye, Councilor, Beloit.

Fourth District.—Crawford, Grant, Iowa, Lafayette and Richland counties. Wilson Cunningham, Councilor, Platteville.

Fifth District.—Calumet, Fond du Lac, Manitowoc and Sheboygan counties. W. F. Zierath, Councilor, Sheboygan.

Sixth District.—Brown, Door, Kewaunee, Outagamie and Winnebago counties. H. W. Abraham, Councilor, Appleton.

Seventh District.—Buffalo, Jackson, Juneau, La Crosse, Monroe, Trempealeau and Vernon counties. Edward Evans, Councilor, La Crosse.

Eighth District.—Florence, Marinette, Oconto and Shawano counties. T. J. Redelings, Councilor, Marinette.

Ninth District.—Adams, Clark, Green, Lake, Lincoln, Marathon, Portage, Waupaca, Waushara and Wood counties. Jos. Smith, Councilor, Wausau.

Tenth District.—Barron, Burnett, Chippewa, Dunn, Eau Claire, Pepin, Pierce, Polk, Sawyer, St. Croix and Washburn counties. Rollo U. Cairns, Councilor, River Falls.

Eleventh District.—Ashland, Bayfield, Douglas, Forest, Iron, Langlade, Oneida, Price, Rusk, Taylor and Vilas counties. J. M. Dodd, Councilor, Ashland.

Twelfth District.—Milwaukee and Ozaukee counties. D. J. Hayes, Councilor, Milwaukee.

HONOR ROLL

Ashland County

ASHLAND—George W. Harrison; Carl O. Hertzman; Henry Arthur Sincok. BUTTERNUT—Albert August Axley.

Barron County

ALMENA—Edgar S. Christman. BARRON—Harry Marcus Coleman; Clark Crandall Post. PRAIRIE FARM—Hiram Allen Buell. RICE LAKE—Drexel Lowry Dawson; Edgar Jonas Knapp. TURTLE LAKE—William B. Cornwall.

Bayfield County

BAYFIELD—Franklin Marshall Hawley; Herman Gustave Mertens. WASHBURN—Parkes T. Trowbridge.

Brown County

DENMARK—Frank John Hager. GREEN BAY—Paul Mather Clifford; Robert Lewis Cowles; Donne Francis Gosin; Fabian Joseph Gosin; Herman Hendrickson; George F. King; Arthur James McCarey; John Edward McGinnis; Harry C. Mix; Walter E. Mueller; George Senn.

Buffalo County

GILMANTON—Arthur Dean Smith. MONDOVI—Milton Weston Hall; Earl L. Parmenter.

Burnett County

GRANTSBURG—Adolph Leonard Kylo. SIREN—Lawrence H. Oliver. WEBSTER—George LeRoy Converse.

Calumet County

BRILLION—Keith Thomas Meyer. CHILTON—William Patrick Forkin; Donald George Hugo. FOREST JUNCTION—John Patrick Harkins. NEW HOLSTEIN—Alexander J. Berger.

Chippewa County

CHIPPEWA FALLS—Eugene P. Ellenson; Conrad William Wilkowske; George Mortimer Smith.

CORNELL—Henry Bush Beeson. HOLCOMBE—Royal Charles Rodecker. STANLEY—Hans C. Erickson.

Clark County

ABBOTSFORD—George Claude Devine. GREENWOOD—Frank Alfred Boeckmann; Frank Homer Kennedy. HUMBERD—Samuel George Schwarz. OWEN—Sherman Merris Kyes.

Columbia County

PORTAGE—John E. Bentley; William Johnstone Thomson.

Crawford County

PRAIRIE DU CHIEN—Peter L. Scanlan.

Dane County

DEERFIELD—Merle H. Draper. MADISON—Smiley Blanton; Frank Favill Bowman; John Kendall Chorlog; James Philip Dean; Robert Drane; Carl A. S. Gunderson; Carl Samuel Harper; Herman Alfred Heise; William S. Middleton; Robert Clinton Montgomery; Norman Oscar Nelson; Ira Roscoe Sisk. MARSHALL—Clarke Bailey Devine. MEN-DOTA—William F. Lorenz. MIDDLETOWN—Martin Fred Du Frenne. STOUGHTON—Harry Anthony Keenan; Alfred Louis Olson. SUN PRAIRIE—William Ellsworth Allen; Howard Jerome Barry; Engelbert Theodore Krauss; John Edward Rueth.

Dodge County

BEAVER DAM—Leo Orrin Voorus; Enoch Palmer Webb. HORICON—Raymond Nicholas Nelson. LOMIRA—Leon Harry Flancher.

Door County

STURGEON BAY—Frederick Charles Huff.

Douglas County

SUPERIOR—Francis J. Broghammer; George Hall Conklin; William Edwin Ground; John Cornelius Kylo; Walter Allan McEachern; Carl Jacob Rollefson; Charles B. Rydell; Richard Cecil Smith.

Dunn County

MENOMONIE—Anfin Egdall; Irving Van Vliet Grannis. RIDGELAND—Knute Albin Ruethin. WHEELER—Richard Albert Dreyer.

STATE MEDICAL SOCIETY OF WISCONSIN

Officers 1917-18

Windershelm, President.....Kenosha
Ear Lotz, First Vice President.....Milwaukee
W. Nazum, Second Vice President.....Janesville
Earl Doege, Third Vice President.....Marshfield
Earl Sleyster, Secretary.....Waupun
S. Hall, Treasurer.....Ripon

County	WISCONSIN									
	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams.....	684	136.8	8,604	1,720	5	..	1	3	3	..
Ashland.....	1,082	45.1	23,271	969	24	1	10	16	16	4
Barron.....	885	29.5	33,083	1,102	30	1	15	23	18	7
Bayfield.....	1,503	100.2	17,151	1,143	15	1	5	8	6	3
¹ Brown.....	529	9.9	59,747	1,127	53	1	31	47	35	12
Buffalo.....	687	62.4	16,006	1,455	11	..	5	9	8	3
Burnett.....	860	215.0	10,156	2,539	4	..	5	4	..	3
Calumet.....	324	18.5	16,701	923	17	..	12	16	12	5
Chippewa.....	1,039	35.6	37,642	1,107	34	3	16	24	20	6
Clark.....	1,218	52.9	33,159	1,441	23	..	12	14	15	5
Columbia.....	778	19.4	31,135	778	40	2	13	25	23	2
Crawford.....	579	28.9	16,288	814	20	..	9	13	9	1
² Dane.....	1,202	8.1	83,275	559	149	15	83	111	104	21
Dodge.....	897	21.3	48,023	1,143	42	2	18	31	30	4
Door.....	469	33.5	19,534	1,394	14	..	7	9	11	1
³ Douglas.....	1,337	27.8	55,515	1,156	48	2	27	34	38	8
Dunn.....	869	39.5	25,420	1,155	22	1	11	17	16	4
Eau Claire.....	638	16.8	33,472	880	38	2	17	27	24	5
Florence.....	497	497.0	3,515	3,515	1	..	1	1	..	1
Fond du Lac...	726	9.5	54,545	737	74	1	43	57	60	12
Forest.....	1,400	116.7	10,713	891	12	..	5	9	8	4
Grant.....	1,164	22.4	39,099	751	52	2	29	38	42	11
Green.....	593	19.1	21,641	698	31	3	15	23	18	5
Green Lake....	360	18.9	15,491	815	19	..	9	16	16	3
Iowa.....	781	30.0	22,497	137	26	..	15	19	12	2
Iron.....	792	132.0	9,539	1,589	6	1	5	5	4	..
Jackson.....	990	70.7	17,075	1,219	14	..	8	11	9	5
Jefferson.....	552	12.5	34,306	779	44	..	29	31	26	8
Juneau.....	802	42.2	19,569	1,029	19	..	6	15	10	2
⁴ Kenosha.....	282	6.4	41,119	934	44	2	21	36	32	2
Kewanee.....	337	42.1	16,784	2,098	8	1	8	8	4	..
⁵ La Crosse.....	481	8.6	44,724	798	56	3	30	40	34	9
Lafayette.....	624	27.1	20,075	884	23	4	11	17	16	..
Langlade.....	875	62.5	20,352	1,453	14	..	10	10	12	2
Lincoln.....	902	53.0	21,104	1,241	17	..	7	13	13	5
Manitowoc....	602	14.3	46,960	1,118	42	1	24	31	34	6
Marathon.....	1,554	33.8	63,665	1,384	46	..	28	36	35	5
Marinette.....	1,415	56.6	35,994	1,435	25	3	11	21	20	2
Marquette.....	457	45.7	10,909	1,090	10	..	5	9	•6	3
⁶ Milwaukee.....	235	0.3	508,496	747	680	12	390	534	401	104
Monroe.....	937	42.6	29,448	1,338	22	..	13	15	19	7
Oconto.....	1,118	6.6	29,146	1,714	17	1	7	14	9	4
Oneida.....	901	60.1	13,300	886	15	..	7	11	9	2
Outagamie....	646	11.3	51,185	897	57	2	30	51	38	10
Ozaukee.....	233	21.2	17,677	1,607	11	..	9	10	9	..
Pepin.....	236	47.2	7,577	1,515	5	..	2	3	4	..
Pierce.....	563	25.6	22,079	1,603	22	1	13	15	9	2
Polk.....	935	46.7	23,969	1,198	20	1	13	15	13	2
Portage.....	812	25.4	32,012	1,000	32	3	13	22	21	7
Price.....	1,279	79.3	17,217	1,076	16	1	8	13	8	3
⁷ Racine.....	324	4.6	66,023	929	71	2	39	53	39	13
Richland.....	590	21.1	18,809	671	28	2	14	22	19	7
Rock.....	716	76.2	58,702	624	94	9	41	70	59	16
Rusk.....	925	92.5	13,086	1,308	10	..	7	8	7	1
Saint Croix....	735	33.4	25,910	1,177	22	2	10	17	19	1
Sauk.....	842	22.1	32,869	864	38	2	25	27	17	4
Sawyer.....	1,320	220.0	8,150	1,358	6	..	3	5	3	2
Shawano.....	1,158	52.6	35,101	1,595	22	1	16	17	17	6
Sheboygan....	521	7.4	58,204	843	69	..	35	56	52	8
Taylor.....	991	110.1	15,378	1,708	9	..	3	5	5	1
Trempealeau...	748	29.9	22,928	917	25	1	14	21	19	7
Vernon.....	821	31.6	28,116	1,081	26	..	9	15	20	4
Vilas.....	833	138.8	6,813	1,135	6	..	3	3	1	..
Walworth.....	560	12.4	29,874	663	45	2	20	35	31	8
Washburn.....	835	119.3	10,147	1,449	7	..	5	5	5	1
Washington....	431	12.4	23,926	825	29	..	18	24	21	8
Waukesha.....	549	9.1	38,464	641	60	4	28	49	48	15
Waupaca.....	759	19.5	33,633	862	39	1	13	27	27	4
Washara.....	646	49.7	21,012	1,616	13	..	8	9	8	4
⁸ Winnebago....	459	6.9	64,956	984	66	2	36	58	50	11
Wood.....	809	27.9	34,026	1,173	29	1	16	20	22	3
Totals.....	55,238	20.2	2,536,091	929	2,783	101	1,485	2,119	1,818	446

1. Includes Green Bay, population 30,017; physicians 41 [M.R.C. 12].
2. Includes Madison, population 31,315; physicians 95 [M.R.C. 12].
3. Includes Superior, population 47,167; physicians 44 [M.R.C. 8].
4. Includes Kenosha, population 32,833; physicians 38 [M.R.C. 2].
5. Includes La Crosse, population 31,833; physicians 46 [M.R.C. 7].
6. Includes Milwaukee, population 445,008; physicians 625 [M.R.C. 81].
7. Includes Racine, population 47,465; physicians 53 [M.R.C. 11].
8. Includes Oshkosh, population 36,549; physicians 39 [M.R.C. 7].

Eau Claire County

EAU CLAIRE—Joseph Charles Baird; Leo Howard Flynn; Hiram Ansley Fulton; Edwin Patrick Hayes; John E. B. Ziegler.

Florence County

FLORENCE—Arthur Francis Lyon-Campbell.

Fond du Lac County

CAMPBELLSPORT—Leo Aloysius Hoffmann. FAIRWATER—Edmond Isaiah Moquin. FOND DU LAC—George Herbert Lawrence; Jonas R. Longley; Patrick Robert Minahan; George Herman Schlesselman. NORTH FOND DU LAC—Albert J. Pullen. RIPON—Edgar C. Barnes; John Samuel Foat. WAUPUN—L. Rock Sleyster; Lucius Lorin Taylor; Athol Horatio Wedge.

Forest County

CRANDON—Clark Ogden Decker. HILES—Henry Allen Halsey. LAONA—Roderick Stephen Elliott. WABENO—George Hamilton Reddick.

Grant County

BLOOMINGTON—James Edmund Heraty; Paul John Lewis. BOSCOBEL—Emil Albert Ruka; Frank Sylvester Tuffley. FENNIMORE—Ernest

Clyde Howell. LANCASTER—Sam Wade Doolittle; James Harman Fowler. LIVINGSTON—Llewellyn Henry Treglown. MONTFORD—Homer Sylvester. PLATTEVILLE—Carlton Haworth Andrew; William W. Pretts.

Green County

BRODHEAD—George Switzer Darby; Ezra Jay Mitchell; Lee Ballou Rowe. MONROE—Lewis A. Moore. BRODHEAD—Anthony Joseph Looze.

Green Lake County

BERLIN—Burt Edward Scott. PRINCETON—Alexander Aloysius Drill; Wade H. Fortner.

Iowa County

MINERAL POINT—Homer Dexter Ludden. RIDGEWAY—Delzie R. Lee

Jackson County

ALMA CENTER—Charles Muson Griswold; George White Griswold Robert Lee MacCormack. BLACK RIVER FALLS—Harold Kalling TAYLOR—Neal Samuel Simons.

Jefferson County

FORT ATKINSON—Louis Jerome Bennett; William Thaw Clark. JEFFERSON—Jay C. Brewer. LAKE MILLS—Gustave Elmer Eck. WATERTOWN—Theodore Carl Henry Abelman; Robert Emmett Wm. Bowen. George Edward Lindow; Albert Fredk. Wm. Ottow.

Juneau County

ELROY—James William Doughty; Carl Christian Vogel.

Kenosha County

KENOSHA—John Russell Eastman; Howard Messner Ripley.

LaCrosse County

BANGOR—Charles Allan Yates. CHETEK—John Howard Prill. LA CROSSE—William A. Edwards; Robert H. Gray; Victor Clarence Jacobson; Albert A. Maurer; Herman Charles Meyer; George Robert Reay Eugene Herbert Townsend Jr.

Langlade County

ANTIGO—Edwin R. F. Murphy; Lyman Allen Steffen.

Lincoln County

GLEASON—William Henry Bayer. MERRILL—Erling Oscar Rayn Herbert Bittner Saylor. TOMAHAWK—George R. Boker; Louis M Pearson.

Manitowoc County

MANITOWOC—William Edward Donahue; Adolph J. Shimek; Max Staehle. REEDSVILLE—Edwin Garfield Festerling. TWO RIVERS—Albert M. Farrell; Eugene Gates.

Marathon County

MOSINEE—George Ellis Towle. STRATFORD—Clinton Orlando Fuller. WAUSAU—Jesse R. Bryant; Eugene Edwin Flemming; Merritt LaCount Jones.

Marinette County

MARINETTE—John William Boren; Russell Rulo Heim.

Marquette County

ENDEAVOR—John Edward Simpson. MONTELLLO—Edwin Henry Federman. PACKWAUKEE—Harry Edwin Gillette.

Milwaukee County

MILWAUKEE—John Edwin Armitage; Leonard Joseph Bachinski Gerhard A. Bading; William Waldo Bauer; Earl Lucas Baum; Emil Frederick Baur; John M. Bffel; Elias Bibby; Nelson Miles Black Robert W. Blumenthal; Max Bornstein; Jeffrey Jabez Brook Jr.; George Van Ingen Brown; Robert Curtis Brown; Dirk Bruins; Harry Eugene Bundy.

Cornelius Joseph Corcoran; William Jesse Core; Adam Lee Curtin Frank Edward Darling; Herman G. Decker; John Frank Elias; Curtis Alban Evans; Charles Raymond Farnham; George Michael Fitzgerald William James Fleming; Harry Robert Foerster; Joseph John France.

Ralph Towns Gilchrist; William Ward Gillespie; Herbert Graebner Ernest Charles Grosskopf; Cecil Bert Hake; John William Hansen Henry Barnard Hitz; Gustavus I. Hogue; Timothy John Howard; Robert Henry Ivy; Albert George Jenner; Arthur J. Kampmeier; Clarence J. Kenney; Raymond Leo Kenney; Frederick Jacob Korthals; Wm. E. Kramer.

Oscar Emil Lademan; Justin D. Leahy; Osville Richard Lillie; Erwin George Linkman; Thos. F. Loughlin; Thomas E. MacKedon; John Rich McDill; Frank Henry McLoughlin; Francis Bartholomew McMahon David Dennis Mehigan; Edmund Herman Mensing; Wilnot Paul Miller Samuel Robert Mitchell; A. A. Mitten; John Emilius Mulrow.

George W. Neilson; James David Nelson; Edward Nicholas Pfeffer; Harry Bernard Podlasky; George Richard Randall; George Gary Rieckhoff; Philip Fletcher Rogers.

Harry C. Saltztein; Frank J. Schubert; Abraham Bernard Schwartz Stanley Joseph Seeger; Gilbert E. Seaman; George Maurice Segal; Ulrich Senn; John Raymond Sheehan; Allen Walters Sivy; Eugene Albert Smith; John William Smith; Hubert Spencer Steenberg; Charles Engels Stolz; Emil Henry Sutter.

James Gurney Taylor; Edward Lewis Tharinger; Francis Alexander Thompson; Michael J. Trock; George Gustave Wallschlaeger; William Frederick Weingart; Claude Isaac Wheatley; Richard Shelby Wilson; John Lawrence Yates. MISHICOT—Arthur Frederick Stueck. NATIONAL HOME—Vernon Roberts. SOUTH MILWAUKEE—Edward Purdon Evans. WAUWATOSA—Glenford L. Bellis; John Francis Bennett Eugene Alfred Gatterdam; Otis Wm. C. Maercklein; Charles Dyer Martin; Russell Edwin Olsen; Harry W. Sargent; Orlando P. Schoofs WEST ALLIS—Thos. Willett.

MILWAUKEE—Henry John Kuhn; Gerald A. Sullivan; Herbert Frederick Wolters.

WAUWATOSA—Herbert Carl Dallwig.

Monroe County

CATARACT—Raymond Arthur Hebron. NORWALK—Judson S. Allen Clifton Abel Cooper. SPARTA—Carlton M. Beebe; John M. Scantleton TOMAH—Albert Raymond Bell; Arthur Edward Winter.

Oconto County
OCONTO—Thomas Clarke; Clifford Joseph *Ouelletto; William Watkins. OCONTO FALLS—George W. Krahn.

Oneida County
RINELANDER—Clarence Alfred Richards; Irving E. Schiek

Outagamio County
APPLETON—William J. Frawley; Earl Francis McGrath; William son Moore; James R. Scott. BLACK CREEK—Frank Clinton Walch. ORTONVILLE—Frank Oscar Brunkhorst. ONEIDA—Josiah A. Pow- is. SEYMOUR—Wesley L. Boyden. SOUTH KAUKAUNA—Argo Mel- urne Foster; Benjamin Franklin Hoyt.

Pierce County
ELLSWORTH—Leon Grant Smith. RIVER FALLS—Adelor Eugene ndron.

Polk County
AMERY—Gentz Perry. ST. CROIX FALLS—Henry Clay Caldwell.

Portage County
ROSHOLT—Carl Christenson Birkelo. STEVENS POINT—John Wesley rd; Lyman Alden Copps; Wayne Frost Cowau; Vincent Joseph Shippy; bert Borden Smiley; Frank Amenzo Walters.

Price County
OGEMA—Charles Magnus Pearson. PARK FALLS—Ole Andy Nelson; win Almiron Riley.

Racine County
BURLINGTON—Charles Henry Meyst. FRANKSVILLE—Arthur Floyd itchen. RACINE—George Nelson Brazeau; Charles Anthony Cibelius; nes George Conley; John Thomas Corr; William Christian Hanson; in Hughes Hogan; William W. Johnston; Frank Waldemar Pope; liam P. Salbreiter; Carl Otto Schaefer; Luther Nelson Schnetz.

Richland County
CAZENOVIA—Wm. Raymond Doctor; George Henry Schlenker. EX- LSIOR—Ivan Beauford Pippin. RICHLAND CENTER—Roy Fred eedon; Percival Guardian Lasche; Harry Charles McCarthy; Harry lroyd Ainsworth.

Rock County
BELOIT—Benjamin Fosse; William Hecker; Harold McMurdo Helm; nest Louis Henning. CLINTON—Charles Harwood Dodge; Albert ith Parker. EVANSVILLE—Clarence Sylvester Cook. JANESVILLE Charles Perry Clarke; George Waterman Fifield; Vincent William ch; Wayne Alonzo Munn; Walter Thomas Nuzum; John Frank Pem- ; Floyd Eugene Shearer; Thomas Joseph Snodgrass; Frank Walter nkirk.

Rusk County
MEYERHAUSER—Leslie James Phillips.

Sauk County
BARABOO—Roger Cahoon. NORTH FREEDOM—Paul Charles Dierschke. AIN—Paul Hare Fowler. REEDSBURG—Rollin D. Thompson.

Sawyer County
EXELAND—Arthur Garfield Maereklein. HAYWARD—James A. Ballard.

Shawano County
BIRNAMWOOD—Wm. F. Baker. BOWLER—Eugene Stephen Knox; dolf Clarence Pfell. MATTOON—Orlando Francis Partridge. AWANO—Ernest Leonard Schroeder. WITTENBERG—John Bern- d Thompson.

Sheboygan County
PLYMOUTH—Ralph Kaysen. SHEBOYGAN—Harold Albert Bach- on; Edward J. Barrett; Edgar W. Bedford; Otho A. Fiedler. SHE- YGAN FALLS—Robert Moses Nichols; Edward Charles Pfeifer. SHEBOYGAN—Clarence Nicholas Sonnenburg.

St. Croix County
UDSON—Harry John Burns.

Taylor County
IEDFORD—Edgar B. Elvis.

Trempealeau County
ARCADIA—Oliver O. Nelson; Judson Albert Palmer. BLAIR—Charles Kelly. INDEPENDENCE—Albert Herbert Kulig. OSSEO—Marlin C. ne. WHITEHALL—Sylvester E. Hutchins; James Clarence Tyvand.

Vernon County
HASEBURG—William H. Remer. READSTOWN—Percy Raymond rson. VIROQUA—Charles E. Lauder. WESTBY—John W. lstensen.

Walworth County
ARIEN—Harold Nelson O'Brien. DELAVAN—Benjamin Harrison mes; Ray H. L. Rice. LAKE GENEVA—Miles D. Cottingham; Oscar rk Willhite. WALWORTH—Neal Francis Crowe. WHITEWATER— hur E. Midgley; Howard Clark Miller.

Washburn County
INONG—John Thomas Brooks.

Washington County
LLENTOWN—Herman Meyer Lynch. BARTON—Sylvester John essel. HARTFORD—William Ezard Buckley; John Gregory Hoffman; er Hathaway Witte. KEWASKUM—Bernard Odin Bendixen. TH GERMANTOWN—Richard William Andreas Dehmel. WEST D—Daniel Webster Lynch.

Waukesha County
OUSMAN—De Lon Richard Notbohn. MERTON—Frederick John edhead. MUKWONAGO—Laurel Elmer Youmans. NASHOTAH— nels John Donnelly. NORTH PRAIRIE—Ernst F. F. Hafemeister. ONOMOWOC—Thomas Miller; Cornelius N. Stuesser; Michael Robert kinson. PEWAUKEE—Herbert Trumbull Barnes; Gilbert Larson.

WAUKESHA—Floyd Walter Aplin; Elmer Andrew Carberry; Richard E. Davies; William Thomas Murphy; George Ernest Peterson.

Waupaca County
FREMONT—Charles Frederlek Rehling. NEW LONDON—August Ludwig C. Borchardt. OGDENSBURG—John Carter Johnson. WAU- PACA—Clifford W. Andrews.

Waushara County
HANCOCK—William Alonzo Joseph; Martin John Treichler. PLAIN- FIELD—Frank R. Borden.

Whitman County
LA CROSSE—George Frank Andrew.

Winnebago County
NEENAH—Clarence C. Del Marelle; Frank Horatio Russell. OSII- KOSH—Burton Clark; Clarendon James Combs; John Mayo Conley; William David Harvie; Charles H. Nims; Addison John Provost; John Ferdinand Schneider. WINNEBAGO—Charles Corwin Rowley. WINNE- CONNE—Charles W. Hughes.

Wood County
GRAND RAPIDS—Will G. Merrill; Frank X. Pomianville. MILLA- DORE—Courad M. Meyer.

WYOMING STATE MEDICAL SOCIETY

Officers 1917-18

R. W. Hale, President.....Thermopolis
H. R. Lathrop, First Vice President.....Casper
A. G. Hurd, Second Vice President.....Sheridan
B. H. Hamilton, Third Vice President.....Greybull
J. D. Lewellen, Secretary.....Powell
George P. Johnson, Treasurer.....Cheyenne

WYOMING										
County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo- men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Albany.....	4,401	366.7	8,194	682	12	..	6	7	6	3
Bighorn.....	6,768	423.0	6,815	425	16	3	9	12	11	..
Campbell.....	.....	.....	2,376	594	4	..	2	3	..	..
Carbon.....	8,029	573.5	8,412	600	14	..	6	12	7	..
Converse.....	6,740	1,123.3	3,626	604	6	..	4	5	5	..
Crook.....	5,441	1,088.2	5,117	1,023	5	..	3	4	3	..
Fremont.....	12,659	.....	9,633	566	17	1	11	14	11	2
Goshen.....	.....	.....	5,035	1,258	4	2	2	2	1	..
Hot Springs....	.....	.....	3,191	290	11	..	7	10	7	2
Johnson.....	4,175	744.6	3,238	539	6	..	4	6	1	1
Laramie.....	6,992	218.5	14,631	460	32	3	22	24	15	5
Lincoln.....	.....	.....	13,531	754	18	..	15	16	4	4
Natrona.....	5,353	334.6	5,398	337	16	1	10	12	12	1
Niobrara.....	.....	.....	3,488	697	5	..	3	5	2	..
Park.....	5,220	401.5	5,473	421	13	..	7	10	10	..
Platte.....	.....	.....	5,277	439	12	..	..	7	5	..
Sheridan.....	2,575	83.1	15,439	498	31	2	22	26	24	4
Sweetwater....	10,500	700.0	10,612	709	15	1	10	11	6	1
Unita.....	11,044	1,104.4	6,051	605	10	1	5	6	5	..
Washakie.....	.....	.....	1,744	581	3	..	1	3	2	..
Weston.....	4,593	1,148.2	4,414	1,103	4	..	3	4	1	1
Totals.....	94,490	372.0	141,705	557	254	14	152	199	133	24

1. Counties recently organized; area included with that of other counties.

HONOR ROLL

Albany County
LARAMIE—Arthur E. Lane; Durward Belmont Park; Edward M. Turner.

Crook County
MOORCROFT—Edward Thomas Gaule.

Fremont County
LANDER—William Francis Smith.

Hot Springs County
CROSBY—Allan Mowry Giddings. GEOO—David Albert Williams.

Johnson County
KAYCEE—Luther Ebert Mitchell.

Laramie County
CHEYENNE—Clyde Yooger Beard; Harry L. Goff; Frederick J. Peirce; Otto Kerr Snyder. FT. D. A. RUSSELL—Ziba Lindley Henry.

Lincoln County
DIAMONDVILLE—Earle Raymond Van Cott. KEMMERRER—Wilson Fullenwider McDill; Robert Hyle Sanders; Walter Addison Whitlock.

Natrona County
CASPER—Niel Charles Gels.

Sheridan County
DAYTON—James Thomas McBride. DIETZ—Edward Ray Schunk. SHERIDAN—Harold M. Brown; Adelbert Harold Benson.

Sweetwater County
ROCK SPRINGS—Oliver Chambers.

Weston County
NEW CASTLE—Fred L. Horton.

SUMMARY OF STATE TABLES*

STATE	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-men Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	Percentage of Physi-cians Who Hold Com-missions
Alabama.....	51,279	20.3	2,307,304	913	2,525	5	1,568	2,046	1,706	330	13.1
Arizona.....	97,395	294.2	263,788	797	331	9	211	274	189	76	23.0
Arkansas.....	52,525	20.3	1,776,475	687	2,587	18	1,282	1,849	887	202	7.8
California.....	155,652	28.8	3,038,322	563	5,396	446	2,956	3,698	2,736	728	13.5
Colorado.....	119,785	70.9	1,014,178	600	1,689	99	739	1,164	841	185	10.9
Connecticut.....	4,820	2.8	1,334,864	795	1,679	63	948	1,299	1,055	261	15.5
Delaware.....	1,965	7.7	234,819	924	254	5	120	172	103	32	12.6
District of Columbia.....	60	0.05	369,282	300	1,230	64	817	951	641	216	17.6
Florida.....	59,396	46.2	1,031,372	803	1,283	29	738	998	568	213	16.6
Georgia.....	60,610	17.3	2,875,205	837	3,436	17	1,956	2,737	1,551	432	12.6
Idaho.....	83,303	185.5	448,577	999	449	9	262	366	156	70	15.6
Illinois.....	56,043	5.1	6,265,789	574	10,909	596	5,530	8,151	6,213	1,533	14.0
Indiana.....	36,045	7.5	2,914,193	611	4,763	135	2,106	3,109	2,591	529	11.1
Iowa.....	55,587	13.9	2,476,526	618	4,004	107	1,775	3,156	2,595	454	11.3
Kansas.....	81,774	30.6	1,888,868	707	2,668	51	1,345	1,904	1,491	382	14.3
Kentucky.....	40,664	11.7	2,425,466	696	3,483	63	1,801	2,587	1,983	454	13.0
Louisiana.....	48,613	24.0	1,864,534	920	2,025	24	1,259	1,760	1,002	281	13.9
Maine.....	28,895	24.5	794,216	673	1,179	27	544	833	865	164	13.9
Maryland.....	9,641	4.2	1,409,415	621	2,268	71	1,269	1,727	1,088	403	17.8
Massachusetts.....	8,039	1.36	3,929,784	669	5,870	403	3,410	4,325	3,403	791	13.5
Michigan.....	57,480	12.5	3,458,185	752	4,598	185	1,844	3,434	2,810	665	14.5
Minnesota.....	80,856	31.7	2,286,341	884	2,584	57	1,454	1,992	1,621	416	16.1
Mississippi.....	46,825	23.7	1,994,685	1,009	1,975	15	1,231	1,527	985	260	13.2
Missouri.....	68,664	11.3	3,537,819	583	6,063	156	2,956	4,375	3,136	699	11.5
Montana.....	240,150	363.3	472,987	715	661	24	439	560	328	121	18.3
Nebraska.....	75,533	48.3	1,295,896	828	1,565	64	1,020	1,557	1,173	312	19.9
Nevada.....	116,941	769.3	111,284	732	152	4	82	123	86	31	20.4
New Hampshire.....	9,031	13.3	445,613	677	657	37	270	456	502	92	14.0
New Jersey.....	7,514	2.5	3,119,558	1,024	3,046	147	1,747	2,489	1,721	518	17.0
New Mexico.....	108,940	238.9	349,920	767	456	8	242	363	224	60	13.1
New York.....	47,661	3.0	9,321,431	587	15,877	619	8,552	12,255	8,324	2,583	16.3
North Carolina.....	49,370	22.1	2,433,782	1,087	2,237	21	1,251	1,706	1,284	340	15.2
North Dakota.....	73,525	121.7	664,607	1,100	604	7	429	540	408	100	16.5
Ohio.....	40,750	5.2	5,261,587	673	7,821	218	3,626	5,699	4,758	1,001	12.8
Oklahoma.....	70,069	26.6	2,315,180	866	2,672	47	1,366	2,001	1,432	377	14.1
Oregon.....	97,757	86.8	862,239	764	1,128	80	591	901	562	203	18.0
Pennsylvania.....	44,831	3.9	8,783,728	761	11,539	518	6,190	8,324	6,750	2,022	17.5
Rhode Island.....	1,067	1.4	631,505	832	759	22	419	623	408	106	14.0
South Carolina.....	31,115	25.1	1,646,615	1,331	1,237	9	690	950	692	204	16.5
South Dakota.....	80,246	124.4	597,331	924	646	16	335	513	372	92	14.2
Tennessee.....	53,282	15.3	2,238,729	646	3,481	20	1,733	2,235	1,660	444	12.7
Texas.....	259,862	41.6	4,557,957	730	6,236	74	2,871	4,039	3,731	788	12.6
Utah.....	82,184	172.3	444,746	932	477	17	298	417	260	75	15.7
Vermont.....	9,129	14.2	368,260	576	639	11	288	453	377	86	13.4
Virginia.....	40,262	16.0	2,023,600	806	2,509	37	1,411	1,551	1,971	394	15.7
Washington.....	66,836	39.9	1,558,808	956	1,673	72	899	1,334	974	284	17.0
West Virginia.....	24,024	13.7	1,420,151	807	1,759	23	994	1,394	1,070	213	12.1
Wisconsin.....	55,238	20.2	2,536,091	911	2,783	101	1,485	2,119	1,818	446	16.0
Wyoming.....	94,490	372.0	141,705	557	254	14	152	199	138	24	9.4
Totals.....	3,085,823	21.4	106,543,317	739	144,116	4,864	75,498	107,255	81,239	19,692	13.7

The fifth column shows 144,116 physicians in the United States. These figures are taken from the galley proofs of the new edition of the American Medical Directory, still in process of compilation, and do not include officers of the Medical Corps of the Army or Navy. It is estimated that the new directory will show a slight increase over the preceding one, or 145,000.

The population is based on the 1917 estimate made by the Bureau of the Census for use in connection with the Selective Service.

The tenth column gives 19,692 as the number of physicians who have been commissioned. As stated in the introductory, these figures do not include those who have been offered commissions but who have not yet accepted them, or whose acceptances have not been reported to this office. Neither, of course, does it include those whose applications are pending. We estimate the total of these two classes at about 2,000.

* See Editorial "The Honor Roll," this issue.



Arthur Dean Brewster

PRESIDENT AMERICAN MEDICAL ASSOCIATION, 1918 - 1919



SOME OF THE SECTION OFFICERS—1918



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THE EFFECT OF PHOSPHORUS ON GROWING, NORMAL AND DISEASED BONES *

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CHICAGO

Since the experimental work of Wegner¹ in 1872, showing the effect of phosphorus on growing bones in animals, it has been used more or less extensively as a therapeutic agent in disorders of ossification. Almost no postmortem or other evidence, however, has been offered as to the exact changes which it brings about in the bones of man.

Wegner administered 1/400 grain of yellow phosphorus daily to young growing dogs, cats and chickens over considerable periods of time, and observed definite changes which in case of the long bones may be thus summarized: There was increased new bone formation in the diaphysis which was especially marked along the epiphyseal lines, leading to the formation of a dense layer in the ends of the shaft which varied in thickness with the length of the period of phosphorus administration. When the period was short, the zone of dense bone was narrow; but when prolonged, it was broad and in some instances included almost all of the trabeculated portion of the ends of the shaft. The cortex of the shaft was increased in thickness from both periosteal and endosteal new bone formation, but the change was not as striking as that in the end of the shaft except in the case of the chicken, in which the medullary cavity of the shaft was practically obliterated and the bones greatly increased in weight. Changes were also observed in the epiphyses. A dense narrow line of new bone formed about the periphery of each center of ossification. Adult bones were not affected by the administration of phosphorus. He found similar slight changes in a child with atrophic but otherwise normal bones which had received small

doses of phosphorus during the two months previous to its death. The bones of three children dying of rickets which had been treated with phosphorus were studied and somewhat similar changes found in one of them. He was skeptical about the value of phosphorus in rickets which was regarded as a condition in which the power of depositing lime salts has been lost by the bony tissues. In this event the phosphorus would stimulate the still further formation of osteoid tissue, which would, however, remain unossified during the florid stage of the disease. Wegner also produced fractures and found that phosphorus stimulated the formation and ossification of callus, but he gives no instance of its use in delayed or nonunion in man.

Red phosphorus and phosphorus compounds, except large doses of calcium phosphate, produced no effects.

Kassowitz² repeated and confirmed Wegner's experiments and brought out the additional fact that from two to four times the dose of phosphorus that produces osteosclerosis leads to osteoporosis and the typical picture of experimental rickets. He used phosphorus extensively in rickets with good clinical results.

Kissel³ experimented with phosphorus, and concluded that it produced no general changes in the

bones; but he apparently used ten times the dose employed by Wegner, which explains the difference in results. Miwa and Stoeltzner⁴ were also able to confirm the finding of Wegner in a few of their experiments, and Stoeltzner as a result of extensive clinical experience has been a firm advocate of phosphorus therapy in rickets.

Cod liver oil was used in the treatment of rickets before the introduction of phosphorus, and later the two substances were combined. Many regarded it largely as a convenient vehicle for the phosphorus and without any special therapeutic value. However, more recent studies in the calcium metabolism of healthy and rachitic children have tended to reverse this opinion.

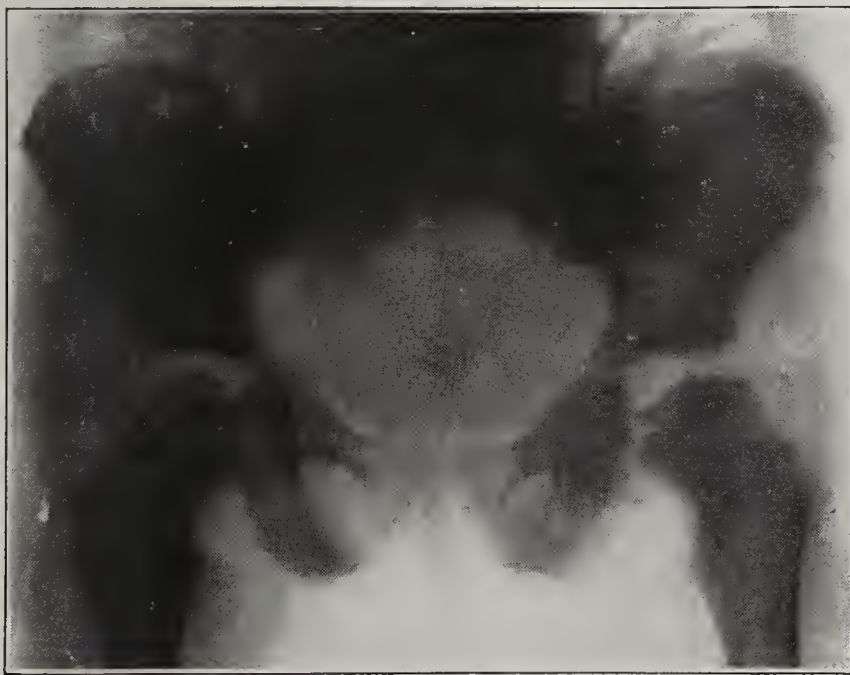


Fig. 1 (Case 1).—Perthes' disease of right hip before beginning administration of phosphorus.

* From the Department of Surgery, Rush Medical College.
1. Wegner: Virchows Arch. f. path. Anat., 1872, 55, 9.

2. Kassowitz: Ztschr. f. klin. Med., 1884, 7.

3. Kissel: Virchows Arch. f. path. Anat., 1896, 144.

4. Miwa and Stoeltzner: Jahrb. f. Kinderh., 1898, 57.

Schabad,⁵ in a series of articles, has maintained that phosphorus when administered alone in the usual therapeutic doses causes no increase in calcium accumulation in the body, and in some of the cases studied

CASE 1.—A. P., aged 4, was first seen in November, 1911 with the typical picture of Perthes' disease of the right hip of six months' standing (Fig. 1). The joint was immobilized for three months by a plaster-of-Paris cast, and phosphorus $\frac{1}{200}$ grain, was given three times a day, in order to determine its effect on the disease of the epiphysis of the head of the femur. Roentgen ray studies were also made of other regions in order to study the effects on the normal bones. The phosphorus was continued for eight months, at which time Figure 2 was taken of the right knee. It shows a heavy broad shadow in the end of the shaft of each bone, being broadest in the femur where the longitudinal growth is greatest. The cortices of the shafts do not appear to be thickened. The epiphyses of all three bones show a fairly dense narrow shadow about the periphery of the centers of ossification. The drug was then stopped, and Figure 3 shows the condition four months later. Growth has continued, and the epiphyses have thereby been carried beyond the lines in the ends of the shafts, which lines are also narrower and less dense than in Figure 2. An unlooked for finding is that a second line has formed in the immediate zone of growth along the epiphyseal cartilage which is of about the same density and thickness as the first. The epiphyses show a second shadow of a layer of new bone outside of the dense layer formed during the period of phosphorus administration. This is best seen on the epiphysis of the fibula, and the sides of the epiphysis of the femur.

Roentgenograms at the end of another four months (Fig. 4) show the same two sets of lines in the ends of the shafts and epiphyses but they are much fainter, narrower and more widely separated than at the previous examination. The phosphorus was then administered for five weeks, and seven and



Fig. 2



Fig. 3

Fig. 2 (Case 1).—Right knee eight months after beginning treatment with phosphorus. Note heavy, broad shadow in the end of the shaft of each bone.

Fig. 3 (Case 1).—Four months after discontinuing phosphorus. Growth has continued; an unexpected finding is that a second line has formed in the immediate zone of growth along the epiphyseal cartilage which is of about the same density and thickness as the first.

even accelerated its elimination. Cod liver oil alone causes a moderate increase, while cod liver oil and phosphorus cause a marked increase in the calcium accumulation. Lime salts, especially calcium lactate when given with cod liver oil and phosphorus, increase still further the calcium accumulation. Where the action is favorable there is not only an increased retention of the calcium intake, but a relative diminution in the calcium output both by the stools and by the urine. He concludes that the cod liver oil, not the phosphorus, is the primary active substance, and that the phosphorus acts secondarily by augmenting the accumulation that is started by the oil. Somewhat similar studies have been made by Schloss,⁶ which tend to support these views.

As 98 per cent. of the calcium of the body is stored up in the bones, they should show a variation in calcium content in case of an increase or decrease in the amount retained in the body. This can be determined either by studies at necropsy or by roentgen studies of the bones in the living. No evidence of either kind is offered by Schabad or Schloss in support of their claims. Consequently the roentgenographic studies of the following cases in which phosphorus alone was administered are of interest.



Fig. 4

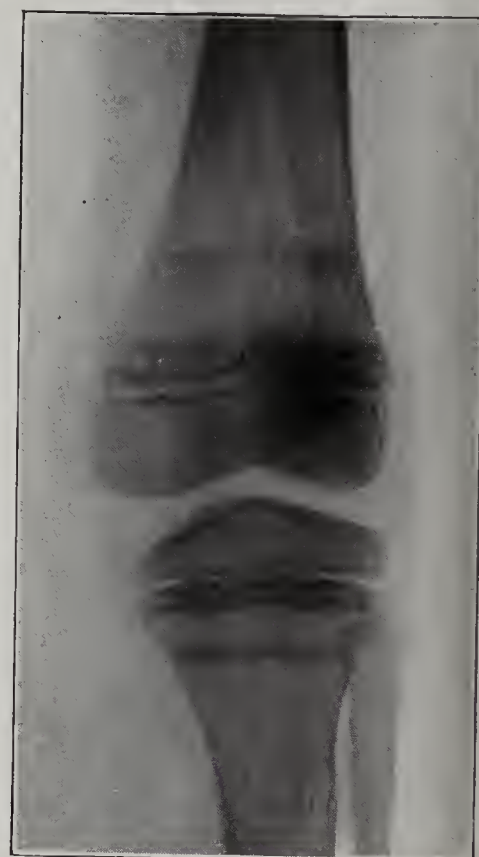


Fig. 5

Fig. 4 (Case 1).—Four months after Figure 3 was taken. Of special interest in Figures 4 and 5 is the evidence of continued bone formation in the end of the shaft over a prolonged period after the phosphorus had been stopped.

Fig. 5 (Case 1).—Seven and one-half months after Figure 3 was taken.

one-half months later roentgenograms were again taken (Fig. 5). Three faint lines are now visible in the ends of the shafts about the knee; one deep in the shaft from the

5. Schabad: *Ztschr. f. klin. Med.*, 1909, **57**, 454; 1909, **58**, 94; 1910, **59**, 435; *Jahrb. f. Kinderh.*, 1910, **72**, 1.
6. Schloss: *Jahrb. f. Kinderh.*, 1915, **82**, 435; 1916, **83**, 46; *Monatschr. f. Kinderh.*, 1914, **13**, 291.

first administration, a second near the epiphysis from the second administration, and a third in the recent zone of growth along the epiphyseal cartilage. The inner line formed in the epiphyses from the first administration is still faintly visible, but no middle or outer dense lines are seen. The same



Fig. 6 (Case 1).—Affected hip two and one-half years after onset of disease. Phosphorus appears to have had little influence on the course of the disease.

changes were found on roentgen examination of the ends of other long bones.

The cause of the continued, although less marked dense bone formation in the end of the shaft along the epiphyseal line, over a prolonged period of time after the phosphorus had been stopped is problematical, but the following two factors are to be considered: First, that phosphorus may be retained in the body and exerts a cumulative action, and second, that the excessive calcium salts stored up in the form of bone in the immediate vicinity may act as a stimulus and cause the dense bone formation. In favor of the former is the observation of Schabad's that wherever there was calcium accumulation there was also an increase in phosphorus retention. Such accumulation is, however, in the form of phosphates, and there is no evidence of the storing up of the element phosphorus as such in the body. In favor of the latter there are no anatomic or roentgen-ray observations; but the metabolic studies of Stoeltzner and Etienne show that moderate doses of calcium salts cause both a relative and an absolute increase in the amount of calcium retained. It is possible that the excessive lime salts stored up in the form of bone, which are constantly being liberated, act as a stimulus and lead to the dense new bone formation in the zones of growth. This may explain the manner of action of calcium phosphate as observed by Wegner.

It is of interest to note that the phosphorus apparently had no influence on the course of the disease for which it was given. The epiphysis gradually broke down until it was eventually almost completely destroyed and the neck was greatly deformed. Active symptoms subsided after about twelve

months, leaving the hip joint markedly stiffened, and Figure 6 shows the condition two and one-half years after the onset. Meager results were to be expected, as Perthes' disease is in all probability an epiphysitis of bacterial origin, and as the phosphorus has little influence on the slowly ossifying normal epiphysis.

A second case shows the influence of phosphorus on a marked disturbance of the longitudinal growth of the shafts of the bones of one limb, and on the normal bones of the other limbs:

CASE 2.—G. C., boy, aged $7\frac{1}{2}$ years, entered the Presbyterian Hospital, July 18, 1915, with dyschondroplasia (Ollier) of the left lower limb. He had limped since the second year, and the left limb, which was otherwise strong and free from symptoms, had gradually grown much shorter than the right. An operation involving bone transplantation for supposed bone cyst had been performed on the upper end of the femur one year before, with infection, and a resulting fistula that had not healed. The patient was a well developed, healthy boy except for the left lower extremity, which was $3\frac{1}{2}$ inches shorter than the right. Both thigh and leg were involved in the shortness, but the foot was almost free, as it was only slightly smaller than the right. The musculature of the limb was well developed, and all the movements were normal. There was a discharging fistula 3 inches beneath the greater trochanter. The ends of the shortened shafts of the femur, tibia and fibula were slightly enlarged and uneven. Roentgen examination of the ends of the bones revealed the epiphyses approximately normal, but the ends of the shafts for a distance of 2 to 3 inches beyond the epiphyseal lines were expanded and cast very faint shadows, which were streaked by irregular longitudinal lines and dotted irregularly by uneven shadows. This change was most marked in the lower ends of the femur (Fig. 7) and tibia. The upper end of the femur showed a coxa vara with a broadened neck casting a faint shadow and the outline of the necrotic transplant below in the irregular but dense shaft which had been formed about it.

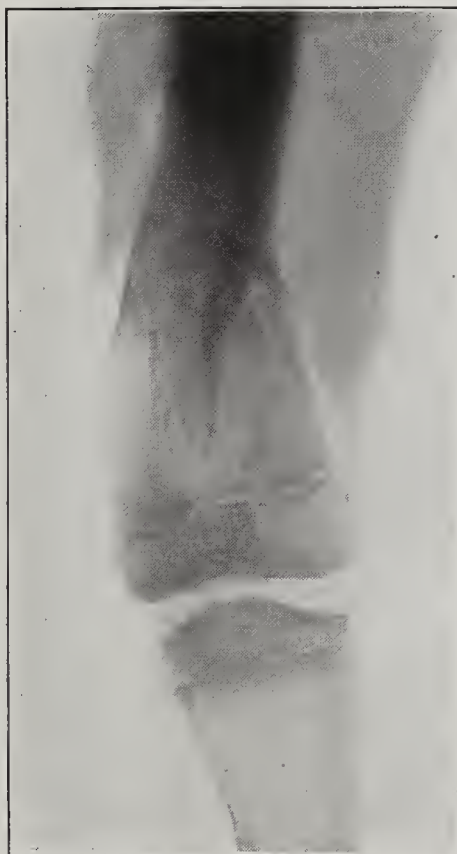


Fig. 7



Fig. 8

Fig. 7 (Case 2).—Dyschondroplasia (Ollier). Note the irregular longitudinal lines and the irregular uneven shadows in the lower end of the femur and tibia particularly.

Fig. 8 (Case 2).—Effect of prolonged administration of phosphorus on dyschondroplastic bone.

The infected transplant was removed, and at the same time for diagnostic purposes a strip was excised the entire length

of the diseased area of the lower end of the shaft of the tibia. It showed that the end of the shaft was filled with a mass of hyaline cartilage with only a thin streaked bony cortex about the periphery, and islands of calcification with beginning ossification were scattered irregularly throughout, making the dotted shadows in the roentgenograms. The condition arises from a dysplasia of the epiphyseal cartilage leading to a piling up of cartilage or an enchondromatous condition in the ends of the shafts and usually affects the bones of one or two extremities. It was decided to try the effects of phosphorus on the diseased condition; so after the hip wound had healed, the patient was given $\frac{1}{200}$ grain in pill form twice daily for three months. Roentgenoscopy revealed moderate changes similar to those in Figure 2 of the preceding case and also including the ends of the affected bones of the left limb. The phosphorus was discontinued for twenty-six months, at which time the only remaining effects of its administration, as shown by the roentgen ray, were the narrow, feeble, transverse shadows in the ends of the shafts at considerable distances from the epiphyseal lines. One hundredth grain pills were then given twice daily and continued fairly regularly for eight months, at which time roentgenograms were again taken.

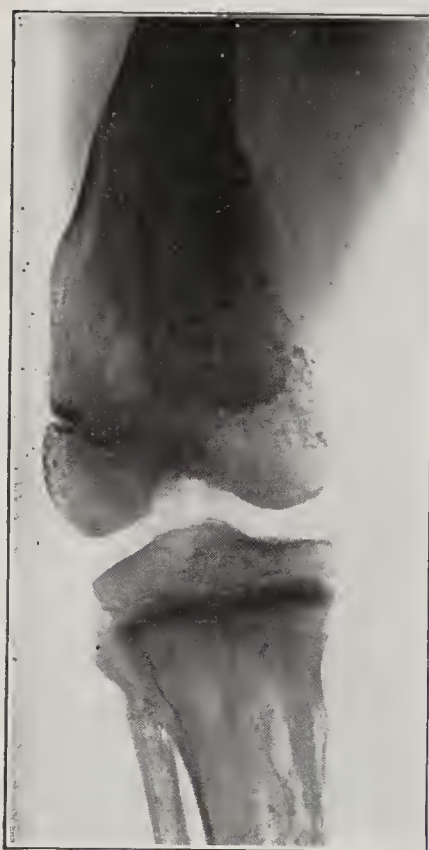


Fig. 9



Fig. 10

Figs. 9 and 10 (Case 2).—Effect of prolonged administration of phosphorus on dyschondroplastic bone.

Figure 8 shows the effect in the normal right limb, where the broad, heavy shadows of the shaft ends represent the bone formation from the recent administration. The narrow line some distance away in the end of the tibia is from the previous administration; but no traces of it are to be seen in the end of the femur or in the epiphyses. In the left limb (Fig. 9) there are no traces left of the first administration except a very faint line seen in the upper end of the tibial shaft.

From the second administration there are zones along the epiphyseal lines and marked enlargement of the irregular spots in the diseased ends of the shafts. The upper end of the tibia where the disease is not marked shows an even broad line, but the lower end of the femur, where the changes are extensive, casts a very irregular juxta-epiphyseal shadow. In its mesial portion there has been little growth along the epiphyseal line, which has produced some bowing of the leg; but the shadows representing numerous islands of the zone of calcification carried upward in the cartilaginous mass have markedly enlarged. This is due no doubt to ossification in and about them and not to a growth of the islands of calcification. The changes are especially well shown in the lower

ends of the tibia and fibula, where shadows are seen in the epiphyses from growth about included islands of calcified cartilage (Fig. 10). The transverse growth of the shaft



Fig. 11 (Case 3).—Limb bones in osteogenesis imperfecta. The shafts are relatively narrow, and the cortices are very thin.

including the diseased regions, has continued, as seen by comparing Figure 7 with Figure 9, which was made two and



Fig. 12 (Case 3).—Limb bones in osteogenesis imperfecta. The shafts are relatively narrow, and the cortices are very thin.

one-half years later; but there is little evidence of the influence of the phosphorus on it.

It is doubtful if the effect of the phosphorus has been of any value to the patient, as there has been no relative increase in the length of the affected limb. It is conceivable, however, that the prolonged use of phosphorus in enchondromas showing areas of calcified cartilage might eventually lead to their complete ossification.

The following case shows the marked effect of phosphorus on both the longitudinal and transverse growth, where a congenital disturbance of bone growth was present:

CASE 3.—W. N., boy, aged 8, was first seen in May, 1913, presenting the usual picture of osteogenesis imperfecta. He weighed only 25 pounds and had suffered numerous fractures of the bones of the frail extremities since birth which, coupled with a hyposcoliosis, had resulted in marked deformity. He was unable to stand and showed about the mental



Fig. 13 (Case 3).—This and the following illustrations show the bone changes following prolonged administration of phosphorus in a case of osteogenesis imperfecta. There has been marked stimulation of osteogenesis which has led to transverse growth of the shafts—the process chiefly affected in the disorder—as well as to longitudinal growth and growth of the epiphyses. In this illustration, marked transverse growth of the tibiae and fibulae is shown, with no signs of recent fractures.

development of a 4 year old child. Roentgenograms of the limb bones (Figs. 11 and 12) revealed fairly long but very narrow shafts, the cortices of which were very thin. As a result of the fractures there were marked curvatures and remnants of several old calluses. The epiphyses were relatively large, and their centers of ossification had appeared normally. Epiphyseal lines were distinct except in the lower ends of the femora, where, as a result of injury, they had become obliterated, resulting in marked shortening of the shafts, especially the right one (Fig. 19).

The patient was put on phosphorus pills, $\frac{1}{200}$ grain, three times a day, which were continued quite regularly for twenty-six months, when he was again seen. There had been considerable general improvement and a gain in weight of 5 pounds. He was now able to sit, and used the arms more freely, which had resulted in a number of bone injuries during the periods. Roentgenoscopy revealed marked phos-

phorus changes. There were shadows at the ends of the shafts varying in density and breadth according to the normal rate of longitudinal growth for the region, marked increase in the transverse diameters of the shafts and denser shadows



Fig. 14 (Case 3).—Marked changes in the upper extremities.

about the cortex of the centers of ossification in the epiphyses and in the short bones of the hands and feet and of the patellae. The tibiae and the fibulae (Fig. 13) showed marked transverse growth with no signs of recent fractures. The broad dense shadows at the lower ends of the shafts showed the preponderance of growth in this region. There were no

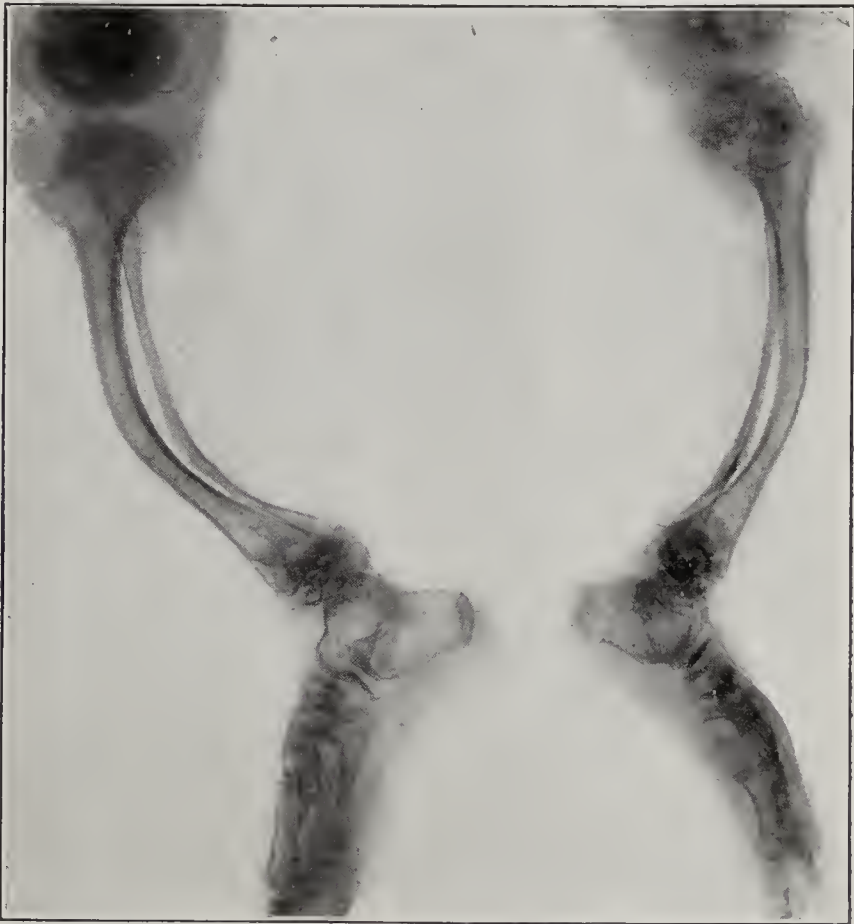


Fig. 15 (Case 3).—Fading of the shadows in the ends of the shafts, and absence of dense shadows in the zones of continued growth.

shadows in the lower metaphyses of the femora, owing to the absence of longitudinal growth from obliteration of their epiphyseal lines. There were marked changes in the upper extremities (Fig. 14), where shadows from the longitudinal

growth were broadest in the lower metaphyses of the radius and ulna. The transverse diameters were greater in the bones of the right arm. This was no doubt due to disuse of the left arm, resulting from fractures, two of which had occurred



Fig. 16 (Case 3).—Left humerus, showing the two fractures with greater angulation and broader unossified intermediary calluses.

in the humerus and one in the radius and ulna, those of the humerus being not yet fully united.

The dose of the drug was then changed to $\frac{1}{150}$ grain twice daily, but the mother stopped giving it after about three



Fig. 17 (Case 3).—Phosphorus changes less extensive than in the first period.

months. The child was next seen one year later. Roentgenoscopy revealed marked fading of the shadows in the ends

of the shafts (Figs. 15 and 16) as shown in previous plates, and no dense shadows formed in the zones of continued growth. The diameter of the shafts and thickness of the cortices had remained about the same. Inner markings from the previous administration were seen in some of the epiphyses and short bones of the hands and feet. The left humerus (Fig. 16) showed the two fractures with greater angulation and broader unossified intermediary calluses than in the previous plate. During the nine months that the phosphorus was discontinued there was more rapid absorption of the previously deposited bone than occurred during like intervals from healthy bones of the first two cases reported.

The patient was again put on $\frac{1}{150}$ grain of phosphorus twice daily, which was continued for eighteen months, when he was again examined. He was much more active both physically and mentally and could creep about, but was still unable to walk. He weighed 35 pounds, which was a gain of 10 pounds during the four and one-half years that he had been under observation. His mental development had been rapid, and he was doing third grade work in school. The deformity of the left arm had increased, and it was much less serviceable than the right. Six months before he had fractured the right arm, which was treated by a splint with healing. Roentgeno-



Fig. 18 (Case 3).—Phosphorus changes less extensive than in the first period.

grams were again taken, which showed phosphorus changes in the previously mentioned locations; but they were relatively less extensive than for the first period (Figs. 17 and 18). This was doubtless due to the smallness of the dose for his weight and age. The right humerus was relatively large and showed a bony callus at the seat of the fracture. The shaft of the left humerus was small, and the lower fracture shown in the previous plate was still ununited. The upper one had united, and its callus had almost entirely disappeared. In the picture of the pelvis and thighs (Fig. 19), the effects of the different administrations are especially well shown by the lamellae on the crests of the ilia. The dose of phosphorus was increased to $\frac{1}{100}$ grain twice daily. Care must be exercised when it is used over such long periods of time in order to avoid the development of chronic phosphorus poisoning, in which, according to Wegner, there is necrosis of the parenchyma and subsequent fibrosis with contraction of the liver and kidneys, and to a less extent of other organs.

The therapeutic value of phosphorus in this case is unquestioned. While it has not removed the underlying cause, osteogenesis has been markedly stimulated, both in the fibrous and enchondral processes of bone formation. This has led to transverse growth of the shafts, which process is chiefly affected in the disorder, as well as to longitudinal growth and growth of the epiphyses.

These findings show that phosphorus affects the normal bones of children in much the same way as described by Wegner for experimental animals. The effects on enchondral bone growth is especially well marked. No definite increased transverse growth could be made out, but if slight it would easily escape detection by means of the roentgen ray, especially as the technic varied with each set of plates. Also for some time after the phosphorus is stopped there is a continued but less marked overproduction of bone in the juxta-epiphyseal region of the shaft which is probably due either to the cumulative effect of phosphorus or to the stimulating influence of the excessive stores of calcium salts in the neighboring bone.



Fig. 19 (Case 3).—Effects in the pelvis and thighs.

COMMENT

The diseased bones showed certain variations. In osteogenesis imperfecta, the transverse growth was as strikingly affected as the longitudinal. All fractures occurring during the period of observation healed except one at the middle of the left humerus, which occurred during the period of interruption of the phosphorus, an inactive stage of nonunion being established before renewal of the drug. Judging from the general effect it produces, phosphorus if given early in fractures during the active period of repair should stimulate callus formation and ossification. In nonunion, however, when the natural reparative impulses have been exhausted, little should be expected from its use.

Roentgen-ray studies of the bones during the administration of phosphorus alone and with other substances in rickets should be of interest. These obser-

vations show clearly that phosphorus when given alone has a marked stimulating effect on bone production and consequently of calcium accumulation in the normal zones of growth, and speak against the assertions of Schabad relative to calcium metabolism in healthy children.

During the florid stage of rickets, the bony tissues have lost the power of depositing lime salts; and as phosphorus is presumably unable to restore this power, no appreciable effect from its administration would be detectable by means of the roentgen ray, although it may increase the amount of osteoid tissue formed. During the healing stage, when the power of laying down lime salts begins to return, the phosphorus would stimulate the formation of osteoid tissue and consequently increase the amount of bony tissue formed. It must be remembered that during the healing stage of rickets, from the rapid ossification of osteoid tissue piled up in the metaphysis during the florid stage, a condition forms which roentgenologically resembles very much the phosphorus changes in normal bones.⁷ Phosphorus administration would intensify this condition.

122 South Michigan Avenue.

A CONSIDERATION OF SOME DRIED VEGETABLES

WITH SPECIAL REFERENCE TO THEIR NITROGEN AND CALCIUM CONTENT *

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From an economic standpoint it is highly desirable, particularly at this time when the transportation of foods occasions unusual difficulties, to eliminate as much water as possible from them and thus reduce their weight and bulk. This furnishes the justification for the attempt to use desiccated foods. Any propaganda for the widespread use of foods prepared in novel ways ought to be supported by scientific evidence of its importance from a physiologic standpoint.

For arctic explorations a supply of vegetables is considered desirable. In some expeditions this has been obtained by the use of desiccated green foods. During the Civil War such dried vegetables as were available were used. At present the various governments are using desiccated foods. The United States Food Administration has directed much effort during the past year in impressing on the minds of the people the value of drying foods. Farmers in this country years ago started drying such products as string beans. A successful community drying plant is no longer an experiment but an institution.¹ The drying of fruit likewise received attention from the Department of Agriculture years ago.² The possibilities of conservation by desiccation are obvious.

In considering the value of a food today, its inorganic constituents should receive attention as well as its protein, fat, carbohydrate and vitamin content. Years ago, Bunge³ and other physiologists emphasized

7. Lovett, R. W.: The Roentgenographic Appearances in Rickets, *THE JOURNAL A. M. A.*, Dec. 11, 1915, p. 2062.

* From the Sheffield Laboratory of Physiological Chemistry, Yale University.

1. Farmer's Bulletin 916, U. S. Dept. Agr., 1917.

2. Yearbook U. S. Dept. Agr., 1912, p. 505.

3. Bunge, G.: *Lehrbuch der physiologischen Chemie*, Leipzig, 1897.

especially the physiologic importance of the mineral content of foods. The significant rôle which the inorganic constituents of foods may play has of late been demonstrated experimentally in more than one way, notably through the study of synthetic dietaries in which one or more inorganic elements were lacking or present in unsuitable proportions.⁴

Sherman's⁵ determinations of the inorganic constituents of a great many foods and also his compilations of recorded analyses are of unusual value to all students of nutrition. He in particular and later Blatherwick⁶ have called attention to the significance of the acid and base forming constituents of foods. Forbes⁷ has analyzed the ash of a great many foods, but most of his data relate to animal feeds.

Recently Courtney, Fales and Bartlett⁸ reported statistics of the inorganic constituents of a number of vegetables subjected to definite conditions of cooking. These authors were particularly interested in determining to what extent cooking by different methods removed the available inorganic components of the foods, bearing in mind the use of green vegetables for their iron and calcium content in infant nutrition.

The student of dietetics recognizes that were it not for the use of milk, eggs and a few green vegetables, our food intake would ordinarily be very deficient in available lime. The present study was planned to supplement our somewhat meager knowledge regarding the composition of desiccated vegetables.

METHODS OF DRYING

Carrots and potatoes were peeled, care being taken not to contaminate the freshly cut surfaces with dirt; they were then weighed, sliced thin, and dried. All other vegetables were handled in an edible form; that is, inedible portions were removed, and the remainder washed thoroughly in cold running water to remove all traces of adherent soil. All vegetables were either dried on a piece of cheesecloth or in a small sieve on an ordinary steam-heated radiator at from 65 to 70 C. (149 to 158 F.).

At the temperature here used in drying, it is wise not to keep those vegetables containing much starch and sugar on the radiators longer than from two to three days, because they then begin to darken. The loss of water in producing these air-dried products was estimated as given in the table.

ANALYTIC PROCEDURES

The moisture still remaining in the air-dried products was determined by drying for from four to five hours in an oven at from 96 to 97 C. (204.8 to 206.6 F.). This temperature in some instances caused a slight darkening; but after many trials at different temperatures, it seemed the best to adopt as a working basis for this analytic procedure.

Ash was determined in the ordinary way on the air-dried material; nitrogen by Kjeldahl's method likewise, and calcium by McCrudden's⁹ method. Before the calcium was determined, the ash was always taken down to dryness on the water bath from three to five

4. Osborne, T. B., and Mendel, L. B.: Publication 156, Carnegie Institution of Washington, 1911; Jour. Biol. Chem., 1918, **34**, 131.
5. Sherman, H. C.: Chemistry of Food and Nutrition, Ed. 2, New York, the Macmillan Company, 1918.
6. Blatherwick, N. R.: The Specific Rôle of Foods in Relation to the Composition of the Urine, Arch. Int. Med., September, 1914, p. 409.
7. Forbes, E. B.; Beegle, F. M., and Mensching, J. E.: Bull. 255, Ohio Agr. Exper. Station, 1913.
8. Courtney, Angelia M.; Fales, Helen L., and Bartlett, Frederic H.: Some Analyses of Vegetables Showing the Effect of the Method of Cooking, Am. Jour. Dis. Child., July, 1917, p. 34.
9. McCrudden, F. H.: Jour. Biol. Chem., 1911-1912, **10**, 187.

times with hydrochloric acid to cause the traces of silica to flock out for removal.

THE LOSS OF WATER IN DRYING

The water content of vegetables is so variable that we only report figures on the basis of the solids found after drying as described. Values for raw edible portions mean nothing when the possibilities for a plant to lose water are so many. For example, variations in water content of a green vegetable may be due to the soil, weather at the time of harvesting, manner of shipment, manner of "handling" by the various dealers, period of time from harvest to consumption, and many other conditions.

NITROGEN

The nitrogen content of the dried vegetables is at best only a rough index of their content of protein. The increase in the concentration of protein as the result of drying is most striking; for example, the nitrogen content estimated on the basis of raw sweet potato is 0.3 per cent.; on the dried product it is 1.06 per cent.; in raw spinach it is 0.45 per cent.; in the dried, 4.58 per cent.

PERCENTAGE COMPOSITION OF VEGETABLES, ARRANGED ACCORDING TO DECREASING NITROGEN CONTENT

Name	Materials as Purchased		Air-Dried Material				
	Water	Solids	Moisture	Ash	N	Ca	Ca in % of Ash
Swiss chard*.....	....	....	4.8	15.2	5.42	1.26	8.3
Beans of String Beans III.....	80.0	20.0	1.14	5.37	4.98	0.30	5.6
Spinach II.....	90.2	9.8	3.7	15.9	4.58	0.56	3.5
Beet tops.....	94.2	5.8	2.3	18.1	4.35	1.66	9.2
Lettuce.....	96.4	3.6	4.22	10.5	4.01	0.77	7.3
String Beans II.....	92.8	7.2	6.3	6.8	3.90	0.60	8.8
Spinach I.....	82.0	18.0	4.7	10.1	3.53	0.60	6.0
String Beans I.....	90.4	9.6	5.8	6.9	3.47	0.53	7.7
Pods of String Beans III.....	93.0	7.0	3.56	5.8	3.09	0.87	15.0
Cabbage II.....	85.0	15.0	6.2	6.0	3.01	0.38	6.3
Celery.....	97.3	2.1	2.27	16.5	2.99	1.13	6.8
Cabbage I.....	89.4	10.6	4.5	4.75	2.86	0.55	11.6
Cabbage III.....	87.3	12.7	6.3	5.5	2.85	0.36	6.6
Potato.....	79.4	20.6	1.89	3.7	2.13	0.03	0.8
Carrot tops.....	74.9	25.1	4.1	10.3	1.95	2.14	20.8
"Riced" potato**.....	....	....	6.43	2.7	1.58	0.01	0.4
Carrots II.....	82.2	17.8	7.6	4.2	1.39	0.22	5.2
Carrots I.....	83.5	16.5	5.3	3.7	1.19	0.19	5.2
Carrots III.....	84.2	15.8	5.9	3.95	1.16	0.20	5.1
Sweet potato.....	71.7	28.3	0.9	3.1	1.06	0.12	3.9

* Product of the Mrs. O. H. Harriman Laboratory, New York.
** Prepared by Dr. H. C. Gore, Bureau of Chemistry, U. S. Department of Agriculture.

The variation in nitrogen according to the plant or parts of the plant is striking. The starch plants, as potatoes and carrots, notwithstanding a high solid content on drying, have a low protein content. Spinach, Swiss chard, lettuce, celery and cabbage serving as vehicles of roughage and flavor, with a high water content, contain a relatively high percentage of nitrogen in the dried material. Intermediate between these two groups stands the string bean, in which the protein is concentrated ten times or more by drying.

In addition to the variation in nitrogen content according to the plant, there is a noticeable difference in the amount of nitrogen in the different parts of the same plant. Dried Carrots I had a nitrogen content of 1.19 per cent., while the tops from these carrots contained 1.95 per cent. According to a calculation from the tables of Atwater and Bryant,¹⁰ the solids of

10. Atwater, W. O., and Bryant, A. P.: Bull. 28, O. E. S., U. S. Dept. Agr., 1906.

beets contain 2.04 per cent. of nitrogen, whereas the sample of dried beet tops here analyzed contained 4.35 per cent. In the case of String Beans III, the nitrogen value of the beans was 4.98 per cent., while of the pods it was 3.09 per cent. In other words, the dietetically unimportant or waste parts of some vegetables contain almost as much nitrogen as, and in some cases more than, the important part of the vegetable, that is, for human consumption.

Notwithstanding these apparently high nitrogen values of some dried foods, it is doubtful whether they are significant from the standpoint of protein intake. Unless we alter our mode of cooking or resort to the use of dried material, it is hardly probable that an individual on his ordinary mixed diet would consume at one meal, in addition to other food, more than from 100 to 200 gm. of the cooked edible portion of any of the vegetables. However, it is not beyond the realm of possibility to dry and comminute the vegetable so finely that one could easily cook the dried material in half of its original water content. In fact, we have cooked our dried carrots in an amount of water equivalent to that driven off from them during the drying process, and have subsequently concentrated the mixture to a palatable consistency. This would have been impossible if the same vegetables had been cooked in their original form.

INORGANIC CONSTITUENTS

A glance at the table shows that a high percentage of inorganic constituents is characteristic of the green vegetables. This statement applies likewise to the calcium content. This alone, if there were no other reasons, would warrant a consideration of these materials as adjuvants to the dietary of the growing individual. We noted by comparative qualitative tests that the green foods had a preponderance of iron over the other vegetables. Their value as a source of iron cannot be overlooked when it is remembered that a quart of milk, one of the most valuable foods, contains only 1 or 2 mg. of this element. The last column of the table shows the calcium in percentage of the total inorganic content of the vegetables.

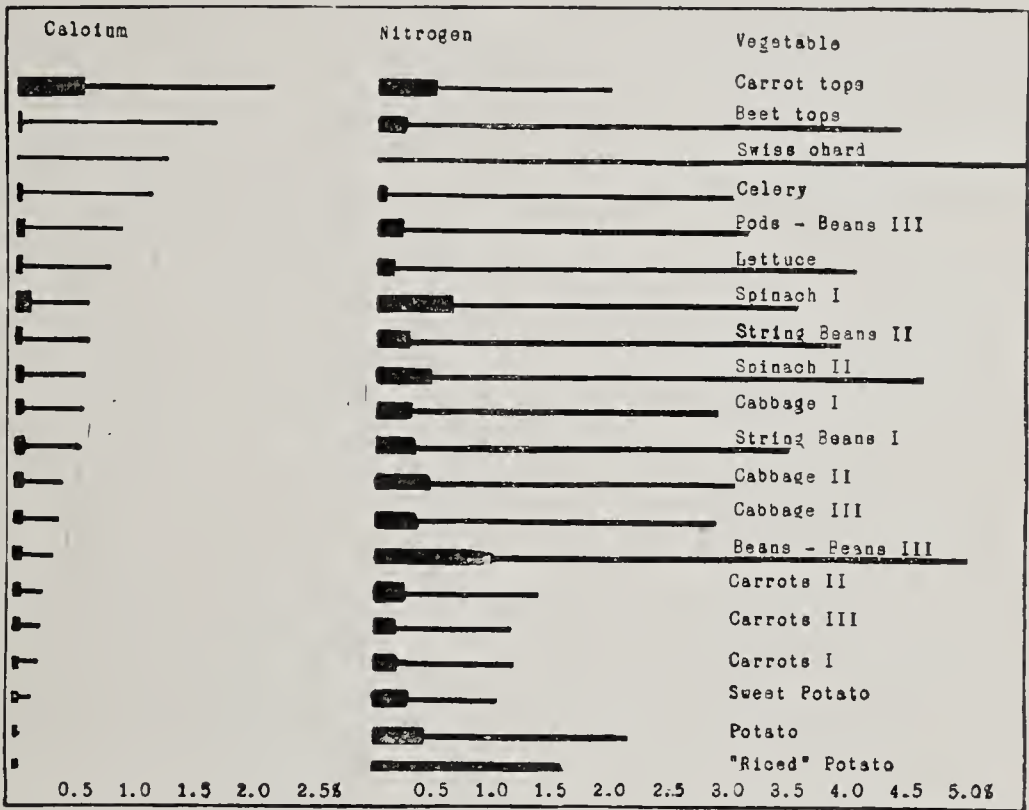
LOSSES BY COOKING AND DRYING

Attention is called to the possible loss of inorganic elements in the method of cooking vegetables. Snyder¹¹ studied the loss in cooking potatoes, carrots and cabbage under various conditions. Using ordinary methods of cooking, he showed that there was a decided loss in the inorganic constituents, as well as other components, in some instances as much as 50 per cent. Wardall¹² has estimated the loss in carbohydrates in preparing "thrice washed" vegetables for diabetics. Most recently Courtney, Fales and Bartlett called attention to the loss in minerals, by boiling, in preparing vegetables for children. They recommend the steaming of foods.

As is shown in the table, the "riced" potato contained a smaller amount of inorganic components, particularly calcium, than the other potato. This may be due either to the soil in which they were grown or to

the method of preparation for drying. These "riced" tubers were steamed before drying to destroy the enzymes which cause the raw potato to darken when exposed to the air. The calcium content of the potato is very low, and to remove any of it in the preparation for drying is a serious objection. This fact must be borne in mind if potatoes are to be dried extensively in this country. With our material there was only a slight darkening when the time between slicing and exposure to radiator heat was reduced to a minimum. In fact, the darkening was so slight that it could not be detected after the dried product was ground.

The physiologic importance of calcium in the feeding of growing organisms is now universally recognized. No other food supplies as much lime as milk. Some of the vegetables here analyzed, if fed in conjunction with milk or other foods, as the cereals, which are decidedly lacking in lime, will increase the available lime in the diet. There is a paucity of studies on the physiologic value of calcium in vegetables. From investigations conducted in this laboratory during the



Calcium and nitrogen content of fresh and of dried vegetables: heavy lines, percentage content of calcium or nitrogen in the fresh vegetable; light lines, concentration of these elements in the same products dried.

past year, the indications are that for at least two vegetables, spinach and carrots, the available lime is not as well utilized as that from milk or lime salts. Courtney, Fales and Bartlett indicate that in their experience one child, somewhat rachitic, showed an improved mineral balance on the addition of spinach to its dietary. The analyses here reported indicate the amount of lime present in some vegetables, which might become desirable as supplementary sources of calcium.

SUMMARY

The quantity of water lost by the foods dried in this series is in accord with the values reported in Atwater and Bryant's analyses. The vegetables here studied contained from 71 to 97 per cent. of water.

In the case of some of the vegetables, the nitrogen content in terms of the dried product is in striking contrast with that of the original material, owing to the large losses of water.

Some of the materials are possible, valuable and hitherto unappreciated sources of lime. The calcium

11. Snyder, H.: Bull. 43, O. E. S., U. S. Dept. Agr., 1897.
12. Wardall, Ruth A.: Vegetable Foods for the Diabetic, THE JOURNAL A. M. A., Dec. 1, 1917, p. 1859.

statistics here reported are in accord with the comparable figures for such of these materials as Sherman and Forbes have analyzed.

The high calcium content of the green vegetables in contrast with that of the tubers and roots is very striking.

There may be a loss of inorganic constituents, particularly calcium, in the cooking of foods and in the preparation of some of them for drying.

INTRATRACHEAL ANESTHETIC MACHINE *

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In neurologic surgery it frequently becomes necessary to employ an intratracheal anesthetic, particularly in work on the cerebellum and the brain stem, when a patient may have respiratory difficulty that may be relieved by the administration of plenty of pure air under slight pressure. There are many intratracheal anesthetic machines in use, some of which are used very successfully, but the general tendency has been to make them too complicated. In view of this fact, it seemed permissible to construct a machine that would be efficient yet simple and easy to manipulate.

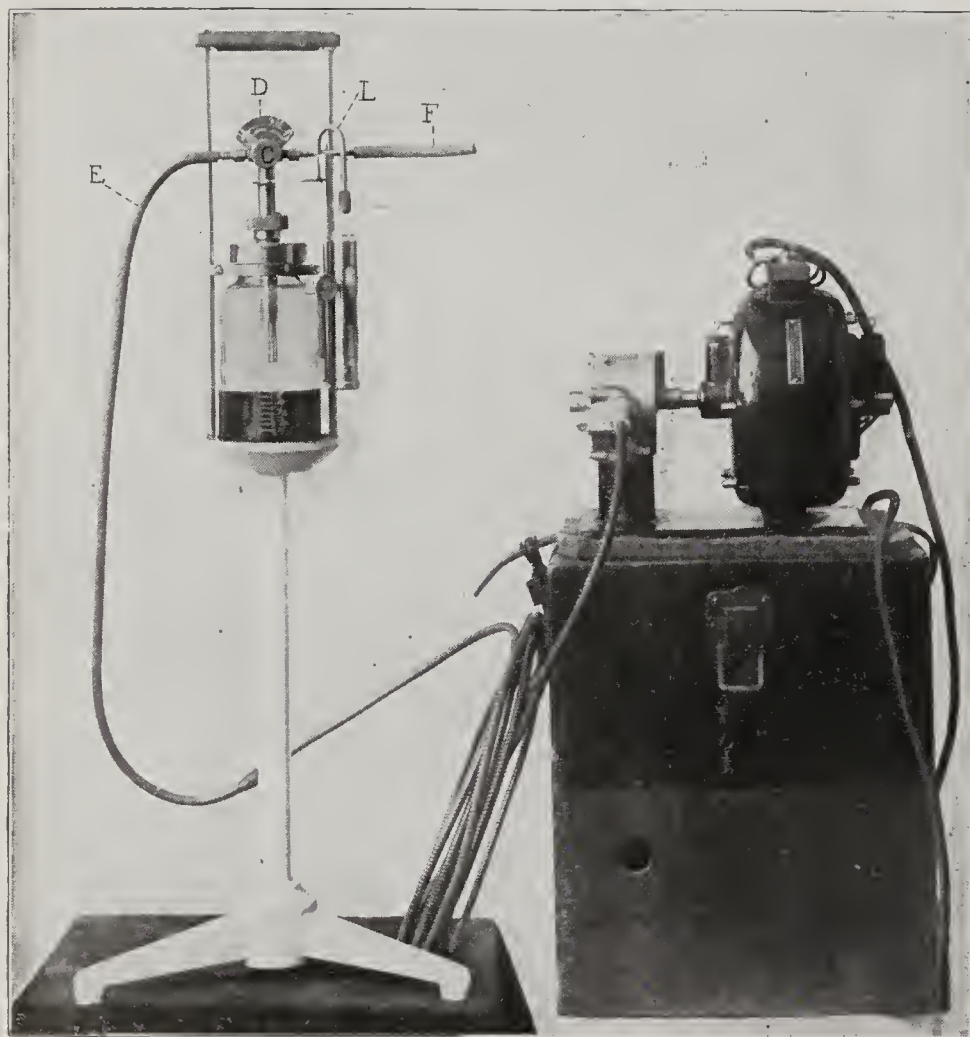


Fig. 1.—Intratracheal anesthetizing machine.

The one herein described has been constructed to conform to three principles, as follows:

1. *Constant Flow of Air.*—A constant flow of air maintained and controlled so that pure air alone, or any degree of ether saturation, may be given (Fig. 2). This is accom-

plished by diverting the air current through valve *C* from *E* to *F*. If pure air is desired, the valve is thrown open to send the air direct from *E* to *F* without entering the ether chamber. If ether is desired, part of the air current is forced through tube *N* on the ether surface, where it becomes saturated with ether and escapes through tube *B* to tubes *C* and *F*.

2. *Ether Tension.*—

Ether tension is kept constant by the lowering or raising of tubes *B* and *N*.

3. *Constant Air Pressure.*—A safety valve prevents too great pressure within the lungs. This is accomplished by connecting the air current with a mercury manometer, *L*, *G* and *H*.

THE APPARATUS

The apparatus consists of a motor directly connected to a small rotary blower mounted on a suitable base; a coil of flexible metal tubing to convey the air to the controlling valve, and a three-point foot piece with a column supporting a base plate, to which is secured a 24 ounce glass bottle by means of a yoke-clamp

gripping the two side rods that are threaded into the base plate and secured at the top by the hand bar (Fig. 1). In Figure 2 the upper end of the etherizing stand is shown enlarged, and the working parts are numbered as follows:

The 24 ounce bottle, *A*, is supplied with a metal cap cemented to its top and having two openings. The opening in front has a knurled screw collar, *K*, designed to clamp and hold tube *B* at any desired vertical position. The other opening has a knurled screw stopper which shows above *K* and to the right of *B*, and which is used for filling the bottle with ether.

The lower end of the tube *B* may be seen just below the neck of the bottle, and the upper end supports valve *C* and the mercury column *H*. The valve is controlled by the knurled knob *C*, to which the indicator point is secured, while dial *D* is fastened to the valve body, and has a point at the left marked "All Air," a point at the top marked "Half A and E" (half air and half ether), and a point at the right marked "All Ether." Tube *E* at the left of the valve conducts the air into the valve, where it is directed downward into the bottle or straight out through the tube *F* at the right of the valve. Tube *G* is a glass extension of the metal tube, *L*, and directs the flow of air against the pressure of the mercury, *H*, which is in a glass retainer held in a metal protecting case. The intratracheal pressure is increased as the column of mercury is raised about the glass tube, *G*.

A flat metal arm extends out to the right from the top of tube *B*, and supports a rod to which is secured a pinion having a knurled knob, *J*. The pinion engages a toothed rack secured to the upper and lower sleeves around the rod, the sleeves being part of the protecting case of the mercury column. At *I* a millimeter scale is seen and reads, beginning at the bottom, 0, 5, 11, 15, and 20 mm. A small quantity of cotton is packed loosely around tube *G* at the top of the glass retainer to prevent the

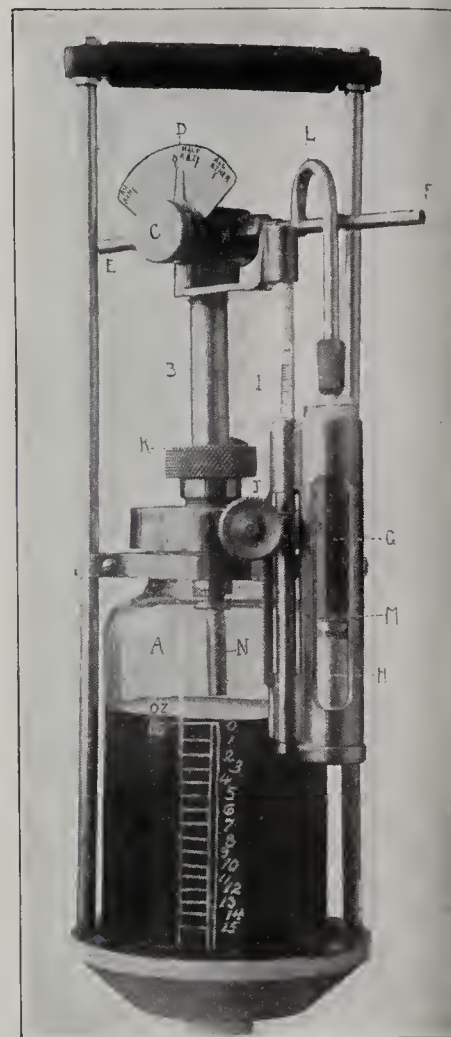


Fig. 2.—Upper end of etherizing stand.

* From the Mayo Clinic.

mercury being blown out and wasted, in case obstruction should occur in the escape of air from the lungs. There is a graduation in ounces engraved on the side of the bottle, numbered, beginning at the top, to the right, 0 to 15, making a 16 ounce capacity as seen at the left. Figure 3 shows the valve in two positions exposing the air ports *A* and *B*. When the machine is in operation, the air passes into tube *E* and fills port *B*, flowing out through tube *F* when the pointer is at "All Air." The surfaces, *X, X*, of the valve at each side of port *B* cover the openings leading down into tube *B* and the small tube *N* inside *B*, preventing air from getting into the bottle. By turning the valve so that the pointer is at "All Ether," the end, *C*, of port *B* is directly over the opening leading down into the small tube inside tube *B*, while the end, *D*, of port *A* is over the opening leading to tube *B*. The air then passes from *E* into port *B*, around to the cell, *C*, down the small tube *N* inside tube *B* and over the surface of the ether. The gas then rises through tube *B* into port *A* at *D*, thence to *A* and out through tube *F* and to the patient. Port *B* is extended toward *A* at *E*, leaving a thin wall between, so that as the valve is turned from "All Air" to "All Ether" there will be a constant flow of air.

To use this apparatus, the motor and blower should be placed in some cool, easily accessible place where a supply of pure air can be drawn into the pump. The starting and stopping switch should be within reach of the operating room,

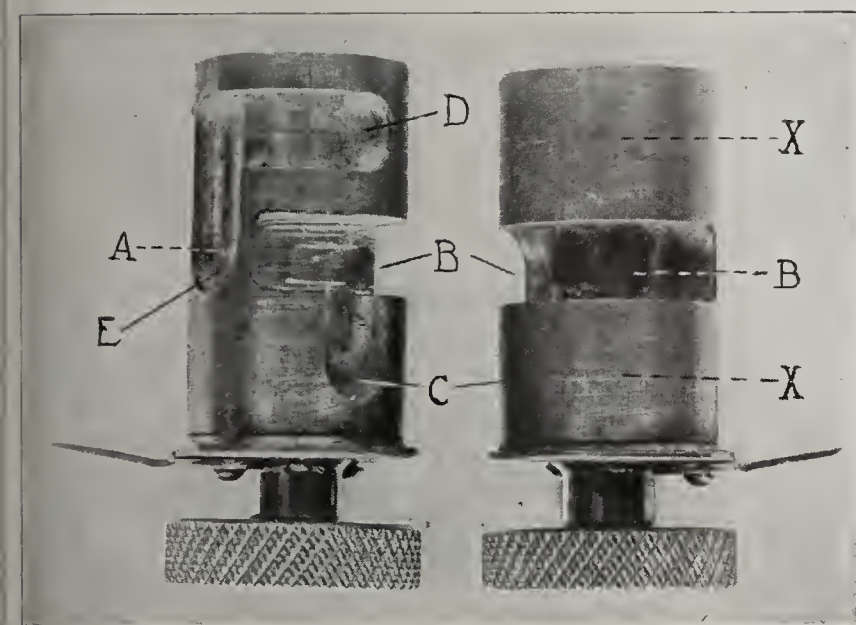


Fig. 3.—Valve.

as should also the air pipe line from the pump. The air connection leading into the room should be about 6 inches above the floor, so that the flexible metal tube used to connect the controlling valve with the pump may lie on the floor out of the way. When the anesthetic is to be started, the rubber connection of the flexible air line is secured to tube *E*, and the intratracheal tubing to tube *F*. Valve *C* is adjusted to control the amount of ether desired. The mercury column is raised to 10 mm. for adults and 7 mm. for children. The bottle is filled with ether to 0, and tube *N* is adjusted to a level 2 cm. above the ether.

The patient to be anesthetized is given morphin and atropin one hour previously. Before intubation is attempted, it is important to have the patient deeply anesthetized, after which the intratracheal catheter is inserted and connected with the running machine. Air is used first, then, gradually, the ether.

Fasting and Work.—A fasting man may have considerable power. The popular idea of the necessity of meat for a laboring man may be epitomized in the statement: a strong man can eat more meat than a weak one, hence meat makes a man strong. The proposition is evidently absurd.—Lusk, Food in War Time.

THE POTENCY OF ANTIPNEUMOCOCCIC SERUM

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Antipneumococcic serum, as developed by Neufeld, was not regarded as entirely satisfactory as a therapeutic agent. Cole and his co-workers renewed the interest in this serum, however, by their work on the differentiation of types of pneumococci and the application of the specific univalent serums.

Clinical evidence has since accumulated which tends to encourage the use of Cole's Type I serum in cases in which the corresponding type of infecting organism has been determined.

The official control of this product by protection tests has thus far been confined to serum produced by the immunization of horses against Type I pneumococci.

Polyvalent serums are required to show the same protective action against Type I organisms as is the specific type serum.

The evidences of the manufacturers' protection tests are accepted for the potency of serums made by immunizing animals against pneumococci of Types II and III.

The present method of testing the potency of antipneumococcic serum was devised by Neufeld. Cole modified the Neufeld technic in certain details, chiefly in the method of the injection of the animals.

It seemed desirable, by reason of the irregularities encountered in the application of this method of testing, that all lots of serum claimed to be effective against Type I pneumococci, offered for sale in interstate traffic, should be examined at one laboratory; further that the manufacturers' tests should be confirmed by an independent official agency, responsible for making and interpreting the tests, until the limitations of the method were studied.

Acting on a recommendation to this effect, the secretary of the treasury ordered the testing to be executed at the Hygienic Laboratory. Since this order has been in effect there have been examined at this laboratory 104 lots of serum made by various laboratories, representing both commercial and noncommercial manufacturers. This involved a total of 125 tests, as certain specimens were tested more than once.

A serum kindly furnished by Dr. Cole was preserved at a low temperature, and was used as a basis of comparison in each test for potency. In a survey of the results of tests on these serums, a number of facts have been noted which it is thought will be of interest to those concerned in the production, testing and therapeutic application of the serum.

The animal test was executed as Neufeld devised it, by inoculating a series of mice with a fixed dose of serum, and varying the dose of culture, with the exception that both the serum and the culture were injected into the peritoneal cavity in accordance with Cole's modification. A shorter time than Neufeld allowed intervened between the injection of the serum and of the culture. Neufeld considered a serum sufficiently active which in a dose of 0.2 c.c. would protect

mice of from 15 to 20 gm. weight against 0.1 c.c. of an 18 to 24 hour old broth culture, of which 0.000001 c.c. was fatal to control mice of similar weights.

SUMMARY *

	Separate Methods		Simultaneous Methods	
	Number of Tests	Per-centage	Number of Tests	Per-centage
Tests in which commercial serums failed to protect as many mice as nonecommercial serums.....	13	12	0	0
Tests in which commercial serums protected as many mice as non-commercial serums	72	68	4	36
Tests in which commercial serums protected more mice than non-commercial serums	21	20	7	64
Total tests.....	106	100	11	100

* This table does not include seven retests following rejection of serums on original tests.

In carrying out the test, two mice were given a dose of 0.2 c.c. of the culture, two mice 0.1 c.c., and one mouse 0.01 c.c., all previously or simultaneously inoculated with 0.2 c.c. of the serum.

PROTOCOL 1.—TESTS SHOWING IRREGULARITIES IN GROWTH OR VIRULENCE OF CULTURE

Serum, 0.2 C.e.	Cultures				
	0.2 C.e.		0.1 C.e.		0.01 C.e.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	36	36	S	S	S
1	24	36	S	S	S
2	S	S	S	S	S
3	S	S	S	S	S

No Serum	Cultures					
	0.0001 C.e.		0.00001 C.e.		0.000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	S	S	24	S	36	S

Throughout all the tests the doses of all serums used was 0.2 c.c. The culture used was grown for from eighteen to twenty-four hours in plain broth to which a few drops of the blood of an infected mouse was added. The hours of survival of the mice after injection are indicated in the protocols by a number, except

PROTOCOL 2.—TESTS SHOWING IRREGULARITIES IN GROWTH OR VIRULENCE OF CULTURE

Serum, 0.2 C.e.	Cultures				
	0.2 C.e.		0.1 C.e.		0.01 C.e.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	30	S	72	S	S
1	72	S	72	S	S
2	20	40	48	30	S
3	24	72	S	S	S
4	12	20	72	S	S

No Serum	Cultures					
	0.0001 C.e.		0.00001 C.e.		0.000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	24	30	28	36	28	40

survival for ninety-six hours or more, which is indicated by an S. It was found that survival for ninety-six hours was adequate for test purposes. A paren-

thesized number indicates the hours of survival of a mouse which was found to be infected with a contaminating organism, when sectioned.
All mice were examined postmortem, to avoid the confusion of irregularities due to death by infection with extraneous organisms, the commonest of which is the bacillus of mouse typhoid.
It is not surprising that variations occur when we consider that a culture which necessarily varies in

PROTOCOL 3.—TESTS SHOWING IRREGULARITIES IN GROWTH OR VIRULENCE OF CULTURE

Serum, 0.2 C.e.	Cultures				
	0.2 C.e.		0.1 C.e.		0.01 C.e.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	20	17	17	29	S
1	20	20	14	S	S
2	20	12	20	20	S
3	10	19	19	28	S
4	48	20	20	24	S

No Serum	Cultures					
	0.0001 C.e.		0.00001 C.e.		0.000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	45	45	S	S	S	S

virulence and density must be employed. The most striking irregularity in the results of the tests is the survival of one or both of the mice receiving the larger dose of culture, while one or both of those inoculated with a smaller dose succumb.
Thus in 125 tests of serums other than the serum used for comparison, twelve, or 9.6 per cent., showed this irregularity; and in nineteen tests of the serum used for comparison, four, or 21.1 per cent., were similarly irregular.

PROTOCOL 4.—TESTS MADE ONE MONTH LATER

Serum, 0.2 C.e.	Cultures				
	0.2 C.e.		0.1 C.e.		0.01 C.e.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	24	27	20	S	S
B	24	27	40	S	S
1	18	18	24	S	S
2	72	27	29	S	S
3	S	S	S	S	S
4	S	S	24	S	S
5	24	88	20	72	S
6	24	S	S	S	S

No Serum	Cultures					
	0.0001 C.e.		0.00001 C.e.		0.000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	24	28	27	27	36	38

IRREGULARITIES IN KILLING POWER OF CULTURE AND IN PROTECTION AFFORDED BY SERUM ¹

Protocols 1, 2 and 3 indicate the irregularities which occur in the growth or in the virulence of the culture. These tests were made each from a week to ten days later than the previous one, and the culture had been passed through one or more mice during the interval. They also indicate the irregularity of the

1. The lettered serums, A, B, etc., are those of producers not engaged in interstate sale of serum, and the numbered serums, 1, 2, 3, 4, are of those engaged in the interstate sale. The numbers refer to different specimens of serum in each test.

protection afforded even by the same serum, A, at different tests.

Protocols 4 and 5 are of tests made respectively one and three months later, and show similar irregularities in the protection afforded.

Among twenty-one series of tests it was found that Serum A failed eight times, or 38.1 per cent., to protect one mouse against 0.1 c.c. of the culture, and failed to protect either mouse five times, or 23.8 per cent.

PROTOCOL 5.—TESTS MADE THREE MONTHS LATER

Serum, 0.2 C.e.	Cultures					
	0.1 C.e.			0.01 C.e.		
	Mouse A	Mouse B	Mouse C	Mouse A	Mouse B	Mouse C
A	22	23	44	(52)	S	S
1	20	(55)	S	S	S	S
2	15	23	24	S	S	S
3	22	S	S	S	S	S
4	S	S	S	S	S	S

No Serum	Cultures							
	0.00001 C.e.		0.000001 C.e.		0.0000001 C.e.		0.00000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	28	28	34	34	40	39	33	47

As it was considered possible that the method of injecting the serum previous to the culture might be responsible for irregularities, the method of injecting simultaneously after mixing in the syringe was tried with the results shown in Protocols 6 and 7.

PROTOCOL 6.—TESTS MADE BY SIMULTANEOUS INJECTIONS AFTER MIXING IN SYRINGE

Serum 0.2 C.e.	Cultures				
	0.2 C.e.		0.1 C.e.		0.01 C.e.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	21	21	23	S	S
B	14	14	26	S	S
C	18	21	21	29	S
D	18	23	21	23	S
1	21	23	26	32	S
2	17	S	73	S	S
3	18	46	17	S	41
4	17	54	90	S	S

No Serum	Cultures					
	0.0001 C.e.		0.00001 C.e.		0.000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	30	30	21	30	34	36

Protocol 7 shows the rearrangement of the test as it has been carried out during the later tests. Three mice were put on each of two doses, 0.1 c.c. and 0.01 c.c. of the culture. This procedure was adopted, since for test purposes it was decided that the increment between the 0.1 and 0.2 c.c. doses was too small to be of practical value.

It is apparent from a survey of the Protocols 1 to 7 that there is little preference between serums produced by institutions engaged in the interstate sale of it and those which do not make the serum on a commercial basis.

That it may be appreciated that there is no inherent difficulty in the production of this serum on a commercial basis, a summary is presented.

From these results it would appear, further, that the method of testing adopted by the Hygienic Labora-

PROTOCOL 7.—TESTS AS REARRANGED

Serum 0.2 C.e.	Cultures					
	0.1 C.e.			0.01 C.e.		
	Mouse A	Mouse B	Mouse C	Mouse A	Mouse B	Mouse C
A	25	35	48	(58)	S	S
1	16	88	S	S	S	S
2	21	23	S	S	S	S
3	18	48	S	S	S	S
4	76	S	S	S	S	S

No Serum	Cultures						
	0.00001 C.e.		0.000001 C.e.		0.0000001 C.e.		0.00000001 C.e.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
	28	28	34	34	40	39	33

tory results in a greater percentage of failures of serums to pass satisfactorily, but that the irregularities are inherent in the test, and not due to slight modifications.

The lack of influence of preservative in the commercial serum was shown by the test recorded in Protocol 8 in which both preserved and nonpreserved serum of the same bleeding was used.

CONCLUSIONS

While it would seem that the mouse test is irregular in its results, it is believed that it affords in its present state a valuable measure of potency of antipneumococcic serum when properly controlled.

PROTOCOL 8.—TESTS WITH PRESERVED AND NONPRESERVED SERUM

	Serum 0.2 C.e.	Cultures				
		0.2 C.e.		0.1 C.e.		0.01 C.e.
		Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
0.15% trieresol....	A	21	S	26	49	S
No preservative....	1	15	S	30	S	S
0.2% 3-cresols.....	1a	18	S	41	S	S
No preservative....	2	21	23	S	S	S
0.25% trieresol....	2a	(28)	S	34	S	S
No preservative....	B	17	26	S	S	S
0.15% trieresol....	Ba	17	S	17	S	S
No pres. stated....	C	49	S	23	23	S

No Serum	Cultures					
	0.0001 C.e.		0.00001 C.e.		0.000001 C.e.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	30	30	21	30	34	36

The serum now available in the market is of as high a potency as that produced by laboratories not engaged in the sale of this product.

A Morgue Nuisance.—The opening of a morgue and undertaking establishment in a residence district, to the depreciation of the value of neighboring property, it is held in the Michigan case of *Saier v. Joy*, L. R. A. 1918 A, 825, may be enjoined as a nuisance.

FEEDING IN HYPEREMESIS GRAVIDARUM

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A review of the work done on the etiology of hyperemesis gravidarum shows that there is probably some kind of a toxic element in all cases which disturbs the vasomotor system and renders more sensitive the vomiting center. A neurotic factor is generally present as well as peripheral irritation from the uterus. The latter generally disappears when the uterus rises out of the pelvis. The vomiting is therefore of the reflex type. A toxic element that causes central vomiting may sometimes exist, but neither laboratory nor clinical proof has been adduced. Serious injuries to the liver or kidneys or other organs may result from starvation and acidosis. The danger to these organs resulting from inanition or toxemia or both can be fairly well estimated by the relation of the ammonia nitrogen to the total nitrogen. The determination must be made by methods that are really quantitative, preferably the Kjeldahl for the total nitrogen and the Folin test for the ammonia.

In treatment, therefore, the important thing is to feed the patient properly, beginning radical treatment early. Hospitalization and good nursing, and keeping the patient in bed, are necessary. On account of the great importance of the neurotic factor, suggestive therapeutics should be employed. At first nothing should be given by the mouth, not even water.

We have three methods of nonoral feeding at our disposal: the subcutaneous, the intravenous and the rectal, the relative efficiency and practicability of which must be considered. The practicability of a method includes its safety, its economy, the patient's freedom from pain, etc.

The principle that should guide us in nonoral feeding is to give all the necessary food elements if possible. If it is not possible to give a sufficient quantity of nitrogenous foods, we should give energy foods which save the tissues.

By the subcutaneous method, water, the salts, glucose, soluble vitamins and sedatives may be given. The method is not suited to the administration of alcohol, and is more painful than the rectal method, and should generally be replaced by the latter except in emergency cases.

By intravenous feeding, all substances may be administered that are given by the subcutaneous method. Woodyatt, Sansum and Wilder have shown the importance of regulating the velocity of the flow of the solution and have found that 0.85 gm. of glucose per kilogram and hour can be given without causing intolerance. At this rate about 40 gm. of glucose could be given every hour to a woman weighing 50 kg., and in six hours about 250 gm., which would give about 1,000 calories of energy. The method is valuable in emergency when available. It requires a special apparatus and technic and is hardly practicable for ordinary use.

Rectal feeding remains the most practicable and, when properly given, is efficient. By this method all essential food elements can be supplied, such as water, salts, glucose, amino-acids and vitamins. The deficiency in nitrogenous foods can be made up in part by

giving an excess of glucose and by alcohol. Sedatives, especially sodium bromid, can be added as needed.

Because there is no digestion in the rectum or colon, no attempt should be made to give undigested proteins. Amino-acids and peptones dialyzed from artificially digested meat or milk may be given. Because sugar and starch digestion does not take place in the colon, carbohydrates should be given in the form of a monosaccharid, preferably glucose, which is absorbed without change. As the absorption of fats is doubtful, they should be omitted.

Solutions of vitamins from the pancreas or other sources should always be added if the feeding is to be continued for a considerable period of time. I am indebted to Prof. William A. Welker of the University of Illinois Medical School for this most important addition to the feeding in hyperemesis gravidarum. He has suggested the possibility that the toxic element in this affection may be a deficiency in vitamins caused by the increased demand of the rapidly growing embryo, and has suggested some experimental studies to discover the truth of this hypothesis. The fact that peripheral neuritis gravidarum frequently accompanies hyperemesis gravidarum is suggestive, as polyneuritis is the most important finding in beriberi, the type of disease due to deficiency in the accessory foods.

An energy food of great importance in rectal feeding is alcohol. According to the valuable studies of Neumann, alcohol is more readily utilized by the tissues than the other energy foods, carbohydrates and fats, even when these are present in large amounts, and its administration leads to the same economy of protein as the ordinary non-nitrogenous constituents of the dietary. As alcohol is more easily absorbed than glucose and as it helps to prevent fermentation in the colon, it proves of great value when given in proper amounts and concentration. If given in excessive quantities or too great concentration, it may be eliminated unchanged and may also injure cell tissue. If given in not more than a 5 per cent. solution and not to exceed 100 gm. a day, it is practically all consumed and harmless.

The great importance of calcium makes it desirable to add a calcium salt to the injection. The constant acidosis indicates the addition of sodium bicarbonate. To diminish the central reflexes, sodium bromid may be substituted for the basic salt sodium chlorid in sufficient amounts, generally from 3 to 4 gm. per liter (quart). There is no reason for giving a solution of salts of concentration to make an isotonic solution. It is probably better to restrict the salts to 7 per thousand.

The solution should be at body temperature. This cannot be secured by heating the solution in the irrigator can and letting it drop through an unwarmed tube. It is necessary to warm the tube near the distal end, that is, just before it is joined to the rectal tube. This can be done by means of hot sandbags. The rate of flow of one drop a second, giving 500 c.c. in two hours, is nearly always tolerated, if the rectum and colon have been properly prepared.

A large enema of at least 1 liter should be given every day to remove particles that continue to come down from the small intestine and also substances that may be excreted from the mucous membrane of the colon. This enema also should be a hypotonic solution, for example, 5 per thousand of sodium chlorid, in order that some water may be absorbed

from it. A small amount of alcohol, 1 per cent., may be added in the hope that a small amount of nutriment may be supplied in this way.

The cleansing enema may be given early in the morning, at 7 or 8 a. m. Then the nutrient enemas would start at about 9 a. m., 2 p. m. and 7 p. m. Sometimes it will be found desirable to add 10 drops of tincture of opium to the evening enema.

The composition of the rectal feedings will have about the following proportions: glucose, 50; alcohol, 10; calcium chlorid, 0.3; sodium bicarbonate, 3; sodium chlorid or bromid, 4; vitamin, as much as is sufficient; distilled water, enough to make 1,000. From 100 to 500 gm. are to be given three times a day. This mixture has an energy value of about 550 calories. If 1,500 c.c. are given each day, the patient will receive 825 calories. In two or three days the retching stops, the thirst disappears, and the patient is in a fairly comfortable condition. The great nitrogen loss is stopped and the total nitrogen output in the urine is often reduced to 3 gm. in twenty-four hours. The ratio of the ammonia nitrogen to the total nitrogen also falls, although it may still remain more than 20 per cent.

It now becomes a difficult task to determine when stomach feeding may begin. As a rule, it is better to be cautious than hasty. The returning appetite of the patient and her confidence in herself is at times a guide. If the pregnancy is approaching the fourteenth week and the uterus is raising out of the pelvis, the mental change is often remarkably sudden. Likewise in markedly neurotic patients, the cures are often sudden. Lavage of the stomach is frequently very desirable before beginning oral feeding. The foods best taken are generally some forms of milk, such as peptonized milk, malted milk and buttermilk. Egg albumin is added early. Rectal feedings are discontinued gradually and not until the stomach feeding is reestablished. Even when the patient has recovered completely, she should be kept under control until the sixteenth or the eighteenth week, as discouraging relapses are not uncommon.

Management along the lines indicated promises success in practically all cases in which patients are treated before inanition becomes extreme. Even in extreme cases by the help of subcutaneous feeding, cures may be effected. The great difficulty is generally in obtaining and keeping control of the patient, largely because of outside influence. In a patient under control, the induction of abortion is practically never required.

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Utilization of Lobsters as Food.—Another of our great aquatic resources that has suffered from the failure or refusal of the states to be guided by the teachings of zoology is the lobster. If the states had given heed to the elementary needs of the lobster as proclaimed by Herrick, instead of shaping their course so as to conform with the interests of those who for years have been profiteering at public expense, they could have made the lobster a staple, moderate-priced food for all time, whereas it has become such a rare and expensive article that the food administration might very properly place an embargo on its use as a wholly unjustifiable extravagance. One alleviating circumstance is that through the adoption of a system of artificial rearing devised by the zoologist Mead, the lobster supply in the waters of Rhode Island has been maintained better than in any other state.—Dr. H. M. Smith, "Contributions of Zoology to Human Welfare," *Science*, March 29, 1918.

A STUDY OF FOUR HUNDRED POST-MORTEM WASSERMANN REACTIONS

SUPPLEMENTARY REPORT *

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The bibliography of the subject of postmortem Wassermann tests was covered in an article¹ published in 1916. No further study of the subject was published in 1917 by any one. In the first article the reasons for doing postmortem complement fixation tests for syphilis were discussed and the technic was described in detail. The results of 290 tests were analyzed and the following conclusions deduced:

1. Postmortem Wassermann reactions confirmed antemortem reactions in 95 per cent. of thirty-eight control cases. Positives were confirmed in serum six hours postmortem and negatives in serum twenty-two hours postmortem.

2. In 90.4 per cent. of cases showing postmortem anatomic lesions of syphilis or presenting evidence of syphilis in their histories, the serums postmortem gave positive Wassermann reactions.

3. The fact that positive postmortem reactions appeared in thirty-eight cases, which did not present postmortem lesions or historic evidence of syphilis and in which death was due to acute infections, tuberculosis or malignant tumors, cannot be interpreted to mean that the reaction was caused by those diseases because, in the first place, the histories and necropsies in those cases were not nearly complete enough to rule out syphilis, and, in the second place, because serums from ninety-four patients who died of acute infections, tuberculosis or malignant tumors, examined under similar conditions, gave negative reactions.

4. Only 7 per cent. of 282 cases showed negative reactions in the presence of anatomic lesions (aneurysms) characteristic of syphilis.

5. The reactions conformed to the anatomic and historical evidence in 84 per cent. of the cases.

6. The fact that only eight, or 3 per cent., of the serums were anticomplementary indicates that the serums were in good condition.

7. The average percentage of specific reactions was almost as high postmortem as would be expected antemortem.

8. The positive reaction appeared in twice as many males as females, in three times as many negroes as whites, and in white females in only 4.3 per cent. of the cases examined.

9. The Wassermann reaction, performed on postmortem blood according to the methods followed in this investigation, is a reliable aid to the diagnosis of syphilis.

The original series of tests has been increased to 400, and the number of postmortem tests controlled with antemortem tests has been about doubled. They form a part of more than 6,000 tests done in the laboratory in the last three and a half years. These 400 tests have been studied and the results set forth in Table 1.

In the first series, we did not take into consideration in Class 3 bloods from which serums could not be separated or which were hemolyzed or otherwise unfit for use, but only those which, when used, proved anticomplementary. In the last series we considered all bloods taken and found unfit for use from any cause, although only three were anticomplementary. In the 6,000 Wassermann reactions, twenty-eight, or

* From the Pathological Laboratory of the University of Louisville Medical Department and of the Louisville City Hospital.

1. Graves, Stuart: A Study of Two Hundred and Ninety Postmortem Wassermann Reactions, *Jour. Immunol.*, 1916, **2**, 53.

0.46 + per cent., have been found anticomplementary and thirty-five, or 0.58 + per cent., have been found hemolyzed, coagulated or otherwise unfit for use. Our original conclusion is therefore strengthened that, if the postmortem serum appears all right and does not prove anticomplementary, it is safe for use. Confidence in the general results is further based on the results in Classes 1 and 2, in which the reactions were as might be expected from the anatomic findings or histories in 304 cases, or 76 per cent. In only ten of 400 were negative reactions found to contrast with apparent syphilitic anatomic lesions or positive evidence of syphilis in the histories. If we find 2.5 per cent. of negative reactions in living patients known to have syphilitic, shall we argue that therefore the reaction is of no value? In the first series, all the patients of this class had aneurysms. Of the three in this series, one patient presented no anatomic lesions of syphilis, but gave a vague history of a chancre ten years before, although his antemortem Wassermann reaction was only +. The second patient presented a coarsely lobulated, sclerosed liver with fanlike fibrous adhesions. His postmortem Wassermann reaction agreed with his antemortem negative reaction. The third case was that of another aneurysm. In this the postmortem reaction was ±

TABLE 1.—RESULTS OF 400 POSTMORTEM TESTS

	First Series	Second Series	Total	Per Cent.
Class 1. Wassermann tests positive with apparent syphilitic anatomic lesions or positive evidence of syphilis in histories	76	28	104	26
Class 2. Wassermann tests negative with no apparent syphilitic anatomic lesions and no evidence of syphilis in histories	161	39	200	50
Class 3. Anticomplementary or otherwise unfit for use	8	14	22	5.5
Class 4. Wassermann tests negative with apparent syphilitic anatomic lesions or positive evidence of syphilis in histories	7	3	10	2.5
Class 5. Wassermann tests positive with no apparent syphilitic anatomic lesions and no evidence of syphilis in histories	38	26	64	16
	290	110	400	100

and the antemortem reaction negative. In the analysis of these three cases, the anatomic and historic evidence is surely overbalanced by the practical agreement of the reactions before and after death. On first thought, it seems strange that in eight of ten cases in Class 4, each showed the presence of an aneurysm, but in twenty-five other cases of aneurysms the postmortem Wassermann reaction was positive.

We now come to Class 5, embracing positive Wassermann reactions in cases that revealed no anatomic lesions that could be regarded as syphilitic and offered no positive evidence of syphilis in their histories. These have been classified as in the earlier article into three subdivisions.

Of the twenty-six cases in the second series in this class, five showed a ± reaction, two + and five ++, leaving only fourteen of 110 which showed positive +++ or ++++ reactions without evident anatomic or historic evidence of syphilis. Of the latter, three agree with antemortem Wassermann reactions, which is of greater importance than the apparently unwarranted positive reactions. This class has been analyzed in the first article and explained conclusively, it seems to us. Here we shall simply revise the table of race and sex, which speaks volumes to any one who has worked where negroes are numerous.

Against the reliability of the Wassermann test, both antemortem and postmortem, it has been argued that, because the reaction appears positive in cases in which

syphilis is not objective or historical while various infectious lesions are obvious, these diseases must bring about changes in the blood that cause complement fixation. Would it not be more logical to conclude that deaths in these cases have resulted from the most common fatal diseases, such as pneumonia and tuberculosis, to say nothing of violence, in patients who were mostly ignorant or unfortunate, or in vicious colored persons who were simultaneously victims of early or late or treated syphilis? If the positive Wassermann reaction is to be attributed to pneumonia, or tuberculosis, or other infectious lesions, or to malignant

TABLE 2.—CLASSIFICATION OF POSITIVE WASSERMANN TESTS WITH NO EVIDENCE OF SYPHILIS

A. Bodies sent by coroner to laboratory for necropsy. No history whatever. Examination often partially restricted to evident cause of death. No opportunity for antemortem physical examination.

Stabbed to death (Wassermann + and Wassermann ++ in two cases)	1
Cardiorenal (Wassermann + in one case)	1
Shot to death	1
Lobar pneumonia	1
Burned to death	1
Choked to death	1
Skull fractured	1
Generalized tuberculosis	1

Total 1

B. Patients admitted to hospital but coming to necropsy as coroner's cases because dying within twenty-four hours or without obvious cause. Little or no opportunity for history or physical examination.

Lobar pneumonia	1
Pulmonary tuberculosis	1
Generalized tuberculosis (Wassermann only +)	1
False elephantiasis of genitals	1
Burned to death	1
Stabbed to death	1
Traumatic septicemia	1
Shot to death	1
Acute pericarditis	1
Acute meningitis	1
Acute peritonitis	1
Typhoid	1

Total 1

C. Patients admitted to hospital. Necropsy permission from next of kin or friends or municipal authorities in cases of patients without relatives or friends.

Generalized tuberculosis	1
Lobar pneumonia (one only +)	1
Cardiorenal (one only +)	1
Acute appendicitis and peritonitis (only +)	1
Streptococcus meningitis (only ++)	1
Gangrene of intestine, intestinal obstruction	1
Acute pyelonephritis	1
Acute tubular nephritis (negro male, aged 20)	1
Shot to death	1
Carcinoma	1
Pulmonary tuberculosis	1
Lobular pneumonia	1
Ulcerative endocarditis	1
Strangulated hernia	1
Lymphoblastoma	1
Sclerosis of liver	1
Acute peritonitis	1
Hemorrhage following operation	1
Typhoid	1
Acute enterocolitis	1

Total 32

tumors, because it appeared in patients who had died of those lesions, of what weight is that argument when it is shown that, of the 161 cases in this series which gave negative postmortem Wassermann reactions and with the exception of the last two, presented no evidence of syphilis, 121 were negative in patients dying from the following diseases: lobar pneumonia, 34; pulmonary tuberculosis, 16; lobular pneumonia, 14; acute peritonitis, 13; acute nephritis, 6; carcinoma, 5; acute vegetative endocarditis, 4; generalized tuberculosis, 8; tuberculous enterocolitis, 2; pneumococcus meningitis, 2; streptococcus meningitis, 1; meningococcus meningitis, 1; empyema, 3; perihepatic abscess

following gastric ulcer, 1; acute pericarditis, 4; brain tumor (not yet diagnosed), 1; hypernephroma, 1; lymphosarcoma, 1; pyonephrosis, 1; carcinoma with infectious nephritis and aneurysm of the aorta, 1; bilateral pneumonia and pericarditis with apparently syphilitic sclerosis of the liver, 1; and tuberculous

TABLE 3.—RACE AND SEX OF PATIENTS WITH POSITIVE WASSERMANN TESTS AND NO APPARENT SYPHILIS*

A. (C. O.) 14 cases	Negro	Male	7	13	
		Female	6		
	White	Male	1	1	
		Female	0		
B. (C. H.) 16 cases	Negro	Male	5	10	
		Female	5		
	White	Male	4	6	
		Female	2		
C. (H.) 34 cases	Negro	Male	13	23	
		Female	10		
	White	Male	7	11	
		Female	4		
				Total negro males	25
				Total negro females	21
				Total white males	12
				Total white females	6
				Total	64

* C. O. refers to coroner's cases in which persons died outside the hospital and were never admitted. C. H. refers to coroner's cases in which death occurred in the hospital. H refers to regularly admitted patients or cases in which there had been some opportunity to take a history or make a physical examination. In the first two classes there had been no such opportunity.

pneumonia with aneurysm of the aorta, 1? The answer may be applied to Class 5 in Table 1.

Of 378 reactions, 168, or 44.4 per cent. were positive. Of course it must be realized that these positive reactions were obtained in a charity hospital, and 73.1 per cent. were negroes. The distribution as to race and sex is shown in Table 4.

TABLE 4.—DISTRIBUTION OF POSITIVE SERUMS

	Male	Per Cent.	Female	Per Cent.	Total	Per Cent.
Negroes	73	43.4	50	29.7	123	73.1
White	34	20.2	11	6.5	45	26.7
Total	107	63.6	61	36.2	168	99.8

The results of previous investigators and ours are compared in Table 5.

TABLE 5.—COMPARISON OF RESULTS IN DIFFERENT SERIES

	Number of Cases	Positive	Per Cent.
Bruck	101	59	58.4
Seligman and Blume	100	28	28.0
Schlimpert	361	46	12.7
Luksch	309	145	46.0
Simmonds	160	33	21.0
Lubarsch	262	55	21.0
Löhlein	149	42	28.2
Wespremi	100	46	46.0
Krefting	115	43	37.0
Nauwerck and Weichert	206	57	28.0
Grüber	300	101	30.0
Woody, Jackson and LeCount	88	66	75.0
Graves	378	168	44.4
Total	2,629	889	33.8

Perhaps the strongest evidence in favor of the reliability of the postmortem Wassermann reaction is found in the controlled cases. In the first series, only two flat discrepancies were found in thirty-seven cases, a confirming average of 95 per cent. We have reason to believe that these discrepancies were not the fault of the reaction. In thirty-one additional controlled cases, not a single discrepancy of this type has been found. On the other hand, there are several cases which show interesting confirmation. In one case (A 16-214) the reaction was \pm on the blood taken three days antemortem. Postmortem, it was the same, although absolutely no connection between the two was known when the latter test was done. When the serums are examined and the tests read, they are identified by numbers only. The same patient had had

a +++ reaction followed by two doses of arsphenamin (salvarsan) and several injections of mercuric salicylate during his last six weeks. In another case (A 17-1) a +++ reaction on a spinal fluid postmortem reaction followed a +++ reaction on the blood antemortem. The necropsy showed gunma of the calvarium and meninges, in which the *Spirochaeta pallida* was demonstrated by the Levaditi method. Similar evidence could be multiplied. In sixty-eight control cases, then, only two contradictions are found, a confirming percentage of 97+. Any series of complement fixation tests, running over a period of three and a half years, with specimens submitted by a large number of different people under varying conditions, which offers a confirming percentage of more than 97, is surely reliable. A +++ antemortem reaction confirmed a +++ reaction sixty hours postmortem. The longest time postmortem after which a negative agreed with an antemortem negative in the same case was twenty-two hours.

Having proved in these two papers, as we believe, that Wassermann reactions on bloods taken and tested under the conditions described are reliable, we may ask, Of what value is a postmortem Wassermann reaction? It is of value, first, because it affords material help in the diagnosis of pathologic anatomy. Not even with such technic as devised by Warthin can one always decide with the microscope whether or not a given lesion had its origin in syphilis. It is impossible at the postmortem table to investigate the history of the unknown, latent syphilis or a fresh infection. If a serologic test will produce positive evidence, it frequently will solve a puzzling pathologic problem. Second, and possibly of greater importance, is the value of a reliable postmortem Wassermann reaction in medicolegal cases. Sometimes the question of syphilis is of far-reaching effect. It could conceivably be a deciding factor in the disposition of a large estate. Frequently, it arises in insurance cases.

It seems strange that a question of such importance has not been studied more. Only one other paper on the subject has been published in English. Leading textbooks on serology barely mention it. The prevailing opinion seems to have been that the postmortem Wassermann reaction was unreliable and without value. The opposite is proved in this investigation.

CONCLUSIONS

1. Postmortem reactions confirmed antemortem Wassermann reactions in 97 per cent. of sixty-eight controlled cases. A +++ positive reaction, sixty hours postmortem, was confirmed by a +++ antemortem in a case with anatomic and clinical evidence of syphilis. A negative Wassermann reaction on blood taken twenty-two hours postmortem was confirmed by a negative antemortem Wassermann reaction.

2. In 91.2 per cent. of cases showing anatomic lesions of syphilis and presenting evidence of syphilis in their histories, the serums postmortem gave positive Wassermann reactions.

3. The fact that only 2.5 per cent. of the serums were anticomplementary or otherwise unfit for use compares favorably with 1.14 per cent. similarly unfit in 6,000 antemortem specimens.

4. Only 2.6 per cent. of 378 cases showing anatomic evidence of syphilis gave negative Wassermann reactions.

5. The reactions conformed to the anatomic and historical evidence in 304 of 378 cases, or 80.4 per

cent., which is considerably lower than it would be if satisfactory histories and physical examinations were recorded in Class 5.

6. There is no logical reason for supposing that acute infections or malignant tumors cause positive Wassermann reactions.

7. The positive reaction appeared in 2.7 times as many negroes as whites, in 1.7 times as many males as females, and in only eleven white females, or 6.5 per cent.

8. The Wassermann reaction, made on postmortem blood according to the methods followed in this investigation, is practically as reliable a test for syphilis as when done antemortem, and is of great value in pathologic anatomy and in medicolegal cases.

THE AGGLUTINATION OF HUMAN RED BLOOD CORPUSCLES BY HORSE SERUM*

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AND

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This study seemed of interest to us because of the increasing use, frequently intravenous, of horse serum in large doses, chiefly in the form of curative serums for the infections. Agglutination of the red blood corpuscles of animals by the serum of animals of other species has been extensively studied, especially by Bordet. Some observers also allude to the agglutination of human red corpuscles by horse serum. We have tested nineteen specimens of serum and we have found that it frequently agglutinates human red corpuscles in the test tube.

Nine of these were normal horse serum, only one of them containing a preservative (phenol [carbolic acid] or a cresol). Ten were antistreptococcus serum, antidyentery serum, antipneumococcus serum or the like, purchased in the open market or issued by official laboratories, all presumably produced from the horse and usually containing a preservative. The specimens came from six different localities. Some of them were nearly a year old. We used some normal horse serums a few days after they had been taken from the animal.

We examined all serums for bacteria by streaking drops on agar slants, rejecting those that gave growths, with one exception. The latter was a serum that had been tested on a large number of blood specimens before its contamination was discovered. We have used the results in this case because they were entirely in accord with our other results, and the bacterial contamination was moderate. Neither the age of a serum nor the addition of a preservative seemed to influence agglutination. Some of the serums were tested with only two lots of blood corpuscles, others with more than thirty different specimens of blood. In all, samples of blood from about seventy-five different individuals were used. Some of these were tested with from five to seven different serums. Most of the samples were collected in 1 per cent. sodium citrate in physiologic sodium chlorid solution; all were centrifuged and washed three times.

Five tubes were used to test a given serum with one specimen of blood. They were so mixed that the tubes contained 1 c.c. of a 1 per cent. suspension of red cells in the sodium chlorid solution, and serum in the desired dilution. The final dilutions of serum used were 1:20, 1:50, 1:100 and 1:200. A control with no serum was kept in every case. The

blood specimens were never more than forty-eight hours old and usually were less than twenty-four hours old. After the blood cells and serum were mixed, the tubes were incubated at 36 C. for one hour, and then allowed to stand in the room for a few minutes. The results were estimated both by the appearance to the naked eye and by examination of drops under the microscope. It was observed that the longer the tubes stood after removal from the incubator to a lower temperature, the more distinct was the agglutination. Our readings were usually completed an hour after removal of the tubes from the incubator. The readings made with the naked eye, and those made under the microscope usually agreed well; but the microscope furnished somewhat the more delicate test. With strongly agglutinating serums, the red corpuscles settled into a firm mass that could be broken up with difficulty at the bottom of the tube. In such case the microscope would show clumping of practically all the red corpuscles into large masses, of probably from twenty to a hundred or more cells in a clump. In other cases the clumps were smaller, and frequently there were many free cells between the clumps. Without exception, the intensity of agglutination was greatest in tubes in which the concentration of the serum in the mixture was highest.

RESULTS

Of the nineteen serums tested, twelve produced some agglutination of human red blood corpuscles in the test tube, while seven produced practically no agglutination, in dilutions of 1:20, the blood corpuscles being in 1 per cent. suspension, and the temperature not being exactly that of the body, but more or less below it.

The twelve positive serums agglutinated half or more of the samples of blood with which they were tested in 1:20 dilutions; and ten serums did the same in 1:50 dilutions.

Two serums agglutinated each two different specimens of blood in 1:200 dilutions; and one serum, in 1:500 dilution, showed slight but definite agglutination of each of two specimens of blood when the tubes had stood in the refrigerator over night. The last was an antimeningococcus serum, nine months old, smelling of phenol or a cresol, and sterile by culture test. Different specimens of blood cells showed considerable differences in the amount of agglutination when they were tested with the same serum. These differences, however, were distinctly less striking than those shown by different samples of serum with the same blood. It will be understood, of course, that the blood corpuscles in these test tube experiments were suspended in about 100 times as much fluid as when in normal blood, in order to demonstrate small amounts of agglutinin, if present.

Ottenberg,¹ working on isoagglutination in human beings, concluded that agglutination may fail to take place if the concentration of agglutinin in the serum is low, or if all the agglutinin is absorbed by an excess of red corpuscles. Using our most powerfully agglutinating serum (the antimeningococcus serum mentioned), with undiluted whole citrated blood, when a platinum loopful of blood was mixed with a loopful of the serum at room temperature, agglutination occurred at once and was nearly complete. When a loopful of serum diluted five times and several loopfuls of blood were used, well marked agglutination took place in from four to five minutes. It is doubtful, however, if such experiments imitate closely conditions in the living body.

Having noted in our tests that agglutination was usually most marked when the mixtures in the tubes

* Presented in abstract at the meeting of the American Association of Pathologists and Bacteriologists, March 29, 1918.

1. Ottenberg, R.: Jour. Exper. Med., 1911, 13, 425.

were allowed to stand for some time at room temperature, we made our readings throughout with this fact in view, in the hope of better detecting small amounts of agglutinin. We varied our original test by keeping the serum and the 1 per cent. suspension of red corpuscles, and the mixtures of them after they were prepared, in a water bath at 37 C.; and a single dilution of the serum of 1:20 was used. Six serums that had previously been found to have little or no agglutinating power gave practically the same result as before. Of three serums that had shown decided agglutination by the original technic, two gave well marked agglutination in 1:20 dilution after one and one-half hours at a temperature of 37 C. In the third serum, which was the antimeningococcus serum mentioned already as having marked agglutinating power, the result was startling. In the 1:20 dilution, no agglutination was visible after six hours in the water bath at 37 C. but agglutination became marked after the same tube had stood at room temperature about half an hour. The possibility that temperature might be an important factor in such experiments was suggested to us by the experience of Rous and Robertson,² who state that in rabbits repeatedly transfused with rabbit blood, agglutinins may develop, but agglutination of the rabbit's red corpuscles appears only at temperatures below 35 or 36 C., a fact which was determined by observations outside the body.

VALUE OF THE EXPERIMENTS

There are probably other factors also that make the application of test tube experiments to the living body of uncertain significance. Furthermore, in those human cases in which the administration of serum may be practiced, there is usually a disturbance of some of the functions, especially of the circulation, and frequently an alteration of body temperature from normal. Our problem is therefore one of great complexity.

An enormous amount of work has been done in trying the effect of alien serums on living laboratory animals. Among a multitude of investigators, certain observers assert that the agglutinating action of an alien serum for red blood cells may be the cause of an animal's death; while others contend that death is probably due to other properties of the serum.³

As far as we have examined the evidence, it seems to us inconclusive. Some cases of death after transfusion from man to man have been reported, in which death was probably due to agglutination of the red blood corpuscles.⁴

Our own experiments on animals with injections of normal foreign blood serum have given results that were not convincing. We have also immunized guinea-pigs by successive injections of washed rabbit red blood cells. The serum of these guinea-pigs became agglutinative and hemolytic for rabbit red cells. Heating the serum destroyed its hemolytic but not its agglutinative power, in dilutions of about 1:500. Rabbits, on receiving the heated guinea-pig immune serum intravenously, in doses of from 4 to 8 c.c. per kilogram, died in a few hours or over night in about half the experiments. The dilatation of the right heart and of the veins in general, and the numerous masses of agglutinated red corpuscles

found in the vessels, made a very striking picture. Decolorized red corpuscles and staining of the blood serum, however, together with a dark color in the urine, were also present, giving clear evidence that hemolysis had taken place. Therefore, like other observers, we have not been able to exclude the possible action of a toxic substance in our experiments.

One of our objects in reporting our observations is to give force to the suggestion that in human cases that result fatally, in which large injections of serum have been given, the possibility of agglutination of red corpuscles should be considered at necropsy; and in suitable cases blood examinations might be made during life. Also if normal horse serum or an immune serum is to be used in large doses, and especially by intravenous injection, a safe and simple precaution would be for the investigator to take a little of the horse's blood, just before the final bleeding, and test the serum for agglutinating power with a number of specimens of human blood, rejecting any horse whose serum had distinct agglutinating power. In the case of horses to be used for making immune serums, such a test would, of course, be performed before beginning immunization.

Military Medicine and Surgery

THE UREA INDEX AS A TEST FOR KIDNEY FUNCTION IN A WAR HOSPITAL*

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During the past nine months, observations on nephritis have been made in this hospital, with McLean's¹ urea index as a test for kidney function. The results have been so helpful for diagnosis and prognosis that the technic employed and certain case protocols are recorded in order to show that the test can be carried out advantageously in a tent hospital with only elementary laboratory facilities.

McLean's directions were followed absolutely. Before each test the patient was given from 150 to 200 c.c. of water, to insure a free flow of urine. One half hour later, in order to start with the bladder empty, he voided. The time of voiding was recorded to within one minute. About thirty-six minutes later, at least 3 c.c. of blood were withdrawn from an arm vein into a dry tube containing a few milligrams of potassium oxalate to prevent clotting. At the end of seventy-two minutes from the first voiding, the bladder was again emptied, the urine carefully measured to within 1 c.c., and used for analysis. The patient took no food or water during this period. Otherwise no restrictions were placed on him. The seventy-two minute period was merely for convenience, as being one twentieth of twenty-four hours. Any other period, preferably not too long, would serve.

Analyses were made by the most accurate, convenient and rapid method available for determination of urea in the blood and urine. The urease method, introduced by Marshall,² fulfilled all of the require-

2. Rous, Peyton, and Robertson, O. H.: Jour. Exper. Med., 1918, 27, 509.

3. Coca, A. F.: Virchow's Arch. f. path. Anat., 1909, 196, 92. Loeb, L., Strickler, A., and Tuttle, L.: Virchow's Arch. f. path. Anat., 1910, 201, 5. Zinsser, H.: Jour. Exper. Med., 1911, 14, 25. Kritchewsky, J. L.: Jour. Infect. Dis., 1918, 22, 101.

4. Ottenberg (Note 1). Bernheim: Blood Transfusion, Philadelphia, J. B. Lippincott Company, 1917, p. 69.

* From the Medical Division of U. S. A. Base Hospital No. 5.

1. McLean, F. C.: Jour. Exper. Med., 1915, 22, 212, 366; Clinical Determination of Renal Function by an Index of Urea Excretion, THE JOURNAL A. M. A., Feb. 5, 1916, p. 415.

2. Marshall, E. K., Jr.: Jour. Biol. Chem., 1913, 14, 283.

ments. This method depends on the breaking down of urea into ammonia and carbon dioxide by the specific enzyme found in the soy bean and the subsequent determination of the ammonia. The permanent preparation of urease described by Van Slyke and Cullen³ was used, and determinations were carried out in the manner described by them, with a few necessary modifications. The method is simple, very rapid and

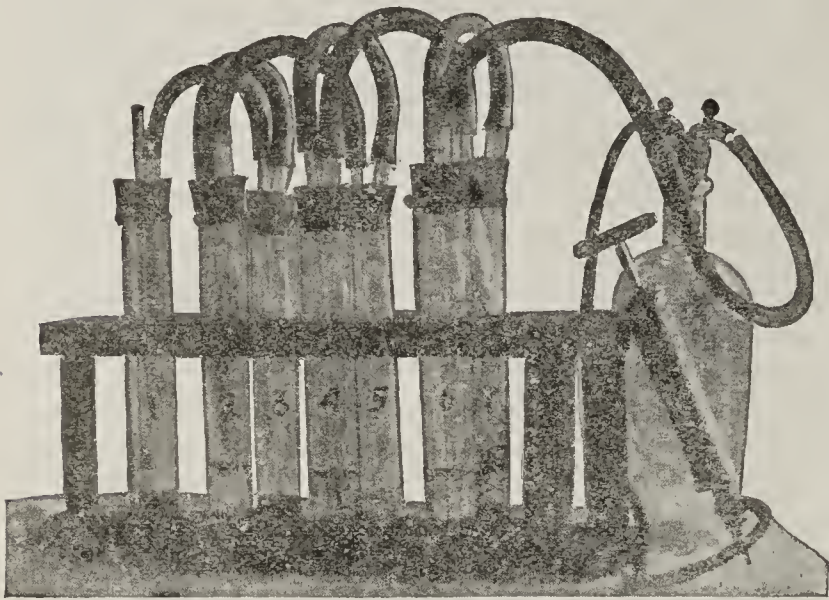


Fig. 1.—Apparatus for aeration of ammonia into fiftieth normal acid with chest aspirating pump: Tubes 1, 2, 4 and 6 contain fiftieth normal acid, Tube 1 being used to absorb whatever ammonia may be present in the air. Tube 3 contains urine only; Tube 5 contains urine and urease; Tube 7 contains blood and urease. The current of air is drawn through the tubes from 1 through 6 by means of the chest pump and vacuum bottle.

requires the minimum of manipulation. Three analyses are necessary: blood urea, urine urea, and urine ammonia. The last is determined in order to correct the urea figure for preformed ammonia, which is also determined in the urea method. Since the method depends on the quantitative determination of ammonia by its aeration into weak acid and titration of the excess acid with alkali, it was necessary to use some sort of aeration apparatus. A water suction pump would have been satisfactory, but water was not always available. However, it was found that an ordinary chest aspirating pump produced sufficient vacuum to complete the reaction in about forty-five minutes.

The acid and alkali used in titration are fiftieth normal and hundredth normal alkali and fiftieth normal acid. Such weak solutions tend to change if they are allowed to stand too long. To obviate this, normal solution were kept in tightly stoppered bottles from which a few cubic centimeters were frequently taken and diluted in calibrated flasks with the proper amount of distilled water. Every week or ten days the solutions were checked.

To carry out the test, therefore, the apparatus included burets for hundredth normal and fiftieth normal alkali, an aspirating set, and the few necessary reagents and the glassware. The equipment could be packed in a small box and set up anywhere in a few minutes. The entire time used for a test was only seventy-two minutes for the period and about seventy minutes for the completion of the analyses.

The results from the determination were calculated to the form in which they are to be expressed in McLean's formula. The weight of the individual should be known to within 1 kg. As scales were not always obtainable, the patient's weight was estimated

and was assumed to remain constant during as many tests as were made. This introduced a slight but inevitable error. The four variables were substituted in the formula and the index calculated by McLean's special calculating device on a 10 inch slide rule.⁴ With a little practice in reading the scales, calculation became mechanical and required only a few seconds. Without a slide rule, calculation could be performed by logarithms.

Perhaps the most striking case encountered to demonstrate the prognostic value of the test was the following:

Case 1.—*History*.—Private C. A. B., aged 24, admitted, Jan. 22, 1918, had been well all his life except for attacks of "nephritis" in 1915 and 1916. Despite this previous history, he had no difficulty in getting into the Army and was able to do his work satisfactorily. About the end of December, or a month before coming to the hospital, he began to notice that he became easily tired, having to fall out on marches, and getting short of breath on exertion. When he arrived in the hospital, he was comfortable, except for considerable dyspnea, and said that he felt as well as he had for several days.

Physical Examination.—His face was puffy and pale, though there was no demonstrable edema elsewhere. His heart was slightly enlarged to percussion, the action regular, not rapid, the sounds of good quality, a blowing systolic murmur was heard over the precordia, loudest at the base. The systolic blood pressure was 135 and the diastolic 45. There were no signs of peripheral arteriosclerosis nor eye-ground changes. The lungs were negative except for numerous diffuse scattered râles in both sides of the chest without signs of consolidation or hydrothorax. The abdomen, genitals and extremities were negative. A casual specimen of urine contained a trace of albumin, was pale, of low gravity, and contained a few leukocytes and an occasional cast. Without functional studies, the patient gave the impression of having nephritis,

not notably sicker than many others who had been admitted previously. Analysis, however, showed the blood urea to be 3.72 gm. per liter, and that the urea index was less than 1. These facts, discovered within two hours after the patient's admission, proved that the man was critically ill and made it seem probable that he would die within a short time. The subsequent course is shown graphically in Figure 2.

Course.—As can be seen, there was no oliguria until the last three days of life, the excretion of chlorid was not materially interfered with, there was no marked albuminuria, and there was a dropping blood pressure. During the first few days the patient appeared to be improving. Thus from clinical and routine laboratory observation alone, it would have been impossible to recognize the seriousness of the patient's condition. However, a second urea index three days

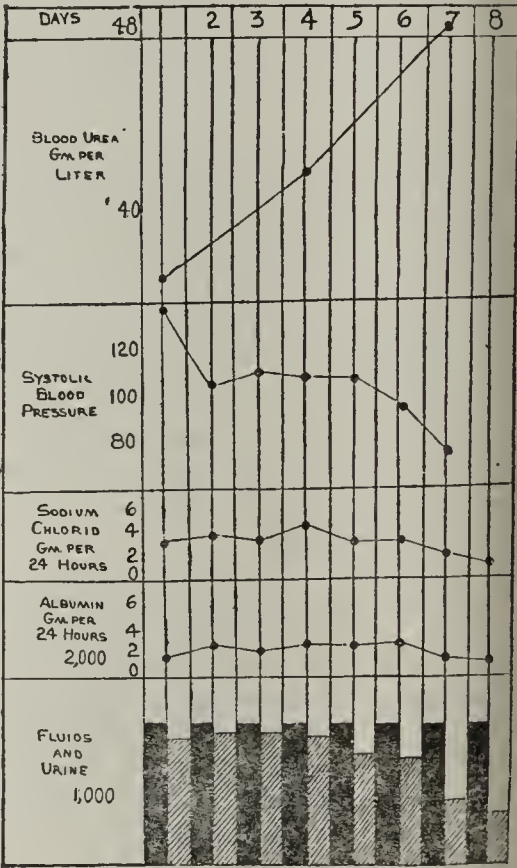


Fig. 2.—Renal function in Case 1.

was a dropping blood pressure. During the first few days the patient appeared to be improving. Thus from clinical and routine laboratory observation alone, it would have been impossible to recognize the seriousness of the patient's condition. However, a second urea index three days

3. Van Slyke, D. D., and Cullen, G. E.: Jour. Biol. Chem., 1914, 19, 211.

4. The rule, with directions for use, may be obtained from the Keuffel and Esser Company, 127 Fulton Street, New York.

after entry showed that the index was again less than 1, and that the blood urea concentration had climbed to 4.15 gm. per liter. Three days later the patient became oliguric, the blood urea rose still farther, and the patient died. At necropsy the kidneys showed a typical chronic glomerular

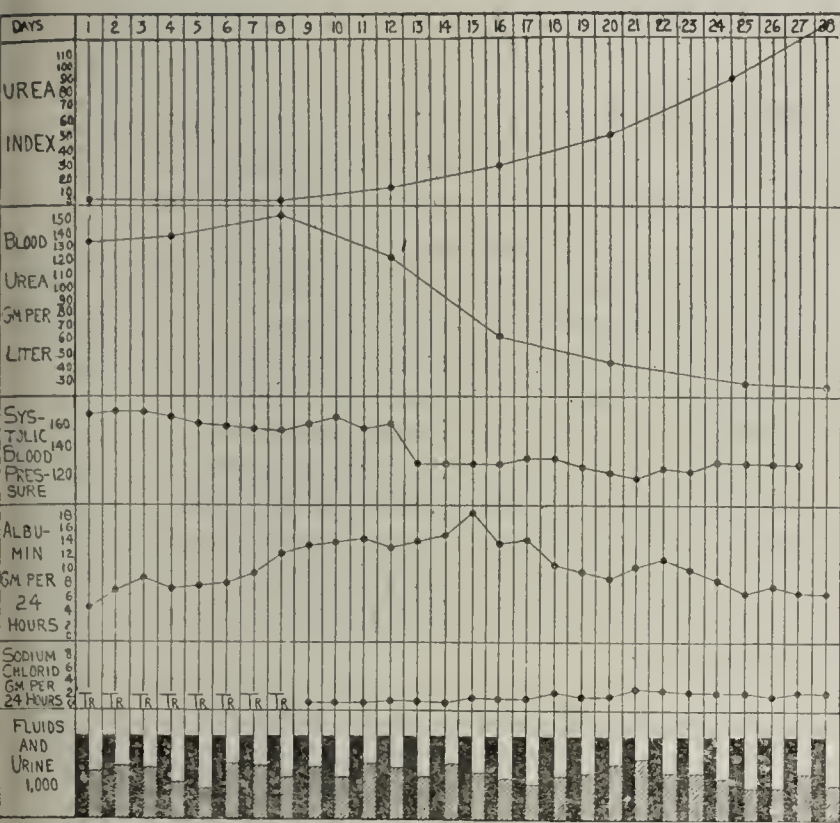


Fig. 3.—Renal function in Case 2.

nephritis with extreme atrophy of both kidneys, especially of the left, which weighed only 50 gm.

Two other less serious cases are recorded to show the satisfactory fashion in which the course of an acute nephritis can be followed by this test, and the results of slight modifications in treatment.

CASE 2.—*History.*—Private G. B., aged 40, admitted, Sept. 19, 1917, had been well until seven days before entry (September 12), when he suddenly felt headache and general malaise, soon followed by shortness of breath and the development of generalized edema. Despite these symptoms, he carried on until two days before entry (September 17).

Physical Examination.—The man was orthopneic, with marked edema of the face, sacrum and legs. There was no hydrothorax or ascites. The heart was not enlarged, the action was regular, not rapid, and the sounds were normal. The systolic blood pressure was 166 and the diastolic 80. The lungs were normal except for a diffuse bronchitis without signs of consolidation. The abdomen was normal, as were the eyegrounds. The observations made on renal function are shown in Figure 3.

Course.—As can be seen, during the month that the patient remained in the hospital, he had a persistent oliguria so that his edema, by actual weight, increased. For the first fifteen days, the excretion of albumin rose, and for the first twelve days, the blood pressure remained almost constantly elevated.

From this evidence alone, it would have seemed that the patient was making little if any progress. The blood urea and urea index, however, gave valuable additional information. During the first eight days, the blood urea rose from 1.3 gm. per liter to 1.5 gm. per liter, and the index stayed below 10. These facts pointed to a severe nephritis, which was possibly increasing. After this, the blood urea fell rapidly to normal and the index rose, both beginning to change before the excretion of albumin had reached its highest figure and before the blood pressure had dropped. These findings showed that the patient was beginning to improve before there was any clinical evidence of it. The patient was evacuated with normal blood urea and urea index, though there still was massive edema. It seemed safe to predict that the patient would gradually improve and that eventually “dechloruration” and polyuria with loss of edema would occur. A letter written two months later by the patient’s medical officer at home proved that such was the case.

CASE 3.—*History.*—Private W. F. C., aged 34, admitted, Jan. 21, 1918, had noticed during the previous year that he had passed more urine at night than by day, but had felt well and able to work. About three weeks before entry (January 1), he became increasingly short of breath, began to complain of headache, and to develop edema in his face and ankles. At entry he was comfortable. His heart was not enlarged and was negative except for a faint systolic murmur over the precordia. The systolic blood pressure was 200, the diastolic 90.

Physical Examination.—The lungs and abdomen were negative. There was marked brawny edema on the face, legs and entire body. The eyegrounds showed slight vascular changes and one hemorrhage, which cleared up in about six weeks.

Course.—For the first twenty-four days the patient showed no frank diuresis, although the water output seemed to be gradually increasing. The excretion of albumin rose steadily

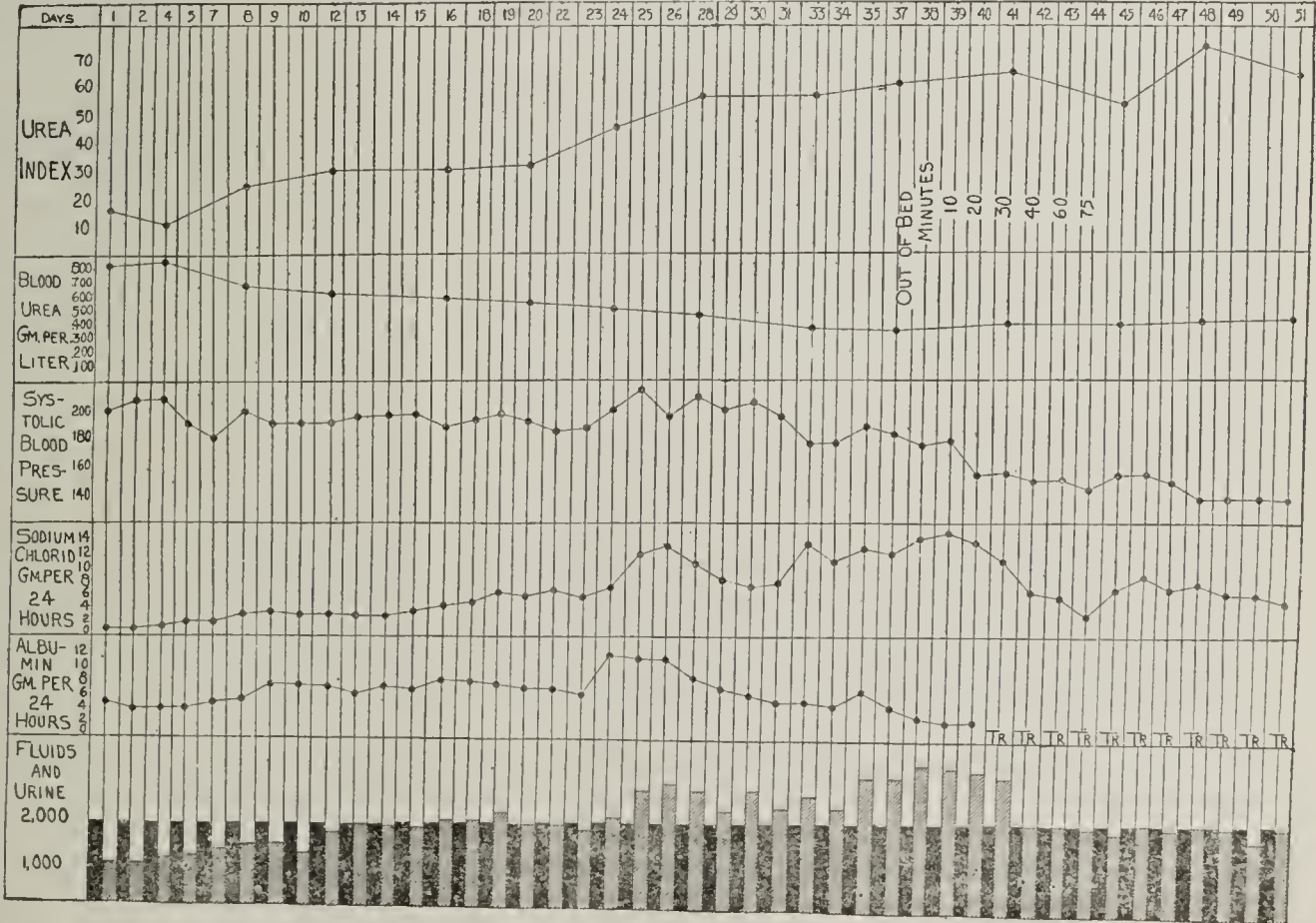


Fig. 4.—Renal function in Case 3.

and the blood pressure remained between 180 and 200. Thus, here again, from routine examination the patient seemed to improve very little. However, the blood urea fell gradually but consistently, and the urea index rose. It was safe to believe, therefore, that the condition was improving satisfactorily. Finally there was a diuresis accompanied by increased chlorid output and disappearance of edema. At

about the same time, the albuminuria diminished and the blood pressure began to fall. The man seemed so much better that he was allowed up for increasing lengths of time after being in bed for thirty-nine days. There seemed to be no immediate effect. On the day after he had been up for seventy-five minutes, however, the urea index was definitely lower than it had been before, and because of this he was kept in bed once more. Three days later the index had risen again. It was concluded from this observation that further rest in bed was indicated, and that actual harm had been done in attempting to get the patient up too rapidly.

COMMENT

These examples are sufficient to show that the urea index test for renal function can be applied satisfactorily in a tent hospital with little if any laboratory facilities. A legitimate question is whether it has any advantages over the phenolsulphonephthalein test of Rowntree and Geraghty⁵ under such conditions. As McLean has shown, the curves of percentage of phenolsulphonephthalein excreted in two hours and of the urea index are parallel and are quite striking. In certain respects the phenolsulphonephthalein test is the simpler. It seemed, however, that for field work phenolsulphonephthalein had one serious disadvantage. Phenolsulphonephthalein is a nontoxic dye substance which must be injected either intravenously or intramuscularly. While this procedure is never troublesome where asepsis is certain, under field conditions it is preferable to use intramuscular or intravenous treatment as little as possible. Moreover, patients do not like to be injected every day or two with a foreign substance which leaves even a slight local reaction. The urea index, on the other hand, requires only 3 c.c. of blood, which can be taken with a fine needle so simply that no patient will mind several bleedings in one day, and the test does not require any foreign body. For these reasons the urea index seemed the more satisfactory method.

On the whole, it becomes evident from the cases reported that the urea index is a feasible test for kidney function in a war hospital without particular laboratory facilities. As McLean has said, the method is applicable in a wide range of cases, easy of performance, and gives results that prove of practical value in the recognition, prognosis and treatment of certain conditions associated with impairment of renal function.

5. Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test, Arch. Int. Med., March, 1912, p. 294.

Mortality of Childhood.—In a reprint from the quarterly publication of the American Statistical Association for March, 1918, Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, tabulates and analyzes the number of deaths and causes of death in the different age periods from birth to the age of 15 as shown by the returns from the registration area, and draws conclusions and recommendations as to the reduction of the death rates for the period between the ages named. He says there is opportunity and need for concentrating the efforts of the public health movement on the further reduction of child mortality. The reduction already accomplished shows large possibilities for conservation of life. The preschool years of childhood have as yet received little attention from the life conservation movement however, public health programs having more to do with the children after they enter school. The extension of infant welfare stations and clinics is suggested. An important consideration is improvement in our sources of information on child life, through accurate census-taking, improved birth registration, and a greater exactness in death registration.

THE STREPTOCOCCUS EPIDEMIC AT
CAMP ZACHARY TAYLOR, KY.

A SURVEY *

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AND

WALTER W. HAMBURGER, M.D. (CHICAGO)

Major, M. R. C., U. S. Army

CAMP ZACHARY TAYLOR, LOUISVILLE, KY.

It was expected that the acute respiratory diseases would share with meningitis the responsibility for the morbidity and mortality of the Army camps. It was, however, the pneumococcus from which it was thought the greatest number of infections would come, so that the history of the acute infections of Camp Zachary Taylor was as surprising as it was interesting. Pneumonia in its lobar form, due to the pneumococcus, appeared early in the autumn months and has continued at the rate of about fifty cases a month ever since, a summary of which is given in the accompanying tabulation.

DETERMINATION OF PNEUMOCOCCI

	No.
Type I	37
Type II	29
Type II ^a	6
Type III	0
Type IV	93

The field was soon occupied by the streptococcus, which did not confine itself to the respiratory tract, but extended its malign influence to practically every tissue of the body, appearing, indeed, in the form of an epidemic infective agent. Chronologically, measles appeared after the pneumococcic pneumonias, typical in character, moderate in severity and leading to a few deaths, the number being the usual for the adult. The cause of death was bronchopneumonia, generally distributed through the lungs, and of the character usually associated with measles. A report on the pathology of all these infections has been submitted by Lieutenant Lucke. It is noteworthy that there was an insignificant number of cases of scarlet fever and chickenpox, and no cases of whooping cough.

On the appearance of the great wave of the streptococcus infections, late in November, the clinical picture and pathology changed noticeably. The men became ill very rapidly, were completely prostrated, and gave the appearance of having a profound toxemia; empyema began to appear; pathologically, the lesions turned from catarrhal to hemorrhagic, and the anatomic evidences of septicemia were manifested. At the same time also there began to appear severe angina, tonsillitis, otitis media et interna, and mastoid abscess, followed in several instances by meningitis. There were also some cases of erysipelas, and streptococcus cellulitis from one or another local cause.

By this time we were well aware of the presence of this streptococcus epidemic, and looked at it as separate and distinct from the measles. We based this view on the multiplicity of lesions caused by it, which stood in no relation to measles, and on the change in the pathology of measles itself as seen at the necropsy table. That the measles may have been increased in severity by the presence of a streptococcus is undoubted, but we believe that the two epidemics existed as separate

* From the Laboratory and Medical Services, Camp Zachary Taylor, Kentucky.

entities. This is further strengthened by the history in the late winter, as measles subsides while the streptococcus even increases its virulence with the production of primary sepsis and serositis, frequently ignoring the lungs and giving a high mortality.

ORIGIN OF THE INFECTION

Searching for the explanation of this infection, it seems most probable that it is a local process in some and a primary septicemia in other cases. Early in the history of the infection there were clinical reports of initial bronchitis, and evidences of pneumonia. In these the spread to the pleura may have been lymphogenic or peribronchial, as McCallum has suggested, the later sepsis being in these instances due to spread through the blood stream. In the recent cases, however, it would seem more likely that the process was a primary septicemia, although the infection atrium is clear in no case. The cases of primary empyema must surely be due to hematogenic spread, because, first, there was no pneumonitis in five of them; secondly, there was no cervical cellulitis and lymphadenitis with extension into the thorax, and thirdly, streptococcemia existed. There was also a case of primary pericarditis.

As the epidemic is reviewed, the gradual and sustained rise of virulence is noteworthy and requires an explanation. It seems desirable to mention that the autumn of 1917 at Camp Zachary Taylor was made unpleasant for the soldiers by considerable wind and dust; the latter was quite irritating and occasioned considerable coughing. The ground here is of clay and sand and has been highly cultivated. This may have contributed to the origin of the infection. A large percentage of soldiers at Camp Zachary Taylor are from rural or small town districts, and it is in such men that the infection has taken the greatest hold. It seems that the streptococcus has experienced a rise of virulence by ever appearing increments of newly exposed individuals.

When men arrive at the camp, some are in the incubation period of communicable disease, some are feeling the effects of the use or abuse of their last fling of freedom, and some bring infective organisms with them. For example, it was found that 15 per cent. of one contingent, mixed rural and urban, arrived at camp carrying hemolytic streptococci in the pharynx. Whether or not the draft men arrive depressed in vital resistance, by one cause or another, the first period of their life here is new to them and they are subjected to unaccustomed conditions, exercise, excitement, and exposure both to the elements and to infective agents. This results in fatigue, insomnia, and general depression of resistance until they have taken their bearings. With such an opportunity it seems that everything favors an increase in virulence of any organism that may be passing about, the effect being the same as the exaltation of virulence obtained by passing an organism through a series of animals in the laboratory. The movements of men in the camp, at Y. M. C. A. buildings, theaters, mess halls and barracks offer an excellent opportunity for the transmission of infection. The picture is sharpened by a consideration of the lack of knowledge of personal hygiene on the part of many men, especially in the depot brigade, before they have had sufficient instruction from the officers. They hawk, cough, sneeze and blow the nose without protecting the face, thus spreading the infection by droplets. When they get into the camp proper they meet new men heavily infected with streptococci, because it

has been shown that the organism is to be found in all organizations. In one company of men, at camp an average of six months, 83 per cent. carried hemolytic streptococci in the pharynx. Another factor that assists in enhancing the virulence of the bacterium is a delay in early diagnosis of an illness, either because the man himself does not know he is a menace, or because he is not inspected sufficiently often. One reason certainly is that it is left to the soldiers to report themselves at sick call, whereas the medical man should go after the soldiers to weed out communicable diseases early. When soldiers crowd in the infirmaries for sick call, those with incubating infections contaminate those about them.

While, from the foregoing, it is evident that we consider the camp as an incubator of this streptococcus infection, it is nevertheless true that attempts should be made to prevent the men coming to it with an acute disease under way. A task that might be taken by the local exemption boards is that an inspection of the draft could be made at their station of departure, that is, before they board the trains and expose their fellow travelers to the camp.

METHOD OF COMBATING THE EPIDEMIC

Our attack on this epidemic entailed the following procedures:

The isolation of all measles patients entering the hospital, shown by blood-agar plates to have hemolytic streptococci in the pharynx, from those free from the organism. It has been shown by Alexander and Levy that the complications of measles are directly connected with the presence of streptococci in the pharynx, and that the isolation of such clean cases materially reduces hospitalization. All measles patients are swabbed in an observation ward.

The examination of dust from recreation rooms and certain barracks demonstrated streptococci. Proper policing of floors washed with disinfectants slightly reduced the morbidity.

It was suggested that whenever several streptococcic cases appear in a company, the whole personnel should be swabbed and the carriers isolated. This was found impracticable, because the barracks did not lend themselves to such arrangements, and military training would be greatly disarranged.

All patients with infectious diseases are put in wards arranged on the cubicle system with sheets, and all persons walking around or coming into the ward are masked.

Experimentation has been undertaken with several solutions of seemingly practical character to destroy streptococci on the pharyngeal wall. These have been unsuccessful so far. Several carriers who have failed to clear up with the use of various solutions in the ward, have promptly done so after being placed out on the porches with abundance of fresh air, good food and exercise.

It has further been proposed that all incoming individuals be swabbed for the presence of streptococci, and those harboring them isolated from the carriers. This has thus far been impracticable because of the absence of suitable small isolation units.

Because of the low resistance of the human being to the streptococcus when it once gets started, it seems that protective vaccination might offer some advantage, even though animal experimentation has not, in the past, demonstrated that serviceable antibodies in any considerable quantity are developed in the lower ani-

mals. This does not indicate that a cellular immunity might not occur if these organisms were used in the vaccine. It is certain that a clinical experiment of this sort with a personal record of the soldier so immunized would be the only answer to the question.

In addition to the foregoing, a detention camp in which men may rest and become acclimatized is imperative, and it should be arranged in small units, so that measles immune and nonimmune, streptococcus carriers and noncarriers or suspects of any kind may be quarantined for three weeks. Visitors should be prohibited; indeed, the isolation should be complete, with attention at all times to amusements and instruction, to prevent the men becoming restive.

When men report at infirmaries they should be separated while awaiting attention, and masked if coughing or complaining of a sore throat. The wards should be divided by sheets into cubicles, and general measures used to prevent crossed infections. All patients coming to the base hospital are masked, and on arriving at the receiving ward are given a cursory examination to find out into which one of the arranged cubicles they are to be put to be further examined and await their transfer to a ward. All wards for infective cases are arranged in cubicles, and all ambulant persons in the ward and all visitors are masked and gowned.

The use of masks in wards and latrines is similar to the method installed at Camp Grant by Major Capps.

CONCLUSION

The study of an epidemic of streptococcal infections in Army camps shows it to be a comprehensive problem of many interrelated parts, each of which should be analyzed and controlled. The local exemption boards may be regarded as multiple foci of potential disease feeding into the camp; the depot brigade as the portal of entry of men and infection into the camp, and the regimental infirmaries as the outpatient department of the base hospital.

A STUDY IN WAR NEPHRITIS

A NEW CONDITION ASSOCIATED WITH HEMORRHAGES IN THE BLADDER WALL AND URINARY SYMPTOMS: PRELIMINARY REPORT*

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Any review of the literature on war nephritis leaves one with the feeling that the subject lacks definition. There seem to be but two possible interpretations of the great variance of views and conclusions that appear: the first, that no single clinical entity is sufficiently inclusive to explain them all; the second, and more radical, that there is no such distinctive disease as "war nephritis."

It was from the latter point of view that we decided to approach the subject: we wished first to learn whether such a distinctive disease as war nephritis existed, and, if so, how to distinguish it from other varieties of acute nephritis. It was impossible to attack the problem from all sides at once, and we therefore restricted our preliminary work almost entirely to the careful clinical observation of every

patient with nephritis, albuminuria and hematuria that came into the hospital. Practically we were only looking for a lead, hoping to find a loose end by means of which we might help to unravel the tangle.

Up to date, 155 cases have been studied. The amount of work done in each instance depended entirely on the nature of the case. We have found, among other things, an apparently undescribed condition that may prove to be a clinical entity. This paper is intended as a preliminary report of this condition, on which we are continuing our studies as fast as the limited amount of the material allows.

Of the 155 patients examined, seventy-three, or 47 per cent., were found to be suffering from chronic cardiac or renal disease with a recurrence of symptoms. In eight of these cases the first attack had occurred at the front; these may be called "recurrent war nephritis." Fifty-eight gave pretty clear evidence of previous cardiac or renal disease in history, physical signs of course. Seven gave no history of previous cardiac or renal symptoms, but suggested in their course an underlying chronic affection. This whole group represents largely the inadequacy of our methods of estimating normality. The relatively high number of cases of recurrent war nephritis (eight, or 5 per cent.) would seem to indicate that men who have suffered from this condition are unfitted for active duty in the front area. All these men had been returned cured after several months' treatment.

Of the remaining eighty-two cases, forty-nine presented a syndrome which marked them definitely as acute nephritis. Some of them were indistinguishable from similar cases seen in civil practice. Others differed in the relative importance of certain symptoms. The distinctive features of these cases have been brought out by Sir John Rose Bradford,¹ and, more recently, by Dunn and McNee.² We have nothing to add to their able descriptions of war nephritis proper.

A small group of eight patients developed signs of nephritis in the course of what appeared to be typical trench fever. In four of these the nephritis appeared as a transient albuminuria with casts, which rapidly cleared up. Five had hematuria as well, two had dyspnea and two edema. In only two cases was the course prolonged, and in those two, albumin and casts were still found in the urine after two months' treatment. Whether or not the trench fever bore any causal relation to the nephritis we are unable to say; but the occurrence of renal complications in these cases leaves one with the impression that the hitherto accepted view of the absence of after-effects from trench fever is not entirely satisfactory.

Four cases of panurinary infection were found. All were febrile cases with pyuria, and in all the presence of a cystitis and double bilateral renal infection was demonstrated by means of cystoscopy and ureteral catheterization. From the urines of which cultures were made the colon bacillus was obtained.

Early in the course of the work we received a patient with profuse hematuria who complained of symptoms strongly suggesting vesical calculus or papilloma. Cystoscopic examination by one of us revealed neither stone nor neoplasm, but, instead, multiple submucous hemorrhages in the bladder wall and blood pouring from both ureters. Since then we have found fourteen other patients with the same bladder picture, and latterly have been able, in several

1. Bradford, J. R.: *Quart. Jour. Med.*, 1916, **9**, 125; *Jour. Royal Army Med. Corps*, October, 1916.

2. Dunn and McNee: *Brit. Med. Jour.*, 1917, **2**, 745.

* From No. 1 (Presbyterian, U. S. A.) General Hospital, B. E. F.

instances, to anticipate the condition we should find, before performing cystoscopy. These fifteen cases make up 10 per cent. of all the nephritics received during the course of this study, and 15 per cent. of all the acute nephritics, proportions that render the condition of more than passing importance.

The clinical picture presented by these patients, if they are considered as a group, was entirely different from that of ordinary acute nephritis. The predominant symptoms, and the only constant ones, were profuse hematuria, frequency of urination and urgency, and pyrexia of an irregular and variable type. The majority also had pain on urination. In a few cases a diagnosis of renal calculus had been made, on account of the association of renal colic and hematuria. These patients later suffered from difficulty in starting the urinary stream, and from severe suprapubic and urethral pain. Cystoscopy revealed the presence of the typical vesical lesions, and in four cases in which the operation was performed while the patients still showed gross hematuria, blood was seen emerging from both ureters. The colicky pains have in every case been coterminal with the gross hematuria, and may have been due to the passage of clots which, in some cases, were later found in the urine. The frequency and dysuria often persisted after the urine had completely cleared up.

Only one of these patients was afebrile throughout the course of the disease. In most cases the initial temperature was quite high, and in one instance 103.8 while under our observation. Of course our records are incomplete, because we have scant notes on the initial period of the disease. The temperature curve is very irregular, and no definite type appears. However, there seems to be a tendency toward slight relapses after the first remission.

RESULTS OF EXAMINATIONS

History of Previous Illnesses.—One patient had had scarlet fever without complications in 1915. Another had diphtheria twenty-six years ago, and rheumatism nine years later. One had been subject to tonsillitis. Three said that they had suffered from some shortness of breath on long marches, but had had no other symptoms of cardiac disease. One had had edema of the face and limbs two years before, which was ascribed to poisoning. Two patients had had gonorrhea; the remainder denied venereal diseases, and none showed any evidences of existing gonorrhea or syphilis. Two had been rejected for the Army, one in 1915 and the other in 1916, but did not know why. One of these had a marked myopia. All were members of active line organizations except one, an orderly of this hospital who had passed a careful physical examination before admission to the Army. Their ages ranged from 19 to 36. All had been in France for at least four months, and all except the orderly mentioned above were in the front area at the time of onset of the illness. With the possible exception of the one patient who had had general edema, then, the cardiac and renal histories may be considered negative.

Mode of Onset and Prodromes.—In nine of the fourteen patients the onset was sudden, with hematuria and its concomitant symptoms. One said he had "felt queer" for twelve hours before the hematuria began. One, after a severe cough of seven days' duration, suddenly developed hematuria, urgency and dysuria. One complained of increasing weakness for

six days before the onset of urinary symptoms. (As this patient failed to recognize a gross hematuria, even after he had burning urination and frequency, it is possible that he may have passed blood earlier.) Another had headache, nausea and vomiting for two or three weeks before the appearance of urinary symptoms. Seven complained of weakness or giddiness at the time of onset, and one of these fainted twice. Eleven had headache. Ten had pains in the small of the back, sometimes resembling renal colic. A considerable number also complained of pains in the legs. Four vomited, and one had diarrhea for twenty-four hours only. Two besides the patient mentioned above complained of cough. Two of the three cases in which temperature records were obtained showed a pyrexia within twenty-four hours of the first appearance of urinary symptoms.

Two cases have not been included in the previous discussion for reasons that will appear, and will be considered separately later.

Physical Examination and Clinical Findings.—

Those patients who were admitted during the febrile stage of the illness approached, in general appearance, the picture of an acute infection; later the most striking features were pallor and general debility. Unfortunately we were unable to determine the actual degree of anemia except in one case. In this, both red cells and hemoglobin were reduced about 40 per cent. Three of the cases showed herpes labialis, and in one instance the lesions later became infected. With these exceptions the skin and visible mucous membranes were clear, but for the usual pediculosis and scratch marks. Cutaneous, oral and conjunctival hemorrhages were never found, in spite of repeated examinations. Edema and dyspnea were noticeably inconspicuous. Puffiness of the face was observed once, and reported once in the history; the former patient was also reported to have had slight swelling of the legs at the onset of his illness. Exertional dyspnea was not common, and occurred only in association with pyrexia. With one exception no signs of respiratory disease were discovered. This patient had had a severe cough, antedating his urinary symptoms by ten days. On admission the cough was subsiding, but râles, dulness and increased voice and breath sounds were present over the right upper lobe. Abnormal cardiac signs were discovered in four cases: One showed a transient enlargement of the area of cardiac dulness without murmurs; two, systolic murmurs without enlargement, and one, a slight persistent enlargement with a transient systolic murmur. There were no disorders of cardiac action. The spleen was palpable in one instance. The liver was never found enlarged either by palpation or by percussion. Tenderness in the upper abdomen was present in two cases, and tenderness in one or both costovertebral angles in five. In spite of the frequency of pains in the legs, tenderness in the shins and calves was present only once, and then was very slight.

Special Examinations and Laboratory Findings.—

Repeated blood pressure examinations were made by the auscultatory method with the Tycos apparatus. The tension was never found elevated, reaching 140 as a maximum in only a single observation. Ophthalmoscopic examinations in eight cases revealed no hemorrhages nor other abnormalities. Of seven blood cultures, only two showed any growth. In both of these, single colonies of cocci (probably pneumococci) were found. It is safer to consider these as con-

taminations, for the present at least, as subsequent cultures from the same subjects proved negative. From the catheterized bladder urine in eight cases, staphylococci, obviously contaminating organisms, were obtained in culture three times; the other specimens were found sterile. The following mediums were used: broth, glucose agar, hydrocele-glucose-agar and blood agar. In two cases, anaerobic cultures were also set up.

White blood cells and differential counts on six patients showed so little uniformity that no conclusions can be drawn from them. A red cell count and hemoglobin estimation on one patient showed 2,700,000 cells with 60 per cent. hemoglobin, a considerable anemia. No morphologic changes were observed in the cells except some central pallor. No nucleated red cells were found.

All the patients exhibited gross hematuria, of variable duration, in the early stages of the condition. All but one showed casts at some time. Usually the casts were of the hyaline and granular types; but frequently epithelial and red blood cell casts were present. Although gross blood did not persist very long, erythrocytes were observed in the urine as late as the fifty-ninth day of the disease in one case, and the forty-first day in another. Only once was any considerable number of leukocytes seen, and never frank pus. Sometimes the urine became negative for a period, with a later recurrence of albumin and casts. Albumin was seldom very marked; in most cases it could be fully explained by the amount of blood present. Only one patient was discharged with consistently negative urinary findings; and another, who is still in the hospital, has now had a negative urine for ten days. The majority left the hospital with a slight trace of albumin and a few casts; six showed blood cells persistently. The periods of observation varied from the eleventh day of the disease to the seventy-second. Although we have tried to follow these cases by means of cards, we have as yet received no replies.

The only renal function test which we have been able to employ is the phenolsulphonephthalein test. In all but three cases there has been a definite diminution in the excretion of the dye, the output varying from 15 to 48 per cent. in two hours. When repeated tests have been made, an improvement of function has usually occurred with convalescence.

Cystoscopy.—Cystoscopic examination of the earlier cases was undertaken to determine the origin of unexplained hematuria associated with symptoms pointing to lesions of the lower urinary tract. A striking and unusual picture was found: multiple hemorrhages in the bladder mucosa, unassociated with inflammation, tumor or stone. In those patients presenting gross hematuria at the time of cystoscopy, bloody urine was seen coming from both ureteral orifices. Renal tuberculosis and neoplasm were thought of, but seemed unlikely in view of the symptoms and other findings enumerated elsewhere, and, moreover, would offer no elucidation of the bladder picture.

The cystoscopies were done from four to eighteen days after the onset of the illness. In all of the thirteen patients whose bladders were examined, practically the same conditions were found: multiple small hemorrhages into the bladder mucosa without ulceration. There were from two to over twenty in each case, and, when numerous, they appeared to be somewhat grouped. They varied in size from minute

punctiform spots to areas about 1 cm. in diameter, and were irregular in shape, often like a broad flame. They were usually situated definitely along the course of visible blood vessels, and were more common on the posterior wall and the posterior parts of the lateral walls of the bladder; twice they were present on the anterior wall, but associated with more numerous ones posteriorly. In four cases the trigon was involved, chiefly the proximal part, but not particularly the neighborhood of the ureteral openings. In every instance the ureteral orifices were normal. The bladder mucosa was normal (except for the hemorrhagic areas) in all but two cases, in which general engorgement of the blood was found.

Latterly five patients have been reexamined by cystoscopy. In none were we able to say that a new crop of hemorrhages had appeared. In four no sign of the old hemorrhages could be found, thirty, twenty-one, twenty and eight days after the first cystoscopy. In the last of these four cases, the original observation was "fifteen to twenty *minute* hemorrhages." In the fifth instance referred to there were numerous moderate sized lesions, some of which were still recognizable twelve days later, though of a brownish rather than a red color, and with less distinct borders.

Examination of the urethra by endoscopy should be made, and we hope to include this in the future studies.

Although it is relatively easy to detect slight bleeding from the bladder wall or a tumor, with a good cystoscope used in a water medium, we have seen no bleeding from the bladder mucosa in any case. Moreover, it is not uncommon to find red blood cells in the urine of these patients after the bladder has cleared up. In some cases we have actually seen blood coming from the ureters, and we feel strongly that the upper urinary tract is the source of most of the blood found in the urine in the cases under discussion. Also, in view of the fact that the bladder evidences clear up rather rapidly, that recurrent hemorrhages into the bladder have thus far not been found, and that at present we are dependent on these cystoscopic signs for a diagnosis, it seems quite possible that the pathologic condition we are describing is more common than our figures show.

In two cases there was tenderness in one or both renal regions, but in no instance were the kidneys definitely felt. The external genitalia were uniformly normal. The prostate and seminal vesicles showed evidence of chronic inflammation on rectal palpation in only one case of the ten thus examined, and this man denied gonorrhea, and had not a trace of pus in the urine at the time of examination.

Pathologic Report.—We were able, by means of a small punch, to obtain specimens from the hemorrhagic spots in three cases. On section, these showed no typical lesions. The mucosa was entirely normal and unbroken. The submucosa showed a profuse and somewhat patchy infiltration of well preserved red blood cells, but no leukocytic infiltration, and nothing suggesting an inflammatory lesion. The blood vessels were somewhat engorged. In one specimen, small nodular accumulations of degenerating connective tissue cells and wandering cells were found in the vicinity of the small arterioles. No organisms could be demonstrated by Gram, Giemsa or Wright stain.

Two cases have thus far been omitted from the discussion. Although these patients ran entirely different courses from all the others, and gave evidences

of hemorrhages elsewhere than in the urinary tract, is impossible to leave them out entirely because they presented typical noninflammatory bladder hemorrhages, the only distinctive feature of the condition we are describing. One died with a general hemorrhagic condition, but at the onset of his illness the bleeding was confined entirely to the urinary tract. The other, after a six weeks' illness resembling trench fever, developed almost simultaneously cerebral symptoms and hematuria. The neurologic consultant thought the former could be explained only by multiple small cerebral hemorrhages. The typical bladder picture was found at cystoscopy, and the urine contained both blood and casts. The subsequent course, including urinary symptoms, was similar to that seen in other cases of this group. It may be that we are dealing with a hemorrhagic disease which usually reveals itself only in the urinary tract, but, in severe cases, also affects other organs.

COMMENT

The consistent presence of casts in the urine, and the reduction of the phenolsulphonephthalein excretion seem to be sufficient evidence to justify us in saying that these patients have a renal lesion. On the other hand, they differ in very essential respects from ordinary cases of acute nephritis. The common symptoms of edema and dyspnea are almost entirely lacking, as are uremic manifestations. Moreover, although we have examined by cystoscopy eighteen patients who had typical nephritis and hematuria, none have shown ladder hemorrhages, the most striking feature in our cases.

Sir John Rose Bradford¹ in 1916 suggested the presence of a distinct hemorrhagic nephritis. We quote from his article:

In some instances, especially if the case is seen early, the urine may contain a large quantity of blood, so as to be obviously red to the eye. . . . Such cases present a rather different clinical picture to the general run of cases in that with them dropsy is neither so frequent, nor when present, so marked a feature of the case. Further, these hemorrhagic cases more frequently have pyrexia and resemble much more closely in their course infective nephritis dependent upon some microbic invasion. . . . In a few instances the hematuria and pyrexia have been intermittent and recurrent, producing a clinical picture closely resembling that seen in renal embolism; but these patients have not been suffering from any condition liable to cause embolism. . . . These cases, however, are few in number, and are quite different from the ordinary form of nephritis . . . where dropsy is really the dominant physical sign. .

Dunn and McNee² have also called attention to a similar group of cases in their clinical analysis, but make no such distinction in the pathologic study.

The cystoscopic picture is entirely different from that seen in acute cystitis, where hemorrhages may occur but are associated with other signs of inflammation. Hemorrhagic spots removed from such bladders as controls presented an intense leukocytic infiltration, edema and tissue degeneration about the hemorrhages.

The bladder hemorrhages can not at present be distinguished from any other purpuric lesions, but a purpura of such frequent occurrence, which is apparently limited, in at least a large proportion of cases, to the urinary tract, is in itself worthy of note. A curvy seems highly improbable.

It is possible that we may be dealing with a type of nictetric spirochetosis. A few microscopic examina-

tions of catheterized urine sediments stained by the Fontana and India ink methods have been negative.³ Of course, the evidence that we are dealing with a clinical entity is not complete, but the frequent occurrence of such a distinctive syndrome makes it seem probable.

We are continuing and enlarging the work, and hope that we shall be able to present detailed results with complete protocols at an early date.

PARAFFIN PAPER AS A SURGICAL DRESSING

CHARLES M. HARPSTER, PH.G., M.D.

TOLEDO, OHIO

On account of the small supply and high cost of gauze, paraffin tissue paper will be found an excellent dressing for burns or any other condition in which a nonadherent dressing is desirable. It is far superior to the paraffin dressing of burns by the spray method, is much more easily and rapidly applied, results in more rapid healing of the burned surface, and is more easily removed.

In the first stage of burns, when there is great pain, the various ointments now in use can be applied directly to the paraffin paper and this applied to the burned area after all vesicles have been opened. It has the advantage of excluding the air, which relieves the pain of the burns, and it is readily removed at the time of redressing, leaving the developing granulations unaltered.

The first dressing, of pure petrolatum on paraffin paper, is applied directly to the burn, and over this a layer of cotton and the usual bandage. As the paper is impervious to moisture, the serum that seeps from the injury runs away from the raw surface, and is absorbed by the outer dressings beyond the injury. There is no sticking to the burn or other wounds, when the dressings are removed. Experience has proved that dressings once in two or three days are sufficient in most cases. Certain cases, however, may require more frequent dressings.

Paper bandages, which are now being universally used, perhaps more through necessity than choice, have been found to work well in certain dry dressings. But the thought arose, what a great saving could be accomplished if they could be used on moist dressings or dressings in which there is considerable oozing or drainage. Here again, the paraffin paper can be utilized as a barrier between the moist dressings and the paper bandage. It has the desired effect of keeping the moisture inside the dressing, and prevents the paper bandage from becoming wet and tearing easily.

The paraffin paper can be secured at almost any store where groceries are sold. An attempt is being made to have some dressing manufacturers put it up in sterile packages for general surgical use.

The advantages of the paper were accidentally discovered when a suitable dressing for a severe burn was needed at a patient's residence. The paper was ideal in this case. It has been employed in numerous other instances, and I have mentioned only a small number of its uses. It can take the place of oil silk or rubber tissue, in which case a double sheet is desirable, or, as I hope to secure soon, a heavier coated paper.

301 Wedgewood Building.

3. More recently, injection of catheterized urine into guinea-pigs has proved negative in three cases.

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SATURDAY, JUNE 8, 1918

SCIENCE AND FOOD PRODUCTION

The admonition of the United States Food Administration that we must save meat includes an implication to the dietetically thoughtful person that some other form of food rich in protein should be substituted for it in the diet. Among the products suggested for this purpose none offers greater promise of value than cheese. The attempt to encourage the use of cheese, in place of meat, is the more timely because, along with butter, it represents a way in which milk can be stored, so to speak, for future use. Furthermore, the administration officials have recently given assurance that large stocks of cheese are now on hand in this country and awaiting consumption. Until recently, at any rate, the United States could not be regarded as a cheese-eating nation in the same sense in which this might apply to European peoples. A census made in 1909 estimated the production of cheese for the United States at about 311,000,000 pounds. To this must be added a considerable importation, so that the cheese consumption was about 3½ or 4 pounds per person per year. This is a low figure in comparison with the amounts of meat and butter consumed, thus suggesting that there is room for considerable increase in the use of cheese.

One obstacle to the wider dietary employment of cheese in the United States at present lies in the fact that many types of this food have traditionally been imported; and until comparatively recent times it has been firmly believed—as still assumed by the majority of cheese lovers—that most of the many favorite brands cannot be produced elsewhere than at the original place of manufacture. The principal importations have been of Parmesan and Gorgonzola cheese from Italy; Emmenthal cheese from Switzerland; Roquefort, Camembert and Brie from France, and Edam cheese from Holland. These, however, by no means exhaust the list, particularly of the varieties which the epicure frequently has adopted.

Precisely as we are rapidly learning that the "made in Germany" brands of drugs and chemicals and diverse other essential items can be successfully

replaced by home-made products, it is becoming evident that the quality of cheeses is not so much a question of countries and climes as of micro-organisms and science. When our dairy mycologists began to direct their attention to the changes that milk undergoes during fermentation and the ripening of cheese it early became apparent that the nature of the product could be controlled and modified by the application of scientific methods. About three quarters of the cheese used at present in the United States is of the Cheddar type, often spoken of as American cheese. But cheese of the Brie, Camembert, Neufchâtel, Swiss and Limburger types are also being successfully manufactured here, particularly in the great milk producing state of New York and Wisconsin.

The hard cheeses, such as the American Cheddar and the Swiss types, depend on a suitable bacterial flora for their normal development. In the softer cheeses molds play an important part in the ripening. In these types also a rapid development of lactic acid bacteria is necessary to bring about the proper physical condition of the curd in the various stages of manufacture. Dr. Thom of the Bureau of Animal Industry, the foremost expert in this field of research, has shown that a specific mold, which he has termed *Penicillium roqueforti*, is concerned in the ripening of Roquefort as well as of Gorgonzola and Stilton cheeses, and is responsible in large measure for their peculiar flavor.

The problems of Roquefort cheese are illustrative of what our men—and women—of science are being called on to solve. This food product, which has been produced in southeastern France for at least two centuries, is a hard rennet cheese made from the milk of sheep. The imitations of it have been prepared from cow's milk, so that questions of identity of procedure and product have naturally become pertinent. In a recent investigation by Evans² in the Dairy Division of the Bureau of Animal Industry, it has been shown that the micro-organisms essential for the manufacture and ripening of Roquefort cheese are *Streptococcus lacticus* and *Penicillium roqueforti*. *Streptococcus lacticus* decomposes the lactose during the manufacture of the cheese, and thus produces the lactic acid necessary for the cheese making. These organisms disappear from the cheese after two or three weeks, being killed by the high concentration of sodium chloride. The remaining flora of Roquefort cheese consists of cheese streptococci and *Bacterium bulgaricum*, organisms that are found in all kinds of ripening cheese. These organisms do not have any significant part to play in the ripening of Roquefort cheese. All experimental cheeses of this variety were made from cow

1. Thom, C.: Fungi in Cheese Ripening: Camembert and Roquefort. Bull. 82, U. S. Dept. Agr., Bur. Animal Industry, 1906. Thom, C. and Matheson, K. J.: Biology of Roquefort Cheese, Bull. 79, Conn. Storrs Agr. Exper. Sta., 1914. Thom, C.; Matheson, K. J., and Curry, J. N.: The Manufacture of a Cow's Milk Cheese Related to Roquefort, Bull. 79, Conn. Storrs Agr. Exper. Sta., 1914.

2. Evans, Alice C.: Bacterial Flora of Roquefort Cheese, Jour. Agr. Research, 1918, 13, 225.

milk, but there was no evidence of any essential variation from the imported product. Such experiments in the control of complex biologic reactions and the reproduction of recognized desirable food products under new conditions of manufacture are timely and commendable. They initiate new possibilities and they attest the universality of science. Recently many persons have begun to look on science as an agent of subjugation; but it is certain to be far more potent as a force for the emancipation of mankind.

MODERN VIEWS OF HAY-FEVER AND ASTHMA

Recent work on hay-fever, asthma, eczema, urticaria and angioneurotic edema is being rewarded with interesting results. It has been noted that these various diseases are frequently associated in one family and occasionally even in one individual. Formerly, hay-fever was regarded as due to "a predisposing—perhaps neurotic—idiosyncrasy, a resulting hyperesthesia" and "an exciting agent"—pollen in true hay-fever, unfavorable atmospheric conditions in so-called pseudohay-fever. Now, however, not only has stress been placed on the resemblance of the symptoms in hay-fever, asthma and allied conditions to some of those of active anaphylaxis (by Wolff-Eisner, Meltzer and others) but, as Koessler¹ says, it has been proved by experiment that hay-fever is a disease due to pollen protein sensitization. It has been shown also that asthma in certain cases may be precipitated by inhalation, by subcutaneous injection or by ingestion of the foreign protein to which the individual is sensitized, as in horse asthma or in patients who develop from their hay-fever true paroxysms of asthma.² In similar manner, certain forms at least of eczema, urticaria and angioneurotic edema have been determined to be forms of protein sensitization, and new methods of diagnosis and treatment are being worked out.³ With this new point of view, the "predisposition" of former times is now "sensitization" or "allergy," and the exciting agent is the specific foreign protein, as pollens in hay-fever, and pollens, animal emanations, food or bacterial proteins in asthma, eczema, urticaria and angioneurotic edema.

The offending protein may be detected by cutaneous and ophthalmic tests with extracts of the suspected proteins. The tests are based on the fact that the cells may react to the protein involved when applied directly. While the significance of such tests has

not yet been worked out completely, the results indicate that the diseases are indeed examples of allergy. This is true of hay-fever quite generally, of asthma also but with exceptions, and of certain forms of eczema, urticaria and angioneurotic edema, as found with increasing frequency. These allergic diseases appear to carry a definite inheritance factor, a positive family history being found in something like 50 per cent. of susceptible persons, as against 14 per cent. of normal persons. It has been claimed that the capacity for sensitization is transmitted nonspecifically as a mendelian dominant, specificity being acquired usually in a manner as yet ill understood through inhalation, ingestion or intradermal reception of foreign protein.

In a recent report on so-called horse asthma as well as asthma from other forms of sensitization, de Besche⁴ describes the case of a physician that illustrates not only early onset of asthma and its association with hay-fever in the same person as well as in other members of the family, but also the induction of typical anaphylactic shock on the injection of antidiphtheria serum, followed for a time by an apparently complete desensitization. In this case as well as in others, specific eye and skin reactions were obtained with horse serum, the eye reaction being obtained by simply touching the conjunctiva with the finger, which had just touched a horse. When the patient's serum was injected into a guinea-pig, horse serum being injected a few hours later, anaphylactic shock resulted. In one case death—passive anaphylaxis—occurred. It is of interest to note that in the case of the physician, exposure to emanations from horses, injection of horse serum, and the ingestion of sausage containing horse meat all caused asthmatic attacks; this patient was sensitive also to rabbit and guinea-pig emanations as well as to rabbit serum. Other cases of asthma described are in many ways similar; but, as commonly observed, with variation in the age when the nature of the trouble was recognized as well as in the course and in the symptoms. In one patient, acute gastro-intestinal symptoms developed, corresponding to the so-called anaphylactic gastro-enteritis. It appears that not all persons subject to horse asthma are sensitive to horse serum, and that consequently the danger of injecting antitoxic serum is less than might seem to be the case at first glance; but the necessity of careful tests of all asthmatics before injecting serum for therapeutic purposes, now generally recognized, remains as obvious as ever. Among other instances of sensitiveness described by de Besche is one of hay-fever-like manifestations associated with pronounced acute gastrointestinal disturbances caused by flowers, more particularly roses; whenever exposed for fifteen or twenty minutes to the odors of roses, this patient, a man, had

1. Koessler, K. K.: The Specific Treatment of Hay-Fever by Active Immunization, *Illinois Med. Jour.*, 1914, **26**, 120.

2. Koessler, K. K., and Moody, A. M.: Contribution to the Etiology of Chronic Bronchitis Associated with Bronchial Asthma, *Chicago Soc. Int. Med.*, 1917, **1**, 7. Walker, I. C.: The Cause and Treatment of Bronchial Asthma, *Med. Clin. of North America*, 1918, **1**, 1177.

3. Longcope, W. T.: The Susceptibility of Man to Foreign Proteins, *Am. Jour. Med. Sc.*, 1916, **152**, 625. Longcope and Rackemann: Severe Renal Insufficiency Associated with Attacks of Urticaria in Hypersensitive Individuals, *Jour. Urol.*, 1917, **1**, 351. Walker, I. C.: Causation of Eczema, Urticaria and Angioneurotic Edema by Proteins Other than Those Derived from Food, *THE JOURNAL A. M. A.*, March 30, 1918, p. 897.

4. De Besche, Arent: Hypersensitiveness and Asthma, Especially in Relation to Emanations from Horses, *Jour. Infect. Dis.*, 1918, **22**, p. 594.

colic and diarrhea at the same time as sneezing and running of the eyes. In some of the instances recorded, the sensitiveness appeared to increase with time. As stated, we do not understand fully how this abnormal sensitiveness develops, whether it is inborn or acquired. Bearing on this question, a case recorded by Walker⁵ is of special interest: a woman, aged 20, who had not had asthma before, was injected with horse serum without any immediate ill effects; but two weeks later she began to have asthmatic attacks whenever in close contact with horses, and alcoholic extracts of horse dandruff gave a skin reaction. Here we have a definite instance of acquired sensitiveness.

Treatment of these allergic diseases includes protective as well as curative measures. The protective treatment aims to exclude the offending protein from reaching the sensitive patient. It is illustrated well in the case of hay-fever, not only by the migration of hay-fever victims to regions that are free from the pollens concerned, but also by the elaborate campaign against hay-fever waged by the American Hay-Fever Prevention Association,⁶ aided by various governmental agencies. Some large cities now limit by weed-cutting ordinances pollination of the grasses and weeds causing hay-fever, and New Orleans is said to have decreased by these means the vernal type of hay-fever by more than 50 per cent in one season. The varieties and distribution of plants bearing hay-fever pollen are being determined, and undoubtedly preventive work of this kind if continued and extended will result in great reduction of the suffering from hay-fever. Persons subject to horse asthma are especially liable to attacks in places where horses abound, and de Besche mentions instances of complete relief from all symptoms when such persons leave the city and go to sea.

At present, the only form of curative treatment that offers any promise of help is based on the principle of desensitization (antianaphylaxis, anergy), injections being given of the particular proteins to which the patient in question is abnormally sensitive, the dose being selected with a view to avoiding severe reactions, as determined by ophthalmic or cutaneous tests. The effects so far obtainable are not marked, and repeated injections are necessary. In hay-fever the treatment with extracts of pollen is begun several weeks before the usual onset, and continued at intervals during the season. The results in hay-fever seem to be encouraging; the drawbacks are lack of permanence in result and difficulties connected with dosage. In other forms of sensitiveness, the specific treatment is being made the subject of careful investigation.³

DEHYDRATED VEGETABLES

The conservation of certain types of foods, notably fruits and vegetables, by desiccation has been brought into public prominence by the propaganda of the United States Food Administration and other agencies for inculcating food-saving. The preservation feature of this program is quite clearly understood by most persons who have given attention to the subject. Less well appreciated are some of the other features of the dehydration plan, particularly the actual change in the composition of the products with respect to their water content. The removal of the water not only yields a desiccated product that is not very likely to be lost by spoilage and decay, but also does away with the great bulk of the material so that the possibility of economy in transportation is greatly enhanced. Saving in tonnage and cargo space is at times an item quite as important as the other advantage afforded by desiccated products, namely, availability in seasons when fresh supplies are not readily obtainable.

In commenting on dehydrated vegetables, during a recent address delivered before the College of Physicians in Philadelphia, Major Murlin¹ of the Food Division of the Surgeon-General's Office called attention to some of the advantages which such foods offer in war time. He reported that the quartermaster's department of the Army has begun to place orders for dehydrated vegetables such as potatoes, onions and carrots for the use of General Pershing's army. As yet the tonnage contracted for is not large, but in all probability in the near future dehydrated vegetables will become a staple in our army rations, as they have already become in the ration of the British army. Thousands of pounds of dehydrated vegetables are being prepared in Canada, some also in the United States, for the British army. By simply soaking in water and boiling in the same water, these vegetables are brought back to the condition of fresh vegetables so perfectly that very often they cannot be distinguished from the fresh vegetables themselves. According to Murlin, another advantage of such products is the very high saving of time in the company kitchen. Dehydrated vegetables put up in packages are ready for the kettle; this saves the work of one or two men a day.

Elsewhere in this issue Givens² has presented statistics that elucidate some of the actual consequences of desiccation. A series of analyses of dried vegetables, conducted at the Sheffield Laboratory of Physiological Chemistry in Yale University, show that the quantity of water lost by such foods as spinach, lettuce, carrots, potatoes and cabbage may range from 70 to 97 per cent. Thus an entire barrel of spinach becomes concentrated into a package weigh-

5. Walker, I. C.: The Treatment of Patients with Bronchial Asthma with Subcutaneous Injections of the Proteins to Which They Are Sensitive, *Jour. Med. Research*, 1917, **36**, 422.

6. Scheppegeirell, William: A Year's Work of Hay-Fever Prevention in the United States, *Am. Jour. Pub. Health*, 1917, **7**, 173.

1. Murlin, J. R.: Some Problems of Nutrition in the Army, *Science*, 1918, **47**, 495.

2. Givens, M. H.: A Consideration of Some Dried Vegetables with Special Reference to Their Nitrogen and Calcium Content, *THE JOURNAL A. M. A.*, this issue, p. 1743.

ing at most a few pounds. Incidentally, it is noted that some of the green edible parts contain not insignificant quantities of calcium, an essential element which is ordinarily derived most readily in abundance from milk and milk products. For example, Swiss chard and spinach may contain more than 1.25 per cent. of calcium; cabbage and lettuce may furnish more than 0.5 per cent. As the requirement of lime for an adult man has been placed at somewhat less than 0.5 gm. a day, the small contributions from liberal quantities of such green vegetables may not be negligible, provided they are physiologically available in these products. This remains for the most part to be ascertained by actual utilization experiments.

Current Comment

VOCATIONAL REHABILITATION OF THE DISABLED SOLDIER

THE JOURNAL has frequently stated that the most important future work connected with the war is the rehabilitation and placement in a vocation of the disabled. It has stated that this work properly should come under the supervision and direction of the Surgeon-General of the Army or the Navy, as the case might be. Recently Senator Smith of Georgia introduced a bill which looked to the transference of some of this work to the Federal Board for Vocational Education. According to the original bill, this work, while theoretically under the supervision of the Surgeon-General, would in reality have been under the supervision of this Federal Board. This, of course, would have been a serious handicap to good work. As the bill passed the Senate, it was so modified as to make the measure a fairly satisfactory one. It must be recognized that an entire program which shall deal with the disabled soldier in an effective way must involve his medical and surgical treatment, whatever reeducation may be necessary, and his final placement or after-care. While the Surgeon-General of the Army had facilities to do all of this work, and, in fact, had worked out a program, other federal agencies also were prepared to do part of the work supplementary to the medical and surgical treatment. The bill leaves the soldier, or sailor, under the entire authority of the War Department or Navy Department—that is, in the Medical Department of the Army or Navy—until discharged from the service. The Surgeon-General may deal with the soldier in an attempt to cure him, or as nearly so as the man's disabilities permit, without outside interference. The bill provides that no "vocational teaching shall be carried on in any of the hospitals until the medical authorities certify that the condition of the patient is such as to justify such teaching"; also that "the plan may be established between the War and the Navy Department and the Federal Board for vocational education whereby these departments will act in an advisory capacity with the board in the care of the health of the soldier after his discharge." Necessarily, if the program as outlined by the

bill is to be carried out in a satisfactory manner, there must be hearty cooperation between the Federal Board and the Surgeon-Generals of the Army and of the Navy. There is no reason to suppose that this cooperation will not be entered into fully by these different interests, and to the ultimate, best advantage of the disabled soldier.

DOMINATION OF THE MEDICAL PROFESSION BY COMMERCIAL INTERESTS

Last week THE JOURNAL published a letter received by a physician in Milwaukee from a firm of lawyers representing the Farbwerke-Hoechst Company. In this communication the physician was threatened with suit if he published further unfavorable reports regarding that firm's preparation. Quoting from the attorneys' letter:

"Mr. Metz directs us to inform you that the publication of this article and the statements therein were seriously damaging to the Farbwerke-Hoechst Company, and directs us to say further to you that he and the corporation will hold you personally responsible for any repetition, oral or written, of the same or of similar statements to the same effect."

We were under the impression that the time had passed when a proprietary medicine manufacturer would presume to threaten a physician for making an honest report of his results with any therapeutic agent. Such condition did exist once, before the Council on Pharmacy and Chemistry undertook its work. Now comes Mr. Metz to revive this relic of an historic but infamous period in the history of American proprietary medicine manufacturing. Even Mr. Vanderbilt regretted that he ever said "The public be d——." One of the elementary principles in the practice of medicine is that the individual physician shall let others know his results, whether good or bad, in any line of treatment. It is by such interchange of knowledge and experience that progress in medicine is possible. Yet Mr. Metz would interfere with the diffusion of such knowledge and experience when it applies to proprietary medicines. His legal threat against Dr. Sargent is "terrorism" applied to the medical profession.

DRUGLESS HEALING INCLUDED IN THE TERM "PRACTICE OF MEDICINE"

A decision handed down a few months ago¹ by the Supreme Court of Illinois will help to do away with the confusion resulting from the licensure of cult practitioners. Under the claim that they were "not practicing medicine," osteopaths, chiropractors, Eddyites, naprapaths, physcultopaths, neuropaths and other healers are claiming or have secured the legal right to practice with lower educational qualifications than are required of physicians. But their claims are no longer valid—at least in Illinois. This decision states that the term "medicine" is not limited to substances supposed to possess remedial properties, but also means "the healing art"—the science of preserving health and treating diseases, no matter whether medicinal substances are used or not. But the deci-

1. Meaning of the Terms "Physician" and "Medicine," THE JOURNAL A. M. A., Oct. 27, 1917, p. 1465.

sion does not end there. It adds emphasis to the foregoing by the statement that any one engaged in the treatment of diseases for the purpose of curing them is a physician. The corollary is also true, therefore, that all who are practicing the healing art by whatever method should be required by law to possess the same educational qualifications. Incidentally, this decision specifies that any physician, regardless of the method of treatment followed, has the right to sign death certificates. This emphasizes all the more the necessity of adequate training for any one who has this authority. The objections that have been raised to the signing of death certificates by followers of the various cults has not been because of the particular form of treatment they emphasize, but because of their lack of a fundamental training in the essentials of medicine. Enforce the same qualifications alike for all who are legally authorized to treat the sick—the same as is done in practically every other country—and there will be no logical reason for restricting the practice of any one engaged in the healing art who, in the light of this decision, is a physician and is engaged in the practice of medicine.

NURSES NEEDED BY THE RED CROSS

On June 10 the American Red Cross will initiate a campaign to secure 25,000 nurses for the United States Army and Navy. It should be emphasized that the nurses needed are those from regularly established training schools, who are registered to practice nursing—not the voluntary nurses' aides nor untrained or so-called "practical" nurses. There is already a severe strain on the supply of registered nurses. This will be an additional strain. For this country to supply 25,000 in addition to those already in the military service—between 10,000 and 12,000—means that physicians and patients will have to get along with fewer nurses. The physician who assigns a trained nurse to a maternity case must now realize that his patient will be able to have this nurse for only a part of the usual time—perhaps only for the day of delivery and three or four days following, and must substitute untrained nursing assistance, if even this is necessary. In ordinary cases of illness the "practical" nurse is often as satisfactory as the thoroughly trained, registered nurse. Incidentally, this forced economy in the use of nurses may not, after all, be an unmixed evil. Many of us have become so accustomed to this trained assistance that we seem to feel that we cannot get along with any other kind. It is an illustration of the old saying that what was a luxury yesterday is a necessity today. We have come to regard a trained nurse as a necessity in illness, in which, twenty-five years ago, even such a luxury as a "practical" nurse was undreamed of. But this is looking at the nurse solely in her narrow field. In recent years she has developed into more than the doctor's assistant; she has become an important, and in some respects a necessary, aid in carrying on the social work that has developed during the last decade or two. It is as visiting nurses—among the poor, in our schools and in infant-welfare work—and as

public health workers—it is here that this great demand on account of the war will be most felt, for here the demand for nurses had already become greater than the supply. Physicians should realize that they can do as much as, if not more than, any other class in encouraging young women of proper training, who seem fitted temperamentally and otherwise for this work, to undertake the training courses now so readily available. There are many who have some ambition in this regard and who, with a little encouragement, would enter on this training. In any event, for the time being it must be borne in mind that nurses are one of the great needs in winning the war, and that it is our duty as physicians to aid in supplying this need.

GASTRIC SECRETION IN FEVERS

Ordinary clinical observation is frequently sufficient to afford unmistakable evidence of defective alimentation in the course of febrile disease. Naturally, the stomach and its functions have received a great deal of attention because they are relatively easy to investigate. Observers agree that there are a diminished gastric secretion and a lowered acidity in fevers; but whether the factors involved in this outcome are partly or entirely of a nervous character, as some persons have believed, or whether some chemical agency in the work of the gastric glands is concerned has never been established. We may thus still ask, as one group of investigators have formulated the question, Does the fever or temperature elevation complex abolish the psychic factor, impair the function of the hormones that provoke the secretion, or depress the gastric cells directly? From recent experiments by Meyer, Cohen and Carlson¹ at the Hull Physiological Laboratory of the University of Chicago, an answer to such queries now seems possible. The experiments indicate, so far as studies on suitable animals are available to give an answer, that during fever gastric secretion is diminished in volume and in total and free acid. The percentage of chlorids is constant or only slightly reduced, and pepsin is relatively increased. The secretion is ropy and mucous in character. The discovery that gastrin, the specific hormone that promotes gastric secretion, can bring its effect about after subcutaneous injection, and under conditions in which psychic factors cannot come into play,² makes it possible to distinguish between such factors and chemical effects on the stomach in febrile conditions. Gastrin, which is now believed to exert a direct action on the cells of the gastric glands, will not induce a secretion of gastric juice during typical fever. Furthermore, it will not act during a condition of elevation of temperature brought about by excessive external heat. The fact that the latter, when sufficient to induce a temperature elevation of from 2 to 4 F., will cause the same changes in gastric juice as are produced by fever, points to the heat itself as the most prominent causal agency in the disorders of secretion induced by fever. The theory of the Chicago physiologists is that the

1. Meyer, Jacob; Cohen, S. J., and Carlson, A. J.: Contribution to the Physiology of the Stomach, XLVI, Gastric Secretion During Fever, *Arch. Int. Med.*, March, 1918, p. 354.

2. Kecton and Koch: *Am. Jour. Physiol.*, 1915, 37, 481.

most important feature in the alteration is a depression of the gland cells. These cell changes, they believe, are transitory in character, and are probably of the nature of a cloudy swelling. The further suggestion is made that, during fever, toxins are perhaps elaborated having a direct depressor action on the cells of the stomach so that they fail to react to the secretory nerve impulses and to the secretagogues. If this is true, a comparable inhibitory or depressive effect on other glandular cells may likewise be expected to occur and thus still further aggravate the alimentary difficulties of the febrile patient.

GESTATION AND LACTATION

It has been believed among the laity as well as by a few physicians that pregnancy and lactation are incompatible and that "the pregnant woman must wean her child because of the marked influence which pregnancy exerts on the composition of milk." If we seek for the origin and ask regarding the validity of this assumption, dependable facts are not easy to find. There are reports to the effect that children nursing pregnant mothers tend to exhibit symptoms of indigestion and impaired nutrition. These phenomena are attributed to the scanty flow of milk under the conditions stated and to a possible alteration in its quantitative make-up. In the case of cows, the problem here presented ought to be open to solution from an experimental standpoint, because nearly all of these dairy animals are bred at some stage of their lactation period. The studies of Palmer and Eckles¹ of the Department of Dairy Husbandry at the University of Missouri have led them to the conclusion that gestation does not exert any direct effect on the composition and properties of cow's milk, but that gestation may affect the composition indirectly by hastening the close of lactation, which is the important factor involved in the changes in the composition of milk as lactation advances. An elaborate series of analyses of the milk of two lactating women indicates, further, that under normal conditions gestation exerts no influence on the composition of mother's milk, but that it may greatly hasten the close of lactation with the changes in the composition of the milk which accompanies it if lactation is sufficiently advanced when the period of gestation begins. Despite the fact that disturbances in the health of the children nursed by these pregnant mothers were never noted, Palmer and Eckles frankly admit, in view of the limited data still available, that the whole question is worthy of more extended study, particularly with regard to the disturbances in the health of the child which have been mentioned as accompanying pregnancy in the case of the mother. They add that the variations in the composition of human milk, the factors that contribute to these variations, and the relation of these variations to the health and nutrition of the child have not received the attention they deserve. Similar information in regard to cow's milk is much more extensive at present.

1. Palmer, L. S., and Eckles, C. H.: The Influence of the Stage of Gestation on the Composition and Properties of Milk, *Jour. Dairy Sci.*, 1917, **1**, 185.

Many opinions regarding the extent of the variations to which the composition of cow's milk is subject, which were formerly held by many persons, have been disproved, but are still regarded as being true for human milk. No doubt, Palmer and Eckles conclude, many of these opinions are equally unfounded for human milk; but the experimental data are not available to disprove them.

IS SALICYLIC ACID EXCRETED AS SALICYLURIC ACID?

When benzoic acid is introduced into the organism it is excreted in combination with glycocholic acid (benzoyl glycocholic acid). This well established fact has long been cited as an evidence of the synthetic capacities of the body, and further as an illustration of its detoxicating devices; for, by conversion to hippuric acid, benzoic acid becomes comparatively inert to living tissues. Many grams of benzoates—more than an ounce—can easily be converted in this way. An analogous reaction has also been believed to occur when the closely related hydroxybenzoic acid, salicylic acid, finds its way into the circulation. The salicyluric acid (salicyl-glycocholic acid) is said to occur in urine to the extent of about 80 per cent. of excreted salicyl in man after the administration of salicylates. Hanzlik,¹ of the Pharmacologic Laboratory of Western Reserve University, has found, however, that the methods which have been used heretofore for isolating what was supposed to be salicyluric acid are inadequate. Even when applied to salicyl urines they do not yield any notable quantity of a pure product of the character expected. From this it accordingly appears improbable, as Hanzlik argues, that salicylates are conjugated with glycocholic acid and converted into salicyluric acid in the human organism. The products hitherto interpreted as salicyluric acid have presumably been more or less impure salicylic acid that had been imperfectly separated in the process of isolation. These few conclusions do something more than teach us that the salicylates are excreted, in good part at least, unchanged. They warn against the folly of transmitting from one edition of a textbook to its successors, through an entire generation, reputed discoveries based on slender evidence.

1. Hanzlik, P. J.: The Salicylates, IX, The Question of Salicyluric Acid in Salicyl Urines, *Jour. Pharmacol. and Exper. Therap.*, 1917, **10**, 461.

Slicing the Patella.—H. Spitzzy recommends sawing the patella through into halves, nearly parallel to the surface, to obtain ample access to the joint. By this means the ligament attached to the sawed off upper half of the patella is left undisturbed, while the quadriceps tendon attached to the lower half is also left unmolested, and yet the two halves can be drawn apart, leaving the joint amply exposed below. When the operation is completed, the halves of the patella are superposed and sutured together with a circular suture embracing both capsule and periosteum. The *Correspondenz-Blatt* adds in its summary from the original article in the *Münchener medizinische Wochenschrift*, No. 35, 1917, that Spitzzy has applied this method in two cases with most excellent results, and has also used the same technic for the elbow, sawing off a slanting slice of the olecranon without molesting the triceps tendon.

Association News

THE CHICAGO SESSION PROGRAM OF MEETINGS

The annual session of the American Medical Association convenes Monday, June 10, with the opening meeting of the House of Delegates at 10 a. m. at the home of the Association at 535 North Dearborn Street. Meetings of the House of Delegates will continue throughout Monday and Tuesday. The General Meeting which constitutes the opening exercises of the Scientific Assembly will be held at 8:15 p. m., Tuesday, June 11. The various sections of the Scientific Assembly will meet Wednesday, June 12, at 9 a. m., continuing throughout Wednesday. Practically all of the sections will combine on Thursday in the meetings of the Section on Miscellaneous Topics in the Auditorium Theater, beginning at 9 a. m. This meeting will be devoted to consideration of reconstruction and rehabilitation of the disabled soldiers. The Scientific Assembly will continue throughout Friday for most of the sections. On Wednesday evening, June 12, at 8:30, the military medical meeting takes place in the Medinah Temple. At this meeting the speakers will be representatives of the Medical Corps of the allied nations. On Thursday evening at 8:30 a patriotic meeting will be held in the Auditorium Theater. There will also be meetings devoted to consideration of the relations of physicians to the selective service to be held Thursday afternoon and Friday morning at the Studebaker Theater. The program of these meetings was published last week.

The registration, scientific and commercial exhibits will be open from 8:30 a. m. until 5:30 p. m., Monday, Tuesday, Wednesday and Thursday, June 10 to 13; and from 8:30 a. m. until 12 noon on Friday, June 14.

THE BRITISH DELEGATES TO THE ANNUAL SESSION

Sir James Mackenzie, Sir Arbuthnot Lane and Col. Herbert Bruce, delegates from the British Medical Association to the meeting of the American Medical Association, arrived in New York City on May 31. They were met and welcomed by Dr. Wendell C. Phillips, member of the Board of Trustees, and by Dr. Alexander Lambert, chairman of the Judicial Council in behalf of the American Medical Association. On June 2 they left for Washington, D. C., where they remained until June 4 when they departed for Cincinnati to attend the annual session of the American Surgical Association. They will arrive in Chicago, Sunday, June 9, for the annual session of the American Medical Association from June 10 to 14, and will be at the Blackstone Hotel.

MILITARY MEDICAL HEADQUARTERS

Room L on the mezzanine floor of the Hotel Sherman, adjoining the Scientific Exhibit, has been reserved as headquarters of the Medical Department of the Army. A representative from the Medical Department of the Army will be at this room every day, commencing Tuesday, prepared to give information concerning the service. Application blanks, circulars of information, etc., can be had there; and arrangements can be made for the examination of those who desire to apply for commission in the Medical Reserve Corps.

LADIES' ENTERTAINMENT

In addition to the announcements already made, arrangements have been made for a trip to the Great Lakes Training Station on Wednesday afternoon. The occasion will be the dedication of the new Red Cross building at the training station. The train will leave the Northwestern Station at 1:30. Members of the Women's Committee will be at this

station to accompany the visiting ladies to the Great Lakes Training Station, where they will be guests of the training station.

MEETINGS DURING THE ANNUAL SESSION

Chicago Pediatric and Infant Welfare Society

A joint meeting of the Chicago Pediatric and Infant Welfare Societies will be held June 10 at the City Club of Chicago, 315 Plymouth Court. Addresses will be given by Dr. William Palmer Lucas on "Child Welfare Work in France" and by Dr. Paul Armand DeLille on "The Infant Mortality Situation in France."

Chicago Ophthalmological Society Banquet

The Chicago Ophthalmological Society will give a banquet and entertainment in honor of the officers of the Section on Ophthalmology of the American Medical Association in the East Room of the Hotel La Salle, Chicago, at 6:30 o'clock, Tuesday evening, June 11. Tickets for the banquet may be procured from the secretary of the Chicago Ophthalmological Society, Dr. Alfred N. Murray.

Medical Mobilization and the War

An English Appreciation of American M. R. C. Officers

Colonel Furbush, of the Surgeon-General's Office, sends the following excerpts from a letter which he received from Lieut.-Gen. T. H. Goodwin, Director-General of the British Medical Service. The letter is dated May 8:

"This is only a short line as I am extremely busy. I would like to give you an extract from a letter which I have just had from G. H. Q. in France. It runs as follows:

'The casualties amongst Medical Officers during the week have been 23, of whom 3 were killed. 5 of the casualties were amongst Medical Officers of the U. S. A. attached to British battalions or field ambulances, 4 being "gas" casualties and one "missing" casualty. The work of these U. S. A. Medical Officers deserves special recognition. They have been invaluable and have worked under the most trying conditions and with great gallantry.'

"I thought you would like to know this, and I should be much obliged if you would show it to the Director-General. You are, of course, entirely at liberty to make it known in whatever way you wish, in fact, I should be glad if you would do so for I feel strongly how much we owe to your country, and I should like your people to know how well your Medical Officers are doing. . . ."

General—then Colonel—Goodwin, it will be remembered, was in this country for over a year, and a large number of our readers will have personal remembrance of him.

It is gratifying to read the message General Goodwin sends. It must be borne in mind that the letter from which General Goodwin sends the quotation was not written with the idea that it would be presented to American readers, but for "home consumption."

Moral Welfare of Military Establishments to Be Further Safeguarded

The Secretary of War was authorized and directed by the provisions of an act to authorize the President to increase temporarily the Military Establishment of the United States, approved, May 18, 1917, to do during the present war everything he might deem necessary to suppress and prevent the keeping or setting up of houses of ill fame, brothels, or bawdy houses in proximity to military stations, and certain penalties were prescribed for the violation of such rules as the Secretary might promulgate to carry into effect the provisions of the act. It has been found necessary, however, to seek further legislation on the subject, and by a bill passed by the United States Senate on May 17, it is provided that during the present emergency it shall be unlawful, within such distance of any military establishment as the Secretary of War shall determine to be needful, to engage in prostitution, or to aid or abet prostitution, or to procure or solicit for purposes of prostitution; or to keep or set up a house of ill fame, or

bawdy house; or to receive any person for purposes of lewdness, assignation, or prostitution into any vehicle, conveyance, place, structure, or building, or to permit any person to remain for purposes of prostitution in any conveyance, place, structure, or building. Punishment for violation of this law is by a fine of not more than \$1,000, or by imprisonment for not more than one year, or by both; and persons subject to military law may be punished as provided in the Articles of War. This bill now goes to the House of Representatives for consideration.

Personnel of the Medical Department

For the week ending May 31, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 394 lieutenants.

MEDICAL RESERVE CORPS: 19,226, including 1,388 majors, 4,983 captains and 12,855 lieutenants. On active duty: 17,343, including 1,320 majors, 4,727 captains and 11,296 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,199, including 18 lieutenant-colonels, 249 majors, 150 captains and 782 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 151, including 5 brigadier-generals, 16 colonels, 122 lieutenant-colonels and 8 majors.

The discharges to date are:

Causes	Number	
	M.R.C.	M.C.N.G.
Physical disability	670	52
Inaptitude	262	20
Other branches of service	209	72
Resignations	132	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	80	5
Dismissals	10	3
Duty completed	1	0
No reasons given	14	0
	1,767	185

New Army Appropriations

In the new Army appropriation bill, reported by the House Committee on Military Affairs on May 25, the amount indicated for the medical and hospital department of the Army is \$267,408,948. In addition there is included for construction and repair of hospitals, \$60,000,000; for hospital care in the Canal Zone, \$60,000; for the Army Medical museum and Library, \$25,000. Among the large items in the bill are those for pay of the Army, \$1,587,318,495.14; for transportation of the Army and supplies, \$1,532,606,103, and for clothing and camp garrison equipage, \$1,230,190,089.

Federal Control of Venereal Diseases Proposed

Action by the United States government to prevent the spread of venereal diseases is proposed in two bills recently introduced into Congress, going far beyond anything heretofore contemplated. Both bills are carefully drawn and bear internal evidence of being the results of careful studies of the situation in so far as concerns the possibilities of federal control. One bill proposes direct action by the Treasury Department, through the United States Public Health Service. The other provides for the creation of an Interdepartmental Social Hygiene Board, to operate primarily through subsidies granted by it to state boards and departments of health, and to universities, colleges, and other suitable institutions.

The bill proposing direct action through the Treasury Department, operating through the Bureau of Public Health, creates in that bureau a division of public health, under direction of an assistant Surgeon-General, and imposes on the bureau the following duties:

(a) To study, investigate and conduct research work into the cause, prevention and treatment of venereal diseases; (b) to construct, acquire, purchase, lease or otherwise obtain internment hospitals, and to equip, manage, conduct and operate the same; (c) to administer and apply medical treatment to persons afflicted with venereal diseases while in said internment hospitals, and to issue orders or discharge therefrom upon cure; (d) to cause the arrest and prosecution of immoral persons afflicted with venereal diseases who go or attempt to go from one state, district or insular possession of the United States to another, and to cause the arrest and prosecution of persons who aid, assist or connive at the same; (e) to receive at such internment hospitals and to have authority and custody thereof for the purpose of examination or medical observation or treatment, all immoral persons afflicted or thought to be afflicted with venereal diseases, who are delivered to or turned over to the officer in charge of any such internment hospital by any state, county, city or town board of health or health department, or by any civil or military court, sheriff, police or peace officer, or by the military or naval authorities of the United States; (f) to detain for purposes of medical observation or examination and treatment any immoral person going or attempting to go from one political division to another, and to commit any such person afflicted with venereal disease

to an internment hospital, and to administer medical treatment to such person, and to have custody of him; and (g) to cooperate with state, county, city and town boards or departments of health in the prevention and treatment and cure of venereal diseases, and to prevent the spread thereof.

The bill makes it unlawful for any immoral person afflicted with syphilis, gonorrhea, chancroid or other venereal disease capable of being communicated from one person to another to go or attempt to go from one state, district or insular possession of the United States to another, and provides a penalty of a fine not less than \$500 nor more than \$1,000, or imprisonment for not less than six months nor more than one year, or by both fine and imprisonment. The term "immoral person" is defined to include any bawd, prostitute or female who practices sexual intercourse out of wedlock for or without hire or thing of value; or any man who consorts with, associates or companions with any immoral woman, or who loiters about or frequents any bawdy house or brothel, or any bawd or any lewd or licentious person.

The second of the bills referred to above creates a board to be known as the Interdepartmental Social Hygiene Board, to consist of the Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury, "as ex officio members," and of the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Surgeon-General of the Public Health Service, or of persons whom the secretaries of the Army, the Navy, and the Treasury may respectively designate; and it empowers the board

(a) To recommend rules and regulations for the expenditure of moneys allotted to the states under authority of the act; (b) to select institutions and to fix allotments to each institution to whom money may be allotted under the act; and (c) to recommend to the Secretary of the Treasury, the Secretary of War and the Secretary of the Navy such general measures as will promote correlation and efficiency in carrying out the purposes of the act by their respective departments. To carry out the provisions of the act recited above, "to be expended under the joint directions of the Secretary of War and the Secretary of the Navy," an appropriation of one million dollars is recommended, to be in addition to other appropriations made by the respective states, and in addition to funds received from any other sources of a more general character. An additional million dollars is recommended to be paid to the states for the use of their respective boards or departments of health in the prevention, treatment and control of venereal diseases, to be allotted to the states in accordance with the rules and regulations prescribed by the Secretary of the Treasury, allotments after the year ending June 30, 1919, to be conditioned upon the appropriation of like amounts by the states. An appropriation of one hundred thousand dollars is called for, to be paid to such universities, colleges or other suitable institutions as in the judgment of the Interdepartmental Social Hygiene Board are qualified for scientific research for the purpose of discovering more effective medical measures for the prevention and treatment of venereal diseases; and an additional appropriation of three hundred thousand dollars is proposed, to be paid to similar institutions, for the purpose of discovering and developing more effective educational measures in the prevention of venereal diseases and for the purpose of sociologic and psychological research related thereto.

Both bills have been referred to appropriate committees.

Nonphysical Standards for Flyers

Asserting that the establishment of a difficult and inelastic schedule of physical requirements for candidates for the aviation service is wrong in principle and has deprived the service of many good flyers, Parsons in the *U. S. Naval Bulletin* (April, 1918) gives an account of tests now applied in the selection of aviators which tend toward the establishment of what he calls "nonphysical standards." He says that formerly "We thought that to become a successful aeronaut was something that could be attained by the one in a thousand, the true hero, endowed with almost miraculous skill and daring. It was because this view was generally held, perhaps, that we adopted such a high set of physical standards in our selection of aviation candidates." Experience has taught that almost any young man with a reasonable amount of common sense, the usual amount of "nerve" possessed by most young Americans, and a keen desire to be an aviator, can become a good flyer in a very few hours. It is questionable, he says, whether a great deal more actual skill is required in learning to fly than in learning to drive an automobile. The most important qualities are "nerve" and lack of fear of the air. Good physical health is of course desirable, but he calls attention to the absurdity of rejecting men, as has been done in instances which he mentions, for lacking a quarter inch of the scheduled figure in chest expansion, or for having flat feet, which he does not use for air navigation purposes, or for being slightly deaf, when the roar of the plane engines while in the air makes it impossible for one with the most acute hearing to hear anything else. The Navy has already rejected hundreds of applicants because of trivial minor defects, most of whom, it is believed, could become successful aviators. In fact, many of them were

accepted in the Canadian Royal Flying Corps where they have made good.

Many cases of "perfect health" men cannot learn to fly, and many cases of "not perfect health" men have become famous flyers, so that mere physical standards are far from infallible. It requires "something else" to make a flyer, and in determining what that is flight instructors have been appealed to. While it is difficult to determine and cannot be determined definitely what that "something else" is, the instructors after discussion have unanimously agreed that a flyer should be cool under strain, be dependable at the critical moment, be mentally and physically alert, lack any inherent fear of the air, and be persistent and persevering in the ambition to become a successful aviator. It is also believed that he should be intelligent, athletic and endowed with good muscular coordination, possessed of a keen sense of equilibrium and be a good judge of velocity and distances. There was no agreement as to whether extreme stolidity or great nervous energy was preferable in an aviator, expertness being found in both temperamental classes. Purely physical qualifications were not given much weight, even the question of exceptional vision. Whereas one naval examiner was much troubled because a candidate had vision of 16/20 in one eye, it is known that one of the greatest British flyers has but 4/20 vision (uncorrected) in one eye and not a great deal more in the other. The instructors were all agreed that a skilful motorcyclist or automobile driver always makes a good aviator. Parsons describes in more or less detail tests devised by Drs. L. E. Troland and H. E. Burtt of Harvard Psychological Laboratory for testing candidates for aviation as to "coolness," alertness, muscular coordination, judgments of distances, powers of observation, unusual fear of flying, equilibrium reaction time, intelligence, etc.

For Vocational Rehabilitation of Soldiers and Sailors

Senator Hoke Smith's bill for the vocational rehabilitation of soldiers and sailors has passed the Senate without a dissenting vote, after some amendments desired by the Surgeon-General. It is now in the House. As it passed the Senate the bill provides that every person who is disabled under circumstances entitling him after discharge from the military or naval forces to compensation under the War Risk Insurance law, and who after his discharge, in the opinion of a board created for the purpose, is unable to carry on a gainful occupation, or to resume his former occupation, or to enter on some other occupation successfully, shall, when feasible, be furnished a course in vocational rehabilitation as prescribed by the board. The disabled person during the time of his rehabilitation and instruction will be paid monthly an amount equal to the amount of his last pay while in active service. Instruction is to be made available without cost. Section 4 relates to the powers of the board in preparing and equipping itself for such instruction and carrying on the courses, and for making all regulations, etc., necessary for the proper carrying out of the purposes of the bill. Section 5 relates to the duty of the board to make studies, investigations and reports regarding vocational rehabilitation and the placement of persons rehabilitated in suitable gainful occupations, which studies, investigations and reports and their carrying out may be done and made in cooperation with other departments and bureaus of the government or with such other public and private agencies as may be deemed advisable.

Section 6 provides that all medical and surgical or other work or treatment necessary to give functional and mental restoration to disabled persons prior to their discharge from the naval or military forces shall be under the control of the War Department and the Navy Department, respectively. After the men are discharged from the military or navy service the training will be under the Federal Board for Vocational Education. This board already starts and has in its personnel the secretaries of commerce, labor and agriculture and the commissioner of education, with three additional men not in official position. The War and Navy Departments are to continue to act in an advisory capacity to the board, and while still in the service the soldiers and sailors will be under the authority of the War and Navy Departments, and the Surgeon-General may deal with them, in his attempt to cure them from their disabilities, without interference from any one.

Section 7 empowers the board to receive gifts and donations from public or private sources which shall be paid into the treasury to constitute a special fund to carry out the

purposes of the act. Section 8 provides for appropriation to carry out the purposes of the bill and the manner in which the appropriations shall be apportioned to those purposes.

DISEASE CONDITIONS AMONG TROOPS
IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 24, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):			Last Week
All Troops	1,068.1	1,106	
Divisional Camps	764.5	736	
Cantonments	1,200.9	1,227	
Departmental and Other Troops	1,109.1	1,177	
2. NONEFFECTIVE RATE PER 1,000 ON DAY REPORT:			
All Troops	39.8	39	
Divisional Camps	33.4	33	
Cantonments	46.4	44	
Departmental and Other Troops	35.8	38	
3. ANNUAL DEATH RATE PER 1,000 (disease only):			
All Troops	5.7	6	
Divisional Camps	1.9	3	
Cantonments	9.0	9	
Departmental and Other Troops	4.1	4	

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 24, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New infections						
Beauregard.....	5	8	23	40	5	1	..	..	0	1,166.4	48.8
Bowie.....	4	..	2	24	22	..	..	..	0	889.4	30.8
Cody.....	5	..	..	6	..	..	..	..	1	531.3	23.2
Doniphan.....	..	1	..	12	..	..	..	..	0	2,477.3	58.3
Fremont.....	6	..	..	34	19	13	..	3	3	1,030.2	34.0
Greene.....	..	..	..	4	4	8	..	..	1	516.4	20.0
Hancock.....	..	..	..	51	..	..	1	..	0	1,071.9	55.0
Kearny.....	2	..	1	2	..	2	1	..	3	533.0	27.4
Logan.....	..	..	..	13	1	2	..	..	0	299.3	26.0
MacArthur.....	..	..	..	..	..	..	..	..	0	723.8	36.0
McClellan.....	1	..	1	20	14	3	..	..	0	546.8	27.6
Sevier.....	10	..	..	33	11	4	..	..	2	498.4	37.4
Shelby.....	1	6	3	12	4	1	1	..	3	1,020.9	41.2
Sheridan.....	2	..	4	35	14	..	..	..	1	514.4	20.0
Wadsworth.....	1	..	..	33	..	15	..	1	0	1,153.5	34.9
Wheeler.....	2	..	..	21	6	..	..	..	1	572.0	35.9
Custer.....	10	..	..	117	4	1	..	..	4	673.4	24.4
Devens.....	37	..	1	28	6	25	..	..	4	661.1	38.0
Dix.....	3	2	1	63	4	9	1	4	2	893.7	39.2
Dodge.....	33	..	..	97	..	10	1	13	12	1,261.9	78.0
Funston.....	13	..	1	176	63	5	3	3	3	1,031.1	50.7
Gordon.....	24	..	2	97	2	41	2	..	14	2,286.5	76.3
Grant.....	5	..	..	14	..	5	2	8	4	437.7	22.9
Jackson.....	17	1	2	81	..	30	2	..	15	3,500.9	64.6
J. E. Johnston.....	5	..	1	43	23	5	..	..	3	869.9	37.0
A. A. Humphreys.....	11	..	..	11	7	11	1	..	2	909.1	21.8
Lee.....	..	..	1	123	1	11	..	..	2	1,032.7	61.7
Lewis.....	13	..	..	58	4	7	..	3	1	777.7	32.5
Meade.....	6	..	..	10	6	4	1	1	2	982.5	31.5
Pike.....	10	..	3	71	14	17	3	..	13	1,554.4	63.6
Sherman.....	2	..	..	81	5	14	1	5	4	1,014.6	43.5
Taylor.....	11	..	..	4	..	14	..	..	3	911.9	56.0
Travis.....	33	1	5	50	3	20	..	1	11	2,345.1	49.6
Upton.....	8	..	..	142	35	..	..	2	2	843.8	40.7
Northeastern Dept.....	..	..	..	11	1	3	1	..	0	692.8	27.2
Eastern Dept.....	..	..	1	22	12	4	..	..	3	871.8	28.9
Southeastern Dept.....	1	..	..	62	35	9	..	..	3	998.1	31.9
Central Dept.....	3	..	..	24	10	8	..	4	3	1,226.2	62.0
Southern Dept.....	19	3	3	156	37	70	1	11	6	1,166.6	33.7
Western Dept.....	..	..	..	31	7	12	..	3	1	722.2	23.2
Aviation S. C.....	9	..	3	124	..	14	2	4	11	1,134.5	31.4
Alcatraz, D. B.....	..	..	..	1	..	..	..	..	0	478.5	18.4
Columbus Bks.....	1	..	..	8	2	..	..	1	0	643.0	21.1
Depot, Prov. Corps and Army Troops	1	..	3	4	..	..	..	..	1	1,174.9	46.6
Edgewood - Aberdeen.....	..	..	..	..	..	1	..	..	0	306.5	11.1
El Paso.....	..	1	..	2	1	..	..	..	0	596.5	19.1
Hoboken.....	7	..	..	165	11	12	..	3	4	979.2	56.3
Holabird.....	..	..	..	3	0	..	..	..	0	610.8	3.9
Jefferson Bks.....	5	..	1	188	3	5	..	..	0	2,366.4	86.1
Leavenworth, D. B.....	1	..	..	..	..	..	..	1	2	1,166.2	37.4
Fort Logan.....	1	..	..	5	..	..	..	3	0	1,233.3	70.6
Fort McDowell.....	2	..	..	43	..	1	..	..	0	2,437.5	86.2
Newport News.....	10	..	2	99	34	8	..	1	5	800.1	48.1
Raritan.....	..	..	..	..	..	..	..	..	0	480.6	27.7
Fort Sloeum.....	2	..	..	26	..	1	..	..	0	2,311.3	44.4
Springfield Armory	..	..	..	..	..	..	..	..	0	276.6	21.9
Fort Thomas.....	1	..	..	17	..	8	..	..	1	1,383.7	38.4
Watervleit.....	..	..	..	..	..	..	..	..	0	536.0	51.5
West Point.....	..	..	..	2	..	..	..	..	0	801.4	11.7
Natl. Guard Depts.....	..	..	..	15	7	2	..	1	1	.....	.....
Natl. Army Depts.....	9	1	1	481	158	20	..	8	4	.....	.....
Total.....	352	24	65	3,145	595	456	24	84	161	1,068.1	39.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 24, 1918	Departmental and Other Troops, Week Ending May 24, 1918	Divisional Camps, Week Ending May 24, 1918	Cantonments, Week Ending May 24, 1918	Expeditionary Forces, Week Ending May 16, 1918
Pneumonia.....	14.4	8.5	6.9	23.3	12.8
Dysentery.....	0.98	0.6	2.6	0.4	0.3
Malaria.....	2.66	1.6	6.0	1.6	1.0
Venereal.....	129.0	176.2	69.0	123.1	37.8
Paratyphoid.....	0.0	0.0	0.0	0.0	0.0
Typhoid.....	0.1	0.1	0.0	0.2	0.0
Measles.....	18.27	21.0	8.7	21.2	12.3
Meningitis.....	0.98	0.4	0.5	1.6	1.4
Scarlet fever.....	3.4	4.7	0.7	0.38	5.7

ORDERS TO OFFICERS OF THE MEDICAL CORPS
AND OF THE MEDICAL CORPS OF
THE NATIONAL ARMY

To Camp Bowie, Fort Worth, Tex., as assistant to camp surgeon, from Camp Sherman, Major JOHN A. BURKET.

To Camp Crane, Allentown, Pa., for duty, from the Surgeon-General's Office, Major STEPHEN H. SMITH; from Walter Reed General Hospital, Major EDGAR A. BOCK. Lieut. PAUL E. McNABB.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Biltmore, Major EDWARD A. NOYES.

To Camp Devens, Ayer, Mass., for sanitary inspection, and on completion to his proper station, Col. HOWARD DEANE C. HOWARD. Base hospital, from the Surgeon-General's Office, Lieut.-Col. LEARTUS J. OWEN. As assistant to camp surgeon, from Fort McHenry, Major HARRY R. BEERY.

To Camp Lee, Petersburg, Va., for sanitary inspection, and on completion to his proper station, Col. ALBERT H. TRUBY. To Camp Lee, Petersburg, Va., Camp Wadsworth, Spartanburg, and Camp Sevier, Greenville, S. C., Camp Gordon, Atlanta, Camp Wheeler, Macon, and Camp Hancock, Augusta, Ga., for duty, and on completion to his proper station, Lieut.-Col. EARL H. BRANS.

To Camp Meade, Annapolis Junction, Md., for temporary duty, from Camp Wheeler, Lieut.-Col. GEORGE F. KEENAN.

To Camp Pike, Little Rock, Ark., as assistant to the camp surgeon, from Columbus Barracks, Major GEORGE D. CHUNN.

To Camp Sherman, Chillicothe, Ohio, for temporary duty, from Camp Dix, Lieut.-Col. SAMUEL S. CREIGHTON. To Camp Sherman, Chillicothe, Ohio, Camp Zachary Taylor, Louisville, Ky., Camp McClellan, Aniston, and Camp Sheridan, Montgomery, Ala., Camp Gordon, Atlanta, Camp Wheeler, Macon, and Camp Hancock, Augusta, Ga., Camp Sevier, Greenville, and Camp Wadsworth, Spartanburg, S. C., for sanitary inspection, and on completion to his proper station, Lieut.-Col. FRANK W. WEED.

To Camp Travis, Fort Sam Houston, Camp Bowie, Fort Worth, Camp MacArthur, Waco, and Camp Logan, Houston, Tex., Camp Beauregard, Alexandria, La., and Camp Shelby, Hattiesburg, Miss., for sanitary inspection, and on completion to his proper station, from Fort Sam Houston, Col. WILLIAM F. LEWIS.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Sevier, Lieut.-Col. CONDON C. McCORNACK.

To Camp Zachary Taylor, Louisville, Ky., as assistant to camp surgeon, from Columbus Barracks, Major HARRY L. ARNOLD.

To Cape Moy, N. J., for duty, and on completion to his proper station, Col. WALTER R. PARKER.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Custer, Lieut. JOHN E. KILEY; from Camp Dodge, Lieut. GEORGE W. SNYDER; from Camp Grant, Lieut. ALLEN R. HOWARD.

To Fort Leavenworth, Kansas, for duty, from Army Medical School, Lieut. WILLIAM S. McCANN.

To Fort Oglethorpe for duty, and on completion to his proper station, Col. CLAUDE K. MORGAN.

To Mineola, L. I., N. Y., for duty, and on completion to his proper station, Col. THEODORE C. Lyster.

To New Haven, Conn., for duty, and on completion to Washington, D. C., Lieut.-Col. CHARLES F. CRAIG.

To New Orleans, La., Charity Hospital, for instruction, and on completion to their proper stations from Camp Shelby, Capt. DAVID L. HILL, DON McCLELLAN, OTIS McQUOWN, Lieut. FRED E. HICKSON, DORSEY M. HINES, RODNEY N. TROUTMAN, ALLEN H. WALKER, ADRIAL C. WEAKLEY.

To New York City, for duty, and on completion to his proper station, Lieut.-Col. JAMES BORDLEY. Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Meade, Lieut. CEDRIC E. FILKINS, ROY T. HASKELL, JOHN C. WOODLAND; from Camp Sheridan Capt. MORSE F. OSBORN, Lieut. FRED L. EYESTONE, GUY G. GIFFEN, MATHEW C. HUUTER, EDWARD L. KENNEDY, P. C. PENNINGTON, EDWARD E. SMITH, FORREST R. STEWART; from Camp Wheeler, Majors CORNELIUS F. HOLTON, WILLIAM C. MILES, Capt. ROBERT B. BEARD.

To Philadelphia, Pa., for duty, and on completion to his proper station, Col. REUBEN B. MILLER.

To Pittsburgh, Pa., Carnegie Bldg., for instruction and on completion to their proper stations from Camp Beauregard, Lieut. RECTOR P. SHEETS, ASA C. WATSON.

To Plattsburg Barracks, N. Y., for inspection, and on completion to his proper station, from Fort Porter, Lieut.-Col. THOMAS D. WOODSON.

To Rockefeller Institute for duty, and on completion to Washington, D. C., Major CARRALL G. BULL.

The following order has been revoked: To Edgewood, Md., as camp surgeon, from San Francisco, Major LEO C. MUDD.

ORDERS TO OFFICERS OF MEDICAL
RESERVE CORPS

Alabama

To Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to Camp Meade, Lieut. BURTON F. AUSTIN, Mobile.

To Camp Crane, Allentown, Pa., base hospital, from Fort Logan, II. Roots, Lieut. CLAUDE C. McCLEAN, Birmingham.

To Camp Hancock, Augusta, Ga., base hospital, Capt. WILLIAM G. THIGPEN, Montgomery.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOHN D. DURDEN, Montgomery.

To Camp Lee, Petersburg, Va., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. JOSEPH W. HUGHES, Birmingham.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. MERCER HOWE, Elba.

To Camp Pike, Little Rock, Ark., as a member of the board examining the command for tuberculosis, from Fort Riley, Lieut. LLEWELLYN H. LEDBETTER, Goodwater.

To Fort Oglethorpe for instruction, Capt. E. LAURENCE SCOTT, Greenville.

To Hoboken, N. J., for duty, from Camp Dix, Capt., GEORGE C. KILPATRICK, Bayou Labatre.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Lieut. SOLON W. WRIGHT, Bessemer.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Oglethorpe, Lieut. HENRY G. WADDELL, Dadeville.

To Riverside, Calif., Signal Corps Aviation School, for duty, from Arcadia, Lieut. GUY E. STEWART, Attalla.

Arizona

To Fort Des Moines, Ia., base hospital, Capt. ALBERT L. GUSTETER, Nogales; JOEL L. BUTLER, Tucson.

To Fort Riley for instruction, Lieut. CHARLES L. HATHAWAY, Winslow.

To Lake Charles, La., S. C. A. School, for duty, Capt. EDWARD W. ADAMSON, Douglas.

To report by wire to the commanding general, Southern Department, for duty, Lieut. RICHARD McC. FRANCIS, Williams.

Arkansas

To Camp Crane, Allentown, Pa., base hospital, from Dansville, N. Y., Lieut. CARL S. BUNGART, Fort Smith.

To Camp Pike, Little Rock, Ark., base hospital, from Jefferson Barracks, Lieut. NOLIE MUMEY, Little Rock.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Logan, Houston, Texas, base hospital, Lieut. JOHN L. SMILEY, Siloam Springs.

To Fort Thomas, Ky., for temporary duty, Capt. J. WILLIAM SCALES, Pine Bluff.

To Hoboken, N. J., for duty, from Camp Sevier, Lieut. JAMES W. BUTTS, Helena.

To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, Capt. JULIUS S. MOORE, Arkadelphia.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. JACOB B. HESTERLY, Prescott.

To San Antonio, Texas, United States Army School, for duty, from Houston, Lieut. JAMES F. HAYS, Russellville.

The following orders have been revoked: To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. JAMES M. BEST, Monticello. To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. THERON E. FULLER, Texarkana.

California

To Camp Dodge, Des Moines, Iowa, as member of board examining the command for tuberculosis, from Camp Kearny, Major RALPH L. BYRNES, Los Angeles. With the board examining the troops for cardiovascular diseases, Capt. BERTNARD SMITH, Los Angeles.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Camp Kearny, Capt. HENRY S. KEYES, Los Angeles.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. JAMES W. HOUSTIS, Los Angeles; Lieut. FRANCIS S. COOK, Brentwood.

To Camp Lewis, American Lake, Wash., for duty, Lieut. JOSEPH H. SHAW, Santa Rosa.

To Camp MacArthur, Waco, Texas, with the board examining the command for tuberculosis, from Camp Kearny, Capt. CHARLES E. IDE, Redlands; Lieut. LESTER E. TRETHERWAY, French Camp.

To Fort McPherson, Ga., for duty, Major HARRY T. SUMMERS-GILL, San Francisco.

To Fort Oglethorpe, Ga., for duty, from Fort Leavenworth, Major HARRY R. OLIVER, San Francisco. Base hospital, from Fort Leavenworth, Lieut. HERSEL E. BUTKA, Los Angeles. For instruction, Lieut. WILLIAM L. DENTON, CLAIR WILSON, Los Angeles; from Chicago, Lieut. TRUSTEN M. HART, Los Angeles.

To New Haven, Conn., for duty, from Fort Oglethorpe, Major CHARLES J. HARBECK, Hayward.

To San Francisco, Calif., Letterman General Hospital, for duty, Lieut. VACLAV H. PODSTATKA, Livermore.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, Major HOWARD C. NAFFZIGER, San Francisco; from Camp Lee, Capt. ALBERT M. MEADS, Berkeley. For consultation, and on completion to Lakewood, N. J., for temporary duty, from New York City, Capt. ERNEST W. CLEARY, San Francisco.

The following orders have been revoked: To Camp Kearny, Linda Vista, Calif., base hospital, Capt. GEORGE G. HUNTER, Los Angeles. To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Fort Riley, Lieut. WALTER C. S. KOEBIG, JAMES H. McLAUGHLIN, Los Angeles; JOSEPH W. CRAWFORD, Sacramento.

Colorado

To Camp Hancock, Augusta, Ga., for duty, Lieut. FRED C. SWARTZ, Nederland.

To Camp Pike, Little Rock, Ark., base hospital Capt. EDGAR M. MARBOURG, Denver.

To Camp Travis, Fort Sam Houston, Texas, for duty, JOHN D. DAVIES, Alamosa.

Connecticut

To Camp Crane, Allentown, Pa., base hospital, from Camp Dix, Lieut. HARRY A. CONTE, New Haven.

To Camp Meade, Annapolis Junction, Md., for duty, Capt. CARL W. HENZE, New Haven.

To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion to his proper station, from Camp Jackson, Lieut. ELMER T. SHARPE, Derby.

To Camp Shelby, Hattiesburg, Miss., for duty, from Camp Beauregard, Lieut. FREDERICK E. STOCKTON, Springdale.

To Camp Wheeler, Macon, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. ROBERT S. STARR, Hartford.

To Hoboken, N. J., for duty, Lieut. ARTHUR M. YUDKIN, New Haven; from Camp Devens, Capt. FRANK P. TODD, Danielson.

To New Haven, Conn., for duty, from Camp Sherman, Lieut. FRANK J. RONAWNE, Hartford.

To New York City, Cornell Medical College, for instruction in military roentgenology, and on completion to Hoboken, N. J., base hospital, from Camp Dix, Capt. EDWARD E. ROWELL, Stamford.

To Otisville, N. Y., for duty, from New Haven, Lieut. BERNARD C. MARANTZ, New Haven.

District of Columbia

To Army Medical School for duty, Capt. LEO. E. EVENS, Washington.

To Camp Hancock, Augusta, Ga., for duty, Capt. ALFRED GLASCOCK, Washington. With the board examining the command for nervous and mental diseases, Lieut. JOHN M. LADD, Washington.

To Camp Lee, Petersburg, Va., to examine the command for nervous and mental diseases, Lieut. JOSEPH H. TOOMEY, Washington.

To Hoboken, N. J., for duty, from Lakewood, Major WILLIAM C. MOORE, Washington.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Colonia, N. J., for duty, Capt. JOHN VAN RENSSELAER, Washington.

To Washington, D. C., for consultation and on completion to his proper station, from Camp Lee, Major JAMES F. MITCHELL, Washington. For duty, Major THOMAS E. NEILL, Lieut. LEON A. MARTEL, Washington; from Walter Reed General Hospital, Capt. STUART G. JOHNSON, Washington.

Florida

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Shelby, Capt. ARCHIE R. PARROTT, Jacksonville.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. JAMES A. FORD, Arcadia; URBAN S. BIRD, Tampa.

To Camp Joseph E. Johnston, Jacksonville, Fla., to determine his physical fitness for active service, from Pensacola, Capt. STEPHEN R. N. KENNEDY, Pensacola.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Meade, Lieut. DANIEL B. WILLIAMS, Lake City; from Camp Wheeler, Lieut. SHALER A. RICHARDSON, Jacksonville.

Georgia

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. EUGENE L. DALLWIG, Augusta. For duty, and on completion to his proper station, from Camp Meade, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. DANIEL N. MATHESON, Atlanta.

To Camp Gordon, Atlanta, Ga., base hospital, Major CYRUS W. STRICKLER, Atlanta.

To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, Major THOMAS D. COLEMAN, Augusta.

To Camp Jackson, Columbia, S. C., for duty, Lieut. GUY S. SELMAN, Douglasville.

To Camp Sevier, Greenville, S. C., to examine drafted troops, and on completion to his proper station, from Camp Jackson, Lieut. EVERARD A. WILCOX, Augusta.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, CHESTER A. WITMER, Waycross.

To Camp Wheeler, Macon, Ga., with the board examining the command for nervous and mental diseases, from Camp Meade, Lieut. JAMES K. PETTIT, Milledgeville.

To Fort Bayard, N. M., for observation and treatment, from Camp Gordon, Lieut. LEWIS J. KEELING, Atlanta.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Major GEORGE A. TRAYLOR, Augusta; from Camp Lee, Lieut. JAMES J. BEATON, Waycross; from Camp Wheeler, Lieut. LAWSON S. RENTZ, Ray City.

To New York City, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Wheeler, Lieut. BOWMAN J. WISE, Plains.

Idaho

To Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to his proper station, from Camp Meade, Capt. CLYDE E. WATSON, Nampa.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Bliss, Lieut. ROY W. QUICK, Weston.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, Lieut. JAMES R. YOUNG, Pocatello.

To Hoboken, N. J., for duty, from Camp Grant, Lieut. JOHN F. COUGHLIN, Twin Falls.

To Otisville, N. Y., for duty, from New Haven, Capt. JOHN E. WHITE, Twin Falls.

Illinois

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieuts. SAMUEL L. STEVENS, Dalton City; GEORGE E. LYON, Decatur.

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. THOMAS H. HENN, Chicago; from Camp Wheeler, Lieut. HERMAN

REINSCH, Chicago; from Fort Oglethorpe, Lieut. RUSSELL M. JOHNSON, Chicago. For duty, and on completion to his proper station, from Camp Meade, Lieut. JOHN F. GRANT, Chicago.

To Camp Crane, Allentown, Pa., base hospital, from Camp MacArthur, Lieut. THOMAS P. O'CONNOR, Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Major ROBERT B. PREBLE, Capt. ALBERT B. KEYES, Chicago.

To Camp Devens, Ayer, Mass., base hospital, from Camp Crane, Capt. CHARLES RICKSHER, Kankakee.

To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. GEORGE A. CONREY, Chicago.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Greene, Capt. LAMBERT W. ROSENBAUM, Chicago; from Camp Kearny, Capt. IRVING PERRILL, Chicago; from Camp Cody, Lieut. JESSE H. ROTH, Kankakee.

To Camp Hancock, Augusta, Ga., for duty, Capt. MAURICE L. BLATT, Chicago.

To Camp Jackson, Columbia, S. C., base hospital, Major BIRD McP. LINNELL, Lieuts. LEI AND H. ANDERSON, WILLIAM J. BUTLER, MAURICE DOKTORSKY, MAX M. KULVINSKY, JACOB STERN, Chicago.

To Camp MacArthur, Waco, Tex., for duty, from Fort Oglethorpe, Lieut. GERHARD J. TORELL, Chicago.

To Camp McClellan, Anniston, Ala., for duty, from Camp Grant, Lieut. EDWARD T. ROBINSON, Chicago.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. WILLIAM L. HANSON, Bellevue, Ill.

To Camp Raritan, Metuchen, N. J., for duty, from Jefferson Barracks, Lieut. HARRY D. WOLFF, Chicago.

To Camp Shelby, Hattiesburg, Miss., with the board examining the command for nervous and mental diseases, from Camp Logan, Lieut. WALTER C. COOK, Peoria.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Meigs, Lieut. MAXWELL LANDO, Chicago.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. GEORGE W. STABEN, Springfield. For duty, Lieut. JOSEPH JAFFE, Chicago.

To Camp Upton, L. I., N. Y., base hospital, from Fort Oglethorpe, Lieut. FRED W. FIEDLER, Batchtown. For duty, from New York City, Lieut. ARTHUR L. MUREN, Patterson.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Beauregard, Lieut. CHARLES H. MANLOVE, Jr., Chicago.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Sherman, Lieut. WALTER C. MOHR, Chicago. With the board examining the command for nervous and mental diseases, from Ann Arbor, Lieut. DAVID B. ROTMAN, Chicago.

To Chicago, Ill., Northwestern University, for instruction, from Camp MacArthur, Lieut. JOHN E. REED, Akin; from Fort Oglethorpe, Lieut. ARTHUR S. SANDLER, Chicago. Presbyterian Hospital for instruction, and on completion to their proper stations, from Camp Custer, Lieuts. ABRAHAM L. DEASER, Chicago; LEO. V. GATES, Zeigler. To assist in the examination of drafted troops, Lieut. HARRY S. SULLIVAN, Chicago.

To Columbus Barracks, Ohio, for duty, from Fort Oglethorpe, Lieut. HARVEY D. THORNBURG, Chicago.

To Fort Bliss, Texas, base hospital, Lieut. ROSS E. ELVIDGE, Longview.

To Fort Des Moines, Ia., base hospital, Lieut. TALLEY J. ECHERER, Chicago; Lieut. LUCIUS COLE, Oak Park; from Camp Zachary Taylor, Lieut. RALPH C. SULLIVAN. For duty, Lieut. WILLIAM J. HENRY, Chicago.

To Fort Oglethorpe, for instruction, Capt. WILBUR H. GILMORE, Mt. Vernon; Lieuts. PHILIP H. WOLFRAM, Chicago; from Chicago, Lieuts. EDWARD HANS, RUSSELL D. ROBINSON, Chicago.

To Fort Riley for instruction, Lieut. LEWIS H. GREEN, Johnston City.

To Hoboken, N. J., for duty, Lieut. CHARLES L. McDONNELL, Chicago; from Camp Sherman, Capt. RALPH E. KLECKNER, Mattoon; from Camp Wheeler, Lieuts. JOHN PELLETTIERI, Chicago; JOSEPH F. MIECZYNSKI, North Chicago; from Camp Zachary Taylor, Lieut. MICHAEL A. GALGANO, Chicago; from Fort Oglethorpe, Lieut. FRANK C. FARMER, Chicago; from Fort Riley, Capt. IRVIN S. KOLL, Chicago; from New York City, Capt. ALBERT B. McQUILLAN, Chicago; Lieut. ELMER M. THOMAS, Aurora.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Lieut. JOHN W. McGUIRE, Chicago.

To New York City for duty, and on completion to his proper station, Major CASEY A. WOOD, Bellevue Hospital for instruction, and on completion to Camp Sevier, Greenville, S. C., base hospital, Capt. MARK A. GIER, Chicago. On completion to his proper station, from Camp Meade, Lieut. FRANK T. DUFFY, Chicago.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Dix, Wrightstown, N. J., base hospital, Capt. CHARLES A. ROBBINS, Dixon. On completion to Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. HARRY S. SULLIVAN, Chicago. Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Riley, Lieut. JOHN W. GEIGER, LaSalle.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Capt. OSCAR T. SCHULTZ, Chicago.

Indiana

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Fort Oglethorpe, Lieut. MILES F. PORTER, Fort Wayne.

To Camp Dix, Wrightstown, N. J., for duty, Capt. JOHN M. WALLACE, Ridgeville.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. ROBERT C. HAMILTON, Indiana Harbor.

To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion to his proper station, from Camp Jackson, Lieut. CHARLES F. VOIGT, New Albany.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. HERBERT E. WHITLEDGE, Evansville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Kearny, Lieut. ARLIE J. ULLRICH, Aurora.

To Fort Oglethorpe for instruction, Lieut. ELI LEVIN, Indiana Harbor; from Chicago, Lieut. HELMUTH C. W. ERNST, East Chicago.

To Hoboken, N. J., for duty, Lieut. JOSEPH M. FREEMAN, Sullivan; from Camp Wadsworth, Lieut. WALTER D. MARTIN, Kramer; from Camp Wheeler, Lieut. ELMER E. EIFERT, Jasper; from Fort

Oglethorpe, Capt. GEORGE H. HOCKETT, Anderson; from Washington, D. C., Lieut. JOHN S. ROBINSON, Winchester.
To New York City, Bellevue Hospital, for instruction and on completion to his proper station, from Camp Zachary Taylor, Lieut. EDGAR M. MENDENHALL, Fort Wayne.
To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp McClellan, Lieut. JOHN J. CONNELLY, Rockville.
To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. EDWARD L. DEWEY, Whiting.
To Plattsburg Barracks, N. Y., for duty, from Fort Strong, Major THOMAS B. V. KEENE, Indianapolis.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Waynesville, N. C., for duty, Capt. FRANKLIN T. WILCOX, Laforte.
To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Grant, Capt. CLAUDE DuV. HOLMES, Indianapolis.

Iowa

To Camp Sevier, Greenville, S. C., for duty, from Camp Zachary Taylor, Lieut. EDGAR A. STEWART, Salem.
To Camp Sherman, Chillicothe, Ohio, for duty, Capt. ELLIOTT R. KING, Letts. As orthopedic surgeon, from Fort Oglethorpe, Lieut. RAY R. KULP, Davenport. Base hospital, Lieut. HENRY M. LEE, Decorah.
To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to Camp Custer, Battle Creek, Mich., base hospital, Capt. JOSIAH R. MEKIRAHAN, Perry. On completion to his proper station, from Camp Custer, Lieut. PAUL B. M. KERSTEN, Fort Dodge; from Camp Dodge, Capt. CHRISTIAN H. DEWEY, Perry; GARNER F. PARKER, Pocahontas; Lieut. JOSEPH L. RUYAVITZ, Duncombe.
To Fort Riley for instruction, Lieut. ANDLEY E. NELSON, Sidney.
To Hoboken, N. J., for duty, Lieuts. WALTER FRAZER, Algona; CLARENCE H. DOTY, Center Point; HENRY L. GARDINER, Gueyden; from Camp Logan, Lieut. FISHER B. E. MILLER, Cherokee; from Camp Zachary Taylor, Lieut. FRANK H. GAFFEY, Bradgate.
To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. MERLE BONE, Albion.
To the inactive list, Capt. LEO E. EVENS, Waterloo.

Kansas

To Camp Jackson, Columbia, S. C., for duty, Lieut. RILEY H. MILLER, Greensburg.
To Fort Bliss, Tex., base hospital, Capt. CHARLES E. ELLIOTT, Fort Riley.
To Fort McPherson, Ga., for duty, from Fort Oglethorpe, Capt. CLIFFORD C. NESSELRODE, Kansas City.
To Fort Oglethorpe for instruction, Lieut. HARRY L. GOSS, Horton.
To Hoboken, N. J., for duty, from Fort Riley, Lieut. GEORGE JENNINGS, Simpson.
To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Lieut. ALBERT M. DAWSON, Topeka. Tulane University, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion to his proper station, from Camp Shelby, Lieut. HENRY H. HAERLE, Niles.
To New York City, Bellevue Hospital, for instruction and on completion to Camp Gordon, Atlanta, Ga., base hospital, Capt. ARCHIBALD D. JONES, Wichita. On completion to his proper station, from Camp Meade, Lieut. CASPER J. MIDDLEKAUFF, Hays.
To Otisville, N. Y., for duty, from Fort Riley, Capt. ANDREW ENGBERG, McPherson.
To San Antonio, Tex., for duty, from Houston, Lieut. WILLIAM S. FLEMING, Ness City.
To Wichita Falls, Tex., Call Field, Signal Corps, Aviation School, for duty, from Fort Worth, Lieut. GEORGE E. BRETHOUR, Dwight.

Kentucky

To Aberdeen, Md., for duty, Capt. ROBERT Y. SHEPHERD, Taylorsville.
To Camp Dix, Wrightstown, N. J., base hospital, from Camp Shelby, Capt. JOHN T. PRICE, Harrodsburg.
To Camp Jackson, Columbia, S. C., for duty, Lieut. OLLIE T. LOWERY, Tolu.
To Camp Lee, Petersburg, Va., with the board examining the troops for cardiovascular diseases, from Camp Meade, Capt. ALFRED H. KELLY, Shively. For duty, Capt. BENJAMIN L. HOLMES, Lieut. JOHN D. CARPENTER, Louisville.
To Camp Meade, Annapolis Junction, Md., for duty, Lieut. BALLARD C. LINTH, White Star.
To Camp Shelby, Hattiesburg, Miss., base hospital, from Camp Gordon, Capt. LLEWELLYN P. SPEARS, Louisville.
To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. SIMRALL ANDERSON, Glenview.
To Edgewood, Md., for duty, Lieut. LATTA A. CRANDELL, Louisville.
To Fort Oglethorpe for instruction, Capt. JAMES B. MASON, London.
To Markleton, Pa., for duty, from Camp Grant, Major BENJAMIN F. VAN METER, Lexington.
To Otisville, N. Y., for duty, from New Haven, Capt. WALTER A. LACKEY, Paducah.

Louisiana

To Camp Crane, Allentown, Pa., base hospital, from Camp Travis, Capt. WILLIAM M. PERKINS, New Orleans.
To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion to his proper station, from Camp Jackson, Lieut. PRESSLY Y. DONALD, Jackson.
To Fort Bayard, N. M., for duty, from Camp Dodge, Lieut. JOSEPH R. D'AUNCEY, New Orleans.
To Habaken, N. J., for duty, from New York City, Capt. WEBSTER W. BELDEN, New Orleans.
To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. SOLON R. HUMPHRIES, New Orleans.

Maine

To Camp MacArthur, Waco, Tex., to examine the command for nervous and mental diseases, from Camp Logan, Capt. FRANK E. LESLIE, Andover.

The following order has been revoked: *To Camp Devens*, Ayer, Mass., base hospital, Lieut. FRANK Y. GILBERT, Portland.

Maryland

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. JOSEPH E. NORRIS, Baltimore.
To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. CHARLES B. ENSOR, Baltimore.
To Camp Jackson, Columbia, S. C., base hospital, Lieut. GEORGE R. WILKINSON, Baltimore.
To Camp Wadsworth, Spartanburg, S. C., to examine the command for nervous and mental diseases, from Camp Meade, Lieut. VERNON L. MAHONEY, Catonsville.
To Camp Wheeler, Macon, Ga., with the board examining the troops for cardiovascular diseases, Lieut. JOHN T. KING, JR., Baltimore.
To Cape May, N. J., for duty, and on completion to his proper station, Major CHARLES BAGLEY, JR., Baltimore.
To Hoboken, N. J., for duty, Lieuts. FREDERICK H. CHARLES, Midland; JOHN D. DARBY, Oakland.
To New York City, Neurological Institute, for instruction, Lieut. HARRY W. WHEATON, Baltimore.
To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Greene, Charlotte, N. C., base hospital, Lieut. HUNTER R. MANN, Mandela Springs.
The following orders have been revoked: *To Camp Hancock*, Augusta, Ga., for duty, from Camp Jackson, Lieut. ISRAEL J. FEINGLOS, Baltimore. *To Fort Oglethorpe* for instruction from Army Medical School, Lieut. DUMONT F. ELMENDORF, Baltimore.

Massachusetts

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieut. THOMAS B. RAFFERTY, Lynn.
To Camp A. A. Humphreys, Accotink, Va., for duty, and on completion to his proper station, from Camp Dix, Lieut. GEORGE B. WILBUR, Newton.
To Camp Devens, Ayer, Mass., base hospital, Capt. DANIEL B. REARDON, Quincy; Lieut. FLETCHER H. COLBY, Boston.
To Camp Dix, Wrightstown, N. J., for duty, from Camp Meade, Major GEORGE E. McPHERSON, Medfield; from Camp Meigs, Lieut. ISRAEL E. RUDMAN, Boston.
To Camp Gordon, Atlanta, Ga., with the board examining the troops for cardiovascular diseases, from duty as a private, Lieuts. LESLIE N. GAY; THOMAS McC. MABON, Boston.
To Camp Lee, Petersburg, Va., base hospital, Major FRANCIS P. EMERSON, Lieut. THOMAS H. VAN CAMP, Boston. For duty, Lieut. JOHN L. C. COFFIN, Boston. To examine the command for nervous and mental diseases, and on completion to his proper station, from Camp Devens, Lieut. EARLE H. MACMICHAEL, Malden.
To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion to his proper station, from Camp Jackson, Lieut. CYRUS B. PARTINGTON, Fall River.
To Camp Shelby, Hattiesburg, Miss., with the board examining the command for nervous and mental diseases, from Jackson Barracks, Lieut. FRANCIS S. CALDICOTT, Milford.
To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Upton, Lieut. RICHARD A. CUNNINGHAM, Boston.
To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Custer, Lieut. WILFRED T. LAFORTUNE, Fitchburg.
To Fort McPherson, Ga., for duty, from Camp Lee, Capt. JOSEPH B. SAYLES, Taunton.
To Fort Oglethorpe for instruction, Lieut. FRANK F. SANDLER, Revere; from duty as a private, Lieut. MILES M. HAMBURG, Waltham.
To Hoboken, N. J., for duty, Lieut. JOHN H. SHAW, Plymouth; from Camp Custer, Lieut. WILLIAM T. McMAHON, Pittsfield; from Camp Upton, Lieut. WINFRED OVERHOLSER, Westboro; from Fort Oglethorpe, Lieut. LEO P. CRIMMIN, Brockton.
To Lakewood, N. J., for temporary duty, and on completion to his proper station, Capt. FRANCIS W. PEABODY, Boston.
To Otisville, N. Y., for duty, from New Haven, Capt. CHARLES E. PERRY, Haydensville.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Upton, Long Island, N. Y., base hospital, Capt. FRANK R. SEDGLEY, West Roxbury. On completion to Williamsbridge, N. Y., for temporary duty, Capt. HAROLD A. JOHNSON, Lynn. On completion to Camp Hancock, Augusta, Ga., base hospital, Lieut. RALPH W. TURNER, Boston.
To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. FRANK B. GRANGER, Boston.

Michigan

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieut. HARTHER L. KEIM, Ann Arbor.
To Camp Custer, Battle Creek, Michigan, as orthopedic surgeon in camp, from Chicago, Lieut. CARROLL S. THOMSON, Clinton. Base hospital, from Camp Sherman, Lieut. ARTHUR R. TIMME, Detroit.
To Camp Dix, Wrightstown, N. J., for duty, Capt. HARRY B. KNAPP, Ionia.
To Camp Kelly, San Antonio, Texas, for duty, from Mineola, Lieut. RICHARD F. BOONSTRA, Detroit.
To Camp Sherman, Chillicothe, O., for duty, Lieut. MALCOM R. MARKSON, Calumet.
To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Custer, Capt. ROBERT M. MARTIN, Detroit; Lieut. JOHN C. FOSHBEER, Grand Rapids; from Camp Dodge, Lieut. LEO R. PHILLIPS, Flint; from Camp Grant, Lieuts. ROBERT E. HAYES, Channing; EDMUND W. BOLIO, Detroit; RAYMOND M. SCHULTE, Dollar Bay. On completion to Camp Pike, Little Rock, Ark., base hospital, Lieut. CLIFFORD P. CLARK, Flint.
To Fort Des Moines, Ia., base hospital, Lieut. GEORGE H. CAMPAU, Detroit. For duty, Lieut. HARRY LIEFFERS, Grand Rapids.
To Fort McPherson, Ga., for duty, Lieut. ROBERT V. HOFFMAN, Detroit.
To Fort Riley for instruction, from Grand Rapids, Capt. LOUIS BARTII, Grand Rapids.

To *Hoboken, N. J.*, for duty, Capt. CHARLES D. D. PULLEN, Mt. Pleasant; Lieuts. JAMES GOSTANIAN, EARL W. MAY, Detroit; from Camp Grant, Capt. LOUIS H. CHAMBERLIN, Grand Rapids; from Fort Oglethorpe, Capt. EDWARD A. FLORENTINE, Ewen.

To *New Haven, Conn.*, for duty, Lieut. FRANK C. BLADERREY, Colon.

To *Otisville, N. Y.*, for duty, from New Haven, Capt. Charles H. MERRILL, Detroit.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to his proper station, from Camp Zachary Taylor, Capt. JOHN D. MCKINNON, Calumet; Lieut. BURNS R. EASTMAN, Muskogee.

To *Pittsburgh, Pa.*, Carnegie Bldg., for instruction, and on completion to Camp Hancock, Augusta, Ga., base hospital, Lieut. ISAAC S. GELLERT, Detroit. On completion to Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. CLARENCE W. OLSON, Escanaba. On completion to his proper station, from Camp Sherman, Lieut. WORTH W. WALTON, Mancelona.

To *Sacramento, Calif.*, Signal Corps Aviation School for duty, from Mount Clemens, Lieut. NELSON ABBOTT, Lake City.

Minnesota

To *Camp American University*, Washington, D. C., for duty, Lieut. CHARLES L. VON HESS, Rochester.

To *Camp Dodge*, Des Moines, Ia., base hospital, Lieut. FRANK N. KNAPP, St. Paul.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to their proper stations, from Camp Dodge, Capt. WALTER D. BRODIE, St. Paul; from Camp Grant, Lieut. THURMAN R. BEAVER, Indianapolis.

To *Fort Thomas, Ky.*, for duty, from New Haven, Lieut. GUY BRELSFORD, State Sanatorium.

To *Hoboken, N. J.*, for duty, from Camp Custer, Capt. FRANCIS J. SAVAGE, St. Paul; from Fort Riley, Capt. HARRY H. SELLERS, JOHN S. MACNIE, Minneapolis.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Lieut. FREDERICK N. BJERKEN, Red Wing.

To *New York City*, Bellevue Hospital, for instruction, and on completion to Camp Upton, L. I., N. Y., base hospital, Lieut. LAWRENCE E. LOPPER, Rochester.

To *Pittsburgh, Pa.*, Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Oglethorpe, Lieut. JOE M. NEAL, Minneapolis.

To *San Antonio, Tex.*, for duty, from Houston, Lieut. SAMUEL R. FRAKER, Cass Lake.

To *Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, Capt. ELMER M. JONES, St. Paul.

To *Washington, D. C.*, for duty, from Camp Beauregard, Lieut. ALBERT E. JOHANN, Minneapolis.

To *Wichita Falls, Texas*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. EDWIN S. INGERSOLL, Rochester.

Mississippi

To *Army Medical School* for instruction, from Fort Oglethorpe, Lieuts. THOMAS A. STRAIN, Meridian; JAMES H. SLAUGHTER, Plattsburg.

To *Camp Doniphan*, Fort Sill, Okla., base hospital, from Fort Riley, Capt. ROBERT M. STEPHENSON, Lexington.

To *Camp Hancock*, Augusta, Ga., for duty, Lieut. ISAAC P. CARR, Clarksdale.

To *Camp Sherman*, Chillicothe, Ohio, base hospital, Capt. JOSEPH C. ARMSTRONG, Water Valley.

To *New York City*, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Wheeler, Lieut. HENRY F. SPROLES, Vicksburg.

Missouri

To *Camp Bowie*, Fort Worth, Tex., as assistant to camp surgeon, from West Point, Lieut. ROY F. MILLS, Odessa. As member of a board examining the command for tuberculosis, from Fort Riley, Lieut. HENRY A. MEYERS, Sedalia.

To *Camp Crane*, Allentown, Pa., for duty, from the Surgeon-General's Office, Major FREDERICK W. BAILEY, St. Louis.

To *Camp Grant*, Rockford, Ill., base hospital, Capt. CHARLES L. BLANKS, Mexico.

To *Camp Jackson*, Columbia, S. C., base hospital, Lieut. CLARE J. CLAPSADDLE, St. Louis.

To *Camp Lee*, Petersburg, Va., base hospital, from Fort Oglethorpe, Lieut. JOHN W. STEWART, St. Louis.

To *Camp Pike*, Little Rock, Ark., as a member of a board examining the command for tuberculosis, from Fort Riley, Lieuts. WILLIAM O. FINNEY, Chaffee; ROBERT SHEETZ, Orrick.

To *Camp Travis*, Fort Sam Houston, Tex., for duty, Lieut. RICHARD P. DORRIS, Jefferson City.

To *Camp Upton*, L. I., N. Y., for duty, from Army Medical School, Capt. HUBERT B. BEEDLE, Lieut. HUGH J. WITTEWER, St. Louis.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to Camp Dodge, Des Moines, Ia., base hospital, Lieut. EZRA C. GRIM, Kirksville.

To *Fort Bliss, Tex.*, base hospital, Capt. CHARLES T. BELL, Maryville.

To *Fort Riley* for instruction, Lieut. JOSEPH A. HORIGAN, Kansas City.

To *Fort Slocum*, N. Y., as orthopedic surgeon, from Fort Oglethorpe, Capt. EDWARD L. COOLEY, St. Louis.

To *Hoboken, N. J.*, for duty, Capt. EDWARD L. STEWART, Kansas City; WILLIAM L. SHARP, Little Rock; from Camp Lee, Capt. CARL M. SNEED, Columbia; from Camp Wadsworth, Lieut. JAMES LEWALD, St. Louis; from Fort Des Moines, Lieut. HORACE S. DOWELL, Clearmont; from Fort Oglethorpe, Lieut. HOWARD O. LIENHARDT, North Kansas City; from Fort Riley, Lieut. WEL-COME E. TILTON, Grant City.

To *Newport News, Va.*, for temporary duty, from Fort Oglethorpe, Capt. JAMES W. SHANKLAND, St. Louis.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to Army Medical School, for duty, Capt. McDOWELL BOTTS, Mexico.

To *Walter Reed General Hospital*, Takoma Park, D. C., for duty, Capt. HUGH WILKINSON, Kansas City; from Fort Oglethorpe, Capt. WALTER C. G. KIRCHNER, St. Louis.

The following order has been revoked: To *Fort Sill, Okla.*, Lieut. JOHN N. DARROUGH, Kansas City.

Montana

To *Camp A. A. Humphreys*, Accotink, Va., for duty, from Camp Grant, Capt. GEORGE B. OWEN, Polson.

To *Camp Doniphan*, Fort Sill, Okla., for duty, from Camp Grant, Lieut. WILLIAM E. LONG, Anaconda.

To *Camp Lewis*, American Lake, Wash., for duty, Lieut. CHARLES A. GARDNER, Columbus.

To *Fort Riley* for instruction, Lieut. HERBERT H. JUDD, Boseman.

To *Hoboken, N. J.*, for duty, from Blacksburg, Va., Lieut. FERRIS L. ARNOLD, Billings; from Camp Bowie, Lieut. ROBERT L. REYNOLDS, Kalispell; from Fort Riley, Capt. GEORGE H. PUTNEY, Great Falls; Lieut. EUGENE F. BRINDJOINC, Butte.

Nebraska

To *Camp Crane*, Allentown, Pa., for duty, from Fort Riley, Capt. NORMAN C. PRINCE, Omaha.

To *Camp Dix*, Wrightstown, N. J., for duty, Lieut. PERRY D. KELLY, Nemaha.

To *Camp Hancock*, Augusta, Ga., for duty, Lieut. EDGAR A. PICKENS, Benkleman.

To *Camp Pike*, Little Rock, Ark., for duty, Lieut. WILLIAM R. PETERS, Stanton.

To *Camp Travis*, Fort Sam Houston, Tex., for duty, Lieut. JOHN L. SEARS, North Loup.

To *Camp Zachary Taylor*, Louisville, Ky., with the board examining the command for nervous and mental diseases, Capt. SAMUEL J. STEWART, Hastings; from Ann Arbor, Lieuts. WARD W. HED-LUND, Ingleside; ANDREW J. SMITH, Salem.

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Dodge, Lieut. CHARLES F. SHOOK, Omaha.

To *Hoboken, N. J.*, for duty, Major ALFRED J. BROWN, Omaha; Capt. CECIL C. COPELAND, Beaver City, Lieut. WILLIAM L. SUCHA, Hastings.

To *Pittsburgh, Pa.*, Carnegie Bldg., for instruction and on completion to Camp Meade, Annapolis Junction, Md., base hospital, Lieut. GEORGE F. FARMAN, Lincoln. On completion to his proper station, from Camp Beauregard, Lieut. ROY E. HALL, Fullerton.

New Hampshire

To *Camp Meade*, Annapolis Junction, Md., for duty, Lieut. WALTER H. SQUIRES, Haverhill.

To *Camp Sheridan*, Montgomery, Ala., to examine the command for nervous and mental diseases, from New York City, Lieut. GOODWIN A. JOHNSON, Concord.

To *Camp Sherman*, Chillicothe, Ohio, to examine the command for nervous and mental diseases, Lieut. ARTHUR B. HOWARD, Concord.

To *Markleton, Pa.*, for duty, from Fort Oglethorpe, Lieut. JAMES C. THOMPSON, North Stratford.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to Camp MacArthur, Waco, Texas, for duty, from Camp Zachary Taylor, Lieut. MELVIN P. BADGER, Manchester.

To *Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion to *Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, Lieut. JOHN C. LAWLER, Dover.

New Jersey

To *Camp Crane*, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. JOHN J. SZYMANSKI, Passaic.

To *Camp Dix*, Wrightstown, N. J., for duty, Lieut. FRANK DEL. SHERWOOD, Jersey City.

To *Camp Jackson*, Columbia, S. C., base hospital, Lieuts. IRWIN E. DEIBERT, Hadon Heights; WILLIAM L. THOMPSON, Jersey City.

To *Camp Meade*, Annapolis Junction, Md., base hospital, Lieuts. ARTHUR O. LARGAY; EDWARD A. MURPHY, Jersey City.

To *Chicago, Ill.*, Northwestern University, for instruction, from Fort Oglethorpe, Lieut. ALEXANDER J. McCRAE, Upper Montclair.

To *Colonia, N. J.*, for duty, from Army Medical School, Lieut. JOHN H. E. FUST, Carney's Point.

To *Hoboken, N. J.*, for duty, from Camp Dix, Lieut. CHARLES RICH, Newark; from Camp Upton, Lieuts. MATTHEW S. LEVITAS, WALTER C. LIEBMANN, Newark; from Dansville, N. Y., Lieut. FRANK J. VAN NOORT, Paterson.

To *New York City*, Bellevue Hospital, for instruction, and on completion to Camp Wheeler, Macon, Ga., base hospital, Capt. FREDERICK M. PAUL, Newark.

To *Otisville, N. Y.*, for duty, from Walter Reed General Hospital, Lieut. CHARLES N. KAIGHN, Stratford.

To *Philadelphia, Pa.*, University Hospital, for instruction, and on completion to Camp McClellan, Anniston, Ala., base hospital, Capt. HORACE D. BELLIS, Trenton.

To *Williamsbridge, N. Y.*, for observation and treatment, from New York City, Lieut. HAROLD F. WESTCOTT, Bridgeton.

New Mexico

To *Des Moines, Iowa*, base hospital, Capt. GEORGE K. ANGLE, Albuquerque.

To *Hoboken, N. J.*, for duty, from Camp Greene, Lieut. JOHN L. REID, Portales.

To *San Antonio, Texas*, Kelly Field, for duty, from duty as a contract surgeon, Capt. JOSEPH W. LACKEY, Carlsbad.

To *Whipple Barracks, Ariz.*, for duty, Capt. JAMES B. VAN HORN, Santa Rosa.

New York

To *Army Medical School* for instructions, from Fort Oglethorpe, Lieut. NATHAN WIENBERG, Brooklyn. On completion to *Boston, Mass.*, Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieuts. JOHN D. COLSON, HENRY J. FEASTER, ALFRED H. IASON, ANTHONY MANGIARACINA, Brooklyn; PORTER A. STEELE, Buffalo; ABRAHAM B. PEMSLER, New York City.

To *Camp A. A. Humphreys*, Accotink, Va., as camp surgeon, from Camp Greene, Major ISAAC W. BREWER, Geneva. To examine the command for nervous and mental diseases, Capt. IRVING HOLLEY, Brooklyn. Base hospital, Lieut. ADAM EBERLE, Brooklyn; from Fort Oglethorpe, Lieut. KEVORK N. BOSTANIAN, New York City.

To *Camp Colt*, Gettysburg, Pa., for duty, from New York City, Lieut. JAMES J. CLARK, Olean.

To *Camp Crane*, Allentown, Pa., base hospital, from Camp Upton, Lieut. RICHARD S. PEARSE, Brooklyn; from New York City, Lieuts. WILLIAM G. HERRMAN, Brooklyn; SOL C. DAVIDSON, Roches-

ter; HERBERT DE G. SHERMAN, White Plains; from Walter Reed General Hospital, Major FREDERICK T. VAN BEUREN, New York City; Lieut. ONSLOW A. GORDON, Brooklyn.

To Camp Dix, Wrightstown, N. J., for duty, Capt. JOHN G. CHADWICK, Buffalo.

To Camp Hancock, Augusta, Ga., for duty, Capt. SAMUEL FRANK, Lieut. MAURICE RIVKIN, Brooklyn.

To Camp Jackson, Columbia, S. C., for duty, Capt. DENIS A. McAULIFFE, New York City. Base hospital, Lieuts. LEROY J. BUTLER, Albany; HARRY F. GOCKLEY, RUSSELL H. OPPENHEIMER, Blackwell's Island; PAUL W. FETZER, New York City; HORACE E. ROBINSON, Pleasantville; from New York City, Capt. HENRY T. CHICKERING, New York City.

To Camp Kelly, San Antonio, Texas, for duty, from Mineola, Lieut. PAUL B. JENKINS, New York City.

To Camp Las Casas, San Juan, Porto Rico, for duty, from Camp Meade, Lieut. HERMAN GOODMAN, New York City.

To Camp Lee, Petersburg, Va., to examine the command for nervous and mental diseases, and on completion to his proper station, from New York City, Capt. JAMES F. MUNSON, Sonyea. Base hospital, Lieut. PERRY J. MANHEIMS, New York City. For duty, Lieut. HOWELL S. BONTECOU, Beacon. With the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. JOHN F. LEWIS, New York City.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. RALPH M. VINCENT, Binghamton; JOHN CALANDRIELLO, Brooklyn; JAMES R. SKEECH, New York City.

To Camp Sevier, Greenville, S. C., with the board examining the troops for cardiovascular diseases, from Camp Lee, Capt. MARCUS A. ROTHCHILD, New York City. To examine drafted troops, and on completion to his proper station, from Camp Jackson, Lieut. HARRY V. JUDGE, Albany.

To Camp Shelby, Hattiesburg, Miss., with the board examining the troops for nervous and mental diseases, Lieut. HYMAN HERSHERG, Bronx.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieuts. NATHANIEL M. HOCHBERG, Bronx; SIMON L. WRONKER, Rochester.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Dallas, Lieut. MAX MENSCH, Brooklyn.

To Camp Upton, L. I., N. Y., for duty, Lieuts. BRUCE L. JONES, Long Island; SAMUEL ALTMAN, New York; from Army Medical School, Lieut. NATHANIEL CROST, New York City.

To Camp Wadsworth, Spartanburg, S. C., for duty, from New Haven, Capt. LEONARD P. SPRAGUE, Chateaugay.

To Camp Wheeler, Macon, Ga., to examine the command for nervous and mental diseases, from Fort Oglethorpe, Lieut. JAMES M. O'NEILL, Flushing.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Grant, Lieut. BENJAMIN D. RUBEN, Port Chester.

To Del Rio, Texas, for duty, from Camp Shelby, Lieut. LEROY D. SOPER, Smyrna.

To Edgewood, Md., base hospital, from Fort Oglethorpe, Lieut. IRVING S. START, New York City.

To Fort Des Moines, Iowa, base hospital, Lieut. DONALD I. KIRK, Pittsburgh; from Camp Dodge, Capt. KENT E. WILLIAMS, Rome.

To Fort Sam Houston, Texas, for duty, Major JAMES I. RUSSELL, New York; from Fort Oglethorpe, Lieut. ANDREW J. ANDERSON, Long Island City.

To Hoboken, N. J., for duty, Capt. DANIEL C. O'NEIL, Binghamton; HORACE J. MANN, Brockport; Lieuts. SAMUEL A. WARSHAW, JOHN WIENMANN, Brooklyn; HAROLD E. SHEAR, Long Island; OSCAR H. FINKLE, New York City; FREDERICK P. LEE, Rosebank, Staten Island; from Army Medical School, Lieut. WALTER C. FOX, Fort Plain; from Camp Devens, Capt. THOMAS F. PATTERSON, Brooklyn; from Camp Dix, Lieut. HYMAN O. TEPERSON, Brooklyn; from Camp Meigs, Lieut. PHILIP KORN, New York City; from Cape May, Major LEMUEL R. HURLBUT, Lockport; from Fort Oglethorpe, Capt. JOSEPH E. HURLEY, Rochester; Lieut. THOMAS A. McGRATH, Hoosic Falls; from New York, Lieut. HERMAN B. PHILIPS, New York; from Washington, D. C., Lieut. FRANCIS J. LAWLER, Glen Falls; from Williamsbridge, Lieut. LOUIS GOLD, Brooklyn. Base hospital, Lieut. GORDON B. McFARLAND, New York City; from Rockefeller Institute, Lieut. MARTIN F. NOLAN, North Tonawanda.

To New Haven, Conn., for duty, Lieut. HENRY A. LATANE, Mount McGregor.

To New York City, Bellevue Hospital, as assistant instructor, from Rockefeller Institute, Capt. TIMOTHY F. SULLIVAN, New York City. For instruction, and on completion to Camp McClellan, Anniston, Ala., base hospital, Lieut. HARRY J. HAMMOND, Buffalo. On completion to Camp Sheridan, Montgomery, Ala., base hospital, Lieut. GEO. I. SIGNORELLI, Brooklyn. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. WALTER A. McCULLOUGH, Brooklyn. On completion to Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. FREDERICK T. OWENS, Utica. On completion to his proper station, from Camp Zachary Taylor, Lieut. HARRISON BETTS, Winkers. On completion to Washington, D. C., for duty in the Surgeon-General's Office, Capt. WILLIAM H. S. KNIPE, New York City. To Otisville, N. Y., for duty, from New Haven, Capt. GEORGE H. SHAW, Camillus; THOMAS F. ELLIS, Lieut. FRANCIS A. GLASS, New York.

To Philadelphia, Pa., for duty, and on completion to his proper station, Lieut. JOHN P. SHARP, Niagara Falls.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to his proper station, from Camp Beauregard, Lieut. JOHN C. BROWN, Albany; from Camp Sherman, Capt. FREDERICK J. PFIESTERER, Ceres; MILTON G. BURCH, Hornell; LOWELL T. DENUNG, Worcester.

To Richmond, Va., Richmond School Board, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion to his proper station, from Camp Lee, Lieut. SAMUEL ZWERLING, Brooklyn.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Wheeler, Macon, Ga., base hospital, Lieut. CALVIN E. BUSWELL, Brooklyn.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Fort Oglethorpe, Capt. JAMES P. FISKE, New York. For observation and treatment, from Camp MacArthur, Capt. JAMES E. CROSSMAN, East Randolph.

To Washington, D. C., for consultation, and on completion to Newport News, Va., for duty, from Camp Joseph E. Johnston, Capt. HARRY PLOTZ, Brooklyn. For duty in the Surgeon-General's Office, Capt. FRANKWOOD E. WILLIAMS, New York.

To Williamsbridge, N. Y., for temporary duty, Major T. PASSMORE BARNES, New York City.

The following order has been revoked: To Camp Lee, Petersburg, Va., for duty, Lieut. SAMUEL S. FERN, New York City.

North Carolina

To Camp Gordon, Atlanta, Ga., as member of board examining the command for tuberculosis, from Fort Oglethorpe, Capt. THOMPSON FRAZER, Asheville.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Sevier, Lieut. JAMES C. BRASWELL, JR., Wilson.

To Camp Upton, L. I., N. Y., for duty, from New Haven, Capt. CHARLES S. JORDAN, Asheville.

To Camp Wheeler, Macon, Ga., with the board examining the command for nervous and mental diseases, from Fort Screven, Lieut. EVERETT S. BARR, Asheville.

To Edgewood, Md., for duty, Lieut. HENRY B. ROWE, Mount Airy.

To Fort Riley for duty, from Camp Lee, Lieut. MAX C. KING, Franklinton.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, for duty, from Camp Kelly, Lieut. JOHN B. POWERS, Wake Forest.

North Dakota

To Camp Grant, Rockford, Ill., base hospital, from Jefferson Barracks, Capt. ROBERT D. CAMPBELL, Grand Forks.

To Camp Laurel, Laurel, Md., for duty, from Camp Grant, Lieut. WILLIAM E. MAERTZ, Lidgerwood.

To Kankakee, Camp Grant, Rockford and Chicago, Ill., for conference and instruction, and on completion to his proper station, Major FREDERICK H. BAILEY, Fargo.

To Camp Meade, Annapolis Junction, Md., as orthopedic surgeon, in camp, from Philadelphia, Lieut. HARRY J. FORTIN, Fargo.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion to his proper station, from Fort Riley, Lieut. GUY S. FROGNER, Parshall.

Ohio

To Alessandro, Calif., Signal Corps Aviation School, for duty, from Houston, Lieut. FRANCIS T. GALLEN, Columbus; from Mount Clemens, Lieut. JOHN A. TRUE, Port Clinton.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. JAMES G. SMAILES, Coshocton.

To Biltmore, N. C., for duty, Capt. JOHN D. DUNHAM, Columbus.

To Camp Grant, Rockford, Ill., base hospital, from Camp Sherman, Capt. JOSEPH E. PIRRUNG, Cincinnati.

To Camp Hancock, Augusta, Ga., for duty, Capt. PERCY W. COBB, Cleveland.

To Camp Lee, Petersburg, Va., base hospital, from Camp Crane, Capt. JOHN H. HARVEY, Toledo.

To Camp MacArthur, Waco, Texas, for duty, from Fort Oglethorpe, Lieut. ALDO V. SIBERT, Lima.

To Camp Meade, Annapolis Junction, Md., as orthopedic surgeon in camp, from New York City, Lieut. LEONARD E. STUTEMAN, Dayton.

To Camp Sherman, Chillicothe, Ohio, with the board examining the command for cardiovascular diseases, from Fort Oglethorpe, Major ROGER S. MORRIS, Cincinnati. Base hospital, Lieut. ALFRED L. MAYFIELD, Cincinnati.

To Camp Upton, L. I., N. Y., for duty, Lieut. CARROLL E. DECOURCY, Cincinnati; Lieut. JOHN SLIVKA, Cleveland.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Custer, Lieut. JOHN H. MURRAY, Massillon; from Camp Grant, Lieut. IGNATIUS E. JASINSKI, Cleveland.

To Cleveland, Ohio, Lakeside Hospital, for duty, Capt. HENRY K. YAGGI, Salem.

To Colonia, N. J., for duty, from Camp Pike, Capt. ROBERT R. SELLERS, Orwell.

To Columbus Barracks, Ohio, for duty, from New Haven, Lieut. CHARLES K. ERVIN, Cincinnati.

To Edgewood, Md., for duty, from Washington, D. C., Lieut. CHARLES ALBERT S. WILLIAMS, Marietta.

To Fort Logan, Colo., for duty, from Jefferson Barracks, Lieut. GEORGE H. REEVE, Cleveland.

To Fort Oglethorpe for instruction, Capt. ZADOK F. ATWELL, Amsterdam; DANIEL L. MOHN, Ashland; from duty as a private, Lieut. ELI F. RAMBO, Akron.

To Fort Sam Houston, Texas, for duty, from Camp Pike, Lieut. RUSSELL E. LIGHTNER, Kingston.

To Hoboken, N. J., for duty, Lieuts. AMOS E. FRIED, Cleveland; ROSCOE H. SPITLER, Greenville; PINCKNEY S. BONE, Lancaster; BENJAMIN R. McCLELLAN, Xenia; from Camp Upton, Capt. ARTHUR J. McCracken, Bellefontaine; from Fort Des Moines, Lieut. JOHN F. HOLTZ, Plymouth; from New York City, Lieuts. HARRY E. WOODBURY, Akron; JOHN K. LAWSON, Dayton.

To New Haven, Conn., for duty, from Camp Pike, Major PHILIP GATH, Cincinnati.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Zachary Taylor, Capt. IVAN L. BIGGS, Custer.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to his proper station, from Camp Sherman, Capt. VICTOR BIDDLE, Steubenville, Lieut. CHARLES S. JACKSON, Edison.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. CLARKE C. PATTON, Ashland. For instruction in the treatment of infected wounds, and on completion to Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Lieut. ARTHUR H. SMITH, Marietta.

To Waynesville, N. C., for temporary duty, Capt. ALFRED C. BARTHOLOMEW, Van Wert.

Oklahoma

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. ELIJAH S. SULLIVAN, Oklahoma City.

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Fort Oglethorpe, Major RUSSELL L. KURTZ, Nowata. For duty, from Fort Oglethorpe, Capt. HENRY DEW. SHANKLE, Hastings.

To Camp Crane, Allentown, Pa., base hospital, from Army Medical School, Lieut. GUY P. McNAUGHTON, Miami.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Doniphan, Lieut. CLYDE F. LOY, Shawnee.

To Camp Grant, Rockford, Ill., with the board examining the command for nervous and mental diseases, from Ann Arbor, Capt. ANTONIO DEB. YOUNG, Oklahoma City.

To Camp Hancock, Augusta, Ga., for duty, Lieut. JAMES LAS. MINER, Beggs.

To Camp Jackson, Columbia, S. C., for duty, Lieut. EDWARD N. McKEE, Enid; HARDIN F. IRVAN, Tulsa.

To Camp John Wise, San Antonio, Texas, for duty, from Waco, Lieut. JOSEPH T. GUNTER, Ochelata.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. LAWRENCE H. HILL, Idabel.

To Colonia, N. J., for duty, from New York City, Lieut. MARION M. ROLAND, Oklahoma City.

To Fort Bliss, Texas, for duty, Lieut. WILLIAM G. LEMON, Tulsa; from Fort Leavenworth, Lieut. BARTON H. WATKINS, Gotebo.

To Fort Des Moines, Iowa, base hospital, from Camp Zachary Taylor, Lieut. HERMAN A. LAFORCE, Blair.

To Fort Riley for instruction, Lieut. JAMES M. CANNON, Billings.

To Hoboken, N. J., for duty, Lieut. GEORGE N. BILBY, Alva; WILLIAM D. BORNINGER, Atwood; from Camp Sherman, Lieut. ORANGE E. WELBORN, Kingston.

To Wichita Falls, Texas, Signal Corps Aviation School, for duty, Lieut. LITTLETON A. NEWTON, Oklahoma City.

The following order has been revoked: To Fort Des Moines, Iowa, for instruction, Lieut. ROBERT W. MOTLEY, Muskogee.

Oregon

To Camp Lewis, American Lake, Washington, for duty, Lieut. HIRAM C. DODDS, Dufur. To examine the command for nervous and mental diseases, from Talmage, Lieut. CLARENCE U. SNIDER, Portland.

To Vancouver Barracks, Wash., for duty, from Talmage, Lieut. KENNETH W. KINNEY, Astoria.

Pennsylvania

To Alessandro, Cal., Signal Corps Aviation School, for duty, from Mount Clemens, Lieut. HENRY MACV. SMITH, Pittsburgh.

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieuts. EDWARD H. McCLISTER, Kittenning; EDGAR B. SLOTERBECK, Monessen; WALTER W. SCHMID, Pittsburgh.

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. JULIUS A. BLASSER, Philadelphia. For duty, and on completion to his proper station, from Camp Meade, Lieuts. RALPH L. ENGLE, ABRAHAM TRASOFF, Philadelphia.

To Camp Colt, Gettysburg, Pa., from Walter Reed General Hospital, Lieut. JOHN W. BANCROFT, Johnstown.

To Camp Devens, Ayer, Mass., for duty, from New Haven, Lieut. FRANK F. D. RECKORD, Harrisburg.

To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. THOMAS L. McCULLOUGH, Homewood.

To Camp Hancock, Augusta, Ga., as assistant to camp surgeon, from Fort Oglethorpe, Major SENECA EGBERT, Philadelphia. For duty, Lieut. DANIEL W. FRYE, Pittsburgh.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ALBERT W. FISHER, Fountain Springs; ABE K. WEAVER, EDWARD I. WOLFE, Jr., Philadelphia.

To Camp Las Casas, San Juan, Porto Rico, as orthopedic surgeon, from Camp Dix, Lieut. LOUIS H. MAYER, Jr., Johnstown.

To Camp Lee, Petersburg, Va., for duty, Lieut. SAMUEL LER. BOSSARD, Saegerstown.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. HARRY S. CARMANY, Philadelphia. For duty, Lieuts. HERBERT H. BOYER, Kunkletown; RAMON J. SIFRE, Philadelphia; JOHN R. CAROTHERS, Smock.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. HARRY J. OWENS, Hazleton.

To Camp Upton, L. I., N. Y., for duty, Lieut. CLARENCE H. MILLER, Media.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Meade, Capt. HENRY G. MUNSON, Philadelphia.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from duty as a private, Lieut. AUDRA H. YARNALL, California.

To Edgewood, Md., for duty, Capt. ANDREW HUNTER, McKeesport; JOHN W. FEARN, Wattsburg.

To Fort Des Moines, Iowa., base hospital, from Camp Lee, Lieut. ILEWELLYN I. THOMAS, Burnham.

To Fort Oglethorpe for instruction, Capt. CHARLES N. MONTGOMERY, Philadelphia; Lieut. IRWIN J. OBER, Greensburg.

To Fort Snelling, Minn., for temporary duty, Capt. JOSIAH T. BUNTING, Philadelphia.

To Fort Thomas, Ky., with the board examining the troops for cardiovascular diseases, Capt. JOSEPH H. BARACH, Pittsburgh.

To Hoboken, N. J., for duty, Capt. ISAAC H. ALEXANDER, Wilkesburg; Lieut. WILLIAM K. SHEA, Philadelphia; from Camp Custer, Major ELMER C. JACKSON, Pittsburgh; from Camp Grant, Lieut. CHARLES H. KIRK, Homer City; from Camp MacArthur, Lieut. ROBERT W. RICHARDS, Shingle House; from Camp Upton, Lieut. THOMAS J. MCNELIS, Lucerne Mines.

To Lakewood, N. J., for duty, Capt. ROBERT J. HENDERSON, Bowmansville.

To Milwaukee, Wis., Chicago, Ill., and Washington, D. C., for duty, from Madison, Wis., Major HENRY D. JUMP, Philadelphia.

To New Haven, Conn., for duty, Lieut. JULIUS H. GOLDSTEIN, Pittsburgh.

To New Orleans, La., Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Lieuts. LEROY UMBURN, Albion; JAMES W. SILLIMAN, Bradenville.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Lee, Petersburg, Va., base hospital, Lieut. ARTHUR E. S. CASEY, Philadelphia. On completion to Camp Meade, Annapolis Junction, Md., base hospital, Lieut. EARL E. REBHORN, Scranton.

On completion to Camp Sheridan, Montgomery, Ala., base hospital, Lieut. LOUIS S. DUNN, Chester. On completion to his proper station, from Camp Meade, Lieut. CHARLES S. FOX, Philadelphia; from Camp Wheeler, Lieuts. EDWARD Y. ORD, McKeesport; WILLIAM J. STEWART, Pittsburgh. On completion to Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to his proper station, from Fort Slocum, Major LOUIS A. SPAETH, Philadelphia.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station from Camp Zachary Taylor, Capt. HOMER S. WILSON, Grove City. On completion to Camp Sevier, Greenville, S. C., base hospital, Lieut. JACK H. HAMILL, Ligonier.

To Pittsburgh, Pa., for duty, from Camp Lee, Major EWING W. DAY, Pittsburgh.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion to Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Lieut. JOSEPH A. PERKINS, Philadelphia.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. CLARENCE H. INGRAM, Pittsburgh; from Camp Logan, Lieut. EDWARD PARDOE, South Fork.

To Williamsbridge, N. Y., for observation and treatment, from New York City, Lieut. JOHN H. BENNETT, York.

The following order has been revoked: To Fort Oglethorpe for instruction, Capt. BENJAMIN F. ROYER, Harrisburg.

Porto Rico

To Camp Las Casas, San Juan, Porto Rico, for duty, Lieuts. JOSE F. GONZALES, Lares; FRANCISCO R. DE JESUS, Ponce; PASCUAL A. RIVERA, San German; SALVADOR GIULIANAI, San Juan.

Rhode Island

To Camp Hancock, Augusta, Ga., for duty, Capt. FRANK A. FEARNEY, Providence.

To Camp Kelly, San Antonio, Texas, for duty, from Mineola, Capt. ARTHUR W. STEVENSON, Newport.

To Cape May, N. J., for temporary duty, Lieut. FREDERICK N. BIGELOW, Providence.

To Fort Oglethorpe for instruction, Capt. WINTHROP G. LINCOLN, Lieut. JOSEPH E. BANNON, Providence.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Zachary Taylor, Capt. HARMON P. B. JORDEN, Providence.

South Carolina

To Army Medical School, for instructions, from Fort Oglethorpe, Lieut. COLLINS E. SMITH, Ridgeville.

To Camp Sheridan, Montgomery, Ala., for duty, from Lake Charles, La., Lieut. LONNIEL M. McMILLAN, Florence.

To Hoboken, N. J., for duty, from Camp Beauregard, Lieut. BENJAMIN T. WYMAN, Oswego.

To New York City, Bellevue Hospital, for instruction and on completion to his proper station, from Camp Meade, Lieut. LACY W. CORBETT, Bishopville.

South Dakota

To Fort Riley for instruction, Capt. ROBERT M. MALSTER, Carter.

Tennessee

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Capt. HERBERT H. McCAMPBELL, Knoxville.

To Camp Hancock, Augusta, Ga., for duty, Lieut. ARCHIE L. ERWIN, Nashville.

To Camp Lee, Petersburg, Va., for duty, Lieut. SWAN BURRUS, Woodland Mills.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. MARVIN B. CAMPBELL, Lebanon.

To Camp Raritan, Metuchen, N. J., for duty, Capt. JOSEPH H. KARSCH, Memphis.

To Camp Wheeler, Macon, Ga., with the board examining the command for nervous and mental diseases, from Camp Meade, Lieut. WILLIAM B. LUNSFORD, Nashville.

To Fort Sam Houston, Texas, for duty, Lieut. ROBERT F. PATTERSON, Knoxville.

To Hoboken, N. J., for duty, Lieut. CHARLES E. STARNES, Memphis.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to his proper station, from Camp Sherman, Lieut. THOMAS W. MENEES, Nashville.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to his proper station, from Camp Zachary Taylor, Lieut. ARA D. SHARP, Murfreesboro.

Texas

To Army Medical School, for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Capt. JOSEPH H. SHELTON, Kingsville; Lieut. HALL SHANNON, Dallas.

To Camp Hancock, Augusta, Ga., for duty, Capt. CHARLES B. McGLUMPHY, Galveston.

To Camp Jackson, Columbia, S. C., for duty, Capt. LORAC E. HASTINGS, Dallas; DICK P. WALL, Galveston; Lieut. MERT R. STARNES, Temple.

To Camp Kearny, Linda Vista, Cal., base hospital, Capt. RICHARD E. NICHOLSON, Brenham.

To Camp Lewis, American Lake, Wash., as assistant to camp surgeon, from Fort Riley, Major IRVY L. McGLASSON, Waco.

To Camp Logan, Houston, Texas, base hospital, Capt. ROBERT L. OWENS, Delhart.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. NAT. M. KENNEY, San Antonio; from Fort Bliss, Lieut. ERNEST W. NITSCHKE, Dallas.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Apache, Capt. ROBERT H. McLEOD, Palestine.

To Del Rio, Texas, for duty, Capt. CLAUDE C. HIGGINS, San Antonio; from Camp Zachary Taylor, Lieut. ROSCOE ETTER, Hubbard.

To Fort Apache, Ariz., for duty, Lieut. TRUMAN C. TERRELL, Fort Worth.

To Fort Bliss, Texas, for duty, Lieut. WHITMEL H. JONES, Humele.

To Hoboken, N. J., base hospital, Lieut. GORDON B. McFARLAND, Ladonia. For duty, Lieut. WILLIAM THOMAS, Mabank; from Camp Dodge, Lieut. THERON B. BOND, Fort Worth; from Camp Travis, Lieut. ALLEN JOHNSON, San Antonio; from Fort Riley, Lieut. JOHN R. LEWIS, Gainesville.

To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp Gordon, Atlanta, Ga., base hospital, Capt. CHARLES C. GREEN, Houston. On completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. ELISHA P. ROBBINS, Houston. On completion to Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Capt. JAMES A. HILL, Houston, Lieut. CHARLES E. COLLINS, Alvin.

To Otisville, N. Y., for duty, from New Haven, Lieut. IVY STANSELL, Sanderson.

To report to the commanding general, Southern Department, for assignment to duty, Lieut. BASCOM LYNN, San Angelo; from Fort Sam Houston, Capt. FRANK L. PASCHAL, San Antonio.

To *Richmond, Va.*, Richmond School Board, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion to his proper station, from Camp Lee, Lieut. WALTER L. JACKSON, Dallas.

To *Rockefeller Institute* for instruction in the treatment of infected wounds and on completion to *Camp Meade*, Annapolis Junction, Md., base hospital, Capt. EDWIN B. KENNER, Galveston. On completion to *Cape May, N. J.*, for duty, from New York City, Lieut. JOHN E. QUAY, Waco.

To *Sacramento, Cal.*, Signal Corps Aviation School for duty, from Waco, Lieut. Y. FRANK HOPKINS, Thrall.

To *San Antonio, Texas*, for duty, from Houston, Capt. THOMAS F. BRYAN, Dublin; Lieut. DAVID L. LOWRY, Teague.

To *Waco, Texas*, Rich Field, Signal Corps Aviation School, for duty, Capt. WILLIAM F. CURRAN, Waco.

To *Wichita Falls, Texas*, Call Field, Signal Corps Aviation School, for duty, Lieut. MILTON C. WILLIAMS, San Marcos.

To *Williamsbridge, N. Y.*, for duty, from Fort Oglethorpe, Capt. IRA E. PRITCHETT, Houston. For observation and treatment, from New York City, Capt. WILLIAM R. FICKESSEN, San Antonio.

Utah

To *Chicago, Ill.*, Presbyterian Hospital, for instruction, and on completion to his proper station, from Camp Grant, Lieut. CLARENCE S. GARDNER, Kaysville.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Capt. WALTER E. WHALEN, Ogden.

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. FREDERICK W. TAYLOR, Provo.

To *Sacramento, Cal.*, Signal Corps Aviation School, for duty, from Waco, Lieut. RAY T. WOOLSEY, East Salt Lake City.

Vermont

To *Camp MacArthur*, Waco, Texas, as sanitary inspector, from Plattsburg Barracks, Major EDWARD A. TOBIN, North Bennington.

To *Hoboken, N. J.*, for duty, Capt. JOHN R. PLATTON, Fairfield; Lieut. GEORGE G. HALL, Woodbury; from Camp Upton, Lieut. GEORGE C. RUBLEE, Hardwick.

Virginia

To *Army Medical School* for instruction, and on completion to *Boston, Mass.* Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieut. MARSHALL L. BOYLE, Jr., Richmond.

To *Camp Crane*, Allentown, Pa., for duty, Major HUGH H. TROUT, Roanoke; Lieuts. ALFRED P. JONES, CARL C. WOLFE, Roanoke. Base hospital, from Army Medical School, Lieut. ALBERT P. TRAYN-AM, Richmond.

To *Camp Hancock*, Augusta, Ga., for duty, Lieut. ALEXANDER A. SIZER, Schuyler.

To *Camp Lee, Petersburg, Va.*, base hospital, from Hoffman's Island, Lieut. BEVERLY P. ECKLES, Richmond; from Williamsbridge, Lieut. EDGAR W. YOUNG, McKenney.

To *Camp Logan*, Houston, Texas, base hospital, from Fort Oglethorpe, Lieut. ELIJA M. HICKS, Roanoke.

To *Camp Meade*, Annapolis Junction, Md., for duty, Lieuts. WILLIAM KARP, Portsmouth; CHARLES B. BAUGHMAN, Rural Retreat.

To *Fort Monroe, Va.*, for duty, and on completion to *New York City*, Neurological Institute, from New York City, Major BLANTON HILLS-AN, Richmond.

To *Fort Oglethorpe* for instruction, Lieut. MARIANO B. CABAL-ERO, Petersburg.

To *Hoboken, N. J.*, for duty, from Fort Oglethorpe, Lieut. ISAAC H. GOLDMAN, Richmond; from Fort Oglethorpe, Lieut. JOSEPH L. McCABE, Richmond.

To *New York City*, Cornell Medical College, for instruction in military oentgenology, and on completion to *Hoboken, N. J.*, base hospital, from Camp Dix, Lieut. PATRICK N. CARROLL, Rio Vista.

The following order has been revoked: To *Fort Des Moines, Iowa*, for instruction, Lieut. MOSES CLAYBOURNE, Boone Mill.

Washington

To *Camp Fremont*, Palo Alto, Cal., base hospital, from Camp Kearny, Capt. RICHARD H. LYON, Bothell; FOREST A. BLACK, EDWARD F. FICK, Seattle; FRANK T. WILT, Steilacoon, Lieuts. HOWARD C. RANDOLPH, Aberdeen; GUY E. MARCY, Montesano; WILLIAM C. KANTNER, HOWARD J. KNOTT, Seattle.

To *Camp Lewis*, American Lake, Wash., for duty, Lieut. YNGVE J. SYVALL, Seattle.

To *Fort Riley* for instruction, Lieut. LUNSFORD M. THOMPSON, Spokane.

The following order has been revoked: To *Camp Kearny*, Linda Vista, Cal., base hospital, Lieut. BERTON E. FLEMING, McCreary.

West Virginia

To *Camp McClellan*, Anniston, Ala., as orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. BYRON W. STEELE, Mullens.

To *Camp Sherman*, Chillicothe, Ohio, for duty, Capt. ORRA F. OVERT, Moundsville; THOMAS R. MEIGHEN, Wheeling.

To *Newport News, Va.*, for duty, from Camp Morrison, Lieut. RALPH I. BOICE, Sistersville.

To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp Pike, Lieut. REECE M. PED-ORD, Elm Grove.

To *Pittsburgh, Pa.*, Carnegie Building, for instruction, and on completion to his proper station, from Camp Sherman, Lieut. JOHN E. HILLER, Widen.

To *Riverside, Cal.*, Signal Corps Aviation School, for duty, from Arcadia, Lieut. HARRY R. PARKER, Williamson.

The following order has been revoked: To *Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, from Fort McPherson, Lieut. WILLIAM D. LEWIS, Beckley.

Wisconsin

To *Camp Meade*, Annapolis Junction, Md., for duty, Lieut. ARTHUR HARBONNEAU, Green Bay.

To *Camp Pike*, Little Rock, Ark., as a member of a board examining the command for tuberculosis, from Fort Riley, Capt. HENRY C. ALDWELL, St. Croix Falls. For duty, Lieut. JOSEPH P. SCHLAI-COWSKI, Milwaukee.

To *Chicago, Ill.*, Northwestern University School of Medicine, for instruction, Capt. ERNEST L. BOLTON, Chilton. Presbyterian Hos-ital, for instruction, and on completion to *Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. HERBERT F. WOLTERS, Milwaukee. On completion to *Camp Grant*, Rockford, Ill., base hospital, Lieut. TIMOTHY

J. HOWARD, Milwaukee. On completion to his proper station, from Camp Dodge, Capt. PAUL J. LEWIS, Bloomington.

To *Hoboken, N. J.*, for duty, from Camp Mills, Major E. J. BAR-RETT, Sheboygan; from Camp Custer, Capt. ALBERT A. MAURER, La Crosse; from Fort Oglethorpe, Capt. FRANK E. DARLING, Milwaukee.

To *Lonoke, Ark.*, Signal Corps Aviation School, for duty, from Houston, Capt. PATRICK R. MINAHAN, Fond du Lac.

To *Otisville, N. Y.*, for duty, from New Haven, Capt. MICHAEL R. WILKINSON, Oconomowoc.

The following order has been revoked: To *Camp Kelly*, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. GEORGE W. HARRI-SON, Ashland.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Section Officers.—At the annual meeting of the Illinois State Medical Society, Dr. Wesley H. Peck, Evanston, was elected chairman of the eye, ear, nose and throat section, and Dr. Frank Allport, Chicago, was elected secretary of the section.

Vaccination Rule to Be Enforced.—On account of the increasing epidemic of smallpox throughout Illinois, the officials of the state board of health are urging stringent enforcement of the vaccination rule. The board suggests that every person not previously vaccinated within a five-year period be vaccinated. A prevention and treatment propa-ganda by means of moving picture films for use in all theaters has been started by the state department of health.

Personal.—Dr. Clarence W. East, Springfield, is reported to have passed first in the examination for chief of the divi-sion of tuberculosis of the department of public health.—A reception was given by the Bureau County Medical Society at Princeton, May 28, in honor of Dr. Oliver J. Flint, Princeton, who has been called to army service. Dr. Rolando H. Henry, Tiskilwa, was the toastmaster. Dr. Samuel W. Hopkins, Walnut, presented the toast, "Dr. Flint as a Citizen"; Dr. John H. Franklin, Spring Valley, "Dr. Flint as a Physician"; Dr. Charles C. Scott, Princeton, "The Physician's Place in War"; Dr. Joseph M. O'Malley, Ohio, "The Physician Patriot," and Dr. Alfred E. Owens, Princeton, "A Memorial of Friendship."—Dr. Charles H. Spencer, Wheaton, is said to have been sentenced, May 10, to imprisonment for thirty days in the Wheaton jail, by Judge Landis, on a charge of violating the draft law.

Plan for Tuberculous Soldiers.—A plan is suggested whereby the central division of the American Red Cross, the Illinois State Department of Public Health, and the Illinois Tuberculosis Association agree to cooperate in securing adequate care and treatment for the returned tuberculous soldier, whether he may or may not have been discharged in line of duty. This plan includes the notification of the return of tuberculous soldiers to the central division of the Red Cross, by the home service section of the local chapter, which will then get in touch with the soldiers and ascertain the facts desired. The Illinois Tuberculosis Association will furnish to the central division of the American Red Cross complete records of all returned tuberculous soldiers with whom communication has been established or whose return has been reported to the association. In the shortest prac-ticable time, then, it will have all returned tuberculous sol-diers examined, their cases diagnosed and the proper methods of treatment outlined, and it will report on these matters to the central division. The Illinois Tuberculosis Association will enlist the services of experts in the diagnosis of tuber-culosis, and have competent nurses as the necessity arises. The expenses of transportation to the central examining points are to be advanced by the local service section of the Red Cross, providing the patient is unable to pay them him-self. The special examiners will cooperate with the local health officers so that the home service section may be in touch with the returned soldiers at all times, and the local health officer may be enabled to protect the interests of the civil population. The results of all examinations are to be reported to the state department of public health. In the interim between the return of the tuberculous soldier and his examination and the outlining of plans for his more perma-nent care, the home service section of the American Red

Cross will render the returned soldier such care as he may require. The temporary or permanent housing of a returned soldier, in the county almshouse will not be countenanced by the American Red Cross. The organization will pay one third of the expense of sanatorium or other care, providing the remaining two thirds can be secured from individuals or special agencies. All records are to be open to representatives of all parties to the agreement, and complete reports of progress are to be sent frequently to the central division of the American Red Cross.

Chicago

Personal.—Dr. Thomas H. Boughton has been appointed coroner's physician, to succeed Dr. William H. Burmeister, who has started for France.—Dr. Nathaniel H. Schaffner, charged with violation of the Harrison Narcotic Law, is said to have pleaded guilty to the unlawful sale of drugs and to have been sentenced to a term of two years' imprisonment in the federal penitentiary, Leavenworth.—"Dr." Richard Langfield is said to have been fined \$100 and costs and sentenced to six months imprisonment by Judge Haas, May 14, on the charge of practicing medicine without a license.

Hospital Car.—The new hospital car, which is to be used in the transportation of the patients from the Psychopathic Hospital direct to the state hospitals at Dunning, Elgin and Kankakee, was open for inspection at the Psychopathic Hospital, June 4, from 1 to 5 p. m. The car, built by the Chicago Railways Company at a cost of \$16,000, has accommodation for twenty-four male patients, seats for twenty and cots for four, and fourteen female patients with seats for twelve and cots for two. The car is provided with two toilet rooms, ice water, and has additional doors at the end through which stretchers may be carried into the car. The first trip of the car will be made to Dunning, on June 13, and on the following day a trip to Elgin or Kankakee will be made.

INDIANA

Vincennes Physician Found Guilty.—Dr. Wilhelm T. von Knappe, Vincennes, who recently was found guilty in federal court and sent to jail for one day, on the charge of sending obscene literature through the mail, entered a plea of guilty to the charge pending in the Knox Circuit Court.

Personal.—Dr. Anexamander M. Hayden has been appointed president of the Evansville Board of Health, succeeding Dr. Carl G. Viehe, deceased.—Dr. Otis M. Keyes, Dana, is critically ill on account of cerebral hemorrhage.—Dr. Charles E. Caylor, Pennville, has moved to Blufftown where he will open a private hospital.—Dr. Giles E. Mowrer has resigned as chief physician at the Indiana Reformatory, Jeffersonville.—Dr. Anexamander M. Hayden has been elected president, Dr. Gardner C. Johnson, vice president, and Dr. Walter R. Cleveland, secretary, of the Evansville School Clinic for Indigent Children.—Lieut. Carl L. Souder, Columbia City, has been ill with bronchial pneumonia in the base hospital at Camp Grant, Rockford, Ill.

MARYLAND

Nurses in Service.—At the last session of the Maryland State Nurses' Association, held last week at Cumberland, the president submitted a report which showed that of the graduate nurses in Maryland, more than 500 have registered for Red Cross work, and of this number approximately 250 are already in active service.

Health Officers Named.—The following physicians have been appointed health officers for Carroll County by the county commissioners: Drs. Franklin H. Seiss, Taneytown; Luther Kemp, Uniontown; George L. Wetzell, Union Mills; Harry F. Bare; Milton D. Norris, Eldersburg; William R. S. Denner, Manchester; Lewis K. Woodward, West Minister; Daniel M. Resh, Hempstead; Roland R. Diller, Detour; Abraham T. Cronk, Taylorsville; J. S. Getty; Thomas H. Legg, Union Bridge; Edgar H. Willard, Knoxville, and Daniel B. Sprecher.

Legacy to Hopkins.—The Johns Hopkins University and the Johns Hopkins Hospital have been given a legacy estimated to be valued at \$700,000, which is to be divided equally between the university and the hospital. As there were no restrictions placed on its use, it is probable that the income will be used to augment the general funds of the Johns Hopkins. By the same will, the Franklin Square Hospital has received \$25,000, the income of which is to be used in the maintenance of a room for those who would be uncomfortable in the free ward.

Personal.—Dr. Nathan R. Gorter, one of the most prominent physicians of Baltimore city, is critically ill at his home. According to his physician, Dr. Gorter's illness began with a severe streptococcus infection of the throat about ten days ago. He immediately developed a high temperature, accompanied by a spread of the infection to the intestinal tract. This was followed by arthritis and facial erysipelas. His condition is only slightly improved.—Dr. Luigi A. Stefani has been appointed health warden for the fifth district by Health Commissioner John D. Blake.—Dr. Eugene McEwen Van Ness and Dr. Walter L. Denny, Jr., have been named as members of the board of surgeons in place of Drs. James M. Craighill and William S. Gilroy, who are on the police board.—Dr. William F. Sappington of Hancock, who was with the British Medical Corps in France and was slightly wounded by a bursting shell six months ago, has been transferred to the United States Army and has been made camp surgeon and commander of a hospital with a capacity of 750 patients, "somewhere in France."—Dr. Edward P. Smith, superintendent of the Mercy Hospital, Baltimore, has resigned to enter private practice. Dr. Smith is a graduate of the class of 1912, College of Physicians and Surgeons, Baltimore, and has been superintendent at Mercy Hospital for five years. He will still retain his connection with the hospital as a member of the visiting staff in the department of general surgery.—Word has been received that Capt. Charles W. Maxson, who was captured in France, April 26, by the Germans, was not injured when taken prisoner. Captain Maxson had been loaned to the British for special trench service and had been decorated with the Distinguished Service Order by the British government.

MASSACHUSETTS

Harvey Cushing Honored in Ireland.—Major Harvey Cushing, M. R. C., on May 25, received an honorary fellowship from the Royal College of Surgeons of Ireland at Dublin. Major Cushing has been abroad for about one year as head of Base Hospital No. 5, the Peter Bent Brigham Hospital unit.

MISSISSIPPI

Appropriation for Sanitation.—The city council of Pascagoula has appropriated \$10,000 and the city of Moss Point, \$7,000, which, with the \$8,000 available from the national government, will make up \$25,000 and will be used to introduce proper sanitation into the shipyards district.

State Society Officers.—At the fifty-first annual meeting of the Mississippi State Medical Association, held in Jackson, May 14 and 15, under the presidency of Dr. Willis Walley, Jackson, the following officers were elected: president, Dr. Waller S. Leathers, University; vice presidents, Drs. Ira B. Seale, Holly Springs; William G. Gill, Newton, and William D. McCalip, Yazoo City; secretary, Dr. Thomas M. Dye, Clarksdale; treasurer, Dr. James M. Buchanan, Meridian; councilors, second district, Dr. Billy S. Guyton, University; ninth district, Dr. John C. McNair, Fayette, and tenth district, Dr. Daniel J. Williams, Gulfport. Hattiesburg was selected as the next place of meeting.

MISSOURI

Personal.—Dr. Eugene H. Bullock, St. Joseph, has been appointed director of health of Kansas City.—Dr. Emmett P. North, St. Louis, has been appointed a member of the Missouri State Board of Health, succeeding Dr. Marc R. Hughes, St. Louis, who has resigned to enter military service.—Dr. William L. Gleaves, Kansas City, sustained a serious injury of the eye in an automobile collision, May 17.

NEW JERSEY

Montclair Physicians Patriotic.—At the annual meeting of the Associated Physicians of Montclair and vicinity, held at Montclair, May 27, a special tribute was paid to seventeen members of the organization who are in military service. Dr. Richard Cole, Newton, was elected president; Dr. Leslie C. Love, Montclair, vice president; Dr. Browne Morgan, Bloomfield, secretary, and Dr. James W. Krichbaum, Upper Montclair, treasurer.

Personal.—Dr. Enoch Hollingshead, Pemberton, and J. Clifford Haines, Vincentown, have been elected members of the board of managers of Pine Rest, the Burlington County Sanatorium for Tuberculosis, New Elizabeth. Dr. D. F. Reamer, Mount Holly, has been made superintendent of the institution and secretary of the board.—J. A. Fetzer

has accepted the presidency of the New Jersey State Conference on Charities and Correction.—Dr. Eugene L. Reed, Atlantic City, was stricken with a cerebral hemorrhage, May 3.

NEW YORK

Personal.—Dr. William H. Heath has been appointed director of hygiene and education of Buffalo, and Dr. Frederick W. Kochler, medical inspector of food industry.

Examination for Health Officers.—The board of health of the Lake George health district announces a competitive examination for the position of full-time health officer at a salary of \$3,000 a year and expenses. Application blanks may be secured from Mr. Loyal L. Davis, Glens Falls. The examination will be both written and oral, the latter part of it being held at Lake George, June 14, at 10 a. m. Applicants should state whether they have taken a special course in public health as provided by the Public Health Service, whether they have been exempted from such a course, or whether they are now registered for this course, and, if so, the name of the university where they are registered and when they expect to complete this course.

New York City

Hebrew Asylum Anniversary.—The Brooklyn Hebrew Orphan Asylum celebrated the fortieth anniversary of its founding, May 26, with an elaborate program. Commissioner of Charities Bird S. Coler made the principal address.

Mackay Home Offered as Hospital.—Clarence H. Mackay has offered his country home at Roslyn, L. I., with its 600 acres of fields, drives and buildings, to the American Red Cross for use as a base hospital. It is estimated that without difficulty it could care for 400 or 500 patients.

Red Cross Starts Drive for Nurses.—The Atlantic division of the American Red Cross celebrated Memorial Day by forming committees to direct a drive for nurses which starts next Monday. The Red Cross states that 5,000 nurses are needed now for the American Army abroad and that 25,000 will be needed before the close of the year.

Medical Aid for Palestine.—The New York Chapter of Hadassah, the women's Zionist organization, has completed the equipment of a medical unit for Palestine, consisting of fifty-one physicians and nurses. It has sent out an appeal for \$1,000 to meet the cost of a motor truck which is needed. This unit is to form the foundation of a large and permanent system of medical relief work that is to be conducted in Palestine on a basis of assistance to all, irrespective of race or religion.

Hospitals Aid Draft Registrants.—The New York hospitals, in response to an appeal from the government, have notified Adj.-Gen. Charles H. Sherrill that they are prepared to give medical and surgical treatment to those registrants of Class 1, who have been classified as eligible for military service, subject to necessary surgical operation or medical treatment. Dr. Victor C. Pedersen, chief medical officer of the selective draft for New York, will be in charge of this part of the draft work in New York.

Health Department Official Denied Open Trial.—Charges of neglect of duty, inefficiency and incompetence have been preferred against Dr. Lucus P. Brown, director of the bureau of foods and drugs of the health department, by Health Commissioner Copeland. This action has been taken, notwithstanding the promise, made soon after Dr. Brown's suspension, that he would be given an open trial and would be allowed to have counsel and witnesses. It is understood that the public will not be permitted to be present at the hearing.

Greenhut Building for Government Hospital.—The Medical Department of the Army has leased the building formerly occupied by the Greenhut Company Department Store for the period of the war and a year thereafter. The Greenhut building is six stories high and the estimated floor space is 1,000,000 square feet. The government will immediately turn this building into a modern hospital with 4,000 beds. It will be known as the Sixth Avenue Hospital, and will be used as a clearing hospital and for medical cases, the surgical cases being sent to better equipped hospitals nearby.

Poor Milk Raises Infant Death Rate.—The records of the New York City Health Department show that there is an increase of five per 10,000 in the deaths of infants during the five months of 1918, as compared with the corresponding period of 1917. This increase is attributed to impure milk and to lack of nourishment. Commissioner Copeland has planned to confer with the big milk dealers of the city and

has ordered the director of the bureau of foods and drugs to begin an exhaustive inspection of all stores handling milk, as well as of the plants of the big milk companies.

OHIO

Fight Against Epidemics.—To prevent the spread of communicable diseases the city council of Toledo has voted to transfer \$75,000 to the epidemic fund of the municipal welfare department.

Personal.—Dr. Samuel C. Caldwell has resigned as physician to the Ohio Boys' Industrial School, Lancaster.—Dr. Charles C. Jones, Canton, is said to have been indicted by the grand jury, May 7, on a charge of performing a criminal operation. He was released on a \$2,500 bond.

Saving the Children.—Twelve counties of the state saved their respective quotas of children during the three months, even though the Children's Year had not yet opened. These counties, with their quotas, totaling 50, are: Auglaize 4, Coshocton 6, Delaware 4, Gallia 4, Hancock 6, Hardin 6, Huron 3, Morrow 2, Noble 6, Union 3, Van Wert 3, Madison 3. Six of these each saved one more than its quota and two saved two more each, giving an excess saving of ten. Twenty-two cities which saved their quotas, or more than their quotas, are as follows: Delphos, Conneaut, Nelsonville, East Liverpool, Salem, Coshocton, Gallipolis, Xenia, Norwood, Findlay, Kenton, Bellevue, Jackson, Mount Vernon, Bellefontaine, Elyria, Piqua, Circleville, Mansfield, Tiffin, Bowling Green, Wapakoneta. Their total saving was seventy-four babies. Of this total saving of 134 in twelve counties and twenty-two cities, all but the thirteen saved in the state at large was neutralized by the records of thirty-six counties and thirty cities, which showed a loss as compared with 1916. In this group Cincinnati lost fifty-eight more than in 1916, and Columbus lost twenty-nine more. Cleveland failed to attain her quota, but saved fifty-eight more than in 1916.

OREGON

Personal.—Dr. William L. Parker, Baker, who is under treatment at St. Vincent's Hospital, Portland, is reported much improved.—Dr. William W. Kimmell, Lebanon, is reported critically ill at his home as the result of a cerebral hemorrhage.

Mackenzie Hall Dedicated.—Mackenzie Hall, the new building of the University of Oregon Medical School, Portland, was dedicated, May 1. Dr. Kenneth A. J. Mackenzie, dean of the medical school, presided. The dedicatory address was delivered by President Ernest H. Lindley, of the University of Idaho. The cornerstone was laid by Governor Withycombe. The campus contains about 21 acres, half of which is to be devoted to medical school buildings; the other half has been set aside for hospital sites.

PENNSYLVANIA

Personal.—Dr. Lincoln R. Light, Lebanon, who has been ill with pneumonia, has recovered and resumed practice.—Dr. William S. Peirce, Warren, is reported to be seriously ill in a hospital in Buffalo.—Dr. Joseph H. Hayes, Lock Haven, is under treatment in the Lock Haven Hospital on account of paralysis.—Dr. Jane R. Baker, West Chester, has been appointed trustee of the Asylum for the Chronic Insane at Wernersville.—Dr. J. W. Campbell, Elderton, has gone as a medical missionary to Wukari, Northern Nigeria, West Africa.

Philadelphia

Personal.—Dr. Richard D. Burke has succeeded Dr. John H. Remig, resigned, as coroner's physician.—Dr. Alfred Ettinger, head of Christ's Home for Children, suffered a fracture of the skull and other injuries by the overturning of an automobile near Hatboro, April 28, and is under treatment in the Abington Memorial Hospital.—Dr. Wilmer Krusen, director of health and charities, has been given the degree of Doctor of Laws by the University of Pittsburgh.—Dr. Richard D. Burke, a select councilman from the twelfth ward, was appointed coroner's physician, May 25, succeeding Dr. John H. Remig, resigned.—Mr. John F. McEvoy, chief deputy of the department of internal revenue, was one of the speakers at the West Philadelphia Medical Society, May 28. His subject, "Recent Rulings," related to laws of the department as they affect physicians.

Officers Elected.—At the annual business meeting of the alumni association of the Jefferson Medical College the fol-

lowing officers were elected: president, Dr. P. Brooke Bland; first vice president, Dr. Henry K. Gaskill; second vice president, Edward J. G. Beardsley; third vice president, William S. Higbee; fourth vice president, Dr. J. Leslie Davis; corresponding secretary, Dr. Elmer H. Funk; recording secretary, Dr. Edward J. Klopp; treasurer, Dr. Warren B. Davis. At the annual banquet held at the Arcadia Café, Dr. Chevalier Jackson, the retiring president, was toastmaster.

SOUTH CAROLINA

Personal.—Dr. Francis B. Johnson, Charleston, has been made director of the state laboratory, Columbia, succeeding Dr. Francis A. Coward, who has entered the military service. —Dr. Herbert E. McDowell, Spartanburg, was struck by an automobile, April 7, fracturing his right arm and sustaining other injuries. He is under treatment at the Spartanburg Hospital.

Palmetto Physicians Meet.—At the twenty-third annual meeting of the Palmetto Medical Association, an organization of colored physicians, dentists and pharmacists, held in Orangeburg, April 25 to 27, Dr. William H. Johnson, Charleston, was elected president; Dr. Seibels R. Green, Orangeburg, vice president; Dr. Jesse H. Thomas, Camden, secretary, and H. H. Cooper, Columbia, treasurer. The 1919 meeting will be held at Denmark.

WISCONSIN

New Medical Infirmary.—The University of Wisconsin reports the receipt of gifts amounting to \$100,000 which, with an appropriation of \$50,000 from the legislature of 1917, will be used in the construction of a new infirmary for the medical school.

Sanatorium Site Selected.—The location for the Tri-County Tuberculosis Sanatorium for Ashland, Bayfield and Iron Counties has been finally chosen, Salmo, Bayfield County, on Chequamegon Bay being the site selected. Plans are being made, and the construction of buildings will be begun at the earliest possible date. Ashland County has voted \$31,500, Bayfield County \$26,000, and Iron County \$20,000 toward the sanatorium.

CANADA

Second Medical Board of Review.—A second medical board of review has been established in the Toronto Military District. The following are the members thereof: Major Edward B. O'Reilly, Hamilton; Capt. Robert L. Morrison, and Capt. Julian D. Loudon, Toronto.

Dominion Health Commission.—At Ottawa recently, before Mr. Justice Hodgins, Toronto, who is conducting an inquiry for the Ontario government into the extent of feeble-mindedness and venereal diseases in that province, Gen. John T. Fotheringham, Toronto, advocated the establishment of a Dominion health commission with plenary powers and authority to enforce treatment and segregation, if necessary, for the purpose of coping with the problem of venereal diseases among the civil population of the Dominion.

Medical Week in Hamilton.—A very successful conference of the medical men completed, Saturday, June 1, one of the largest medical meetings ever held in Canada, as about 1,000 were registered from all over the Dominion. Four medical associations held their annual meetings, the Canadian Medical Association, the Ontario Medical Association, the Health Officers' Association of Ontario, and the Canadian Medical Protective Association. Also, were held the annual meetings of the Canadian Public Health Association, and the Association for the Prevention of Tuberculosis, but these two admit laymen to membership. The secretary of the last organization stated that there is now in Canada accommodation for 3,000 tuberculosis patients, and that more than \$900,000 was annually expended on the work. More than \$3,000,000 are invested in plants. It was the intention of that association to trace the men with tuberculosis rejected by the army and to treat them. The Canadian Medical Protective Association in its annual reports showed satisfactory progress. It was felt, however, that the association should be better patronized by the profession, as its membership still stays at about 1,000. Dr. Robert H. W. Powell, Ottawa, was reelected president, and Dr. J. Fenton Argue, Ottawa, secretary-treasurer. A feature of the meeting was the poster display of the American Medical Association on the patent medicine outrage. The idea was expressed that some plan for closer association of the two national medical bodies, the A. M. A. and the C. M. A., should be formed in order to carry on

successfully a determined campaign to offset this great evil. The Association of Health Officers of Ontario had many exhibits, as well as the health department of Toronto. The latter showed various tests for water and milk, also apparatus in connection with rendering germs visible. The former showed antitetanic serum in all the stages of its preparation. This came from the Connaught Laboratories of the University of Toronto. Since the war began, these laboratories have sent overseas more than 140,000 packages of this product. Dr. J. Alexander Hutchinson was elected president of the Canadian Public Health Association, the acting secretary being Dr. Robert D. DeFries, Toronto. Dr. George R. Cruickshank, Windsor, was elected president of the Health Officers' Association of Ontario, and Col. John W. S. McCullough, Toronto, remains as secretary of the organization. Perhaps, the keenest interest shown by the members of the congress, from a practical and scientific standpoint, was manifested in the address on surgery by Dr. Charles H. Mayo, and in the address on medicine by Dr. Lewellys F. Barker. Cancer was the subject of Dr. Mayo's address. He declared that 200,000 people have it in the United States and that 80,000 die annually from the disease. The death rate in Ontario is about 2,000 per annum. Dr. Barker dealt with heart murmurs, especially as they apply to the rejections in the army. The surgeons passed a resolution calling for the control of the issuance of licenses to surgeons. Whenever such legislation is enacted, it will require all surgeons to take three extra years of study, either in a hospital, or with a qualified surgeon. The officers elected for the Ontario Medical Association were as follows: President, Dr. George S. Cameron, Peterboro; treasurer, Dr. Gordon A. Bates, Toronto; secretary, Dr. Thomas C. Routley. Next year the annual meeting will be held in Toronto.

GENERAL

Pediatric Officers.—At its thirtieth annual meeting held in Lenox, Mass., May 27, 28 and 29, the American Pediatric Society elected the following officers: president, Dr. Edwin E. Graham, Philadelphia; vice president, Dr. Henry Heiman, New York City; secretary, Dr. Howard C. Carpenter, Philadelphia; treasurer, Dr. Charles Hunter Dunn, Boston, and recorder, Dr. Oscar M. Schloss, New York City. The next meeting will be held in Atlantic City.

American Association of Anesthetists Meets.—The sixth annual meeting of this association will be held in Chicago, June 10, at the Auditorium Hotel. A program of papers has been provided. Dr. F. W. Nagle, Montreal, is president of the association, and Dr. Isabella C. Herb, Chicago, is one of the vice presidents; Dr. James T. Gwathmey, now in France, is secretary and treasurer, and Dr. F. H. McMechan, Avon Lake, Ohio, is acting secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Polyclinic Hospital, New York City, a gift of \$1,000 to be applied to the support of free beds in the ophthalmological service of Dr. Earle Conner.

Emory University and Oglethorpe University, Atlanta, each \$5,000 by the will of Dr. William S. Kendrick, senior professor of medicine at Emory Medical College.

Presbyterian Hospital, Philadelphia, \$10,000, Polyclinic Hospital, \$5,000, and Women's Hospital, \$5,000 by the will of Mary L. Baugh, Philadelphia.

Status of Library of the Surgeon-General's Office of the Army Defined and Books to be Added.—While the library of the Surgeon-General's Office of the United States Army has for many years been open freely to the medical profession of the entire country, notwithstanding that the library has been in fact primarily an adjunct to the Army, its public and general status is now officially recognized in a bill passed by the United States Senate on May 17. The bill provides that this being the large general medical library for the use of the medical profession of the United States, in the copyrighting of the books on medical and allied subjects there shall be deposited with the Congressional Library three copies, one of which shall be for file in the library of the Surgeon-General's Office of the United States Army. The bill now goes to the House of Representatives for consideration.

Unauthorized Subscription Pedlers Arrested.—Dr. Charles Ryttenberg, Port Chester, N. Y., writes that he has succeeded in "landing" one of the ringleaders of the subscription fraud that has been worked for several years past—chiefly on members of the medical profession. Among the titles used in this fraud were "United Students Aid Society," "Advance Society of the University of Illinois," "Michigan Educational

Association," "National Educational Society" and "University Progressive Club." On Sept. 18, 1915, Dr. Ryttenberg was a victim to the extent of \$5 under the head of "The Michigan Educational Association"; recently, under the guise of the "American Defense Association," an attempt was made to solicit him again, the statement being made that the subscription would assist a man into the Engineering Corps of the United States Army. He called the police and the solicitor was arrested. After three days the solicitor confessed that he and two others had been working the country for some time, and produced the various types of receipts used by them. He also divulged the names of others involved in the scheme.

FOREIGN

"New and Nonofficial Remedies" in France.—The *Progrès Médical* of May 4, just received, gives a description of the work of the Council on Pharmacy and Chemistry of the Americal Medical Association and of its publication "New and Nonofficial Remedies," "founded," it says, "with the aim of informing the members of the medical profession as to the value of the proprietary medicinal articles which flood America." The *Progrès* adds, "Looking over the 1917 edition of this work, we see that of the 500 or 600 products therein inscribed, there are not even ten of French make. More than half of them are manufactured by German firms; the others come from England or are made in the United States. . . . The reason for this, we are told by Monsieur Puckner, president of the Council on Pharmacy and Chemistry, which has charge of the publication of the work, is that the German proprietary pharmaceuticals have been sent in large numbers to America, and consequently a large number were presented for examination by the Council. Another reason for the small number of French proprietaries included is that among those which were sent to America and offered for examination by the Council, many did not comply with the rules governing the admission of proprietary articles to the book 'New and Nonofficial Remedies.'" The *Progrès* then gives in full detail the object of the rules, the contents of the book, the definitions of terms, and the six main rules governing, respectively, composition, identification, direct and indirect advertising, fraudulent claims as to origin, and unwarranted therapeutic claims. The article is published also in the April number of the French *Journal de pharmacie et de chimie*.

The Arsphenamin (Salvarsan) Investigation in Germany.—The *Nederlandsch Tijdschrift* relates that, in reply to an interpellation by one of the deputies, the minister of internal affairs in Germany declared that his study of the subject had shown no grounds for interfering with the use of arsphenamin by the medical profession. The responsibility for its use rests on the physician, and there is no call for the state to interfere. This has elicited a protest from Dreuws, who started the ball rolling two years ago. He published an article in the *Deutsche Zeitung* of Feb. 28, 1918, in which he said that the medical journals have closed their columns to him, but he declared he knows that paralysis, after the use of arsphenamin, has occurred in the proportion of 224 per hundred thousand cases; blindness in 1.3; serious skin lesions in 620; lesions in the brain in 61.3; and deafness, unmistakably due to the arsphenamin, in 16, and, probably due to it in 14.6. He protested that the government inquiry among specialists was like asking brewers whether the use of alcohol should be permitted. The minister in his investigations had found twenty deaths after the use of arsphenamin among the 265,158 cases from the practice of 500 physicians. Dreuws stated that he had heard or read of sixty-seven fatal cases, and warned that cases might escape record, as the blindness or deafness might not develop until weeks after the arsphenamin treatment. Pinkhof, in commenting on this in the *Tijdschrift* mourns that the day has passed when the value of a remedy was determined by physicians. "Nowadays," he says, "the discoverer of the remedy or his friends rush before the public with such claims for the superiority of their product that there is no opportunity for a calm comparative study of it. If we do not prescribe this new 'superior' remedy, we are regarded as being behind the times, or worse. This advertising to the public avenges itself—on the public in the first place, and then also by sapping the confidence of the public in medicine as a whole."

Competitive Examinations for Internships After the War.—The Paris Société médicale des hôpitaux has been discussing ways and means by which medical students now serving in the war will be able to win places as interns after demobilization. Three resolutions were adopted and they are offered

for the approval of the profession in general and of the hospital authorities: 1. That each medical student or recent graduate should have his army record carefully made out and verified by signatures, a *carnet de campagne*, on which should be recorded the young man's position and work, the number of months under fire, the number of engagements in which he has taken part, the wounds he has received, citations, decorations, etc., a verified and attested biographical record of his army service during the war. 2. There should be two competitive examinations at a few months' interval, the first being open only to those who have been serving in the army; and only half the vacant posts are to be filled from this first examination. The second examination is open, as usual, to all, including those who failed at the first examination. 3. The principle is advocated of allowing the military candidates a certain number of credits proportionate to the length of their service at the front. The idea is not to give many credits, merely one crédit for each six months' work under fire, and half a point for each six months' work in a division ambulance. This plan will give the men from the front a trifling superiority over those who have been in the home zone. In the second competitive examination, it will give to the men who have been under fire a slight advantage over the nonmobilized, women candidates, foreigners, and all those who have been able to carry on their medical studies undisturbed. This will, to an extent, equalize the race between a candidate who recites by heart pages of anatomy learned from a textbook and another candidate who has given the most magnificent proofs of devotion, courage, decision of character, and knowledge through practical experience.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Exclusion of Alien Members.—Last November, when Brazil declared war against Germany, the Sociedad de Medicina e Cirurgia of S. Paulo held a special open meeting and adopted resolutions congratulating the president of the republic for the stand he had taken. At the same meeting it was voted to drop from the membership of the society members of enemy nationality.

Honduras Organizes Public Health Department.—The *Vida Nueva* of Havana reports that Honduras has created the Departamento de Salud Publica and remarks that this represents progress for this Central America republic. It continues "It may not be amiss to refer once more to the fact that for many years there has been a public health service in Cuba, the Secretaria de Sanidad, which is the pride of the country."

Public Health Efforts in Cuba.—The Liga contra el Paludismo, Uncinariasis y Tifoidea Rural was recently organized in Cuba under the auspices of the Public Health Service and the state department of public instruction. The president of the league is Dr. M. G. Lebrede, the secretary, Dr. A. Vieta, and each province is represented on the board, of which Dr. D. Tamayo is chairman. The official organ of the new league is to be the *Eco Científico*, published at Ciego de Avila.

New Ophthalmologic Journal in Mexico.—For seventeen years Dr. M. Uribe Troncoso edited the *Anales de Oftalmologia* in Mexico, but with his recent removal to New York, this journal was merged with others to form the *American Journal of Ophthalmology*. The Mexican Ophthalmologic Society, of which he was long president, has now decided to publish its own annals, and the *Anales de la Sociedad Oftalmologica Mexicana* has already made its appearance. Dr. D. M. Velez is director of the *Anales* and perpetual secretary of the society. Summaries of the two leading articles are given in both English and French, and duplicates are published on an insert for convenience of reviewers. The officers of the society for 1918 include Dr. F. Lopez, president; Dr. A. Chacon, vice president, and Dr. E. F. Montaña, perpetual treasurer.

Prizes Open to Spanish-American Physicians.—A Spanish medical journal, *Higia*, published at Madrid, offers a series of prizes for the best article on various topics. Competition is restricted to physicians and medical students of verified Spanish or Spanish-American nationality, and the articles must be sent in anonymously with the name in a sealed envelop on or before Dec. 31, 1919. The *Vida Nueva* for May reproduces all the conditions. The grand prize is for any research work yielding a positive progress for medicine. Six other prizes are offered for the medical bibliographic index of Spain or Spanish-America, from 1900 to 1920, with critical

comment; for the history of medicine in Spanish-America during the fifteenth and sixteenth centuries; the Spanish race in the Spanish-American republics; and the treatment of cancer. Other prizes are offered for students. The executive committee in charge of the matter is seeking the patronage and the financial support of the government in Spain and in the different Spanish-American republics to further this prize competition as an educational and enlightening force. The amount of the prizes naturally will depend on the financial support obtained.

PARIS LETTER

PARIS, May 2, 1918.

National Headquarters for Rehabilitation of Crippled and Disabled Men

In order to coordinate the work of the public authorities and the private institutions and organizations which are working for the rehabilitation of soldiers, sailors and aviators disabled by wounds received in the war or who are suffering from diseases contracted during the war, there was recently established l'Office National des mutilés et réformés de la guerre. It will be the function of this commission or office to centralize information concerning the activities of public administrations and private organizations, also to encourage and facilitate the work of readapting the military mutilés for self support; to study legislative dispositions and regulations susceptible of being taken advantage of in their favor; to follow their application, and, in a general manner, to assure them of patronage and the permanent support of the nation, which is their due. The resources of this commission or office are: (1) an annual credit included in the budget of the ministère du travail and of the prévoyance sociale; (2) gifts, donations and legacies of every kind which should be made either to the commission directly, to the *ensemble* or to a definite group of *militaires* or former *militaires mutilés et réformés*.

Determination of the Origin of the Wounds and Diseases of Soldiers

To ascertain the origin of wounds or disease is a matter of great importance to the soldiers. At present, pay is allowed only for wounds or diseases contracted or aggravated while in service. Gratuities or pensions of any kind are given only for infirmities contracted or aggravated while in service or the result of the dangers and fatigues of military life. Finally, for the wives, the death of the husband as the result of the eventualities of war, confers the right to a higher pension. Therefore, Dr. Louis Mourier, under-secretary of state for the Service de Santé militaire has sent out a circular specifying those wounds or infirmities which will be considered as having been contracted while in the service or aggravated thereby, and those which will not be so considered:

(1) Wounds or infirmities contracted while in service or aggravated thereby: All wounds or diseases proceeding from the fatigues or dangers of military service, that is to say, in relation with it, of such a nature as the interested person would not have been exposed to had he not been in the service. (2) Wounds or infirmities resulting from war operations or the eventualities of war: All lesions resulting either from a direct or indirect action of the enemy, or from participating in a premeditated action against the enemy, either preparatory to it or during the action.

(3) Wounds and diseases not incident to service: Those not included in any of the above categories, that is to say, not being caused or aggravated in any sense of the word by military service, its fatigues or dangers, such as traumas received and maladies contracted while on furlough or while acting contrary to orders; traumas received and diseases contracted outside of the service and the fault of the interested person, for which the state should not be held responsible, such as a quarrel in a saloon, accident of drunkenness; diseases the result of intemperance; hereditary diseases not aggravated by service; diseases existing prior to entrance on military service.

Hospitalization of Army Nurses Who Have Contracted Pulmonary Tuberculosis

The under-secretary of state for the Service de Santé militaire has had arranged two *formations sanitaires*, one for the military nurses who are known to have pulmonary tuberculosis, and the other for those who are suspected of having tuberculosis, or who are in a state of general exhaustion the result of disease or of hard work. The nurses who will come under this ruling will be obliged to make appli-

cation, supported by a certificate "de visite et de contre-visite," to the under-secretary of state of the Service de Santé militaire.

The Bread Ration of Contagious Disease Hospitals

The attention of the food commissioner has been called to the necessity for new arrangements in regard to the bread ration of the private establishments which hospitalize contagious disease patients or those suffering from severe maladies. Usually they come to the hospital without being accompanied by any one who could dole out the daily bread tickets with which the person in question should be provided. In order to assure these patients of food, M. Victor Boret, the food commissioner, has given instructions to the prefects to invite the mayors to deliver each month to the chiefs of the establishments, who have made demand, tickets intended to replace those which the patients failed to present at the time of their admission. But, in order to avoid using tickets a second time, the chiefs of the establishments will be obliged to force these patients, the members of their family or other persons interested in them, to return the corresponding tickets to the authorities according to the number of days of their hospitalization.

Repatriation of Members of Hospital Units

All the personnel protected by the Geneva Convention will hereafter be repatriated in regular convoys every other month. The first convoy left in February for Constance; the next, in April, for Lyon, and so on alternately. As for those *sanitaires* belonging to units of which the registers or archives have been destroyed, it will suffice that the state from which they came attests to their character.

Citation of American Nurses

The professional devotion of two American army nurses, who have been recommended for the English military medal, has caused each of them to receive a personal letter from General Pershing. The nurses are, Miss Evan Jean Parmales, a reserve nurse, and Miss Beatrice MacDonald, infirmière-major, of the Presbyterian General Hospital. Each continued to care for the wounded after having been wounded herself by an air bomb.

American Libraries in Paris

The medical library of the American Red Cross has been moved to No. 12, place Vendôme. This library contains books and periodicals, both French and English, bearing on the medicine and surgery of war. On the other hand, a reference library on medical subjects has been arranged at No. 6, rue Piccini.

Inauguration of the Franco-Peruvian Hospital

Recently there was inaugurated in Paris a Franco-Peruvian hospital under the auspices of a Peruvian committee of which General Benavides, former president of Peru, is chairman. Besides the members of the Peruvian colony, representatives of the Association des Dames françaises were among those present. The hospital contains eighty beds. The expense of maintenance will be met by the Peruvian colony.

Sale of Troches and Cough Drops

Deputy Laniel having inquired of the food commissioner whether the bakers and confectioners are authorized to sell the various cough drops which can be bought at pharmacies, he received the following reply: "The *pâtes pectorales*, having only a medicinal character, can be sold only by pharmacies. Other analogous products which do not have that character are confectionery and come under the prohibition of the decree of Feb. 12, 1918."

Donation to the Academy of Medicine

The permanent secretary of the Academy of Medicine has been authorized to accept, in the name of the Academy, a legacy of 25,000 francs made by the late Dr. Magnan. The revenue from this sum will be used to establish a triennial prize to be awarded to the author of the best work on mental medicine.

The Fight Against Tuberculosis

On motion of M. Ambroise Rendu, the municipal council of Paris voted the following resolution: The Administration is invited to place at the disposition of the Rockefeller Foundation Commission on Tuberculosis rooms in the city halls and school yards in which the temporary exhibits and the conferences can be held. The Rockefeller Foundation, in pursuance of its propaganda work, recently held a series of conferences at Rennes which were exceedingly successful.

Deaths

John William Langley, Ann Arbor, Mich.; M.D. (hon.), University of Michigan, Ann Arbor, 1871; aged 76; acting assistant surgeon, U. S. Navy, 1862 to 1864; assistant professor of physics in the U. S. Naval Academy, 1867 to 1870; professor of chemistry in the Western University of Pennsylvania, Pittsburgh, 1871 to 1874; professor of chemistry and physics in the University of Michigan, from 1875 to 1889; professor of electrical engineering in the same institution from 1892 to 1905, and since that time emeritus professor of electrometallurgy; a scientist of international repute; died at his home, near Ann Arbor, May 11.

William Austin Macy, King's Park, New York City; College of Physicians and Surgeons in the City of New York, 1885; aged 55; a Fellow of the American Medical Association, and New York Academy of Medicine; superintendent of the King's Park State Hospital for the Insane, since 1904; formerly assistant superintendent of the Manhattan State Hospital, Ward's Island, and Willard State Hospital; died in the King's Park State Hospital, May 21, from cerebral hemorrhage.

Edward Thomas Abrams, Dollar Bay, Mich.; Dartmouth Medical School, Hanover, N. H., 1888; aged 57; a Fellow of the American Medical Association; appointed a member of the State Board of Health in 1911, and at the time of his death president of the board; for several years a member of the state legislature; one of the most prominent and esteemed practitioners of the Copper Country; died at his home, May 21, from heart disease.

Wallace Eugene Hallock, Juneau, Wis.; University of Michigan, Ann Arbor, 1873; aged 71; a member of the State Medical Society of Wisconsin; president of the Dodge County Medical Society; county physician of Dodge County for forty years; and once mayor of Juneau; while visiting Rockford, Ill., May 20, was struck by a street car and died in a hospital in Rockford from his injuries a few hours later.

Martin Stamm, Fremont, Ohio; University of Berne, Switzerland, 1872; aged 70; a Fellow of the American Medical Association; and president of the Sandusky County Medical Society; for several years professor of operative surgery in the College of Physicians and Surgeons, Cleveland; for two terms a member of the local board of education; died at his home, May 22, from heart disease.

Lieut. John Groat Corson, M. R. C., U. S. Army, Binghamton, N. Y.; University of Syracuse, N. Y., 1915; aged 27; who had been on duty with a medical detachment of the British Expeditionary Forces in France, and there contracted tuberculosis and was invalided to England, died in a hospital in London, about May 17, from tuberculosis.

William F. Creasy, Newport News, Va.; University of Maryland, Baltimore, 1890; aged 54; a Fellow of the American Medical Association; formerly president of the City Board of Health, and quarantine officer of the port of Newport News; died at his home, about May 18.

Boyle Travers, St. John, New Brunswick; Dublin, 1847; William Stokes prize-man; aged 93; a member of the New Brunswick and St. John, New Brunswick, Medical Society; who began practice in St. John in 1848; died at his home in that city, April 7, from senile debility.

Edward T. Pendleton, Wellsville, Kan.; University Medical College, Kansas City, Mo., 1899; aged 44; a member of the Kansas Medical Society; who was operated on about three months ago at St. Luke's Hospital, Kansas City, for the removal of gallstones; died May 13.

Joseph E. Heard, Baltimore; College of Physicians and Surgeons, Baltimore, 1882; aged 65; surgeon of the Police Department from 1888 to 1900, and a health warden of Baltimore from 1908 to 1918; died in the Church Home and Infirmary in that city, May 21.

Lieut. Whitney Hoteling Joyce, M. R. C., U. S. Army, Unadilla, N. Y.; Albany, N. Y., Medical College, 1913; aged 28; a Fellow of the American Medical Association; who was on duty with the Royal Warwickshire Regiment, British Expeditionary Forces; died in France, from wounds, May 17.

Capt. Frederick David Clair, M. R. C., U. S. Army, Philadelphia; Medico-Chirurgical College of Philadelphia, 1915; aged 27; attached to the Forty-Third Field Ambulance, British Expeditionary Forces in France; is reported to have been killed in action recently.

Herbert Aaron Lord, Pueblo, Colo.; Gross Medical College, Denver, 1898; aged 45; a Fellow of the American Medical Association; county physician of Saguache County, Colo., for several years; died in St. Mary's Hospital, Pueblo, May 15, from cerebral hemorrhage.

Hamilton Earle Russell, Easley, S. C.; Southern Medical College, Atlanta, Ga., 1895; aged 48; a Fellow of the American Medical Association; local surgeon for the Southern Railroad; died suddenly while making a professional call, May 16.

John Snyder McPheeters, Hardinsburg, Ind.; Cincinnati College of Medicine and Surgery, 1860; aged 81; assistant surgeon and later surgeon of the twenty-third Indiana Volunteer Infantry, during the Civil War; died at his home, May 11.

Stephen William Driver, Cambridge, Mass.; Harvard Medical School, 1863; aged 85; a member of the Massachusetts Medical Society; a veteran of the Civil War; consulting physician to the Cambridge Hospital; died at his home, May 21.

James Piner Bartley, Bartlesville, Okla.; Kentucky School of Medicine, Louisville, 1898; aged 51; a Fellow of the American Medical Association; died in the Bartlesville City Hospital, May 20, from cerebral hemorrhage.

Benjamin J. Alexander, Hiawatha, Kan.; Drake University, Des Moines, Iowa, 1882; aged 62; a Fellow of the American Medical Association; and formerly a member of the State Board of Health; died at his home, May 20.

James H. Roll, Hamilton, Ohio; Medical College of Ohio, Cincinnati, 1872; aged 72; a member of the Ohio State Medical Association; a veteran of the Civil War; died at his home, May 16, from cerebral hemorrhage.

Merritt Byron Fairchild, Syracuse, N. Y.; Albany, N. Y., Medical College, 1868; aged 79; health officer of Syracuse for two terms, and for four years physician to the state penitentiary; died at his home, May 16.

William Kennedy, Hamilton, Ont.; Trinity Medical College, Toronto, 1875;

aged 70; formerly president of the Conservative Association of Norfolk County; died at the home of his daughter in Hamilton, May 16.

Lieut. Edward Everett Tredway, M. R. C., U. S. Army, Pasadena, Calif.; Denver and Gross College of Medicine, Denver, 1908; aged 39; a Fellow of the American Medical Association; died May 19.

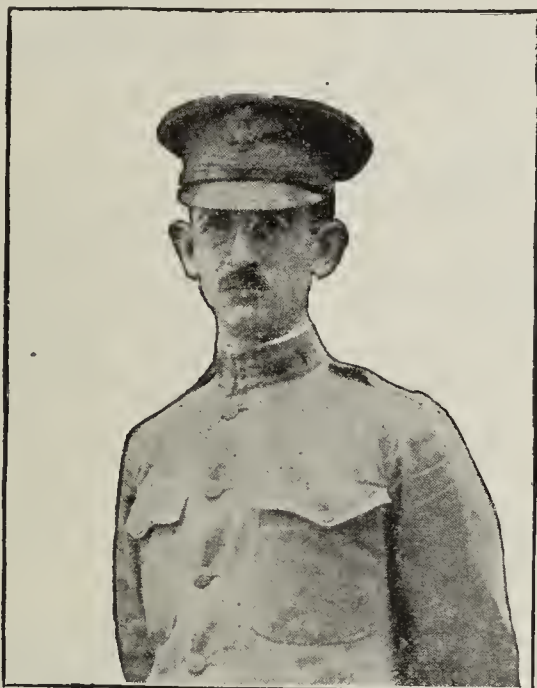
Joseph J. Evans, Winchester, Ind. (license, Indiana, 1897); aged 78; a practitioner of Winchester since 1867; for eight successive terms coroner of Randolph County; died at his home, May 16.

Willie Estes Cobb, Blythville, Ark.; Louisville, Ky., National Medical College, 1904; aged 43; a colored practitioner; was shot and killed, May 9, in an altercation over boundary lines.

Charles E. Thompson, Stephens, Ark.; Kentucky University, Louisville, 1906; aged 37; a member of the Arkansas Medical Society; died at his home, May 17, from tuberculosis.

Samuel Kennedy Christy, Willshire, Ohio; Medical College of Ohio, Cincinnati, 1880; aged 65; formerly a Fellow of the American Medical Association; died at his home, May 16.

Theodore Milan, Davenport, Iowa; (license, Iowa, 1890); aged 63; died in Mercy Hospital, Davenport, May 17.



Died in the Service
IN FRANCE

LIEUT. WHITNEY H. JOYCE, M. R. C.,
U. S. ARMY, 1891-1918

Joseph Henry Martin, Los Angeles, Calif.; Dartmouth, Medical School, Hanover, N. H., 1871; aged 75; for thirty-three years a resident of Los Angeles; died at his home, May 9.

Adolph Boppert, Richmond, Ind.; University of Zurich, Switzerland, 1856; aged 82; for more than fifty years a pharmacist of Richmond; died at his home, May 13.

H. C. Hollingsworth, Terre Haute, Ind.; Rush Medical College, 1864; aged 75; a veteran of the Civil War; died at his home, March 7, from malignant disease.

Archibald Yhel Martin, Moundsville, W. Va.; Kentucky School of Medicine, Louisville, 1890; aged 57; died at his home, May 17, from disease of the kidney.

Luke H. Kelly, Hammond, Ind.; University of Illinois, Chicago, 1899; a member of the Indiana State Medical Association; died at his home, May 16.

Lewis E. Meeker, Brooklyn; Detroit Medical College, 1872; aged 67; formerly president of the Eastern District Savings Bank; died at his home, May 23.

William W. Roberts, Athens, Ga.; Medical College of Georgia, Augusta, 1891; aged 73; died at his home, at Princeton, near Athens, May 16.

Rebecca H. Reynolds Longshore, National City, Calif.; Pennsylvania Medical University, Philadelphia, 1861; aged 81; died at her home, April 17.

Albert J. Cavert, Nashville, Tenn.; University of Nashville, Tenn., 1872; for many years a teacher in the city schools of Nashville; died about May 11.

F. B. Godby, College Park, Ga.; Atlanta, Ga., Medical College, 1859; aged 86; died at his home, April 9, from paresis following pneumonia.

John Parker Cartwright, Bowling Green, Ky.; Bellevue Hospital Medical College, 1882; aged 67; died at his home, May 9, from carcinoma.

William Hall Carleton, Toronto, Ont.; University of Toronto, 1883; aged 62; died at his home, February 14, from cerebral hemorrhage.

John Newton, Deseronto, Ont.; Queens University, Kingston, Ont., 1866; aged 75; died at his home, February 13, from arteriosclerosis.

Robert Milliken Davis, Wrightsville, Pa.; University of Pittsburgh, 1897; aged 57; died at his home, March 23, from cerebral hemorrhage.

Charles Francis Adams Walsh, New York City; Long Island College Hospital, Brooklyn, 1895; aged 55; died at his home, March 18.

Freeman Hall, Kalamazoo, Mich.; Medical School of Maine, Portland, 1855; aged 84; died at his home, March 30, from acute cystitis.

David B. Snodgrass, Marion, Ind.; Physio-Medical College, Cincinnati, 1878; aged 81; died at his home, May 11, from heart disease.

Owen Franklin Person, Hazleton, Pa.; Jefferson Medical College, 1872; aged 69; died at his home, May 11, from chronic nephritis.

Edward Chapman Hayman, Lincoln, Neb.; University of Nebraska, Omaha, 1908; aged 34; died at his home, March 13.

Isaac A. Wesson, Wingo, Ky.; Vanderbilt University, Nashville, Tenn., 1881; aged 79; died at his home, May 14.

Edward Channing Folsom, Santa Monica, Calif.; Harvard Medical School, 1868; aged 73; died at his home, May 11.

John Perrins, Boston; Eclectic Medical Institute, Cincinnati, 1873; aged 79; died at his home, May 17.

Marriages

LIEUT. LOUIS TOMPKINS WRIGHT, M. R. C., U. S. Army, Atlanta, Ga., on duty at Camp Upton, N. Y., to Miss Corinne M. Cooke of New York City, May 16.

JESSE WILLIS AMEY, New York City, to Miss Grace May Hoffman of Schenectady, N. Y., May 8.

SQUIRE WILBERT STONE, to Miss Julia Louise Des Loges, both of New York City, May 21.

THOMAS J. CUMMINS, Mineville, N. Y., to Miss H. Densey Mitchell of Baltimore, April 22.

VICTOR I. ENGLERT, to Mrs. Cora Kors, both of Chicago, May 23.

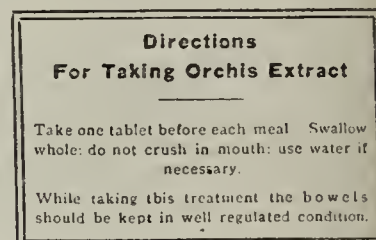
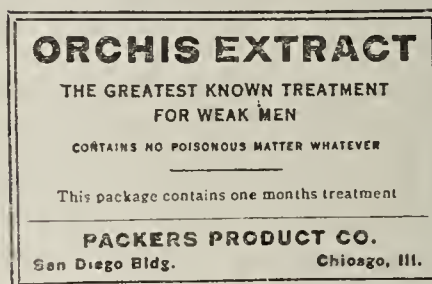
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

PACKERS PRODUCT COMPANY DECLARED A FRAUD

The Federal Authorities Close the Mails to a Fakish Concern

The Packers Product Company, San Diego Building, 311 River Street, Chicago, was the name under which one Fred A. Leach sold a nostrum, "Orchis Extract." The sales were made on the mail-order plan. In December, 1917, Leach was called on by the federal authorities to show cause why a fraud



Reproduction in miniature of the labels on the boxes in which "Orchis Extract" was mailed.

order should not be issued against his business and Jan. 10, 1918, was fixed as the date for the hearing. His attorney, Frank H. Repetto of Chicago, made application that the case be continued to January 14. On January 11 a written answer was submitted by the attorney accompanied by certain exhibits. These were carefully considered, together with the evidence against Leach. As a result the mails were closed to the Packers Product Company.

Judge Lamar, Solicitor for the Post Office Department, in his memorandum to the Postmaster-General recommending the issuance of a fraud order, declared the facts regarding the Packers Product Company to be, in part, as follows:

A MISLEADING NAME

"The business complained of consists of the sale of a preparation known as 'Orchis Extract' by means of representations made through the mails in furtherance of a scheme to defraud. Fred A. Leach is the promoter of this scheme and operates it under the name Packers Product Company. This trade name was obviously selected and is continuously used for the purpose of leading persons to believe that they are dealing with a responsible concern engaged in the meat packing business and utilizing one of its by-products in the alleged manufacture of the aforesaid preparation which is offered to the public as a curative agent in cases of lost sexual power and kindred ailments. This purpose is clearly evidenced (1) by the name itself and (2) by the print of buildings and pens enclosing cattle on the back cover of the booklet and upon the form letters [See illustration accompanying this article.—Ed.] distributed to the public through the mails and carrying representations hereinafter referred to concerning the alleged curative properties of said preparation.

"The name 'Packers Product Company' is misleading for the reasons above set forth and the word 'manufacturers of Orchis Extract' are false, for the evidence shows that this respondent is not a manufacturer of this extract but the remedy sold by him and alleged to contain this substance is purchased by respondent from various manufacturing chemists. The print thus used with intention to mislead and thereby induce persons to purchase the preparation represents in fact some of the packing house buildings and slaughter pens of Armour and Company at Chicago, Illinois, in which this respondent has no interest and from which he buys none of the ingredients used in the compounding of the said preparation.

"'Orchis Extract' is said to be a substance obtained from the testicles of rams. A chemical analysis made by the Bureau of Chemistry of the Department of Agriculture shows

that Orchis Extract Tablets, the preparation sold by respondent, consists of sugar of milk, orchitic animal tissue, and agents used in compressing the tablets."

FALSE AND RIDICULOUS CLAIMS

The Solicitor then quotes extensively from the advertising booklet sent out by Leach. Some of the characteristic claims follow:

"Pre-senility, or premature old age, is a condition which can in most cases be relieved by a careful and conscientious treatment of Orchis Extract."

"Orchis Extract has a special action on the glands of the reproductive organs."

"Its action is that of a great vitalizer—tending to increase their activity, to aid their secretory functions and promote the normal development. It is specifically indicated in cases of atrophy of the private organ so common in cases of sexual abuses. Orchis Extract operates in a most remarkable manner in overcoming these conditions."

"Orchis Extract, when introduced into the blood, should bring about a richer supply of blood so that the cold and shrunken parts of the body must return to vigor and vitality; ambition will be restored by stronger and healthier nerve tissues and muscles, and relief or a cure is sure to follow."

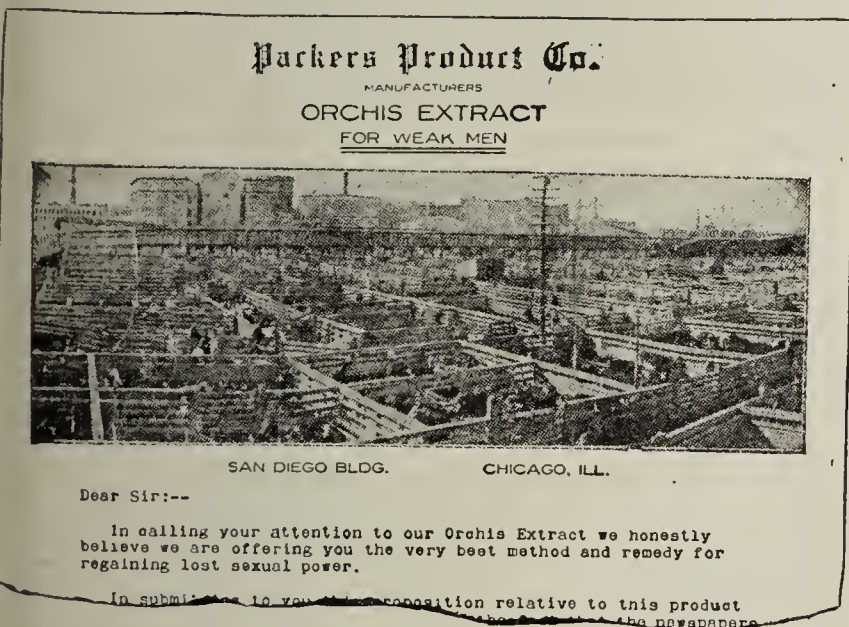
"Orchis Extract is a reliable compound for restoring lost vitality, renewing cell life, resulting in restoring life, strength and development to the organs of man."

"Orchis Extract is being successfully used in cases of Nervo-Sexual Troubles, such as Nervous Debility, Lost Manhood, Night Losses, and Undeveloped Parts. It is for the weak man, for the debilitated man, for every man who needs a reliable remedy to renew his life and vitality, enrich the blood, tone up the stomach and aid digestion, to soothe the nerves, to overcome vital exhaustion, to stimulate the liver and kidneys and to send new energy and new sustenance to every cell and tissue of the body. To nourish the brain, strengthen the memory and to renew life with health and strength."

WHAT THE EVIDENCE SHOWED

Judge Lamar's memorandum continues:

"The evidence shows the diseases and diseased conditions for which this remedy is recommended cannot be relieved or cured by its use; that the remedy taken internally can have no effect whatever on such diseases and diseased conditions, and that it is of no value in their treatment; that the condition known as 'Lost Manhood' may arise from various causes, and that no one remedy even if assumed to possess



Reproduction (reduced) of the letterhead used by Leach, obviously for the purpose of leading the public to think that the packers' (Armour's) whose plant is here shown, were behind the business. As a matter of fact, Armour's had repeatedly protested against this misuse of their name and were to no small extent responsible for putting the fraud out of business.

medicinal virtue could reach all of these various causes and relieve and cure the conditions arising therefrom; and that the respondent, unskilled in the science and practice of medicine, cannot determine the condition from which the patron may be suffering or its superinducing cause, and cannot unless by accident furnish a remedy that will give relief and effect a cure.

LEACH AN OLD OFFENDER

"Fred A. Leach, the promoter of this scheme, has been in the mail-order business from 15 to 20 years. The evidence shows that he was manager of the Distributors Guarantee Association, against which a fraud order was issued May 8,

1908; that he sold vacuum developers for the enlargement of the male organ under the name of the Vacuum System and David Kuno, Chicago, Illinois; that he also operated under the name of the Ausin System and E. D. Ausin, Chicago, handling vacuum developers, and that in 1912 and 1913 he sold vacuum developers under the name of Martin W. Wade and Wade Manufacturing Company, Chicago, Illinois.

"The respondent requests that he be allowed to continue the business in question using revised literature, and has indicated the revision intended by striking out certain parts of the literature now in use. Since the testimony shows that the preparation is of practically no value in the treatment of the diseases and conditions for which it is recommended, this request must be denied.

"The postmaster at Chicago, Illinois, reports that on an average 15 pieces of mail are daily received at his office addressed to this concern.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretences, representations and promises, and therefore recommend that a fraud order be issued against the Packers Product Company, at San Diego Building and 311 River Street, Chicago, Illinois."

A fraud order was issued April 4, 1918.

Correspondence

BARBOUR'S LINEN FLAX THREAD AS A SUBSTITUTE FOR PAGENSTECHER THREAD

To the Editor:—As Pagenstecher thread, used by many surgeons in gastric and intestinal work, has not been imported for many months, the supply has become practically exhausted. It may be of interest, therefore, for those who have not found a satisfactory substitute, to know that Barbour's linen flax thread is stronger, smoother and a much better product than Pagenstecher linen. This material can be obtained in almost any size, at 18 cents per spool of 200 yards, as compared with 20 cents per skein of 50 yards for Pagenstecher thread (less than one quarter the price). No. 60 or 70 is a satisfactory size for intestinal work. The war has demonstrated that with little inconvenience we can dispense with practically everything we formerly used bearing the label, "Made in Germany," and linen thread for surgical work is no exception. I do not know where Barbour's thread is made, but believe it comes from Ireland. I do know, however, that it can be obtained in any department store.

STEPHEN E. TRACY, M.D., Philadelphia.

OIL INUNCTION IN PREVENTION OF PLAGUE: A SUGGESTION OF A CENTURY AGO

To the Editor:—Anent the article by Dr. George Homan in THE JOURNAL, May 11, 1918, on "Protection Against Lice," a quotation from an old book on "Plague and Yellow Fever" in my possession may be of interest. The title page of this book has been lost so I cannot give either the name of the author or the date of its publication; but from references and quotations it was probably printed about the year 1800 and it has the long f-like letter s. Under the head of the treatment of plague, on page 341, the author says:

But of late a discovery has been made of a surprising power in heated oil of removing this disease, insomuch that, if we can believe what has been published of it, we must suppose it to be little less than a specific. So great indeed has been the confidence put in this method that, by order of the Academy of Sciences of Lisbon, it has been translated into Arabic, French and Portuguese.

Then follows a long extract from an Edinburgh medical journal, the *Annals of Medicine* for 1797, page 373, saying: "The method was first proposed by George Baldwin, Esq., agent of his Britannic Majesty, consul-general at Alexandria." Then follows a page of directions how to use oil by inunction in treating plague, and on page 343 is this statement:

There is no instance of the person rubbing a patient having taken the infection. He should previously anoint himself all over with oil, and must avoid receiving the infected person's breath into his mouth

and nostrils. The precaution to be used in all circumstances is that of carefully anointing the body and living upon a light and easily digested food. Mr. Baldwin observes that among upwards of a million of people carried off by the plague in Upper and Lower Egypt in the space of four years, he could not discover a single oilman or dealer in oil.

Now that we know the rôle played by the bite of fleas and lice in causing plague, typhus and trench fever, reason would seem to justify the experimental use of oil by inunction in the prevention of these diseases.

S. W. DICKINSON, M.D., Marion, Va.

CONTRIBUTIONS FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—I beg to acknowledge the following contributions in money and instruments for the Belgian and French civilian doctors to aid them when they return to their devastated homes.

SUBSCRIPTIONS IN CASH

Dr. J. J. Edmonson, New York	\$ 5.00
Dr. Clarence T. Faries, Narberth, Pa. (second, third and fourth monthly contributions)	30.00
Dr. Horace Gray, Camp Devens, Fitchburg, Mass.	5.00
Dr. William B. Reed, Rochester, N. Y.	10.00
Total	\$50.00

INSTRUMENTS

Dr. John M. Ball, St. Joseph, Mo.; Dr. A. S. Doloff, Lewiston, Maine; Dr. J. Hall Allen, Philadelphia; Dr. A. F. Radzinski, Detroit; Dr. G. V. Janvier, Lansdowne, Pa.; Dr. DeWitt C. Rodenhurst, Philadelphia, N. Y.; one package of instruments, name of donor unfortunately mislaid; Dr. W. W. Keen, Philadelphia.

Messrs. Harvey R. Pierce & Co. have very kindly taken charge of the instruments and packed them carefully for shipment.

W. W. KEEN, M.D., Philadelphia.

SIMPLE METHOD OF MAKING CURVED NEEDLES

To the Editor:—Owing to the scarcity of round curved needles, Langston Brothers, jewelers of Hamlet, N. C., have been making curved needles for the Hamlet Hospital by taking ordinary needles and bending them over an alcohol flame. This can be done by catching each end of the needles with a pair of pliers and gradually bending the needles over an alcohol flame. It takes about twenty seconds to make a curved needle out of a straight one.

W. D. JAMES, M.D., Hamlet, N. C.
Surgeon in Charge, Hamlet Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INSURANCE AND COMPENSATION

To the Editor:—May I ask you to describe the features of the insurance bill as it applies to medical men in active service? The points on which I should like information are the following: amount that must be carried; amount that may be carried; the rate—say at the age of 36—per thousand dollars. Does insurance remain in force after military service ceases; if so, how long? Does insurance entirely replace any other "pension" allowances to dependents in case of death? What provision is made for payment of "pension" in case of permanent or total disability incurred in line of duty? Please do not publish my name.

R. N. C., Cleveland.

To the Editor:—Will you please answer the following questions relative to the insurance and compensation law? Does Article II, relating to allotments and family allowances for enlisted men, apply to officers of the Medical Reserve? What is the cost of a \$10,000 policy at the age of 45? Please omit my name.

E. L. S., Montana.

To the Editor:—Can a medical officer resign from the service after taking the oath? When does his pay begin? When does it stop? Will those in Europe be returned home or be discharged over there to make their way home the best way they can? Does the government give any form of insurance that could be collected in bulk so that

the wife would have enough to do something with, or is it all on the monthly payment plan that would keep her practically a dependent pauper—a sum that no family could live on and have money to do anything with? Does an officer's family have any other allowance than his salary and commutation as do the privates? Will there be any insurance or pensions for officers' disabilities?

F. R. DeHoney, M.D., Fredericktown, Mo.

ANSWER.—Medical officers in active service may carry government insurance, but are not required to do so. They are allowed to carry from \$1,000 to \$10,000, the monthly rate on \$1,000 varying as shown in the accompanying table:

Years.	Monthly Premium	Years.	Monthly Premium
25	\$0.66	41	\$.82
26	.67	42	.84
27	.67	43	.87
28	.68	44	.89
29	.69	45	.92
30	.69	46	.95
31	.70	47	.99
32	.71	48	1.03
33	.72	49	1.09
34	.73	50	1.14
35	.74	51	1.20
36	.75	52	1.27
37	.76	53	1.35
38	.77	54	1.44
39	.79	55	1.53
40	.81		

In case of total or permanent disability the insured receives \$5.75 per month per thousand dollars of insurance; this is continued as long as the insured lives or as long as disability continues. In case of death the beneficiary will receive \$5.75 per month for 240 months for each thousand dollars of insurance less any payments made to the insured for total and permanent disability. The benefits are not paid in a lump sum. After the war the insurance is convertible, within five years, to any of the standard types of insurance, such as life, twenty payment life, or endowment. The premiums increase annually during the war as the age increases until the insured changes to one of the permanent forms, when the premium will depend on the plan then chosen. The permanent insurance after the war will be government insurance. During the war it will have no cash value or loan value, but the permanent insurance after the war will have such value. The insurance must be applied for within 120 days after entrance into active service.

In addition to the government insurance there is compensation payable to officers injured or disabled when on active duty. This is payable for death or disability resulting from personal injury suffered or disease contracted in line of duty, unless caused by the person's own wilful misconduct, the sum varying from \$30 to more than \$100 monthly, according to the number of dependents.

DICHLORAMIN-T

To the Editor:—In THE JOURNAL, April 27, 1918, p. 1212, appeared an article entitled "Dakin's Dichloramin-T Solution for Ocular Infections." 1. Please inform me as to where I can obtain this preparation. I have been using the Carrel-Dakin solution, but, as stated in the article, it is too irritating, and I should like to try this preparation. 2. Please inform me as to the method of preparation, and what oil it is put in. 3. What is the meaning of the "T."

D. M. RANDEL, Muskogee, Okla.

ANSWER.—Dichloramin-T may be obtained from the Abbott Laboratories, Chicago, the Calco Chemical Company, Bound Brook, N. J., and the Monsanto Chemical Company, St. Louis (see New and Nonofficial Remedies, 1918, p. 159 and the N. N. R. department of THE JOURNAL, April 6, 1918, p. 999).

2. For use, dichloramin-T is dissolved in chlorinated eucalyptol, and this solution is diluted with chlorinated paraffin (see New and Nonofficial Remedies, 1918, p. 80), or the dichloramin-T may be dissolved in chlorcosane (see the N. N. R. department of THE JOURNAL, Feb. 16, 1918, p. 459, and May 18, 1918, p. 1459).

3. Dichloramin-T is the parasulphonedichloramid of toluene; the "T," for "toluene," distinguishes it from similar compounds that have been or may be made from benzene, xylene, etc.

SANATORIUMS THAT CARE FOR PATIENTS WITH TICS

To the Editor:—Please give me the names and addresses of sanatoriums that have had particular success in caring for patients with spasmodic functional tics.

X. Y. Z.

ANSWER.—THE JOURNAL will be glad to hear of institutions, preferably in the West, that are fitted to care for cases of this character.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

ARIZONA: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

FLORIDA (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

FLORIDA (Regular): Jacksonville, June 17-18. Sec., Dr. W. M. Rowlett, 812 Citizens Bk. Bldg., Tampa.

INDIANA: Indianapolis, June 13-15. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSOURI: St. Louis, June 17-19. Sec., Dr. George H. Jones, State House, Jefferson City.

NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Wauhay.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Connecticut Homeopathic Report

Dr. E. C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports that 2 candidates have been licensed through reciprocity since Jan. 1, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Boston University	(1909)	Minnesota
New York Homeopathic Medical College	(1917)	New York

Maine March Examination

Dr. Frank W. Searle, secretary of the Maine Board of Registration in Medicine, reports the written examination held at Portland, March 12-13, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 17 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Lowdoin Medical School (1918)	85, 85, 86, 86, 87, 88, 88, 89, 89, 90, 90, 91, 94.		
Harvard University	(1918)	87
McGill University	(1896)	85
Chicago College of Medicine and Surgery	(1908)	*
Harvard University	(1918)	*

* No grade given.

Medicolegal

Removing Superfluous Hair with Electric Needle Is Practicing Medicine

(Engel v. Gerstenfeld (N. Y.), 168 N. Y. Supp. 434)

The Supreme Court of New York, Appellate Term, Second Department, reverses a judgment obtained by the plaintiff for a balance claimed to be due for the removal with the electric needle of superfluous hair from the face of the defendant's niece, a Miss Abrams, because the plaintiff, not being a licensed and registered physician, in undertaking to treat Miss Abrams for the growth of hair on her face, violated the provision of the public health law regulating the practice of medicine. Justice Benedict holds that, as the plaintiff committed a misdemeanor in undertaking to treat the "deformity" or "physical condition" of the skin of Miss Abrams, the plaintiff was not entitled to recover in this action. Justice Clark concurs in the result, on the ground that the plaintiff practiced medicine, in that, following the definition of the statute, she held herself out as being able to diagnose, treat, and operate for a certain physical condition, and undertook to diagnose, treat, and operate for such physical condition. Justice Callaghan dissents.

Justice Benedict says the "practice of medicine" is defined in the statute as follows:

A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition.

The growth of hair on Miss Abram's face when she went to the plaintiff was a "deformity" or a "physical condition," of which she, or the defendant, desired the aid of the plaintiff in the treatment and cure; and the plaintiff clearly held herself out to them as being able to treat it successfully, and did undertake to treat it with an instrument known as an electric needle. The statute plainly means that a person holds himself out as being able and willing to diagnose or treat any human disease or "deformity" or "physical condition" when he represents or states to a patient that he possesses the skill or ability requisite for the case. It is not essential that the "holding out" should be by way of public announcement. If there be a "holding out" of oneself as willing to undertake the treatment and able to administer it, then it follows that this constitutes the practice of medicine within the terms of the statute. Nor can it be said that the removal of hair from the face of a woman by the use of an electric needle does not properly come within the category of the practice of medicine any more than the removal of hair from the face of a man by the use of a razor would. Bouvier's Law Dictionary, speaking of surgery, says, "The practice of surgery is limited to manual operations usually performed by surgical instruments or appliances." The use of an electric needle would obviously come within this definition.

The definition of the term "practice of medicine" contained in the statute may be thought by some persons to be highly artificial. It includes, and was designed to include, many things not popularly considered as medical practice. But the wisdom of the law, if it be constitutional, is a matter for the consideration of the legislature and not of the courts. It may well be argued that four years of medical study, including a thorough knowledge of anatomy, materia medica, hygiene, etc., in all their branches, are not requisite to equip a person properly to remove superfluous hair alone. Yet it can hardly be contended that persons engaging in that occupation should be subject to some sort of regulation to insure proper skill and sanitation, such at least as the regulations affecting the practice of chiropody. The legislature has seen fit to set a much higher standard, and until the statute herein discussed is amended or abrogated, the courts have no discretion but to enforce it.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Association of Anesthetists, Chicago, June 10-11.
Am. Assn. of Industrial Physicians and Surgeons, Chicago, June 10.
American Ophthalmological Society, New London, Conn., July 9-10.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Idaho State Medical Association, Seattle, July 17-19.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Jersey Medical Society, Spring Lake, June 25-26.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Seattle, July 17-19.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, Seattle, July 17-19.
Western Roentgen Society, Colorado Springs, June 27-28.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Third Annual Meeting, Held at Atlantic City, N. J.,
May 7-8, 1918

DR. F. H. WILLIAMS, Boston, in the Chair

Instructions in Treatment

DR. F. H. WILLIAMS, Boston: The young practitioner has many difficulties in adapting the details of pharmacology and therapeutics to practice. Students should be taught by men with long clinical practice and in that way learn to bridge the gap between materia medica and therapeutics, on the one hand, and the practice of medicine on the other. More opportunities for bedside instruction should be offered. The student should be taught when to give powerful remedies and when not. The man who brings sleep to the patient without resorting to hypnotics, or alleviates pain without prescribing morphin, who, in other words, accomplishes results by simple means, is learning to be master of his art.

Intravenous Use of Arsphenamin in Syphilis of the Nervous System

DR. BERNARD SACHS, New York: Four hundred patients were treated intravenously with the Philadelphia preparation of arsphenamin, which has proved entirely satisfactory. I am convinced that much good will be accomplished by the intravenous treatment, which is safe in the hands of the majority of physicians. All biologic tests must be used as corroborative evidence, and clinical evidence must not be disregarded. The lack of serologic evidence does not always disprove syphilis, nor is there a parallel between clinical symptoms and serologic findings, as remissions are often observed without serologic change, and serologic improvement is not always accompanied by clinical betterment. It is only in types with vascular lesions that the clinical findings and serologic tests progress *pari passu*. In general paresis and tabes, the chief lesions are deep in the brain and cord, far removed from the spinal fluid, and only to be reached by the blood stream. In the meningomyelitic type of involvement it is impossible for the curative substances to remain in the fluid long enough to do any good. I do not hold the doctrine of the impermeability of the choroid plexus. The pressure in the cerebral capillaries being higher than in the fluid, a metallic substance like arsphenamin is rapidly absorbed into the venous system. Why, therefore, should not the venous system be used at once? Intraspinial medication is theoretically and essentially unsound. It is fatal to the syphilitic organism, but frequently also to the patient. Early and intensive treatment is necessary, a dose being given every other day for from four to six weeks, followed by a period of complete rest. Forty or fifty injections may be required within a year. It would be impossible to introduce toxic substances so frequently into the canal. No claim can be made for the cure of tabes dorsalis or general paresis by the intraspinal method; the most that can

be said is that remissions may be longer. It is urged that treatment be begun as early as possible and continued for years after the initial lesion, and that the patient be kept under medical control for as long as necessary. The hope of the future lies in the discovery of a substance less toxic than arsphenamin with which a more intensive treatment can be undertaken.

DISCUSSION

DR. S. J. MELTZER, New York: In regard to the permeability or impermeability of the choroid plexus we have no exact knowledge. Benedict found arsphenamin (salvarsan) in the spinal fluid, but no doubt not in such quantities as if injected intraspinally. Swift's work was conservative, and he never overemphasized his claim. He used not merely arsphenamin, but arsphenamized serum. Is there any objection to giving intraspinal treatment at the same time as intravenous, provided it does no harm? With meningitis both intravenous and intraspinal injections should be used.

DR. WILLIAM H. PARK, New York: In regard to tetanus antitoxin, one can absolutely show that the intraspinal injection will protect and cure, while the intravenous alone will not. The two are given simultaneously.

DR. BERNARD SACHS, New York: In reply to Dr. Meltzer as to why I do not advocate the combination of the intraspinal and the intravenous methods, I have distinct experience of the far more dangerous character of the intraspinal medication. I have seen immediate paralyses ensue, and cases in which rectal and vesical control have become markedly impaired. With the use of the intravenous treatment I have kept a patient over ten years in a very comfortable condition.

Relation of the Chemical Structure of Opium Alkaloids to Their Action on Smooth Muscle and on the Pharmacologic and Therapeutic Properties of Some Benzyl Esters

DR. D. I. MACHT, Baltimore: I have made an intensive study of the alkaloids of opium in connection with morphin. A marked difference exists in the alkaloids of the two products. The alkaloids of opium act on the central nervous system, on peripheral structures, and on smooth muscle. The effect of morphin is increased tonicity, that of papaverin, relaxed tonicity and inhibition of contractions. Thus the latter preparations (papaverin alkaloids) can be used for expulsion of renal calculi, by relaxation of the ureteral muscle. Search was made for nontoxic products, and benzyl benzoate and benzyl acetate, very slightly toxic products, were found, giving the effects of papaverin. Metabolic studies showed that benzyl acetate was excreted by the kidneys as hippuric acid. This is nontoxic and can be administered by mouth. It has been tried clinically, but the disagreeable odor and digestive disturbance after its use contraindicate its use. Benzyl benzoate was then tried. It was found to be of use in cases of excessive peristalsis, in diarrhea and in dysentery. A 20 per cent. solution in alcohol was used. Other indications are in pylorospasm, intestinal colic, spastic constipation, biliary colic, ureteral calculi, vesical spasm, spasm of seminal vesicles, uterine colic, arterial spasm, high blood pressure and lastly bronchial spasm with true asthma, in which remarkable relief was afforded. Benefit occurs by relaxation of spasm.

Use of Benzyl Alcohol as a Local Anesthetic

DR. D. I. MACHT, Baltimore: In testing the taste of the drug, it was found that a drop on the tongue produced numbness, and experiments proved that this agent produced anesthesia of the sensory nerve endings. Benzyl alcohol possesses only slight toxicity. It is found in balsam of Peru and Tolu and is known as phenmethyl-O. The boiling point is very high. It is soluble up to 14 per cent. in water, at room temperature. All the solutions used in the clinic were from 0.5 to 4 per cent. Other effects are sensory nerve paralysis; corneal anesthesia; blocking of nerve fibers, first sensory, then motor; effect on blood pressure (the heart not being affected at all), and a slight sedative effect on the central nervous system. The toxicity as compared with cocain shows

that 20 c.c. injected into an animal gives no effect, whereas 20 mg. of cocain injected kills an animal. It has been tried out in the clinic with marked success. The anesthesia was found to be fully that of cocain. A bullet was extracted without pain; ingrowing toenails were excised; complete excision of hemorrhoids and excision of rectal fissure were painlessly performed.

DISCUSSION

DR. S. J. MELTZER, New York: Has Dr. Macht studied only smooth muscle or has he also experimented with papaverin on striated muscle? What are the effects on the central nervous system? Does the papaverin group increase the inhibitory side of the nerve effect, or are the phenomena of the opposite nerves reduced?

DR. T. R. BROWN, Baltimore: In cases of increased irritability of the gastro-intestinal tract, associated with diarrhea and mucous colitis, the symptoms are very greatly relieved by the benzyl esters.

DR. S. SOLIS COHEN, Philadelphia: I have found benzyl benzoate of value in the treatment of various forms of asthma with dyspnea and in arteriosclerosis with excessively high blood pressure. It is of great use in a particularly irritating cough, known in Philadelphia as "Hog Island Whoop." In cases in which one does not care to use morphin, benzyl benzoate is a distinct palliative.

DR. ALFRED H. HESS, New York: I have used papaverin in pylorospasm with good result.

DR. D. I. MACHT, Baltimore: I believe that the papaverin group exerts its action peripherally. This is the therapeutic action of all papaveraceae. Benzyl esters act on the central nervous system. The peripheral effect on smooth muscle predominates, however. In regard to the toxicity of the benzyl esters, the herbivorous animals apparently can stand much larger doses and can metabolize them better than carnivorous animals.

Acute Pancreatitis in Typhoid

DR. THOMAS MCCRAE, Philadelphia: The case ran an ordinary course, the temperature being normal on the twenty-fourth day. On the twenty-sixth day the patient complained of pain in the upper right quadrant, there was jaundice, and the leukocytes numbered 20,000. Two or three days later the pain subsided and the leukocytes numbered 10,000. Eleven days later there was a definite mass in the region of the gallbladder, somewhat tender, and a diagnosis of cholecystitis was made. The next day the pain was very severe and bloody stools were passed, blood was present in the urine, and large amounts of blood were vomited. The leukocytes numbered 26,000. The symptoms subsided for a time when the pain again increased. On the fifty-fourth day of the illness an operation was performed. It was found that the gallbladder, duodenum, stomach and bile ducts were normal. The pancreas was swollen and inflamed. The abdomen was closed and the patient made a good recovery, and in three weeks the mass disappeared. On the eighty-second day he was discharged perfectly well. Points to be observed in this case were that there was very little fever, never complete stoppage of bile, and the stools showed no evidence of pancreatic disease.

DISCUSSION

DR. EMANUEL LIBMAN, New York: I have seen this picture in cases in which I suspected a mild form of pancreatitis. A certain form of pancreatitis occurs in acute infectious diseases and in suppurative conditions after abdominal operations. The diagnosis of acute pancreatitis is not so difficult as it is supposed to be. In these cases there is tenderness of the left lumbar region, marked even in patients not sensitive to pain. This question of the relative sensitiveness of the patient to pain is important. Pain is much more apparent in some patients than in others. In acute pancreatitis the pain on the left side can always be elicited, and this is found in no other condition.

DR. THOMAS MCCRAE, Philadelphia: There was no tenderness in the left lumbar region in this case. A careful examination was made because when the hematuria appeared it was thought that there was a condition in the kidney producing this symptom.

Clinical Manifestations of Tropical Sprue

DR. E. J. WOOD, Wilmington, N. C.: There has been a great increase in the number of cases in North Carolina, South Carolina and Georgia. I have seen cases of tropical sprue from the East and from Porto Rico, as well as Southern cases. There is only one type in all cases. Sprue is often confused with pellagra. It is no doubt true that many cases of pellagra are complicated by sprue. Sprue needs special attention at this time because it has appeared near many of the Southern cantonments. The symptoms appeared first in the tongue, in the form of small, painful erosions. In the diarrhea of sprue the feces are tremendously acid in reaction, are yeasty, and are passed during the early morning hours. They show tremendous loss of fat, as much as 59 per cent. The nitrogen loss is 15 per cent. Functional deficiency of the pancreas is evident in most cases, but not all. Anemia in sprue is an essential feature. The absence of anemia in pellagra is a distinguishing feature. In sprue the anemia appears similar to pernicious anemia. Shrinkage of the liver is seen in both conditions. The stomach content changes are fairly similar in both diseases and show a decrease in hydrochloric acid. The beef treatment of Cantley has been found the best means of therapeutics.

DISCUSSION

COL. WILLIAM H. WELCH, M. R. C., Baltimore: I have found buccal lesions and gastro-intestinal lesions which might be referable to sprue. I should like to know to what extent pellagra is complicated by sprue. Goldberger's work would seem to show that this is one of the most difficult and perplexing questions. Not a single case of pellagra has been found to develop when the diet has been properly supplemented.

DR. ALEXANDER MCPHEDRAN, Toronto: A few years ago I saw a woman who returned from India much affected. Her condition was grave, with extreme anemia, but there was no material loss of weight. Diarrhea was marked. The tongue had a rather glazed, smooth appearance. She had recurrent attacks of vesicular stomatitis. No treatment produced any effect until she tried the strawberry diet, three or four pounds a day, and she improved on that and for two summers was greatly improved. Two years later she became pregnant and had a marked mitral stenosis. It was believed best to do cesarean section three weeks before term. The child was viable. She did well for a few days, but then developed sepsis and died.

DR. S. SOLIS COHEN, Philadelphia: A teacher returned from Porto Rico with an undoubted case of sprue. She showed marked nervous and mental symptoms. British writers advocated treatment by old santonin. This patient received this treatment and recovery followed. Is that the general experience?

DR. T. R. BROWN, Baltimore: I have seen two cases from Porto Rico. The stomach contents showed complete achylia. Under treatment the stomach contents returned to normal as regards hydrochloric acid.

DR. E. J. WOOD, Wilmington, N. C.: The point to decide is, When does sprue begin to complicate pellagra? The pellagra tongue has a different appearance, being a much deeper red, this being accompanied with profuse and painful salivation. In sprue the tongue is furred and dry because of the absence of salivation. The intake and the output of nitrogen in pellagra are normal. Pellagra is a seasonal disease running from May to August. In sprue the diarrhea, instead of ending, continues. Anemia is not associated with pellagra, but in sprue it is essential for diagnosis. In answer to Dr. Libman, there is an absolute absence of hydrochloric acid in sprue. In regard to the nervous disturbances mentioned by Dr. Cohen, these disturbances are marked in pellagra and perhaps the case mentioned was really pellagra and not sprue. The strawberry diet has not been found to be of any service. Santonin and emetin have been discarded as worthless. No treatment except dietetic control and rest for a prolonged period has been found of any avail.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

May, 1918, 155, No. 5

- 1 *Surgical Shock and Some Related Problems. J. E. Sweet, Philadelphia.—p. 625.
- 2 Melanosarcoma of Rectum; Report of Case. J. W. Churchman, New Haven, Conn.—p. 639.
- 3 *Prognosis of Gallbladder Infections. J. H. Gibbon, Philadelphia.—p. 644.
- 4 Nervous Manifestations of Syphilis of Eye. J. Collins, New York.—p. 649.
- 5 *Cardiac Syphilis. W. C. Moore, Washington, D. C.—p. 660.
- 6 Sulphoconjugation as Test of Liver Function. M. Kahn, New York.—p. 668.
- 7 Some Clinical and Experimental Observations on Gastric Acidity: Use of Gas Chain Method. G. L. McWhorter, Chicago.—p. 672.
- 8 Prognostic Value of Psychometric Tests as Compared with Clinical Signs in Epilepsy. L. P. Clark and A. Mileau, New York.—p. 685.
- 9 Gummosis Syphilis of Thyroid. F. E. Senear, Ann Arbor, Mich.—p. 691.
- 10 Differential Diagnosis of Affections of Right Upper Quadrant. C. G. Heyd, New York.—p. 703.
- 11 Roentgen Rays as Aid in Diagnosis of Ulcus Ventriculi. I. W. Held and M. H. Gross, New York.—p. 713.

1. **Surgical Shock and Some Related Problems.**—Sweet defines shock as a condition marked by a gradual progressive fall of blood pressure with no obvious cause, such as hemorrhage, intracranial pressure or heart failure. He believes that it is due to a paresis or paralysis of the musculature of the arterioles. The only way in which Sweet has been able to experimentally produce anything which looks like shock to him is by the removal of the suprarenals. After the removal of the suprarenals the content of the intestinal tract contains a poison identical with, or at least similar to, the poison found in high obstruction, which suggests a possible relation between high obstruction and the suprarenals. Speaking of blood transfusion Sweet says: Let us think for a moment of what the blood is and does and let us begin by getting out of our heads the idea that the blood is that vital life-giving fluid which can be cleaned by a spring tonic or which can become diseased with any result, from pimples on the face to cancer of the uterus. The blood is just about as vital as a bucket of water and just as full of life. It contains and carries to the tissues just what and only what the tissues put into it. It is a purely passive, inert, lifeless stream, carrying canal boats loaded with goods, the red cells, themselves again passive. The red cells are alive, but only mildly so, and no more so than certain chemical agents, sponge platinum for example. The white cells are alive in a more real sense, but they are not in the blood stream because the blood stream wants them; they were merely playing on the bank and fell in. Sweet says he has the highest respect for it as a common carrier, no respect at all for it as an active agent, endowed with a free will; and because he feels as he does toward the blood, he fails to see that a transfusion can ever be much more than a symptomatic treatment.

3. **Prognosis of Gallbladder Infections.**—Gibbon believes that the mortality in gallbladder infections depends very largely on whether or not a cholangitis is present, and that a persistent jaundice accompanied by general symptoms of sepsis is of grave import and calls for prompt drainage through the gallbladder or common duct, or both; that a patient having undoubted symptoms of gallbladder infection should not be allowed to postpone operation until an acute exacerbation of the infection occurs; that even far-advanced and neglected cases of infection of the gallbladder alone give good results following operation; that jaundice due to stone in the common duct in the absence of symptoms of sepsis is not necessarily a grave symptom if prompt operation is done; that the high mortality following operations occurs in the cases of long-standing gallbladder symptoms with acute exacerbation of the infection and in cases of malignancy of the gallbladder and pancreas; that the use of horse serum has

practically eliminated the danger of hemorrhage due to long-standing jaundice, and that the recurrence of gallstones after thorough operation is extremely rare.

5. **Cardiac Syphilis.**—Moore insists that cardiac complications during syphilis occur much more frequently than has been recognized generally heretofore. The cardiac lesions occur earlier in the disease than has been thought, even in the early secondary stage. Congenital syphilis of the heart is a cause of sudden death in early life, this condition being unsuspected clinically, as a rule. The nature of the process in the heart is distinct and may be recognized microscopically, and the spirochetes may be found in the lesion; it is most frequently a myocarditis. Uncomplicated aortic insufficiency is of syphilitic origin in the majority of instances. The symptoms are not definite but extremely suggestive; the diagnosis depends mainly on the signs of some cardiac disorder, with a positive Wassermann, and a response to anti-syphilitic treatment. The prognosis is good in the early stages and varies directly with the stage of the disease and the extent of the changes produced. Treatment should be mainly antisyphilitic intensive. Cardiac treatment is required rarely except in cases with decompensation. Once instituted treatment should be carried through persistently and uninterruptedly.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

May, 1918, 77, No. 5

- 12 Anatomic Factors Concerned in Production of Deformed Pelves. J. W. Williams, Baltimore.—p. 714.
- 13 *New Operation for Prolapse of Uterus. E. Ries, Chicago.—p. 758.
- 14 Development and Perfection of "Interposition Operation" for Prolapse of Uterus and Bladder. I. S. Stone, Washington D. C.—p. 773.
- 15 Case Illustrating Value of Kidney Drainage with Ureteral Catheter, of Pelvic Lavage and Intra-Ureteral Manipulation. H. G. Bugbee, New York.—p. 781.
- 16 Delivery by Abdominal Section. E. P. Davis, Philadelphia.—p. 786.
- 17 Painless Childbirth. W. F. B. Wakefield, San Francisco.—p. 792.
- 18 *Analysis of Blood in Eclampsia and Allied Intoxications. J. M. Slemmons, New Haven, Conn.—p. 797.
- 19 Surgical Conditions Complicating Intra-Uterine Pregnancy. R. D. Mussey, Rochester, Minn.—p. 806.
- 20 Acidosis in Pregnancy (with Special Reference to Carbon Dioxide Method of Van Slyke). L. A. Emge, San Francisco.—p. 813.
- 21 Gallbladder Disease Complicating Pregnancy. A. W. White, Brooklyn.—p. 821.

13. **Operation for Prolapse of Uterus.**—All or any of the steps of Ries' operation are used according to the findings. Assuming a case of a multipara who does not insist on further offspring, the vagina is disinfected with compound solution of cresol, and the external skin with iodine or acetone alcohol. The bladder is catheterized. The cervix is pulled down, is disinfected, and volsella are placed just below the external meatus, one far out on each side of the vagina. A piece of vagina the size of which depends on the amount of redundant vaginal tissue is dissected off. The edges of the vagina are then lifted up and dissected farther away from the bladder so that the lateral attachments of the bladder are freed. Then the ligamenta pubovesicalia where distinct, are separated from the bladder a short distance and the bladder is pushed away from the uterus clear up to the peritoneum, but the peritoneum is not opened. Now the first sutures unite the ligamenta pubovesicalia below the bladder where they are well pronounced. Then next line of continuous sutures grasps the vaginal wall and where the urethra is not firmly fixed, the urethra. At the end of the urethra this suture is tied. From there on a continuous suture unites vaginal wall and fastens it at the same time to the cervix so that a deep anterior fornix of the vagina is created. Coming close to the lower end of the cervix the line of incision is drawn into a transverse line and the suture made across the cervix. This finishes the work on cervix urethra and anterior vaginal wall. The bladder has not been sutured so far at all and it lies temporarily above the anterior fornix of the vagina and any oozing from it will accumulate in this space between the peritoneum above and the vagina below.

The operation for the rectocele is now begun with a Hegar triangular denudation, the rectum is separated from the vagina so far as necessary and by blunt dissection of the levator muscle is laid bare on both sides. The attachment of the pubococcygeus behind the anus causes the posterior circumference of the anus to move if the freed levator is pulled on. Three or four sutures unite the edges of the levator. Then a point as much below the apex of the triangle as necessary in each case is pulled up and a suture made which distorts the upper end of the triangle into a two-pronged suture line, the two prongs lying in the posterior sulci of the vagina. The rest of the perineal plastic is done in the usual way. Skin sutures are made with celluloid linen, everything else with plain catgut. The perineum is covered with petrolatum as the only dressing. The abdomen is entered and the uterus exposed. Sterilization is accomplished by excising the tube out of the uterine horn in wedge shape. The gap in the uterine horn is sutured over by a special suture or this suture is done together with the next step of the operation. The edge of the peritoneum of the bladder is pulled as high up on the uterus as the tissue will allow, thereby taking the slack out of the posterior vesical wall and fastening the posterior bladder wall high up on the uterus. This peritoneum and bladder is sutured to the fundus of the uterus and the stitches which fasten it can be utilized to close the gap in the uterine horn if this has not been done previously. If the emphysema has been found bare, the anterior wall of the bladder is pulled up and stitched to the posterior aspect of the rectus muscles as high as the slack permits. Next the parietal peritoneum is sutured to the posterior surface of the uterus below the fundus so that the fundus is extruded from the peritoneal cavity, and the suture of the parietal peritoneum is completed. The rectus muscles or sometimes the fascia are sutured to the extruded fundus. The muscles and fascia are then united in the ordinary way and the skin sutured.

18. Blood in Eclampsia.—Analysis of the blood in cases of eclampsia and allied intoxications revealed a normal quantity of amino acids and a slight retention of nitrogenous waste products, as urea and uric acid. After convulsions there is an increase in the blood sugar. The total fat is approximately the same in cases of toxemia and of normal pregnancy. Usually the cholesterol is increased and the lecithin diminished in eclampsia. The carbon dioxide combining power of the plasma is reduced during normal pregnancy, indicating mild acidosis, and the variations met with in the presence of auto-intoxications are insignificant. Slemons says that the results of blood analysis do not support the acidosis hypothesis nor the derangement of protein metabolism hypothesis of eclampsia and indicate that the cause of the disease must be sought elsewhere.

American Journal of Ophthalmology, Chicago

May, 1918, 1, No. 5

- Leprosy; Ophthalmologic Findings. A. M. Yudkin, New Haven, Conn.—p. 303.
Case of Traumatic Pulsating Exophthalmos. A. J. Bedell, Albany, N. Y.—p. 311.
Star Shaped Figure in Macula of Syphilitic Origin. H. C. Haden, Galveston, Texas.—p. 313.
Pathogenic B. Subtilis Isolated from Eye. E. A. Greenspon, Montreal, Canada.—p. 316.
Ophthalmic Examination of Drafted Men at Camp Jackson. B. Chance, Philadelphia.—p. 318.
Wassermann Findings in Ophthalmic Disease. N. M. Brinkerhoff, Philadelphia.—p. 322.
Association of Ocular and Nasal Accessory Sinus Disease. G. O. Ring, Philadelphia.—p. 324.
Two Cases of Atrophy of Iris. F. Allport and J. R. Smith, Chicago.—p. 336.
Blepharospasm Secondary to Pyorrhea Alveolaris. H. M. Thompson, Pueblo, Colo.—p. 338.
Hysteric Amblyopia. F. A. Morrison, Indianapolis.—p. 338.
Corneal Loupe. R. Von der Heydt, Chicago.—p. 339.

Boston Medical and Surgical Journal

May 16, 1918, 178, No. 20

- Traumatic Shock. W. T. Porter, Boston.—p. 657.
Anatomy and Physiology of Respiratory Tract. F. F. D. Reckord, Harrisburg, Pa.—p. 660.
Portable Respiration Apparatus for Clinical Use. F. G. Benedict, Boston.—p. 667.

Canadian Medical Association Journal, Toronto

May, 1918, 8, No. 5

- 36 Pancreatic Cysts; Report of Cases. W. F. Hamilton, Montreal.—p. 385.
37 Cholecystectomy—Useful Technic. F. N. G. Starr and R. Graham, Toronto.—p. 391.
38 Handling and After-History of Heart Affections in Soldiers. J. C. Meakins.—p. 394.
39 Diagnosis of Disseminated Sclerosis. A. G. Morphy, Montreal.—p. 401.
40 Tuberculin, Its Nature and Action. R. C. Paterson, Saranac Lake, N. Y.—p. 409.
41 Cutaneous Manifestations of Syphilis. A. V. Greaves.—p. 417.
42 Teaching of Hygiene. A. H. Mackay.—p. 424.
43 *Ruptured Ectopic Pregnancy—Blood Transfusion and Pulmonary Embolism. R. V. B. Shier, Cookstown, Ont.—p. 427.

43. Ruptured Ectopic Pregnancy—Blood Transfusion and Pulmonary Embolism.—When first seen six hours after onset of symptoms Shier's patient presented the signs of abdominal hemorrhage. The history and patient's condition quickly led to a diagnosis of ruptured ectopic pregnancy. She was pulseless, her pupils dilated and altogether not at all encouraging. The abdomen was opened and found full of blood and clots. The ruptured tube was easily located, its pedicle clamped and tied off. Pituitary extract 1 c.c. was given. The abdomen was made reasonably free of blood and clots and the incision closed, drainage being provided by two rubber tubes passing down to the pelvis. The patient was returned to bed with the foot elevated. About two hours later, Shier transfused her from her husband, a healthy robust man. About 750 c.c. of blood was used. The sodium citrate method was followed. The usual signs of improvement after transfusion followed, and from then on the patient made an uninterrupted recovery until the morning of the twelfth day, when suddenly, while in conversation with the nurse, she was seized with a fainting spell and gasped for air. Collapse followed immediately, the pulse dropped to 70 and was very weak. She was cyanotic and suffering from dyspnea. She had no pain but her pulse was now 140. Shier suspected pulmonary embolism and gave stimulants and fresh air in abundance. In a few hours time the cyanosis lessened, but the pulse remained fast and the dyspnea increased. The respiratory rate reached 58 to 60 at times. The air hunger was extreme. Her condition remained much the same for thirty-two hours when death came through gradual cardiac failure.

Illinois Medical Journal, Chicago

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- 44 Reclamation of Wounded Soldier. H. N. MacKechnie, Chicago.—p. 245.
45 New Field Development of Use of Army Litter. E. D. Wise, Fort Oglethorpe, Ga.—p. 248.
46 Case of True Senile Prostate Associated with Multiple Sacculi of Bladder. G. F. Lydston, Chicago.—p. 250.
47 Treatment of Venereal Diseases Recommended for Army. W. A. Pusey, Chicago.—p. 251.
48 Mental Depression. C. F. Read, Chicago.—p. 253.
49 Ophthalmologic Cases. C. Loeb, Chicago.—p. 257.
50 Relation of Glands of Internal Secretion to Surgery. J. B. Haeblerlin, Chicago.—p. 262.
51 Triple Wounds of Stomach from Single Intact Bullet. N. Kerr, Chicago.—p. 267.
52 Range of Physiologic Life of Tonsil. J. W. Smith, Bloomington.—p. 268.
53 Why Are Tonsils and Lymphatics of Nose and Throat Responsible for so Many Systemic Diseases? R. H. Good, Chicago.—p. 271.

Iowa State Medical Society Journal, Des Moines

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- 54 Problems of Stream Pollution in Iowa. L. Higgins, Des Moines.—p. 163.
55 Pathology of Pregnancy. P. Reed, Iowa City.—p. 168.
56 Indications and Use of Drugs in Obstetrics. H. W. Vinson, Ottumwa.—p. 171.
57 Obstetric Accidents as Cause of Gynecologic Conditions. W. C. Kasten, Fort Madison.—p. 175.
58 Management of Premature Labor and Obstetric Surgery Outside of Hospitals. C. W. Stephenson, Milton.—p. 177.
59 Embolism of Superior Mesenteric Artery; Report of Case. F. R. Sparks, Waverly.—p. 182.
60 Some Troublesome Fractures. W. H. Fox, Waucoma.—p. 186.

Kansas Medical Society Journal, Topeka

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- 61 Some Lessons of War. C. S. Huffman, Topeka.—p. 107.
62 Obstetric Clinic, Kansas City General Hospital. G. C. Mosher, Kansas City.—p. 110.

Journal of Experimental Medicine, Baltimore

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- 63 Study of Low Blood Pressures Associated with Anaphylactic and Peptone Shock and Experimental Fat Embolism, with Special Reference to Surgical Shock. J. P. Simonds, Chicago.—p. 539.
- 64 *Autohemagglutination Experimentally Induced by Repeated Withdrawal of Blood. O. H. Robertson and P. Rous, New York.—p. 563.
- 65 *Experiments Outlining Limitations of Operations on Abdominal Aorta. C. Goodman, New York.—p. 569.
- 66 Morphologic Characteristics and Nomenclature of *Leptospira* (Spirocheta) Icterohemorrhagiae (Inada and Ido). II. Noguchi, New York.—p. 575.
- 67 *Cultural Conditions of *Leptospira* (Spirochaeta) Icterohemorrhagiae. H. Noguchi, New York.—p. 593.
- 68 *Survival of *Leptospira* (Spirocheta) Icterohemorrhagiae in Nature. H. Noguchi, New York.—p. 609.
- 69 *Behavior of Hypochlorite and of Chloramin-T Solutions in Contact with Necrotic and Normal Tissues in Vivo. J. H. Austin and H. D. Taylor, New York.—p. 627.
- 70 *Toxicity of Certain Widely Used Antiseptics. H. D. Taylor and J. H. Austin, New York.—p. 635.

64. **Autohemagglutination Induced by Repeated Withdrawal of Blood.**—The influence of repeated bleedings on the normal isohemagglutinins was investigated by Robertson and Rous. They found that the repeated withdrawal of moderate quantities of blood does not lead to a development of new iso-agglutinins in rabbits, or to noteworthy changes in normal ones already present. On the other hand, clumping of the animals' own cell in specimens of the whole blood is a frequent result. It is found in animals rendered anemic by the bleedings, not in those that rapidly repair their losses and remain in good condition. A similar clumping is sometimes to be seen in the blood of rabbits rendered anemic by malnutrition. The clumping is due to a true auto-agglutinin, which differs from the normal auto-agglutinin in its far greater strength, as also, at least in some instances, by a peculiar variation in its activity with changes of temperature. In the rabbits which developed iso-agglutinins after bleeding, the tendency of the cells to form rouleau was far less than the normal. It follows that rouleau formation is not essentially connected with auto-agglutination, as has been assumed in the past. The authors suggest that in the light of these findings a systematic search for autohemagglutinins in the blood of anemic patients would seem of interest.

65. **Operations on Abdominal Aorta.**—From the results of the five experiments presented by Goodman there seems to be no difficulty in correcting injuries of the abdominal aorta in dogs, with subsequent perfect restoration of the continuity of the vessel. The complete occlusion of the aorta for a period of thirty minutes is not necessarily followed by serious consequences. For lateral defects in the aorta, or for injuries not involving the entire circumference, a rectangular clamp may be applied for a prolonged period in order that the circulation should not be completely cut off. An operative field free from blood can thus be obtained while the circulation is maintained through the remaining lumen of the aorta. In the instances in which a portion of the aorta must be resected, an arterial segment taken from another animal can be safely utilized as a transplant. Smaller vessels can be adapted to the caliber of the aorta by the following procedure which was devised by Jeger and Helmuth Hoesel. While the reestablishment of the continuity of the severed aorta by the circular suture is possible, the approximation of the severed ends during the suture entails such injury that thrombosis frequently occurs. Therefore, when the aorta is completely severed, the introduction of a transplanted segment is indicated. An arterial tube of increased caliber made of smaller vessels such as the carotid lends itself readily as a transplant to the severed aorta, with a reasonable assurance of reestablishing the continuity of this vessel. Defects in the aorta can be readily corrected by the use of fascial transplants with minimum danger of thrombosis.

67. **Cultural Conditions of *Leptospira Icterohemorrhagiae*.**—Noguchi claims that the presence of suitable animal or human serum is essential for the cultivation of *Leptospira ictero-hemorrhagiae*. A luxuriant growth takes place in a medium of Ringer's solution to which more than 10 per cent. of normal rabbit serum is added. The use of an undiluted serum offers no advantage over a diluted one, provided the latter

contains at least 10 per cent. of serum. In the case of certain animal serums dilution seems to make them more suitable for cultivation purposes, owing perhaps to its reduction of their inherent alkalinity. The reaction of the medium is an important factor in the cultivation of the organism, which thrives most vigorously in a medium of which the reaction is slightly alkaline, not exceeding that of the serum. Three different media are described by Noguchi for the cultivation of freshly isolated strains. After prolonged cultivation on these mediums a strain may be readily cultivated in a serum diluted with Ringer's or isotonic salt solution.

68. **Survival of *Leptospira Icterohemorrhagiae* in Nature.**—The larvae and adults of the *Culex* mosquito, the larvae of the house fly and bluebottle fly, wood ticks (*Dermacentor andersoni*), and leeches failed to become carriers of the spirochetes when fed on infected guinea-pigs or their organs; they cannot play the part of an intermediary host of *Leptospira ictero-hemorrhagiae*.

69. **Hypochlorite and Chloramin-T Solution.**—Exact determinations of the rapidity of the fall in chlorin concentration on pathologic and on normal skin, under experimental conditions were made by Austin and Taylor because they might be of value to surgeons using Dakin's hypochlorite and chloramin-T solutions clinically. The left ears of three white rabbits of the same relative size and weight were exposed to the rays emitted by a Coolidge tube. The spark gap used measured 3 inches; the milliamperage was 110; the distance from the target to the ear was 6 inches; and the time of exposure was twenty minutes. Eight weeks later the roentgen rayed ears each exhibited a sharply demarcated gangrenous area over which there was considerable crusting of epithelium and secretions and in the lumen there was much thick pus. The ears of the affected rabbits were each suspended for twenty minutes in a beaker containing 400 c.c. of the solution to be tested.

The fall in chlorin concentration of Dakin's hypochlorite solution was more rapid in contact with necrotic than in contact with normal tissue. The fall in chlorin concentration of chloramin-T solution was very slight when applied to necrotic tissue and is negligible when applied to normal tissue. The action of the hypochlorite solution on tissue resulted in the separation of particles of necrotic tissue, hair, epithelial scales, coagulated serum, etc., and a gradual digestion of these substances, taking place over a period of at least seventeen hours. The fall in the chlorin concentration of hypochlorite solution was not complete until the particles were completely dissolved. Chloramin-T solution, 2 per cent., had no erosive effect comparable with that exhibited by the hypochlorite solution. Repeated exposure to the three solutions showed that the hypochlorite solution was superior in its cleansing ability on necrotic tissue. The hypochlorite solution was much more irritating to normal rabbit skin than chloramin-T solution or the alkaline control solution. Therefore, the authors conclude that irritating effects must be due to the readily available chlorin.

70. **Toxicity of Certain Antiseptics.**—The toxic action of a number of antiseptic substances in common use was investigated by Taylor and Austin. The method was to inject increasing doses into mice intraperitoneally and into guinea pigs both subcutaneously and intraperitoneally. The only antiseptic of which the smallest fatal dose was smaller than the largest survival dose was dichloramin-T. Since two mice survived 4.7 mg. per 100 gm. of body weight, it is probable that 15.5 mg. rather than 1.6 mg. is to be considered the smallest fatal dose for this series. Of all the substances tested, eucalyptol and brilliant green were the most toxic, the lethal dose of each being 0.1 mg. per 100 mg. of body weight. Mercurophen, mercuric chlorid, and chloramin-T constitute the group with the next highest toxicity, the lethal dose being 1 mg. per 100 gm. of body weight. Dichloramin-T, proflavine and the four hypochlorite solutions tested follow in the order named with a lethal dose of about 10 to 15 mg. per 100 gm. of body weight. The least toxic chemical are iodine and phenol, of which the lethal doses are about 50 mg. per 100 gm. of body weight. The lethal dose of Dakin's hypochlorite solution injected under the skin of the

abdomen of guinea-pigs per 100 gm. of body weight is the same as that determined intraperitoneally in the mouse. Chloramin-T and dichloramin-T administered in this manner have rise to local necrosis with extensive sloughing. Therefore, the substances injected intraperitoneally into mice and guinea-pigs arranged in the order of their decreasing toxicity are: eucalyptol and brilliant green; mercurophen; mercuric chlorid and chloramin-T; dichloramin-T and proflavine; hypochlorite, Dakin's hypochlorite, Javelle water, and magnesium hypochlorite, iodine and phenol. Now that Dakin's iodine solvent, chlorcosane, is available as a vehicle for dichloramin-T, the authors advise that eucalyptol should be discarded for this purpose because of its much greater toxicity.

Medical Record, New York

May 18, 1918, 93, No. 20

- 1 Probing the Mind. J. V. Haberman, New York.—p. 839.
- 2 Mastoiditis. W. H. Huntington, Washington, D. C.—p. 849.
- 3 Treatment of Malaria. B. Robinson, New York.—p. 852.
- 4 Opportunities for Preventive Medical Work in Dispensary Clinic. A. M. Richardson, New York.—p. 853.
- 5 Roentgen Diagnosis of Disease of Stomach. W. H. Meyer, New York.—p. 857.

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- 6 *Electro-Operative Bone Clamp. F. H. Albee, New York.—p. 913.
- 7 Study of Images Reflected from Cornea, Iris, Lens and Sclera. W. H. Bates, New York.—p. 916.
- 8 Smith-Indian Intra-Ocular Operation for Cataract. F. Allport, Chicago.—p. 924.
- 9 Organism Causing Poliomyelitis and How Disease Probably Spreads. H. Greeley, Brooklyn.—p. 925.
- 10 Relation of Industrial Hygiene to General Practice. L. I. Harris, New York.—p. 928.
- 11 Encourage Obscure Contributor. J. van Becelaere, Detroit.—p. 931.
- 12 Gallstones. S. Weiss, New York.—p. 932. To be continued.
- 13 Treatment of Gunshot Injuries of Spinal Cord at Casualty Clearing Stations. H. M. W. Gray, Aberdeen, Scotland.—p. 937.
- 14 Epidemic of Sore Throat at Fort Ethan Allen, Vt. I. W. Brewer.—p. 938.

76. **Electro-Operative Bone Clamp.**—Albee has devised an electrically driven bone clamp for use in difficult cases, in conjunction with the traction table, although it has been found that the clamp can be successfully used alone and is the most powerful instrument per se. In several instances of ununited fracture of the femur of several months' duration and with two thirds inches of shortening (overriding), the fragments have been easily and quickly distracted and brought to alignment with little muscular exertion on the part of the operator for the reason that all the energy has been expended on the bone fragments themselves.

Northwest Medicine, Seattle

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- Organic Basis of Neurasthenia and Surgical Cure. H. W. Riggs, Vancouver, B. C.—p. 131.
- Operative Treatment of Fractures. C. D. Hunter, Tacoma.—p. 134.
- Bone Transplants. M. G. Sturgis, Seattle.—p. 137.
- Perforated Ulcer of Stomach and Duodenum. A. O. Loe, Seattle.—p. 140.
- Postoperative Gaps in Abdominal Wall. R. C. Boyle, Vancouver, B. C.—p. 142.
- Paralytic Ileus in Gunshot Wounds of Abdomen. R. D. Forbes, Seattle.—p. 144.
- Intestinal Obstruction. A. S. Monro, Vancouver, B. C.—p. 147.
- Importance of Early Diagnosis of Intestinal Obstruction. W. B. Holden, Portland, Ore.—p. 148.

Public Health Journal, Toronto

May, 1918, 9, No. 5

- Tables for Rapid Interpretation of Fermentation Tube Results. M. H. McCrady.—p. 201.
- Tuberculosis and Maternity. D. A. Stewart, Ninette, Man.—p. 221.

Southwestern Medicine, El Paso, Texas

May, 1918, 2, No. 5

- Our Brothers in Khaki. W. A. Holt, Globe, Ariz.—p. 1.
- Diagnosis and Treatment of Skin Lesions by General Practitioner. V. V. Wood, St. Louis.—p. 5.
- Case of External Hydrocephalus Following Injury. E. B. Rogers, El Paso.—p. 19.
- Prevention of Disease in War. L. L. Seamon.—p. 22.
- Case of Kidney Stone. E. B. Rogers, El Paso.—p. 29.

Tennessee State Medical Association Journal, Nashville

May, 1918, 11, No. 1

- 100 Duty of Profession in Present Crisis. E. T. Newell, Chattanooga.—p. 1.

Vermont Medicine, Rutland

April, 1918, 3, No. 4

- 101 Anemia. C. W. Howard, Shoreham.—p. 79.
- 102 Symptomatology in Child. C. K. Johnson, Burlington.—p. 83.

Wisconsin Medical Journal, Milwaukee

May, 1918, 16, No. 12

- 103 Social Medicine in Industries. C. H. Lemon, Milwaukee.—p. 453.
- 104 Health Insurance. A. W. Gray, Milwaukee.—p. 459.
- 105 Present Status of Tonsil Removal. H. B. Hitz, Milwaukee.—p. 463.
- 106 Plea for Conservation of Fingers. E. W. Maechtle, West Allis.—p. 465.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 20, 1918, 1, No. 2990

- 1 *Vaginal Douching. W. E. Fothergill.—p. 445.
- 2 Treatment of Furunculosis and Other Deep Seated Coccogenic Infections by Collosol Manganese. M. Morris.—p. 446.
- 3 *Recovering Dysentery Bacilli from Stools According to Time Elapsing Since Onset of Disease. C. J. Martin and F. E. Williams.—p. 447.
- 4 *Two Fatal Cases of Icterus Gravis Following Injections of Novarscnobillon. P. C. Fenwick, G. B. Sweet and E. C. Lowc.—p. 448.
- 5 *Toxic Jaundice, with Atrophy of Liver, Followed by Regeneration and Recovery. B. G. R. Crawford.—p. 450.
- 6 Acute Metatarsal Overstrain (Foot Swelling). A. R. Jones.—p. 451.
- 7 *Amyl Nitrite Inhalations in Diagnosis of Mitral Stenosis. R. A. Morison.—p. 452.
- 8 Pylon, or Temporary Artificial Leg. W. H. Broad.—p. 453.

1. **Vaginal Douching.**—Fothergill says the vaginal douche can have, on the whole, been a curse to womankind rather than a blessing. Just as there was a pessary age, characterized by the haphazard use of pessaries in the treatment of the minor ailments of women, so there has been a long period of indiscriminate douching which has not yet reached its belated end. For a time douching remained under the control of the medical profession; but then the general public began buying douche cans on its own account, and the pernicious but apparently seductive habit of antiseptic douching is now generally begun on the advice of an elderly relative. Every patient who complains of minor pelvic ailments should be asked whether she douches or not; and, if she says "Yes," should be told to stop it. The vaginal surface has no glands, and is not a mucous membrane, but is covered by stratified squamous epithelium, which, though very strong and resistant to infection, is, so to speak, not quite waterproof. Thus the vaginal secretion is simply serum which exudes from the surface of the squamous epithelium, and which acquires its normal creamy appearance by admixture with leukocytes and epithelial debris. Sliminess of the vaginal discharge is due to an excess of mucus which comes from the lining of the uterus and not from the vaginal wall. The normal vaginal secretion is definitely acid in reaction, and this acidity inhibits the life of most septic and pathogenic organisms. Thus the normal content of the vagina is a barrier to ascending infections, and it is generally sufficient to protect the uterus.

Douching does actual harm, for it washes away the normal acid secretion; kills the acid-producing bacteria which are the normal inhabitants of the vagina; kills the superficial layers of cells, and irritates the subjacent layers. Further, it promotes hyperemia of the parts, and thus increases the quantity of the secretion, favors menorrhagia, congestive dysmenorrhea, and intermenstrual congestive pain. This explains the fact that the woman who douches much never gets rid of her vaginal discharge, and generally has other complaints in addition. In septic infection of the uterine cavity after abortion or labor, vaginal douching clearly does not

touch the spot at all, and intra-uterine douching is positively dangerous, as it sometimes causes fatal peritonitis by forcing septic material and noxious antiseptics through the tubes into the peritoneal cavity. The proper way to treat uterine sepsis is to dry clean the uterine cavity thoroughly, using a general anesthetic if necessary; to apply concentrated antiseptics with no excess of fluid; and thereafter to leave the uterus and vagina severely alone. In gonorrheal infection of the vulva the infection is very likely to be carried up through the vagina to the cervix, whence the gonococcus has a clear run over the mucous lining of both uterus and tubes. When the cervical canal is once infected, douching is futile, and proper disinfection under anesthesia is the only method likely to be effective.

Though antiseptic and medicated douches might well be dispensed with altogether, exceptions are, the palliative treatment of cancer of the uterus; when preparing a prolapsed and ulcerated vagina or cervix for operation the nurse may give one or two mildly antiseptic douches every day for a week or ten days, during which the patient is kept in bed and the vagina lightly packed; after vaginal operations, also, a few antiseptic douches are useful on those rare occasions in which the incisions become septic. In such cases the indication is definite. Under certain circumstances it is desirable to increase pelvic hyperemia, and for this purpose the prolonged warm douche is useful if given under proper supervision and for a limited period. Typical cases for this treatment are pelvic cellulitis following infection of a torn cervix with a more or less massive deposit of inflammatory exudate in the pelvic cellular tissue, where absorption is favored; inflammatory deposits in other pelvic tissues and organs. Thus, in the subacute phases of pelvic infection, vaginal douching is seen at its best. A slow stream of normal saline solution at a temperature of 100 F. to, say, 105 F., kept up for ten or twelve minutes once or twice a day for two or three weeks, forms a part of the proper treatment of these cases, but it must be done with the patient lying on her back.

3. Recovering Dysentery Bacilli from Stools.—Martin and Williams say that prior to the war the notion seems to have been widespread that the bacteriologic diagnosis of dysentery was as satisfactory as that of diphtheria, and measures for the control of epidemics have been founded to some extent on this assumption. Their experience of laboratory work in the eastern Mediterranean and in Egypt in 1915 and 1916, however, lead them to the conclusion that the chance of recovering dysentery bacilli from the stools was, after the first few days of the disease, a small one. Similar experience seems to have been had by Kolle and his co-workers, and by Seligmann and Cossmann. Seligmann at a laboratory near the front had opportunity to examine material from the recently evacuated sick. Under these conditions the results were that *B. dysenteriae* Shiga, was recovered in 38 per cent. of cases examined. Seligmann gives the percentage positive findings according to the state of the illness as follows: first week, 70 per cent.; second week, 53 per cent.; third week, 18 per cent.; fourth week and later, nil. The authors give the technic of their method and tabulate their percentage of positive results of 1,050 efforts to recover dysentery bacilli from stools at various stages of the disease, June to December, 1917, as follows: the first to fifth day, 68.0; sixth to tenth day, 17.4; eleventh to fifteenth day, 6.3; sixteenth to twentieth day, 3.1; twenty-first to thirtieth day, 1.5; thirty-first to fortieth day, 3.0; forty-first to fiftieth day, 3.0, and fifty-first to one hundredth day, 0.0. Their conclusions are that the chance of recovering dysentery bacilli rapidly diminished after the first few days. This appeared to be the case whether the stools remained characteristically dysenteric or not. The mucopus and epithelial debris discharged in the milder pathologic condition, and the necrosed coagulated superficial layers of the mucous membrane in the more serious, is, except in the earliest stages of the disease, invaded by hosts of intestinal organisms which soon overwhelm the dysentery bacilli originally present. This places a serious limit on the value of a bacteriologic diagnosis of dysentery. If reliance had been placed on the results of one examination, but 15 per cent. would have been discovered.

4. Fatal Cases of Icterus Gravis Following Novarsenobillon Injections.—The authors report two fatal cases of icterus gravis following injections of novarsenobillon, in soldiers aged 26 and 20. These two cases resembled one another closely in their history, clinical manifestations and morbid anatomy. After receiving five doses of novarsenobillon followed by an interval (of seven and fourteen days, respectively), the patients became jaundiced. At first the symptoms were mild, but the jaundice gradually deepened, the liver became greatly reduced in size, persistent vomiting occurred, and the patients died twenty-one and forty days respectively, after the onset of symptoms. Necropsy showed an acute cirrhosis of the liver. Both were cases of primary syphilis and showed no secondary manifestations. Case 1 gave a negative Wassermann reaction at the conclusion of treatment, but Case 2 gave a double positive reaction on the last occasion on which it was taken.

5. Toxic Jaundice, with Atrophy of Liver.—Crawford reports on three cases of toxic jaundice, with atrophy of liver, followed by regeneration and recovery. The patients were workers on T. N. T. manufacturing processes, and were exposed both to fume and skin contact. Two were men aged 29 and 22, and the third a woman of 19. The diagnosis, including the liver atrophy, was confirmed in each case by a government medical inspector of factories. The treatment was necessarily somewhat empirical. The skin was encouraged to act, the bowels kept free by a mild aperient (white mixture) and enemata; nourishment was given in small quantities at frequent intervals—milk and soda water, meat juice, thin broths, barley water, etc.; meat extracts were well tolerated, while fruit and fruit juices disagreed and caused vomiting. Injections of 6 ounces of a saturated solution of sodium bicarbonate were given by the rectum twice daily at the height of the illness, and the same salt by mouth also in a mixture and in milk to the amount of 10 drams daily; whenever this was discontinued the patient became worse. All three patients slowly rallied, and in the fifth or sixth week of the illness began definitely to improve. Convalescence, however, was slow and slight relapses frequent, the patient becoming drowsy and sick, and having recurrence of epigastric pain if allowed to do much at first or if excited by friends or visitors. The chief points of interest in the cases were: 1. The regeneration of the liver after very extensive destruction. 2. The beneficial result of the exhibition of sodium bicarbonate in what seemed to be hopeless cases. 3. The absence of T. N. T. in the urine when it was being excreted by the bowel.

7. Amyl Nitrite in Diagnosis of Mitral Stenosis.—Morison says that in twelve cases of soldiers in whom presystolic murmurs were suspected, but in whom they could not be recognized with any degree of certainty, amyl nitrite (inhaled from a 3 minim capsule until a reaction was evident) brought forth unmistakable murmurs in six instances. Among the first signs of early mitral stenosis is an accentuated first sound; from this sign the sounds pass to a simple reduplication with accentuation; to perhaps a triplication, and then to what may, or may not, be termed a murmur, according to the idiosyncrasies of the examiner. The point which is emphasized is that amyl nitrite, in a large proportion of cases, will raise the scale of the signs, bringing them near to a point in which a diagnosis becomes certain.

Lancet, London

April 20, 1918, 1, No. 4938

- 9 Modern English Skull. F. G. Parsons.—p. 557.
- 10 *Dysentery Bacilli: Differentiation of True Dysentery Bacilli from Allied Species. F. W. Andrewes.—p. 560.
- 11 *Etiology and Treatment of Trench Foot. J. E. Sweet, G. Norris and H. B. Wilmer.—p. 564.
- 12 Bacillemia Due to Various Organisms. J. G. Thomson.—p. 566.
- 13 Thermoprecipitin Reactions as Aid to Rapid Diagnosis of Bacillary Dysentery. L. F. Hirst.—p. 567.
- 14 Acute Infective Ophthalmoplegia, or Botulism. W. Harris.—p. 568.
- 15 *Epidemic of Toxic Ophthalmoplegia. A. J. Hall.—p. 658.
- 16 Case of Infection with *Bothriocephalus Latus*. T. T. O'Farrell.—p. 570.
- 17 Peripheral Nerve Lesions After Antitetanic Serum. S. C. Dyke.—p. 570.

10. **Dysentery Bacilli.**—Andrewes in differentiation of true from related forms of dysentery bacilli employed sugar reactions, indol formation, alkali formation in relation to initial acidity, the acid agglutination test, and agglutination with specific serums. With reference to the latter he finds: 1. Shiga's bacillus is readily agglutinated and to end titer by any of the stock Shiga serums. No instance of an inagglutinable Shiga has been met with in the course of this work. 2. *B. ambiguus* is not agglutinated by Shiga serums, even in low dilution. 3. Flexner Y bacilli are usually agglutinated to end titer, or its neighborhood, by one or another of the stock serums on the market, but different strains may respond to different serums. 4. Of the allied bacilli, *B. alkalescens* fails to agglutinate with Flexner Y serums within the usual time limit of four to five hours. 5. *B. dispar* is in much the same case. The serologic relations of *B. alkalescens* and *B. dispar* with the Flexner Y bacillus seem thus remote, though there is a suggestion of some small element in common. The species described as *B. ambiguus* and *B. alkalescens* seem fairly well defined and can be rejected as having no connection with dysentery. With regard to the lactose fermenting forms which Andrewes has grouped under the name *B. dispar*—more for the sake of a convenient general term than because he believes them to be a single entity—much more work is necessary. There is a general belief that the lactose fermenters can be excluded in dysentery work, and this is very likely correct; at least, they cannot be returned as dysentery bacilli. Even when all these simulators of *B. dysenteriae* are rejected there will doubtless remain a certain proportion of aberrant strains which cannot be thus accounted for, and some of these may be really atypical members of the Flexner Y group. Judging, however, from this series of 100 strains, the majority of which were sent as presenting abnormal features, such a residue would be very small.

11. **Treatment of Trench Foot.**—The authors try to show that the disease in all its forms starts from the interior, and that the infections which often mark the course of the disease are but the natural secondary manifestations of the reaction of devitalized tissues to infective agents; that, therefore, the treatment of the condition should be directed to the skin only in so far as these secondary infections have resulted in surgical conditions. Standing still in the cold and wet may be the causal factor, in "trench foot," as it must be the exciting factor, in which event, however, all men should be susceptible. Since all men under the same conditions do not fall victims, and since in the men who are affected these facts of clinical blood pressure which the authors herewith demonstrate are to be found, they feel compelled to the conclusion that "trench foot" is a disease incited by the effect of cold and inaction on a foot whose vasomotor system is physiologically impaired, and therefore, though more rarely, they encounter a "trench foot" and "trench knees." The explanation of "trench foot," based on their reasoning and their findings, is that there is a spasmodic contraction of the arterioles of the foot. The first result of this arteriole spasm, is ischemia with numbness, tingling, burning pain; the second result is a disturbance of capillary circulation, perhaps due to back pressure from the veins, perhaps due to the loss of rhythmicity of the driving force, perhaps due to the mere stagnation, with swelling of the foot from edema and diapedesis of red cells. This results in devitalization of the skin and the favoring of infectious processes, and may extend to actual gangrene. The number of cases of "trench foot" on which the authors have made blood pressure estimations to date is fifty-three. Pressures were also taken on eight other cases not suffering with "trench foot" to serve as controls. With but one exception an inequality of the leg and arm pressure was found in the fifty-three cases of "trench foot," consisting in a very definite increase of the leg over the arm pressure. In the one exception the arm pressure exceeded the leg pressure; after forty-eight hours reverting to the condition found in the other fifty-two cases. In the eight patients used as controls the pressure was found equal in the arm and leg. The leg pressure was also found increased in direct

proportion to the severity of the case. As the patient's condition improved the pressure was found to drop, or in some instances, few in number, the arm pressure would rise, and by the time the patient had recovered, the arm and leg pressure had become equal; thirteen cases so far have been observed which show this phenomenon. These thirteen cases, together with seven suffering from other conditions, justify the conclusion that the differences observed in "trench foot" cannot be ascribed to some technical fault in the authors' blood pressure readings. The differences in arm and leg pressure are as follows: the maximum 30 mm., the medium 15 to 20 mm., the minimum 8 to 10 mm.

The authors are convinced that potassium iodid is a most important addition to the treatment of "trench foot" for the prompt alleviation of pain, if for no other reason. In thirty-one cases potassium iodid in 20 gr. doses three times daily was given, with the result that there was a decided relief of pain in twenty-four hours after the first dose had been given. There was also coincidentally with the relief of pain in many of the cases a fall of pressure, an average drop of the leg pressure of 10 to 15 mm. In all of the thirty-one cases the potassium iodid was withheld for twenty-four hours on three occasions. The complaint from the patient the following morning was increased pain and insomnia. In some of the cases the dose of potassium iodid was increased to 30 grains three times daily, as 20 grains did not seem sufficient to control the pain. One of the twenty-nine patients treated with potassium iodid alone was also a severe type, with marked discoloration and blebs of both feet. The potassium iodid was sufficient in this case to control the pain. Relief from pain is absolute, but from comparing the cases treated with potassium iodid with others treated by the ordinary methods, the relief is greater in the cases in which the potassium iodid alone has been given, and the duration of the attack is markedly shortened. The only other treatment used in these cases was hot-water bottles to the soles, boric powder dusted on the feet, and flannel bandages.

15. **Epidemic of Toxic Ophthalmoplegia.**—Hall describes a toxic ophthalmoplegia associated with acute asthenia and other nervous manifestations which occurred in epidemic form. The main features of the cases so far observed are as follows: The patient, while in ordinary health, begins to be languid and drowsy, with or without headache, and other symptoms of malaise. In a few hours or days the weakness has increased very much, and indeed, may amount to complete prostration, so that he lies helpless in bed and can hardly move a muscle. Together with this, the drowsiness becomes more marked and develops into real lethargy. Pyrexia may be absent throughout, or it may be present from the first, become severe, and persist. Cerebral excitement and delirium has been a prominent feature in some of the cases. In most of them local symptoms pointing to lesions in the bulbopontine area are present at some time or other. Of these ptosis, ophthalmoplegias of various extent, nystagmus, facial palsy of lower neuron type, unilateral or bilateral, speech affections, and dysphagia have occurred in different combinations in different cases. Muscular tremors of a curious kind have been noted in some; in one case this formed the most prominent symptom, and alcoholism was suspected. In some cases the general muscular asthenia has been more marked on one side of the body than on the other—either arm alone or arm and leg. But there has been, as yet, no evidence of a localized limb paralysis such as one commonly sees in acute poliomyelitis.

Hall has divided the cases provisionally into two broad groups: (1) the meningitic; (2) the asthenic. 1. Meningitic: These cases simulate meningitis very closely, and at a certain stage it is almost impossible to be sure they are not. So far the cerebrospinal fluid has shown no organisms or abnormal cells and its pressure has not been increased, and in a few days the symptoms subside and improvement sets in. Four of the cases were of this type. 2. Asthenic: The asthenic group presents a clinical picture of drowsiness and languor replacing excitement and delirium. The patient without any obvious cause is rendered quite helpless, and lies in bed like a log, unable to turn over or to move the limbs without

assistance. There is usually no pyrexia throughout. The effect of the muscular asthenia in the neck and face is very extraordinary. The first case of the series was a boy, aged 15. The facies suggested a myasthenia gravis. In another case, a woman, aged 56, the facial expression was so suggestive of "Parkinson's mask" that Hall thought at first she must have paralysis agitans. As a matter of fact, this was the case referred to above in which general muscular tremors were the chief symptoms. In a few days the symptoms disappeared. In this group there is also a peculiar posture of the hands across the trunk and a kind of plastic tone, not unlike that seen in paralysis agitans. The tremor, however, has no resemblance to the tremor of that disease. Although in most of the cases the symptoms begin to disappear in a few days or a week or two, yet in one case, a man, they still persist after three weeks. The sphincters are not as a rule affected.

Of the ten cases seen up to the present there were: males, four; females, six; ages range from 9 to 70. Only one was under 10. Eight were over 20. It is evident that the etiologic factor is something which acts as a widespread poison on the central nervous system. Such a poison might be of organic or of inorganic origin. It may be connected with some poisonous element in the food or some deficiency of essential ingredients. Attention has been called to the similarity between these cases and certain outbreaks of botulism, due to the consumption of food infected by *B. botulinus*. Investigations on these lines are proceeding. So far, only in one case has the patient in any way attributed the illness to food.

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April 9, 1918, 79, No. 14

- 18 *Magnesium and Cancer. Dubard.—p. 295.
19 Dermatitis, etc. Produced by Cabbage Caterpillar. E. Crouzel.—p. 297.

April 16, 1918, 79, No. 15

- 20 Repair of Wounds of Palate and Nasal Fossas. H. Morestin.—p. 303.
21 Rapid Healing under Carrel Treatment after Mastoid Operations. G. Mahu.—p. 309.
22 *Alarmists. C. Vallon.—p. 312.

18. **Magnesium and Cancer.**—Dubard gives magnesium carbonate (from 8 to 12 gm. a day) after operations for cancer. He found that marked improvement followed this while ordinary alkaline medication, such as Vichy water, had an unfavorable influence in incipient malignant disease. He believes that there is some connection between neuro-pathic disorders and the origin and course of cancer, and we all know the important part played by magnesium in the normal functioning of the nervous system. Loss of magnesium seems to favor the onset and development of malignant disease, while administration of magnesium serves to restore these losses and exert a favorable influence on tumors, warts, papillomas, etc. Between 1900 and 1916 he performed 550 operations for cancer, and of 360 patients kept under observation 125, that is, 34 per cent., are known to be living five years at least since the operation. Others have died after survivals of six or seven years. He has thus a global total of 24 per cent. of relatively long survival. His systematic administration of magnesium carbonate kept up for months, he thinks, has had much to do with these favorable experiences. Occasional association with phosphoric acid, sodium fluorid or manganese seemed to aid in the assimilation of the magnesium, he says. The prevalence of cancer in the elderly he is inclined to explain by the substitution in the tissues of calcium for magnesium with advancing age. Some organic combination of magnesium, he adds, might be better than the *magnésie blanche* he has been using.

22. **Alarmists.**—Vallon presents arguments to show the necessity to beware of alarmists during the war. They are either seeking to depress the morale of the people and army, and in that case they come in conflict with the espionage and similar laws, or they are mentally irresponsible. There is nothing astonishing in the fact that pathologic melancholia and other psychoses take this form of alarmist pessimism in this war environment. It is the alienist's task to distinguish between the traitorous and the pathologic alarmists.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 15, 1918, 42, No. 6

- 23 *Transfusion in Measles. L. Ribadeau-Dumas and E. Brissaud.—p. 147.
24 *Relics of Inoculation Tubercle. Ribadeau-Dumas and Perrochon.—p. 150.
25 *Spinal Fluid in General Paresis. J. A. Sicard and H. Roger.—p. 154.
26 *Slow Endocarditis. H. Fayolle.—p. 159. R. Debré.—p. 163.
27 Autochthonous Malarial Aortitis. G. Rosenthal and S. Bloch.—p. 166.

Feb. 22, 1918, 42, No. 7

- 28 Aneurysm of Aorta with Inherited Syphilis. H. Barbier.—p. 173.
29 *Paroxysmal Vomiting with Inherited Syphilis. H. Barbier.—p. 174.
30 Peripheral Facial Paralysis. Lévy.—p. 177.
31 *Syringe for Aspiration and Transfusion. J. E. Larché.—p. 178.
32 *Chronic Arsenical Poisoning. J. A. Sicard and H. Roger.—p. 181.
33 *The Dyspepsia of Repatriated War Prisoners. F. Ramond and A. Petit.—p. 186.
34 Spirochetosis. Manine.—p. 190.
35 The Resisting Power of the Corpuscles in Malaria. E. May.—p. 193.
36 Suprarenal Symptoms with Chronic Nephritis. R. Porak.—p. 197.

23. **Transfusion in Measles.**—Two Arabs were brought to the base hospital with extreme collapse in the course of measles. One speedily died, but the other recovered after transfusion of citrated blood from a measles convalescent. The eruption was diffuse and ecchymotic, the fever up to 41 C., with collapse, anuria, incontinence and toxic dyspnea. After transfusion of 100 c.c. of blood from a man who had been cured of measles for a week, in two hours the vital functions had recuperated and speedy recovery followed.

24. **The Initial Lesion in Tuberculosis.**—Dumas and Perrochon in making roentgen examination of the chests of men with various diseases or wounds or healthy controls made a special point of investigating for some primary initial tuberculous lesion, dating probably from childhood. They found evidences of such in almost two thirds of the adults examined.

25. **The Reaction in the Spinal Fluid in General Paresis.**—Sicard and Roger reiterate that the Bordet-Wassermann reaction is always positive in the cerebrospinal fluid with progressive paralysis, and is irreducible even under intensive treatment. Their findings have been invariably positive in more than 100 cases of general paresis in the last six years. They insist that negative findings disprove the diagnosis of general paresis. In the blood, the reaction was positive only in 95 per cent. of their cases, and it veered to negative in all but 35 per cent. under intravenous arsphenamin treatment.

26. **Slow Endocarditis.**—Fayolle reports the clinical history of a case in a man of 33, and Debré the necropsy findings in a case previously published. Debré has found constantly in his cases a streptococcus nonvirulent for laboratory animals, and its cultures do not form a halo on solid mediums with blood. It turns hemoglobin green, and hence Schottmüller calls it the *Streptococcus viridans*. The endocarditis is of the vegetative type; enlargement of the spleen and multiple joint lesions are constant, as also multiple infarcts in the abdominal organs. Subacute nephritis is always found at necropsy. The rupture of some intracranial aneurysm is usually responsible for death.

29. **Paroxysmal Visceral Disturbances with Inherited Syphilis.**—Barbier emphasizes the frequency with inherited syphilis of localized syndromes, such as paroxysmal vomiting, paroxysmal enteralgia and paroxysmal incontinence of urine. The paroxysmal vomiting seems to be most frequent between the ages of 5 and 10. It occurs usually in the morning, fasting, generally preceded by frontal headache a few hours or even days before the paroxysm of vomiting comes on. The headache keeps up during the vomiting, but stops when the vomiting is over. The child's sleep is not so sound as usual, and there may be signs of insufficiency of the liver. There is no nausea; the vomiting occurs suddenly, in a gush. After expulsion of the food in the stomach, the vomit seems to be pure gastric juice. The child may thus vomit twenty times in the twenty-four hours, and there may be some blood in the vomit at last. As soon as the child stops vomiting it returns to its play. The attacks may last from a few hours to two or three days. There is no periodicity about their recurrence;

there may be two or three in a few months and then no more for several years, or there may be two or three a year. They are rarely closer together than this. Occasionally the attacks are accompanied by meningeal symptoms, somnolence, arrhythmia, and tendon and pupil changes. Unless a positive Wassermann reaction can be obtained, it is often difficult to differentiate this inherited syphilis vomiting from that with an incipient cerebellar tumor or tuberculous meningitis. With the latter there is usually fever at times, while there is none with this syphilitic vomiting. Appendicitis may be suggested by this latter, but lumbar puncture should be done before appendectomy in dubious cases. Attacks of enteralgia with diarrhea may alternate with the vomiting, and incontinence of urine may be referred to the same cause. This incontinence may accompany the gastric crisis, or there may be attacks of transient incontinence occurring alone. A positive Wassermann reaction in such cases explains the incontinence. He treats such children with weak doses by the mouth, rejecting the inunction method which he regards as dangerous for children. He knows of cases of sudden death after mercurial inunctions.

31. Syringe for Both Aspiration and Transfusion.—Larché's *transfusio-aspirateur* is fitted with a combination trocar-needle. A serous or purulent pleural effusion can be punctured and evacuated and an aseptic gas or disinfecting solution can be injected into the cavity, all through the one syringe and at the one operation.

32. Chronic Arsenical Intoxication After Arsphenamin Treatment.—Sicard and Roger discuss the three types of disturbances that may follow intravenous treatment with any of the new preparations of arsenic: disturbances in the nature of anaphylaxis, disturbances from the mixed reaction of the arsenic on the spirochetes—their virulence enhanced in response to the action on them—and disturbances from pure arsenical intoxication. They report here five cases of general paresis in which intravenous injection of a French preparation of arsphenamin had been rapidly pushed to a dose of about 1.8 gm. per week, or 15 or 30 cg. had been given daily. This intensive treatment was given at the demand of the patients and their families, but after from 11 to 12 gm. had been administered, erythema, falling of the hair, abscesses and ulcerations in one of the men testified to the chronic arsenical poisoning, and he died in consequence of ulcerations in pharynx and tongue, with hemorrhages. The others all seem to have benefited materially by the treatment, but the Wassermann reaction is still positive. These men took 15 or 17 gm. in the course of two or three months. Sicard found the skin reaction to iodine a reliable means of detecting the approach of arsenical intoxication. When the skin has reached the limit of its endurance, painting with tincture of iodine brings out a crop of blisters. He applies this test to the forearm, and the dermatitis with the vesicles is apparent the next day. This sign became manifest after intravenous injection of from 10 to 12 gm. of novarsenobenzol in the course of about two months, and the reaction was positive a long time after suspension of the drug. With the big weekly doses, the kidneys and the liver suffered most, and by the eighth or ninth gram, albuminuria and subjaundice were evident. With the small daily doses, the kidneys and liver did not seem to suffer appreciably and there were no symptoms from them, but the ectoderm seemed to be unable to stand more than 12 gm. in the two months.

33. Dyspepsia in Men Returning from Prison Camps.—Ramond and Petit have examined forty men repatriated after long imprisonment in Germany, and practically all were suffering from acute or subacute gastro-enteritis, the condition much like those in herbivora kept on a meat diet. The corroboratory evidence of all shows that the diet at the Würzburg, Darmstadt and Gräfenburg camps consisted of bread containing bran, straw, potato, corn and sawdust, barley coffee, no sugar, bean or turnip soup, and at supper 40 gm. of cheese of the Brie type or a piece of sausage the size of one's thumb, or herring. They comment that "the Germans have no excuse for these scanty rations, for the potato harvest in 1917 was particularly good, and the stock of pigs was never so large. The Austrians, on the

other hand, although with greater scarcity of foodstuffs, yet have made a point of respecting the international conventions which they had signed." Among the repatriated from Germany whom they examined, fully 10 per cent. had confirmed gastric ulcer; four required an operation for stenosis of the pylorus.

"These gastric disturbances," they add, "are not the only ones nor the most frequent. There is the long, sad train of those with advanced consumption. What the shells and the poison gases fail to accomplish, the prison camps complete. We witness thus the slow and implacable death agony of all our young men, without a single word of protest being raised. And while our sons are perishing obscurely in the jails and camps of Germany, France, always foolishly generous, does not reciprocate. Our German prisoners have abundant food, which they can vary; they enjoy excellent health. When the war is over they will take up again the economic struggle, with all their forces intact, and it will not be our soldiers returning anemic from Germany, in greatly diminished numbers, who will be able to crown the victory of our arms with the economic victory."

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March 30, 1918, 8, No. 13

- 37 *The Psychoses of Malaria. A. Porot and R. A. Gutmann.—p. 241.
38 Arterial Findings with Oscillometer as Guide in Operating. G. Jeanneney.—p. 248.
39 *Bacteriologic Findings during Operations. G. Rosenthal.—p. 251.

April 6, 1918, 8, No. 14

- 40 *War Bread from Biologic Standpoint. E. Weill, and G. Mouriquand.—p. 258.
41 The Meat Question. G. Linossier.—p. 267.
42 The Milk Supply of Paris. C. Porcher.—p. 269.
43 Sugar and Saccharine. G. Pouchet.—p. 273.
44 The Soldiers' Ration. M. Labbé.—p. 275.

37. Psychoses in Malaria.—Porot and Gutmann describe three varieties of acute malarial psychoses and four of the prolonged type, with several subvarieties. They are in charge of a *centre neurologique*, and their experience emphasizes the imperative necessity for vigorous and persevering treatment (quinin) in all cases of the mental confusional state, the initial psychopathy, in malaria. Under proper treatment this often subsides, and thus is warded off the prolonged and rebellious form of malarial psychopathies. In one of the typical cases reported, the young man developed the syndrome of dementia praecox within a year of contracting malaria in Macedonia. No other pathologic antecedents were known in the personal or family history except that he had had convulsions as a child. In another case the man of 37 developed acute mania but under seven months of sanatorium treatment regained his mental poise, although still somewhat excitable.

39. Bacteriologic Control at Advanced Surgical Station.—Rosenthal comments on the importance of the bacteriologist's statement that a wounded man recently brought in, and apparently not gravely wounded, yet harbors the perfringens for instance. The surgeon is thus warned of the necessity for extra thoroughness in his operation. The Carrel-Dakin method seems to be especially effectual in clearing out the large anaerobes. Every war operation may be modified by the bacteriologic findings, either spurring to extra care or justifying less vigorous measures. The bacteriologic control during the intervention must be restricted, of course, to rapid examination with the ultramicroscope when possible, without staining or some simple stain, the gram—these will readily show the group to which the microbes in the specimen belong. The perfringens, in particular, is the one that seems most to be dreaded. The bacteriologist thus in five minutes can tell the surgeon that the wound is aseptic or contains diplococci, or there is complex diplobacillary infection with both aerobes and anaerobes.

40. War Bread.—This is a study from the biologic standpoint of the various materials now used in making bread. Among the practical conclusions is the suggestion that possibly an aqueous extract of bran, rice hulls or other hulls of grains might contain the vitamins necessary for health, and if bread was made with this "bran water" it would not

be necessary to burden the digestive tract with so much cellulose. Weill and Mouriquand report considerable experimental research on pigeons, confirming the importance of these vitamins. They say, "Notwithstanding the Americans, we are at present obliged to live almost exclusively on our supply of wheat, and the 1917 crop was below the average." Their experiences confirm further that bread made with lime water, instead of ordinary water, seems to keep better and be more palatable, free from the bitter taste which the "war bread" sometimes leaves in the mouth. The Italian "Bergamo bread" is made of whole grain without grinding. It is subjected to maceration for two days, in water at 20 C., and it is then mashed and used directly for making dough. There seems to be some germination of the grain, and this seemed to increase the nutritional value of the grains for guinea-pigs in their tests. The germination possibly aids in transforming the albumins into peptones, or amino-acids, and the starch into dextrin and glucose.

Presse Médicale, Paris

March 21, 1918, 26, No. 17

45 *Auto-Bone Flap for Gap in Skull. R. Le Fur.—p. 153.

46 Arsenic Preparations in Relapsing Fever. Dumitresco-Mante.—p. 155.

March 28, 1918, 26, No. 18

47 *Acute Rheumatism with Chronic Heart Disease. O. Josué, M. Parturier and A. Berrut.—p. 161.

48 Extraction of Projectiles in Hilum of Lung. R. Didier.—p. 162.

49 Frequency of Association of Streptococci and Staphylococci in Chronic Osteitis. E. S. Harde and A. Hauser.—p. 164.

45. **Cranioplasty.**—Le Fur has applied in thirty-seven cases the technic he describes with illustrations, and has found it constantly reliable while its simplicity and ease commend it above other methods. He splits horizontally the bone of the skull over the desired area, and then turns the upper slice back, as if on a hinge, thus covering the opening in the skull. The periosteum is loosened back from the farther edge of the bone flap thus turned over, and it is used to suture the flap to the periosteum of the skull beyond. The skull then shows the rectangular flap with its inside turned up, and the rectangular space in the skull beyond, from which the flap was split off. The tables of the skull are easily separated, and the flap is taken large enough to extend beyond the hole to be covered. The method is applicable even for very large gaps in the skull, as two flaps can be cut and turned back to overlap, thus covering a large area.

47. **Recurring Acute Articular Rheumatism in the Course of Long Established Heart Disease.**—Josué and his co-workers refer to *poussées rhumatismales* in the form of joint swelling and pain, or pain in the muscles occurring in the course of chronic heart disease. They are liable to be mistaken for tonsillitis or influenza or acute bronchitis. The heart symptoms are overshadowed by those from the exacerbation of the rheumatismal infection. Or it may act on the heart alone, sparing the joints, including a febrile asystole with or without general disturbance; congestion of the liver; edema of the legs; dark colored, scanty urine and arrhythmia. Under the salicylates the symptoms promptly retrogress, while they persist stubbornly under other measures. They warn that the doses must be large enough to be effectual, from 6 to 8 gm. daily for several days, continuing with 4 gm. for some time. They give about the same amount of sodium bicarbonate with it to insure tolerance by the stomach. They give children 0.5 gm. per year of age up to 6, and then 3 gm. daily. Unless the salicylic medication is vigorous and long kept up, the infection is not conquered but persists in an almost latent form continuing its ravages to irreparable lesions.

Progrès Médical, Paris

April 6, 1918, 33, No. 14

50 *Malaria in France. L. Leger, G. Mouriquand and A. de Kerdrel.—p. 117.

51 Traumatic Total Facial Diplegia. L. Marchand.—p. 120.

April 13, 1918, 33, No. 15

52 *"Embalming" Treatment of Wounds. L. Mencièrè.—p. 125.

53 Psycho-Pathologic Explanation of Confusional Mental States. G. L. Duprat.—p. 129.

54 Mechanism of Psychotherapy for Functional Contractures. H. Piéron.—p. 132.

55 Case of Concussion of the Chest. P. Batigne.—p. 135.

50. **Malaria in France.**—It was early recognized that the men returning from Macedonia with malaria might import the disease and form foci of infection for others, creating new foci or rousing long slumbering foci. A commission was appointed to study the subject, and the country was charted to show the regions where the anopheles abounds and where it cannot be found. The men returned to France with malaria are now distributed in the nonanopheles districts, but before the danger was recognized, several active foci had developed. In some the infection was traced to soldiers from French China, carriers of the malaria parasites.

52. **The Mencièrè Treatment for War Wounds.**—Mencièrè's aim is to fill the wound with a fluid which will hold the microbes in check while soothing and relieving pain. The man can then be safely left without further treatment for several hours or even days, confident that the wound will be found practically *in statu quo* when conditions permit thorough surgical treatment. Mencièrè here quotes the testimony of numerous army surgeons on the efficacy of this embalming treatment in its special field, that is, when a big drive is on, or other conditions prevent careful surgery at once. He says that the formula that has stood the test of thousands of experiences is 10 gm. each of guaiacol, eucalyptol and balsam of Peru; 10 gm. of iodoform; 100 gm. alcohol and ether to 1 liter. For one or two applications only, for severe gangrenous wounds, he substitutes 10 gm. of benzoic acid in the formula, or merely adds 9 gm. of benzoic acid to the first formula. He explains the action of the different ingredients, especially the penetrating action of the ether which follows the microbes into the depths of the tissues lining the cavity, where the microbes are most active; those free in the cavity are already dead. The fluid is sprayed copiously into the wound, and this can be done by any one. It does not interfere with the surgeon's work later. The fluid can be used further as a systematic dressing after the surgical toilet of the wound. The protection conferred by this dressing seems to be only for twenty-four hours at most. The official instructions from the army medical department, dated October, 1917, state that, in case of precipitate evacuation of the wounded, after excision of devitalized tissue it is advisable to apply some dressing the action of which would continue during the entire duration of the transportation. No particular dressing was specified, but Mencièrè insists that his formula answers the purpose, and that 1,200 or 1,300 army surgeons are using it.

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Sept.-Oct., 1916, 35, No. 9-10, Pub'd. Feb., 1918

56 *Concussion of Cervical Spinal Cord. H. Claude and J. Lhermitte.—p. 535.

57 Cerebellar Parasyndrome from Wound of Worm. A. Léri.—p. 555.

58 *Obliteration of Arteries and Nervous Ischemia in the Wounded. R. Desplats and A. Buquet.—p. 578.

59 *Spasmophilia and Intoxication as Factors in Epilepsy. L. Plantier.—p. 620.

60 Tuberculomas. Gougerot and Dénéchau.—p. 644.

61 Skin Reaction to Vaccine. H. Pied.—p. 658.

56. **Concussion of Cervical Spinal Cord.**—Claude and Lhermitte describe cases from their experience in which the concussion of the spinal cord in the neck from a projectile entailed grave quadriplegia, hemiplegia or monoplegia and a cerebellospasmodic set of symptoms without actual paralysis. They have encountered also a number of abortive cases of these various types. Notwithstanding the apparent gravity of the paralysis, the evolution has been constantly favorable. Motor function and sensibility have gradually returned. This is in marked contrast to the course of similar lesions in the dorsal, lumbar and sacral spinal cord.

58. **Nervous Disturbances from Wounds of Arteries.**—Desplats and Buquet declare that not enough attention has been paid to injury of the medium sized arteries in the nervous disturbances of the wounded. Obliteration of a trunk artery is enough in itself to entail motor, sensory,

and trophic disturbances and modify the electric reactions. The terminal distribution is characteristic, and these disturbances are the more pronounced the higher the segment of the artery involved, and at points where collateral circulation is less readily established, especially in the arm. The zone of the axillary artery is the most dangerous. Traumatic obliteration of this artery may alone entail ulnar, median or radial paralysis, with the reaction of degeneration in the segment of the arm involved and complete anesthesia of the tips of the fingers. The fingers may also show characteristic deformity. This set of symptoms becomes attenuated as the obliteration or compression of the artery is farther from the trunk. In the leg the symptoms are masked by the tendency to gangrene. In the majority of cases, however, both the artery and the nerve are injured by the projectile. To operate on the nerve and neglect the artery is as futile as to operate on the artery and neglect the nerve.

59. Epilepsy.—Plantier epitomizes his opinion of epilepsy in the statement that it is a "toxicate of spasmophilia." Spasmophilia is usually an inherited taint, but it may be acquired in the course of lead or alcohol, coffee or tea poisoning, or the spasmophilia may develop from some local cause, possibly relics of meningitis or encephalitis, consecutive to some acute infection in early childhood. We all know instances where extraction of a wisdom tooth, of a polyp in the nose, or of hardened wax in the ear has arrested a tendency to epilepsy even of long standing. He remarks that it is useful to read over the cases of this kind, that are so numerous in the literature, in order to impress on one's mind the imperious obligation in the presence of an epileptic to eliminate every possible acquired local cause for spasmophilia before ascribing it to heredity, or diagnosing it as common, essential epilepsy. The continuous abnormal excitation transmitted to the motor neuron from the foreign body, sequester, calculus, helminths or carious tooth, keeps up a kind of tetanization of the hyperactive motor nerve cell, and the partial or complete epileptic seizure is the result. This is hastened and intensified by any superposed toxic action. Digestive auto-intoxication is the main and usually the only source for the toxic action. He has found the liver pathologic in almost every epileptic he has had occasion to examine. This coincidence explains the absolutely unexpected arrest of the seizures in many epileptics who were given treatment addressed to the liver.

Schweizer Archiv für Neurologie und Psychiatrie, Zurich

1917, 1, No. 1

- 62 Definition of "Somatogenous" and "Psychogenous." Dubois.—p. 8.
- 63 The Mendelian Laws in Psychoses. E. Bleuler.—p. 19.
- 64 Anatomic Findings in Congenital Spastic Paraparesis in Adult Idiot. Düring.—p. 41.
- 65 Aplasia and Hypoplasia of Neocerebellum. R. Brun.—p. 61. To be continued.
- 66 The Static Tonus and Its Role in Nervous Pathology. M. Egger.—p. 124.
- 67 The Connecting Tracts between the Cerebellum and the Stem of the Brain. H. Uemura.—p. 151. Concluded in No. 2, p. 342.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 21, 1918, 39, No. 23

- 68 Mercury Bicarbonate in Analysis of Ammonia and Purin Bodies in Organic Fluids. E. Pittarelli.—p. 225.

March 24, 1918, 39, No. 24

- 69 *Reaction of the Blood to Tuberculin. A. Barlocco.—p. 233.

March 31, 1918, 39, No. 26

- 70 *Treatment of Frozen Feet. G. Cocci.—p. 254.

69. Reaction of Blood to Tuberculin.—Barlocco describes the morphologic reaction of the blood to the cutaneous and subcutaneous introduction of tuberculin in healthy and tuberculous subjects. In the healthy there did not seem to be any appreciable change in the blood after subcutaneous injection of 0.001 gm. of tuberculin, but with a larger dose there was pronounced hyperleukocytosis with neutrophilia. In the tuberculous, injection of 0.001 gm. tuberculin, or even half this, induced a neutrophil hyperleukocytosis with sometimes slight eosinophilia. This reaction is independent of the eventual thermic reaction to the tuberculin. He gives charts

and tables from typical cases to illustrate these findings, as also the findings after the skin tuberculin test. They seem to be the same in all these conditions, differing merely in degree and proportionate to the amount of tuberculin used. The lymphocyte curve does not seem to be modified.

70. Treatment of Frozen Feet.—Cocci refers to extremely grave freezing of the feet with gangrene and mutilation. In his service the mortality of these cases with freezing of the third degree was from 70 to 80 per cent. until he began to sear them with a red hot iron, passing it flat and slowly over the gangrenous surface to the line of demarcation. The tissues thus destroyed are only those already devitalized by the gangrene. The heat induces such an afflux of lymph and blood that the tissues beneath start to heal naturally, and as the scorched tissues are cast off, healthy granulations are found beneath. The fever subsides and with it the edema, the gangrene becoming dry gangrene. This favorable outcome is not constant, but it occurs often enough to render this method of treatment far superior to anything else he has tried, and saved months of suffering and extensive mutilations in many cases. The streptococcus was found in a pure culture in the blood in most of these severe cases.

Policlinico, Rome

April 14, 1918, 25, No. 15

- 71 *Dermatitis in Sorghum Cutters. G. Hoffer.—p. 341.
- 72 Nonirritating Treatment of Scabies. L. Tommasi.—p. 343.
- 73 Sudden Death in Six Months' Infant with Previously Latent Inherited Syphilis. C. Rühl.—p. 349.

April 21, 1918, 25, No. 16

- 74 Frame for Applying Plaster Cast under Roentgen Control. L. Gavazzoni.—p. 365.
- 75 *Clinical Signs of Anatomic Healing of Pulmonary Tuberculosis. P. Rusca.—p. 369.
- 76 Primary Edema in Malaria. F. Paoletti.—p. 373.

71. Dermatitis in Sorghum Harvesters.—Hoffer found a peculiar dermatitis in twenty-five members of seven different families engaged in cutting sorghum. It gradually subsided in the course of three or four weeks. A parasite resembling a parasite found in flour was found in the sorghum and was probably responsible for the dermatitis.

75. Signs of Healing Tuberculous Process.—Rusca analyzes the signs he has found in soldiers showing a clinical cure of pulmonary tuberculosis under prolonged sanatorium treatment: After all the previous symptoms have subsided and the general health has improved, there may be pains in the region that was the site of the process. As the fibrous cicatricial tissue forms it may pull on the adjoining tissues, and the nearer to the pleura, the more pronounced the pain. The toxi-infectious process may have rendered the nerves in the region more sensitive. These painful sensations are a sign of healing; they are not accompanied by return of the old symptoms, and there is no tender spot to be found in the region. The painful sensation is continuous, and has no connection with the respiration or the position, and it subsides in a few days. This pain with a healing tuberculous process is probably often mistaken for casual neuralgia, or congestion. Rusca also calls attention to the occurrence of minute hemoptysis as another sign of the healing of the focus. It occurred after effort, as for example at defecation, and the hemoptysis seemed to be connected with the painful sensation mentioned above, as the latter usually preceded, accompanied and followed it. The sputum was slightly tinged with blood, not enough to redden it, but merely to give it a salmon-color tint. The microscope shows well preserved elements of the blood but no pus or tubercle bacilli. Several writers have emphasized the tendency to capillary hemorrhage in the sclerosis of a tuberculous focus in the lung. Extensive hemoptysis occurs with destructive processes, but the capillary hemorrhages seem to occur only in the circumscribed, well encapsulated processes, or with the penetration of newly formed vessels into the forming cicatricial fibrous tissue. This salmon-tint hemoptysis was never preceded or followed by the slightest exacerbation of the auscultation findings. The bleeding probably proceeds from some newly formed and not quite complete new blood

vessel, which had ruptured under the preceding physical exertion. This slight hemoptysis is thus an additional proof of the anatomic repair going on. His conclusions that the above mentioned local pains and the minute hemoptysis are signs of favorable import are based on wide experience of numbers of cases traced for months or years afterward.

Riforma Medica, Naples

March 30, 1918, **34**, No. 13

- 77 *Gastric Ulceration Effect of Poison Gases. Zagari.—p. 242.
- 78 *To Promote Healing of Skin. D. Taddei.—p. 245.
- 79 Noma Following Paratyphoid B in Child. E. Romanelli.—p. 248.
- 80 The Present Status of the Thymic Syndrome. R. de Nunno.—p. 250.

April 6, 1918, **34**, No. 14

- 81 *The Stool Signs of Liver Disease. R. Campana.—p. 262.
- 82 *The Granular Red Corpuscle Count. F. Ravenna.—p. 263.
- 83 The Mouth and Pharynx in Typhoid. A. Campani and F. Bergolli.—p. 264.
- 84 *Diagnosis of Cancer of the Liver. A. Ferrannini.—p. 269.

77. Hematemesis after Poisoning from War Gases.—Zagari reports the case of a previously healthy robust soldier who was knocked down unconscious by an exploding bomb which contained a toxic gas. He was not picked up and did not regain consciousness for about twenty-four hours. While others suffered from the effects of the gas in the air passages, he had no symptoms from them and no laceration, merely a pain in the lumbar region and a little blood in the urine, and in a few days symptoms indicating ulceration in the stomach. The ninth day he vomited blood, and the hematemesis recurred five times in the following three months. Under treatment of the gastric ulcer and the hemorrhagic tendency, the man recuperated and he has had no further symptoms on the part of the stomach for two months to date. [A communication was read recently before the Paris Société des Hôpitaux which was struck out of the published records by the censor, but brief reference to it by another speaker showed that it was a similar report on gastric ulceration from the toxic action of war gases.]

78. Treatment to Hasten Healing of Epithelium.—Taddei reports that his experience in thousands of cases has confirmed the way in which iodine promotes the healing over of a wound when applied after the cavity of the wound has filled up with granulations. He lays a strip of ordinary adhesive plaster on a compress and swabs the adhesive side with a 10 per cent. tincture of iodine. When dry, it is cut in strips 4 or 5 mm. wide and from 3 to 8 cm. long and these strips are applied to the edge of the wound, the strip fitting for 1 mm. on the epithelial margin of the wound and the other 3 or 4 mm. on the granulation tissue. Three, four or six of these strips are applied to outline the wound like a narrow frame. The iodine applied in this way seems to stimulate the production of epithelium while protecting it when the dressings are changed. He states that in many cases the epithelium healed over as promptly and effectually as if Thiersch grafts had been applied. The plaster alone without the iodine, does not answer the purpose so well.

81. Stool Signs of Liver Disease.—Campana remarks that when there is an irritative process in the liver, the stools show cellular detritus, nuclei of liver cells, leukocytes, the bile pigments of these cells and glycogen. These pass out of the liver with the bile into the intestines, and can be detected in the stools. The patient must be kept for a few days before on starchy and albuminoid food, and the teeth must be clean and the anus washed with soap and thoroughly dried. He refers in particular to the findings in the stools as revealing syphilitic hepatitis.

82. Granular Red Corpuscles.—Ravenna declares that the best method known to date for showing up the granular reds is with a 0.8 per thousand solution of brilliant cresyl blue in a 7 or 8 per thousand solution of sodium chlorid, kept at 37 C. for fifteen minutes, or at 16 or 18 C. for thirty minutes.

84. Diagnosis of Cancer of the Liver.—Ferrannini emphasizes that metastasis is less frequent and less early with cancer of the liver than with malignant disease elsewhere, as a rule. He cites twenty authors in the last twenty years

who have come to this conclusion. In three cases in adults in his own experience there was no trace of involvement of the supraclavicular glands but merely some enlargement of the retroperitoneal glands, and some in the omentum. There was no pronounced emaciation, and in one patient the complexion was ruddy, except where there was a tendency to cyanosis from the interference with the circulation by the ascites. The patients were at the cancer age, near 50; the liver felt knobby, and it had increased rapidly in size; there was no jaundice or eosinophilia, but there were symptoms on the part of the stomach resembling those with gastric cancer. Echinococcus disease seemed probable at first, but this diagnosis was dropped on discovery of the enlarged glands back of the peritoneum and in the omentum, which also excluded syphilitic gummatous disease of the liver. He emphasizes these differentiating points as they contrast with those of Griffith's recent compilation of fifty-seven cases of cancer of the liver in children. Cachexia and metastasis were common, but ascites and jaundice were rare among the children.

Rivista Critica di Clinica Medica, Florence

Feb. 23, 1918, **19**, No. 8

- 85 *Determination of Glucose in the Urine. G. Ugduleña.—p. 85.

March 30, 1918, **19**, No. 13

- 86 Adenoids and Military Service. V. Grazi.—p. 145.

April 13, 1918, **19**, No. 15

- 87 Dysenteriform Diseases at a Base Hospital. A. Roccavilla.—p. 169. Conclusion.

85. Quantitative Determination of Glucose in the Urine.—Ugduleña comments on the importance from the military standpoint of the determination of permanent glycosuria and the elimination of the factitious—all of which requires repeated examinations, and a simplified technic. For this he uses two sets of ten test tubes. The first ten tubes have straight sides and serve for the dilution of the urine. The first tube is filled with urine. In the other nine he places 2 c.c. of urine in each, and adds 1, 2 or 3, up to 9 c.c. of distilled water, the number of cubic centimeters of fluid in each corresponding to the number of the tube in the series. The ten tubes of the second set taper to a point. The Fehling reagent solution is placed in each up to the 5 c.c. mark and then urine is added to the mark showing 2.37 c.c. in addition. The urine for this purpose is taken for each tube in the second set from the correspondingly numbered tube of the first set. After they have been thoroughly agitated, a few drops of liquid petrolatum are poured on top to form an airtight covering, several millimeters thick. The tubes of the second set are then placed in their standard in the water bath and kept for ten minutes at a temperature of 95 or 100 C. The number of the test tube which contains the minimal dilution compatible with complete reduction of the Fehling solution, represents the percentage of glucose in the urine. No calculations are necessary, as we know that 50 c.c. of Fehling's solution is reduced by 23.75 c.c. of urine containing 1 per cent. glucose. With the ten tubes containing each 5 c.c. of the reagent and one-tenth of the 23.75 c.c. of urine, that is, 2.37 c.c. in each tube, the tube in which there is complete reduction evidently corresponds to 1 per cent. of glucose. If this diluted urine came from tube No. 4 of the first set, that is, the tube in which the urine had been diluted with three parts water, then we know that the figure 4 represents the percentage of glucose in the urine. A colored plate shows the two sets of tubes, the markings, etc., so that the whole technic can be seen at a glance. The urine keeps well under the liquid petrolatum so that the tubes can be examined and reexamined at leisure.

Brazil-Medico, Rio de Janeiro

March 2, 1918, **32**, No. 9

- 88 *Acute Case of Brazilian Trypanosomiasis. E. Villela.—p. 65.
- 89 Eugregarina Parasite of Brazilian Arthropods. III. C. F. Pinto.—p. 65.
- 90 *Leishmaniosis of the Nose. C. de Rezende.—p. 66.

88. Chagas' Disease in Brazil.—Villela reports the first acute case of this trypanosomiasis in the state of S. Paulo.

in Brazil; it is the third case known in which skin lesions formed part of the clinical picture. The beetle known to be the host of the *Trypanosoma cruzi* was found in a certain locality in the state, and he then examined the inhabitants and found this acute case of Chagas' disease, with multiple skin lesions, in a child of 16 months. All the three generations in the family showed goiters, and this child had the aspect of myxedema, slight fever and enlarged glands, spleen and liver.

90. Destructive Leishmaniosis.—The illustration shows the destruction of the nose and nasal fossas by the leishman process. The patient was a boy of 16 and the trouble had commenced eight months before like a pimple on the nostril. Under local treatment with tartar emetic it healed promptly and completely, and the boy now breathes normally through his nose notwithstanding the loss of the septum. The results were equally favorable in three other cases, all healing under local treatment alone. De Rezende combines the drug with substances that penetrate deep into the tissues and others which form a varnish so that the application sticks and hardens, not requiring any dressing. His formula is 0.2 gm. each of arsenic trioxid, copper sulphate, methylene blue and of methyl violet; 0.5 gm. quinin; 0.75 gm. tartar emetic; and 1 gm. each of camphor, menthol, phenol and antipyrin, the whole forming a salve which is applied with a cotton-wound toothpick two or three times a week. In less than a month the lesion had completely healed in the severe case illustrated.

Medicina Ibera, Madrid

March 7, 1918, 2, No. 18

- 91 Chronic Psychosis with Hyperthyroidism. F. Sanz.—p. 287.
92 *Photographic Record of the Pulse. G. Casares.—p. 289.
93 Tuberculosis of the Testicles and Heliotherapy. J. Esquivel.—p. 290.
94 Treatment of Severe Acne. Sicilia.—p. 294.

March 14, 1918, 2, No. 19

- 95 *Beriberi in Spain. F. F. Martinez.—p. 313.
96 Auscultation in Early Diagnosis of Pulmonary Tuberculosis. G. Triviño.—p. 315.
97 Placenta Praevia. J. Botella y Montoya.—p. 318.
98 *Physiotherapy for Gastric Ulcer. S. Carro.—p. 320.

92. Photographic Record of the Pulse.—Casares gets a photographic record of the oscillations of the fluid in a small U manometer containing water, alcohol, acetone or ether. He calls the apparatus for the purpose a palograph and the tracings palograms, from the Greek word *palos*, to "palpitate." This palography reproduces, he says, the movements of the heart, of arteries and veins, with a detail hitherto unattainable. No further details are given.

95. Beriberi in Spain.—Martinez has discovered in Spain cases of amebic dysentery, kala-azar in children and cutaneous leishmaniosis, and now he reports a case of beriberi—none were imported cases. The beriberi case was in a fisherman of Granada who was admitted to the hospital with the diagnosis of polyneuritis, but the symptoms on the part of the heart, the cachexia and the absence of malaria, alcohol and syphilis in the antecedents led to the assumption of beriberi, a year after the first symptoms had appeared. Under repose, nourishing diet, avoiding fish, rice, potatoes and the other dishes to which he was accustomed, and a tonic, with massage, the symptoms gradually subsided to a complete recovery in time.

98. Diathermy in Treatment of Gastric Ulcer.—Carro extols the efficacy of diathermy in treatment of ulcerative or inflammatory processes anywhere in the digestive tract and especially for gastric ulcer. In three cases of gastric ulcer described, the lesion had not been modified by the usual courses of treatment, but the improvement under the thermopenetration was pronounced. In all the gastric ulcer was of several years' standing. Hyperchlorhydria is the rule with gastric ulcer, and this keeps the ulcer from healing. Anything tending to promote secretion of gastric juice is contraindicated with gastric ulcer. The diathermy also benefited materially a man of 54 with dysenteriform ulcerative colitis of ten years' standing. The improvement was most gratifying, the stools losing their diarrheic character and the pains

becoming much attenuated. Carro gave from eight to twenty sittings in the gastric ulcer cases. He begins with 1 or 1.5 amperes and never goes over 2.5. The sittings are given daily, twenty or thirty minutes long.

Revista dos Cursos, Fac. de Med., Porto Alegre

1917, 3, No. 3

- 99 Lumbar Syndrome from Wound of Spinal Cord. F. Barros.—p. 5.
100 *Four Primary Infections with Syphilis. C. Wallau.—p. 9.
101 *Operative Removal of Foreign Bodies. C. Wallau.—p. 13.
102 The Pituitary Body. F. Esposel.—p. 28.
103 Alkaptonuria. G. Blessmann.—p. 50.
104 Antirabies Service. G. Vianna.—p. 64.
105 The Lines in the Parietal Bone. F. da Fonseca.—p. 69.

100. Reinfection with Syphilis.—Wallau's patient is a man of 30 who beginning in 1906 has had four primary lesions in turn, at intervals of seven years and about one year. In the course of these experiences he has been given a total of 7.5 gm. of arsphenamin (salvarsan), and 944 gm. mercury by inunction, besides twenty intramuscular injections of mercury. He has been in good health free from symptoms during the last two years.

101. Foreign Bodies.—Wallau emphasizes the necessity for not trusting to the patient's statements as to sensations, etc., with a foreign body. In one case a man insisted that the set of false teeth he had swallowed could be felt in the stomach, but the organ was empty when opened. Under chloroform the man vomited profusely, and thus expelled the set which had been impacted in the esophagus. In times of epidemics an unsuspected foreign body may be mistaken for the prevailing disease, as in the case of a child with supposed diphtheria symptoms until a scrap of wood was found sticking in the throat. In his three cases of myiasis of the nose, one of the patients succumbed to meningitis; in the other two the larvæ were washed out in time with weak solutions of mercuric chlorid and creolin. In two other cases a glass tumbler was removed from the rectum. One tumbler was 7.5 cm. tall by 7.5 in diameter at the top; the other tumbler was 9 cm. tall by 6 in diameter. Both were removed whole. In a recent case of supposed cancer of the vagina, a fragment from a pessary used for a short time years before proved the cause of all the disturbances.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 7, 1918, 118, No. 1493

- 106 Indications in Appendicitis. J. Blanc y Fortacin.—p. 129.

March 7, 1918, 118, No. 1497

- 107 *Experiences with Spinal Anesthesia. J. Blanc y Fortacin.—p. 257.
108 *Unusual Conditions in Hernias. J. Blanc y Fortacin.—p. 264.

107. Spinal Anesthesia.—Blanc has found the anesthesia available in from three to ten minutes after injection of the anesthetic into the spinal canal; the sensation of contact is retained. The anesthesia was a success for operations on the legs but, for herniotomies, sometimes a few whiffs of cloroform were necessary in addition. In his 200 cases of intraspinal anesthesia there were serious mishaps only in two cases. In one of these by mistake the assistant had made the solution with 0.12 gm. of novocain, and syncope followed, requiring artificial respiration under which the patient promptly recovered. In the other case the patient was an elderly man with impassible stenosis of the urethra, and the operation was for retrograde catheterization. The operation was brief but there was some cyanosis afterward and coma followed in an hour with death in another hour.

The anesthesia lasts about two hours and there is sometimes headache, but it is very slight and brief. There is often a febrile reaction, evidently from aseptic irritation of the meninges as the spinal fluid looks turbid the next day and there is polynucleosis, but all returns to normal by the third or fourth day. Vomiting and paresis were never observed. He operated above the umbilicus only in one case, on an echinococcus cyst in the liver, and the operation was a smooth success. The anesthetic used was generally 6 cg. each of stovain, glucose and 1 per thousand epinephrin in 1 c.c. of physiologic serum. Of late he has been using cocain and epinephrin.

108. **Unusual Features of Hernias.**—When the cecum is sessile on and adherent to a hernial sac containing the appendix, Blanc warns that there are likely to be vessels at this point on which the cecum depends for more or less of its nourishment, and hence a plastic operation is usually necessary, through a second incision in the abdomen above. In two of his cases the hernial sac was formed of a diverticulum in the bladder. The nature of the hernia was not suspected until the hernial sac was incised and the pink color of its lining attracted attention. In both cases the diverticulum was surrounded and concealed by masses of fat. He excised the diverticulum in one case and inverted it in the other. In many cases, traction on the hernial sac pulled the bladder down into view. In one case a direct hernia had caused no trouble as it was kept under control by a truss. Then suddenly it increased in size and distended the scrotum but was not painful. With the diagnosis of hydrocele superposed on the congenital hernia, he incised the supposed hydrocele and found it an echinococcus cyst.

Revista Sud-Am. de Endocrinologia, Buenos Aires

March, 1918, 1, No. 3

- 109 Oil Extract of Corpus Luteum in Treatment of Sterility and as Stimulant during Pregnancy. G. Giacobini.—p. 71.

Mededeelingen van den Burg. Geneesk. Dienst, Batavia

1917, No. 1

- 110 *Biologic Processes in Tropical Soils. P. A. A. F. Eijken and G. Grijns.—p. 1.

1917, No. 2

- 111 Tuberculosis in Java. C. D. de Langen and J. Schut.—p. 1.
112 *Tuberculosis in Uncivilized Tribes. J. Schut.—p. 3.

110. **Biologic Processes in Tropical Soils.**—These bulky volumes are issued by the Civilian Medical Service of the Dutch West Indies. They are published in the Netherlands language and in English, in parallel columns. This number of 150 pages is devoted to questions relating to the disposal of night soil and sewage in tropical conditions. The biologic processes occur with greater intensity in tropical soil, so that large quantities of organic matter are rapidly decomposed in a small space, with destruction even of intestinal bacteria. Hence, it is said, the closed septic tank offers peculiar advantages on this account in tropical countries, with oxidizing beds for the effluent.

112. **Tuberculosis in Virgin Soil.**—Schut reviews what is known to date in regard to pulmonary tuberculosis among savage tribes and natives of remote districts where the disease finds virgin soil. In the East Indies tuberculosis is rare, while other diseases giving a positive response to the skin tuberculin tests are common, and in the natives the response is nearly always negative with frank tuberculosis. Consequently, the Pirquet test is not reliable in the diagnosis of tuberculosis among the natives. He ascribes the higher mortality from tuberculosis—when such exists—among the native East Indians to the low resisting power from the climate, conditions of life and endemic diseases. There is no need to invoke a "virgin soil theory" to explain why tuberculosis runs a particularly acute and dangerous course in them.

Norsk Magazin for Lægevidenskaben, Christiania

April, 1918, 79, No. 4

- 113 *Constitutional Hypersusceptibility and Asthma. A. de Besche.—p. 377.
114 *Rhino-genous Optic Neuritis. B. Malling.—p. 414.
115 *Acute Bulbar Paralysis. L. Nicolaysen.—p. 428.
116 Electrocardiography in Diagnosis. N. B. Koppang.—p. 433.

113. **Constitutional Hypersensitiveness and Asthma.**—De Besche reports the case of a physician of 30 who developed an alarming condition for an hour or so after a preventive injection of diphtheria antitoxin. This was a year or so before attention had been called to the danger of symptoms suggesting anaphylactic shock with injection of antitoxin when there is constitutional hypersensitiveness to horse serum and horse emanations. The physician knew that, from childhood, when he had anything to do with horses symptoms resembling those of hay-fever developed, with asthma. De

Besche has made a special study of this idiosyncrasy to horses, and reports the details of eleven cases and one in which the idiosyncrasy was to cats. In eighteen other cases of asthma, no connection with horses or other animals could be detected. An idiosyncrasy of this kind can be rendered evident by touching the skin of a horse with the finger and then placing the finger on the conjunctiva of the patient's eyeball. In all cases of horse asthma, pronounced redness, lacrimation and slight edema follow, and sometimes sneezing. There is no appreciable reaction in the absence of this idiosyncrasy. The reaction is also instructive but is less constant when a drop of the horse serum is applied to a scarified area, as for vaccination against smallpox. A blister forms. He remarks that it might be advisable to apply these eyeball and scarification tests before injecting antitoxin in persons subject to asthma or hay-fever, and thus be able to exclude an idiosyncrasy. In his total twelve cases of horse asthma, in some the idiosyncrasy was to horses alone; in others also to cows, dogs and goats. Two had also hay-fever, and a tendency to hay-fever or asthma was common in other members of the family in several cases. In some of the horse-asthma cases the manifestations of the idiosyncrasy were accompanied by abdominal pain and vomiting or diarrhea. The physician first mentioned had a severe attack of the horse asthma once after dinner on a day when there had not been any known connection with horses. But the precipitin test, applied to the sausages from which he had eaten, revealed horse meat in them. One of the horse-asthma patients developed typical attacks also after eating strawberries. De Besche mentions that the attacks in his cases were exactly like those described by Willey, Bacon and Wright in THE JOURNAL, 1908-1909.

114. **Rhino-genous Retrobulbar Optic Neuritis.**—Malling reviews thirty-seven publications bearing on this subject and describes a case from his own experience in which a previously healthy woman of 40 developed a highly febrile diseased condition in the nose and left ear, confining her to bed for some time. A polyp had been removed from the nose just before. Two or three months later vision became impaired, and by the sixth month there were signs of beginning atrophy of the optic nerve. Nothing was found to suggest any other cause than the nose-ear trouble. Under potassium iodid, vision improved somewhat, but it was still only $\frac{1}{8}$ in the right and $\frac{6}{60}$ in the left eye. The ethmoidal cells then were found extremely pathologic and they were cleared out. Improvement was prompt and pronounced, vision in a few days increasing from $\frac{1}{12}$ to $\frac{6}{6}$ and from $\frac{1}{24}$ to $\frac{1}{4}$, while the scotoma disappeared and the blind spot returned to normal. The only pathologic findings in this case were the chronic ethmoidal sinusitis. The retrobulbar optic neuritis and secondary atrophy were characteristic of the rhino-genous type of eye disease, especially in the fluctuating course. The scotoma was always most pronounced in the early morning, possibly because the nose drained better when the patient was up and about. It was noticed further that the scotoma was much less pronounced when the flow of mucus from the nose was freest. Even if the patient proves later to have had incipient multiple sclerosis as the explanation of her retrobulbar neuritis, the search for and cure of her sinusitis rendered conditions for vision much more favorable.

115. **Acute Bulbar Paralysis.**—A man of 62 had been previously healthy except for occasional migraine. Then he had an attack of dizziness and vomiting for nearly two days but there was no headache or other symptoms. The next day he found he could not swallow. The whole act of swallowing was paralyzed. He learned to feed himself through a stomach tube and after several months a faint tendency to return of the ability to swallow is now evident. Electric treatment had been patiently applied but had not seemed to benefit.

Ugeskrift for Læger, Copenhagen

April 4, 1918, 80, No. 14

- 117 Blunders in Diagnosis of Pregnancy. H. Wulff.—p. 547.
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118. See Abstract 114, p. 1344.

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THE ORGANIZATION OF THE MEDICAL PROFESSION FOR WAR

PRESIDENTIAL ADDRESS *

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CHICAGO

I feel greatly honored by the election to the position of President of the American Medical Association. I recognize not only the honor but also the responsibility of assuming the leadership of the organized medical profession of the country at this time. The war has made unusual and exacting demands on us. The government and the people are looking to us to furnish in this great emergency not only the necessary number of medical men for the Army and Navy, but also the highest degree of medical service and efficiency. This is proving to be a war not simply between well organized armies but between efficiently organized nations. It is now clear that in order to win the war we must organize the entire nation in such a way that every man and every woman must become a useful part of a great and powerful national military machine. No part of such a great national organization is more important than the medical profession, and on this, the opening evening of this great war meeting of American physicians, it is my purpose to address you on the organization of the medical profession for war.

ORGANIZATION OF THE ASSOCIATION

There are in the United States more than 145,000 men and women licensed in the various states to practice medicine. Of these more than 81,000 are members of the American Medical Association, and more than 45,000 are Fellows. The American Medical Association is organized along the most democratic and representative lines. No profession in this or in any other country is more thoroughly and efficiently organized than the American Medical Association. The unit of the organization is the county medical society. It is the avowed purpose of the county society to receive into its membership all reputable practitioners who are legally qualified to practice medicine. The county medical society is a democratic organization. It is not, nor is it intended to be, a select and exclusive medical society. Its functions are educational and social. It exists for the purpose of using the united efforts of the physicians of that county for the benefit of the people and for the education of its members. Any county society that is not democratic and representative is not fulfilling its proper function. By virtue of membership in the county society the

physician becomes a member of his state medical society and of the national society—the American Medical Association.

During the first half century of its existence, the American Medical Association was a rather loosely organized body. It was founded for the special purpose of elevating the standards of medical education and practice. Its ideals were high, and it accomplished a great deal of good. Not, however, until its reorganization in 1901 on broad democratic and representative lines, did it become in fact the organized medical profession of the country. The American Medical Association is not sectarian, but is broad enough to include in its membership all licensed physicians who honorably practice scientific medicine.

ACTIVITIES OF THE ASSOCIATION

Since its reorganization, the American Medical Association has had a record of splendid achievement. It has succeeded in elevating the standards of medical education in this country, which had been uneven and unsatisfactory, to a position where they are as high as those in any other country. It has improved the character of medical instruction until we can now state without fear of contradiction that the medical student can obtain as thorough and complete an education here in America as anywhere in the world.

Moreover, the American Medical Association has accomplished much through its Council on Medical Education in cooperation with THE JOURNAL. Through these departments it has been of great service in creating a register of licensed practitioners. A register of medical students is now kept so that the Association possesses a full record of the medical career of each licensed practitioner and medical student.

The American Medical Association and its constituent state medical associations have succeeded in securing improvements in the medical practice acts of most of our states protecting the people against ignorant and inefficient practitioners and securing better public health service.

The American Medical Association has through its Council on Pharmacy and Chemistry done outstanding, pioneer work against the unscientific and unnecessary use of drugs and against the prescribing of secret formulas and "quack" medicines. It has done more than any other medical organization to place drug therapy on a sound and scientific basis.

THE JOURNAL of the American Medical Association has become the largest and most influential medical periodical in the world. It has a circulation of more than 65,000 copies, and in the best sense it is the instrument that keeps the profession in touch with the affairs of the Association, with scientific medicine, and through well-prepared abstracts with the current medical literature of the world.

* President's address before the American Medical Association at the Sixty-Ninth Annual Session, Chicago, June, 1918.

It is now more important than ever that these admirable activities of the Association should be continued and amplified, and that steps should be taken to meet the new problems that will confront the Association after the war. These will undoubtedly include the stimulation of medical research, the development of an adequate American medical literature, the creation of postgraduate medical facilities not only for our own medical men, but also for the medical men from other countries, who will find here in our great democracy a welcome and opportunities in medical instruction and medical research second to none. But these things can and must wait on the one great problem that confronts us now, *the winning of the war*.

DEMANDS MADE BY THE WAR

The problem that confronts the country in this war, as far as the development of the medical departments of the United States Army, Navy and Public Health Service are concerned, can briefly be stated in this way: If we raise an army of 3,000,000 men, 10 per cent. of this number will be in the medical department; that is, 300,000 officers and men, and of these at least 25,000 must be qualified physicians and surgeons. If we raise an army of 5,000,000 men, the medical department will contain 500,000 officers and men, and it will be necessary to have between 35,000 and 40,000 qualified medical men. At present there are more than 200,000 men authorized in the Medical Department of the Army. Of these, somewhere from 20,000 to 25,000 will be medical officers, and the balance enlisted men and nurses. If we create a navy of 500,000 we shall need 3,500 medical men. If we create a navy of a million, which is probable, we shall need 7,000 medical men. The need of the Public Health Service, although more modest, will be considerable, and must be met. No one can prophesy the extent or duration of the war, but we can say with certainty that it is the purpose of the American people to create and maintain the largest and most efficient navy in the world and to organize and train and equip an army large enough to win the war.

WHO REPRESENTS THE MEDICAL PROFESSION?

The efficient organization of the medical profession of this country for war is being splendidly accomplished by the cooperation between the Medical Departments of the Army and Navy and the organized profession, the American Medical Association. It has been unfortunate that a medical advisory committee which is not in any way representative or democratic, and which has no proper function in the efficient organization of the medical profession for war, should have been called into existence. A small coterie of specialists, of gynecologists and surgeons, no matter how eminent or how successful they may have been as promoters and exploiters of special medical societies, can in no way in this great emergency and in this great democracy represent the medical profession.

RESPONSE OF THE PROFESSION

At the outbreak of the war, the American Medical Association offered to the United States government its entire organization and machinery to assist in the enormous expansion that became necessary. Through the officers of the county societies, the state societies, and particularly through the columns of *THE JOURNAL*, the needs of the government were placed before the organized profession of the country, and they responded splendidly to the call. So far 25,000 have

gone into the Medical Departments of the Army and Navy. No other profession or calling has responded more promptly to the needs of the country than the medical profession. The great bulk of the medical men who have gone into the government services were members of the American Medical Association.

The demands made on the medical profession by the war are so great that it is evident that in order to secure the necessary number of medical men for the government, and at the same time prevent hardships in some communities and institutions, it is necessary to organize the entire profession of the country in a systematic way. It therefore became necessary for the American Medical Association, acting with the Surgeon-General's Office, to take a census of the available medical men in the United States in each state, in each county, in each medical school and in each hospital, and to attempt to secure from each one of these different units at least 20 per cent. of the medical men. This plan will enable the government to secure the necessary number of medical officers for an army of 5,000,000 men or more, and a navy of 1,000,000 without any great hardship to any community or to any institution. It is evident that a plan of this kind is absolutely essential, and it is the purpose of the American Medical Association through its county and state societies and its national organization to create such a systematic classification and secure the adoption of this plan. Such a plan means a voluntary draft of the medical profession by the profession itself. The medical profession will supply the men needed by the government. No conscription, no compulsion will be required.

THE HONOR ROLL

The survey has been completed, and was published in *THE JOURNAL*, June 1. It gives the honor roll of the men who have already gone into the service from each county and state society. It gives the number of men under 45 and under 55 years of age in each county and the percentage of men who have volunteered. Up to this date about 15 per cent. of the total number of men have volunteered. The Surgeon-General of the Army has called for 5,000 more medical officers, and the Surgeon-General of the Navy needs about 2,000. It becomes necessary for us to raise the total number of medical officers this year to about 30,000, which means nearly 22 per cent. of the medical men of the country.

As President of the Association, I desire to call the serious consideration of each county medical society to the fact that in order to do its duty it should furnish at least 20 per cent. of its members for military service. This situation should be met fully and promptly by each county medical society. In order to prevent hardships to communities due to lack of medical service, and in order to prevent the crippling of medical schools and hospitals, no community and no institution, unless it is clearly oversupplied, should be allowed to furnish more than 50 per cent. of its medical men. As far as possible the quota from each county should be filled by men under 45 years of age. If this is not possible, men up to 55 will be taken. As fast as each county fills its quota of 20 per cent.—and this should be done by each county within the next few months—the secretary of the county medical society should notify the secretary of the state medical association and the secretary of the American Medical Association of that fact.

THE SUPPLY OF MEDICAL MEN

Profiting by the experience of the great nations that entered the war in 1914, the medical profession of the country, and the government, have very wisely taken steps to prevent the disruption of our medical schools, and I am glad to say that our national government adopted the suggestion made by the Surgeon-General to allow medical students to be commissioned in the enlisted Medical Reserve Corps and have them detailed to complete their medical education and to serve a year in a hospital as interns before they are called into active service. This was to apply to the men who have already studied medicine in the medical school proper for one year. In order to insure the further supply of medical students to meet the demands of a great and prolonged war, the effort is being made to have this apply also to the men who are taking their premedical work in universities. It is necessary to have these men continue their medical studies in order to insure the continued supply and the necessary number of medical men.

The United States is the only great reservoir of medical men in the world. The medical professions of Great Britain and France, of Italy and Belgium, and this is probably more true of enemy countries, have been well nigh exhausted by this war. They delayed making plans for a continued supply, their medical schools became disrupted, and they are already suffering for medical men in their armies and in their civil life. Major Horace B. Arnold, chairman of the Council on Medical Education, who is on active duty in the Surgeon-General's Office looking after the problem on medical education for General Gorgas, has this matter now under consideration, and it is to be hoped that he will succeed in securing rulings that will enable our premedical students to continue their medical courses. If the need for medical men becomes very great we can adopt a continuous session and graduate men in three years. The senior students in the medical schools should have special courses in military surgery. I would recommend that if possible one or two competent medical officers be assigned to each medical school for this purpose.

EXPANSION OF THE MEDICAL DEPARTMENT

The enormous problem that was presented to the Surgeon-General's Office by the war may be realized in a striking way by the statement that the development of an adequate medical department for 3,000,000 men means that less than 2 per cent. of such a department is represented by the men in the service at the time of the outbreak of the war—that more than 98 per cent. of the men must be taken from civil life, and must be given the necessary military training to fit them for active duty in the field. This enormous problem is being adequately and splendidly met. A small medical department which existed before the war has formed the leaven necessary to change a great body of physicians coming from civil life into efficient military surgeons and efficient hospital and ambulance units. Special training camps for medical men were formed at Fort Riley, Fort Benjamin Harrison and Fort Oglethorpe. Gradually the work done by these different camps is being concentrated at Fort Oglethorpe, where an enormous military medical university of 40,000 officers and men is being created. Here the enlisted men will receive their necessary training in small and large units, and the medical officers will receive their necessary military instruction

and instruction in such medical work as will peculiarly fit them for their military duties.

GENERAL GORGAS

Standing out prominently in the development of the great Medical Department of the Army is a great figure, the figure of Surgeon-General Gorgas, who in a very quiet way has demonstrated again the fact that he is one of the greatest organizers in sanitation and in military medicine and surgery. It is most fortunate that in this emergency work of the medical department it was found in such strong and capable hands. General Gorgas is one of the great assets of this country today. The splendid work that he is doing he should continue to do throughout the war, and the organized profession of this country could do no greater service to the government than to make clear to the Washington authorities that they are unanimous in their support of Surgeon-General Gorgas, and regard him as the best man in the country for the head of the Medical Department of the Army.

General Gorgas has succeeded in surrounding himself with the strongest, most efficient men, and has shown great wisdom and judgment in placing specially qualified men at the heads of the many departments under his control. The men he has chosen from the regular corps as the heads of divisions are strong and efficient: it is only necessary to mention such men as Welch, Vaughan, Billings, Mayo, de Schweinitz and scores of others, who in civil life are the recognized leaders in their special field of work, recognized not only in this country but throughout the world.

We are equally fortunate in finding the Medical Department of the Navy in the efficient hands of Admiral Braisted, who has succeeded in meeting the great expansion made necessary by the war in the most satisfactory way.

The medical profession is also proud of the splendid service that has been rendered by the Public Health Service under the able leadership of Surgeon-General Blue.

HEALTH DURING MOBILIZATION

The mobilization of this country for war is an enormous task. To create an army of from three to five million men or more, where before we had less than 100,000, and create a navy of from 500,000 to 1,000,000 is an undertaking that had never before been worked out by any country. It was necessary that this enormous mobilization should be done as rapidly as possible, and from the rapidity and the enormous size of the mobilization it was inevitable that the medical organization could not accomplish the impossible and secure at once ideal results. Yet when we compare the mobilization of the United States for war with other countries we find cause for congratulation. Up to the time of our mobilization the army of Japan had held the record for the lowest mortality of any country during mobilization, and the best care of its soldiers from a medical standpoint. In the Japanese mobilization there was a mortality of 20 per thousand. In our mobilization there has been a little less than 10 per thousand. In other words, the showing of our mobilization from the standpoint of mortality was twice as good as the record held by any country up to that time. There have been epidemics of contagious diseases, such as measles, mumps and meningitis, and the total number of cases occurring among 2,000,000 men has been somewhat startling; but when these facts are analyzed and it is found that the mortality in our army is less than the mortality in

civil life of the same number of men of the same age, picked by insurance companies, we can realize what splendid results have been accomplished.

The people of this country, the mothers and fathers and wives, whose sons and husbands are in the Army and Navy, are entitled to know, and it will be a great comfort to them to know, that the health of these men is better looked out for than when they were in civil life, that the dangers that they run from disease are less than when they were in civil life, and that when they are sick or wounded they will receive as good care, as high a class of medical and surgical service, as could possibly be obtained in civil life. This is true because our best men have gone into the medical service, and the government is providing the medical departments with every facility necessary to give our soldiers the best medical care.

THE VENEREAL PROBLEM

Strikingly successful has been the handling of the venereal problem. A careful examination of the evidence shows that venereal disease is only about half as frequent in men after they enter the Army as in similar groups of individuals in civil life. Certainly no army has ever been mobilized which has been as clean morally and free from venereal disease as the present American Army. Associated with this fact and responsible in large part for the splendid showing made is the elimination in large part of drink from the Army. Certainly no army has ever been mobilized that has been as free from drinking as the American Army. It was fortunate that our mobilization occurred at a time when the amount of drinking in this country was rapidly diminishing, and at a time when most of our states were going on a prohibition basis. Special efforts have been made by the government in the way of laws that have been enacted for this purpose to prevent drinking in Army posts and in territory immediately contiguous to them. This leads me to a consideration of the problem of drinking and prohibition as a purely medical problem.

NECESSITY OF ELIMINATING DRINK

As we analyze the facts in a scientific and medical way there can be no doubt of the injurious effects of alcoholic drinks on both the physical and the mental well-being of our population. There can be no doubt that the greatest single factor that we can control in the interests of the public health of the nation would be the elimination of alcoholic drink.

In the slow evolution of civilization, many great wrongs persisted for centuries because people had become so accustomed to them that they were accepted as matters of course. They became so intrenched that it required either centuries of education or a revolution to extirpate or right them. Great epidemics and plagues were accepted as inevitable and as visitations of God. Government by autocratic power and divine right without the consent of the governed has been tolerated. Slavery with its horrors was defended. The unequal rights of women went unquestioned. Among these great wrongs too long tolerated, none has done more injury to mankind than drink. Events now are moving rapidly in the convulsions of a world war. Women have demanded and will obtain, as they deserve the world over, their equal rights. The course of events is writing the death warrant of autocracy and rule by divine right; and science and education should eliminate not only the plagues and epidemics but also the curse of drink from the world.

I want to plead for the united action of the organized medical profession of this country to secure protection by law against the injury that drink is doing to our people, not as a political measure, but as the most important public health measure that could be secured. In this crisis when we and our allies are fighting not only for ourselves but also for humanity and civilization, we must organize the entire nation in the most efficient possible way, and this cannot be done without eliminating drink. Each member of the medical profession as an individual, each county medical society, each state medical society should take an active part in the propaganda against drink, and secure national prohibition, not years from now but now when it is so badly needed and will accomplish so much good, not only for our boys in khaki and in blue, but for the nation in arms. And when it has once been done away with, it could no more be resurrected after the war than could slavery.

THE NURSES

One of the serious problems now confronting us is the securing of the necessary number of women nurses for our Army and Navy hospitals. We shall need from 25,000 to 40,000 women nurses. These cannot be secured from the trained and registered nurses of the country and leave a sufficient number of nurses to care for our civilian population. It requires three years of training in times of peace to educate a nurse. But we must remember that in peace times it requires a four years' training at West Point and Annapolis to make an officer of the Army or Navy. In the emergency of this war we are developing splendid officers from well educated, capable men taken from civil life, by intensive short three months' courses in our officers' training camps. The same plan should be adopted in securing the necessary nurses.

There are thousands of well educated, capable young women in this country who are not only willing but are anxious to offer their services to the country. Nurses' training camps and training schools can be developed in our Army and Navy cantonments where, with an intensive three months' training, these young women can be developed into most useful war nurses, and meet the needs of the government. The Surgeon-General of the Army has already taken steps to encourage these nurses' training schools.

RECONSTRUCTION AND REEDUCATION

Another great problem confronting us is the reconstruction and reeducation of our wounded coming back from the war. Our allies after four years of war, bringing with it hundreds of thousands of cripples, have demonstrated what great good can be accomplished by reconstruction and reeducation. The injured man is reeducated to do some useful work. He is not allowed to drift as a useless wreck, a burden to himself and the community. He is recalled to life by a process of training and reeducation that enables him to earn his livelihood, to occupy his mind and to make life—even with a handicapped body—worth living. Surgeon-General Gorgas has been fortunate in securing as the head of this important reconstruction work our own Dr., now Colonel, Frank Billings, who will have the earnest support of thousands of men and women throughout the country in making this work successful.

DRUGS AND CHEMICALS

An organized effort should be made by the medical profession of the country to secure the creation and

maintenance of industries for the production in this country of the necessary drugs and chemicals, surgical instruments and appliances, making this country independent in productions of this kind from other countries of the world. The securing of such legislation by the national government as will protect by proper tariff these industries in the process of development is essential. With the 145,000 medical men in this country, with the population and wealth of this country, we are the largest market in the world for drugs, instruments and medical appliances. By proper legislation, industries could be developed so that these products could be made here as cheaply as anywhere in the world, in such quantities as not only to supply our own market but also to enable us to enter other markets and maintain commercially our position in the western hemisphere, especially in this country and in South America.

HEALTH OF THE CIVIL POPULATION

One matter which the profession should not lose sight of in endeavoring to meet the great demands made by war is the health of our civil population. The importance of maintaining and increasing and making more effective a national Public Health Service with wide authority, of developing in each county and each state strong public health departments, cannot be questioned. We should demand such state and national organizations for public health and preventive medicine that will secure for our people in a much better way than at present the great possibilities of modern preventive medicine. The war makes this matter not less but more important.

ONE HUNDRED PER CENT. LOYALTY

In organizing the medical profession of this country for war there is one fundamental and basic condition that must be secured: We as a profession must go into this war not only efficient, but we must go into it 100 per cent. loyal, 100 per cent. American. We are at war with a barbarous and brutal autocracy. The American people did not want to enter the war. It was only after the Imperial German Government had murdered our people and destroyed our property and treated our repeated protests with contempt that we prepared to defend ourselves against Germany, as an individual must against a murderer, a highwayman, a thief. We are at war with Germany and Austria. The Germans and Austrians who have chosen to make this country their home must choose between the land of their birth and America, the land in which their children are born. The choice with most of them has not been difficult. They have chosen their new home, the birthplace of their children, and these men and women we accept gladly as loyal Americans. But there are a few who are disloyal and would give aid and comfort to the enemy, and these must be sought out and interned where they can do no harm. It is the duty of every medical man and each county medical society to assist the government in securing the arrest and internment of every disloyal member of the medical profession.

There are in this country some German medical societies, and attention of the government authorities should be called to these. They should be disbanded at once. We should not permit, now, or in the future, in this country any organizations that further German propaganda. The world has had its lesson with this monstrous thing.

THE INTERNATIONAL FELLOWSHIP OF SCIENCE

The American medical profession as a whole is more familiar with Germany and the German and Austrian people than is any other class of our countrymen. Thousands of our medical men have studied abroad in the clinics and laboratories of Great Britain and France, of Germany and Austria, of Switzerland and Italy. No other class of people in the world has felt more fully the international brotherhood of science than have American medical men. They have regarded scientific knowledge and scientific discoveries as the property not of one nation but of the world. They have accepted the great discoveries, such as Jenner's of vaccination, the American discovery of anesthesia, the work of Pasteur the great Frenchman, the work of Lister the great Englishman, the work of Koch the great German, the German discovery of the roentgen ray, the French discovery of radium, the American discovery of the manner of transmission and means of preventing the spread of yellow fever and typhus. They have accepted these and rejoiced that these great discoveries belonged not to one nation or one people, but were contributions to the great international science of medicine. What effect has the war had on this international fellowship of science?

OUR ATTITUDE TOWARD THE GERMAN MEDICAL PROFESSION

I believe we owe it as a duty to ourselves and to the German medical profession to state clearly the feelings and position of the American medical profession toward them. We can never again hold out to them the right hand of the fellowship of science until the German people drive from power and punish as they deserve the brutal and barbarous autocratic government which is responsible for this war, and has created in Germany a government of the people, by the people and for the people. No matter what doubt or confusion there may have been at the outbreak of the war as to the guilt of the German government, the responsibility is today fixed and definite. The refusal to attempt a peaceful settlement before hostilities began, the outrage of Belgium, the invasion of France, the breaking of all international law, the sinking of the *Lusitania*, the evidence and revelations of the long prepared and worldwide plot of Germany to dominate Europe and the world by force of arms, the evidence furnished by the German ambassador to England, Prince Licknowsky, the deliberate attempt of the German government while we were still at peace with Germany to embroil us in war with Mexico and Japan, the murder of Edith Cavell, the use of poisonous gases, the bombing of unfortified towns and cities, the acquiescence in the massacre of the Armenians by their Turkish allies, have all written with the indelible pencil of truth the history of German guilt.

No matter what sophistries the German people may advance as excuses for these things and for their precipitating war on Belgium, France, England and Russia, we know that these cannot apply to America. We know that there is not a shadow of excuse for their making war on the American people. It required repeated outrages to convince the American people that the German government was a thing without honor, that we were face to face with a highly organized and efficient autocracy which recognizes no law but the law of the jungle, an autocracy and a people who would rob their neighbors of their fair fields and

their factories, their iron mines and their oil wells, an autocracy and a people who combine the frightfulness and moralities of the Hun with science and efficiency of the twentieth century, an autocracy and a people that have been seized with the insane egotism that they are God's chosen instruments to civilize and "kultur" the world, not by education and science, but with the mailed fist and the sword.

To medical men who are accustomed to study diseased bodies and minds, this state of mind of the German government and the German people seems like the insanity of a whole nation. We medical men are familiar with a horrible disease, which begins with an initial lesion acquired in a debauch and which ends often in insanity with delusions of grandeur and magnificence. It would seem as though the German nation was suffering from such a disease, from such a form of insanity. It acquired its initial lesion in the rape and outrage of Denmark, of Austria and of France in the decade between 1860 and 1870. The virus of conquest and domination has coursed through its veins for more than fifty years, and has produced now a diseased national mind with the delusions of egotism and grandeur that are responsible for this world's war.

When the German people waken from the nightmare of the war, they must realize the enormity of the crime they have committed under the spell of the medieval autocratic government that controlled them. They will realize that although they might retain with profit to themselves a province stolen from Denmark or Poland, France or Belgium, they can never dominate with force of arms with profit to themselves for any length of time great nations like Russia and France, England, Italy, Japan and America. We are in this war, as our great President has said, "to make the world safe for democracy;" and whether it takes one year or ten years, we shall continue the war until the brutal and barbarous autocracy of Germany is destroyed. If the German people could have but a brief period of freedom from their war madness, let them ask themselves if the few miles of Belgium and France and the occupied provinces of stricken Russia can compensate them for making nine tenths of the world their bitter enemy. And they should be made to know that this is not the enmity of a day, the enmity that will disappear with a peace that they hope to compel by force of arms, but that it is an enmity that will last, that will mean for Germany a complete severance of relations, social, commercial and in every way from ourselves and our allies until Germany has purged itself of guilt, and asks humbly for a place among the nations in which the people rule. The medical profession of America sends this message to the medical profession of Germany.

OUR SINGLE PURPOSE AS A NATION

To the medical professions of Belgium and France, of England and Italy, of Russia and Greece, of Portugal, Roumania, China and Japan, of Brazil and the Central American Republics, to our colleagues in Canada and Australia and New Zealand and South Africa, and to the other nations who in response to German outrages have joined in war against her, we send a message to hold fast and be of good cheer. We have been a peace loving people, we loathe war, we have done everything a nation could in honor do to avoid war, but our people have been murdered by the German government and the German people, and we protested and they murdered more, and we pro-

tested and they murdered more, and we have been forced to defend ourselves and our rights. We have not been a military nation. We have been unprepared for a great war. But we have absolute confidence in the ultimate success of our democratic form of government. We believe that it is not only the best form of government in peace, but that it can be made the most efficient and best organized form of government in a great war. Let us tell our medical colleagues in the nations who are now our allies that America with its more than hundred million free men and women is organizing itself into a great military machine, that all our people, that all our resources, that everything we have is being converted as fast as brains and energy and money can convert them into a weapon with which to win this war, which is now our war. Let us tell them to hold fast and be of good cheer, for America is coming.

America asks nothing for herself. She comes with a clear conscience, a sane national mind, a stout heart and a strong arm. She comes with the single purpose of a united people, a hundred million strong, to punish the murderers of her people and to win this war for civilization and humanity.

Let us send from this meeting of the organized medical profession of America to our great leader in Washington a message, the message that wells up from every farm and factory, from every town and hamlet, the message that echoes and reechoes through our country, from the mountains through the valleys to the sea, the message that is sent by every man and woman of America when our government calls for their services in this war:

We hear the call of our country. We answer, we are here.

THE EFFECT OF TYRAMIN ON CIRCULATORY FAILURE

DURING INFECTIONS AND DURING OR AFTER
OPERATIONS *

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The action of tyramin¹ on the normal circulation of man has been considered in a previous paper.² After the subcutaneous injection of a full therapeutic dose (from 60 to 80 mg.), the systolic blood pressure usually rises to levels of from 150 to 200 mm. The pressure begins to rise within five minutes after the injection, attains its maximum in about ten minutes, and subsides more gradually to its previous level, which is usually reached in from fifteen to thirty minutes. The diastolic pressure frequently rises also, but never to any great extent. The volume pulse in the arm becomes larger and more sustained. The heart rate becomes somewhat slower, and extrasystoles occasionally occur. These circulatory changes, except for being more prolonged, resemble those which follow the intravenous injection of epinephrin in moderate doses. Subcutaneous injections of epinephrin, on the other hand, rarely cause any marked rise of systolic

* From the Division of Medicine, Leland Stanford Junior University School of Medicine.

1. "Tyramin" is the short term for "tyramin hydrochlorid."

2. Hewlett, A. W.: The Action of Tyramin on the Circulation of Man, Arch. Int. Med., March, 1918, p. 411.

pressure and not infrequently lower the diastolic pressure.

Despite the fact that tyramin injections consistently raise the systolic blood pressure of man, we find in the literature but few instances in which they have been used clinically for the purpose of combating a failing blood pressure. Hoyt³ recorded one case of advanced tuberculosis with marked circulatory weakness in which the systolic pressure was raised from 85 to 130 mm. by the injection of 40 mg. of tyramin. Clark⁴ injected tyramin on two occasions into a patient showing collapse after an operation for a ruptured gastric ulcer, and after each injection the systolic pressure showed a transient rise, from 60 to 72 mm., without, however, preventing a fatal termination. In a second patient, showing collapse after hemorrhage from septic wounds, Clark raised the systolic pressure for a short time from 100 to 112 mm. The patient died some days later.

In the present paper we wish to place on record additional observations on the effects produced by the subcutaneous injection of tyramin during the circulatory failure of infectious diseases as well as during that which may occur during or after operations. A few attempts to abort asthmatic paroxysms with this drug will also be reported.

TYRAMIN IN THE CIRCULATORY FAILURE OF INFECTIONS

In the following cases of infection the patients showed a serious circulatory failure previous to the administration of the drug. Such failure is characterized by a rapid, small and poorly sustained pulse and by a subnormal blood pressure.

CASE 1 (Hospital No. 58260).—In a patient, aged 69, with double lobar pneumonia 40 mg. of tyramin were injected at 1:30 p. m., Sept. 19, 1917, without appreciable effect on the pulse or the blood pressure. At 4 p. m. a second injection of 80 mg. was given. Ten minutes later the systolic pressure had risen from 100 to 110, the diastolic pressure was still 58, and the pulse had increased from 85 to 100, the pulse feeling a little fuller. Twenty-five minutes after the injection the circulatory condition had returned to its previous state. The patient died early on the following morning.

CASE 2 (Hospital No. 58632).—In a patient, aged 57, with lobar pneumonia complicated by malaria, the blood pressure at 1 p. m. was 85 systolic and 60 diastolic, and the pulse was 140 per minute and barely perceptible. Five minutes after the injection of 80 mg. of tyramin, the pressures were 110 systolic and 60 diastolic, and the pulse was 145 and somewhat more easily felt. Fifteen minutes after the injection the blood pressure and pulse had returned to the original condition. At 2 p. m. the pulse could not be felt, nor could the blood pressure be read. The injection of 80 mg. of tyramin at this time did not produce any evident change. The patient died half an hour later.

CASE 3 (Hospital No. 60120).—In a patient, aged 28, with typhoid fever, Nov. 20, 1917, the blood pressure was 85 systolic and 65 diastolic, and the pulse was 120. Sixty mg. of tyramin were injected. Five minutes later the blood pressure had risen to a maximum of 115 systolic and 70 diastolic, and twenty minutes later it was 100 systolic and 70 diastolic. November 21, the patient became cyanotic, the pulse was imperceptible, and the blood pressure could not be recorded. Three minutes after the injection of 60 mg. of tyramin, the pulse could be easily felt, and the blood pressures were 95 systolic and 65 diastolic. Half an hour later the pulse was still palpable. The improvement in the patient's general condition following this injection was very striking and was

commented on by the attendant nurses. November 22, the blood pressures were 80 systolic and 60 diastolic; the pulse was 126 and very small. Four and ten minutes after the injection of 60 mg. of tyramin the blood pressure was 100 systolic and 60 diastolic, and the pulse was larger. Twenty-five minutes after the injection the pressure was again 80 systolic and 60 diastolic. The patient died, November 23.

CASE 4 (Hospital No. 60216).—A man, aged 38, with typhoid fever, was unconscious when admitted to the hospital, and the pulse could not be felt. Five minutes after the injection of 60 mg. of tyramin the pulse could be counted, 150 per minute. It remained palpable for about an hour, when it again became imperceptible. A second injection of 60 mg. had the same effect as the first. During the following thirty-six hours the drug was given whenever the patient became pulseless, usually at intervals of one to one and a half hours. Up to the last two hours before the patient's death, each injection was followed by a return of the pulse and some improvement in the general condition. The last one or two injections, however, produced no effect.

From these observations it is evident that in the circulatory failure which may complicate infections, the subcutaneous injection of tyramin causes at times a transient rise of blood pressure and an increase in the size of the pulse. These effects were neither so marked nor so constant in the circulatory failure of infections as they were when the drug was injected into individuals with normal circulations (compare with the results, recorded by Hewlett²). Furthermore, the drug was often ineffective shortly before the death of the patient. Occasionally, as in the second injection given in Case 3, the change in the circulation was accompanied by an evident improvement in the general condition of the patient. The effects of the drug, however, were transitory, and in our cases the final outcome was not influenced. Indeed, it is to be expected that when the underlying cause of the circulatory failure is progressive in character, no drug which merely corrects this manifestation is likely to save the patient. At the same time it is conceivable that under exceptional circumstances the temporary improvement in the circulation might prove of decisive value in enabling the patient to overcome the infection.

TYRAMIN IN THE CIRCULATORY FAILURE DURING AND AFTER OPERATIONS

CASE 5 (Hospital No. 59183).—A man, aged 30, after the resection of a rib for pyopneumothorax following lobar pneumonia, became cyanotic and pulseless. Sixty mg. of tyramin were injected. In five minutes the pulse had become palpable and in ten minutes it was full, rapid and of fair tension. The patient's general condition was strikingly improved. Forty-five minutes later, when the pulse was again becoming smaller, a second injection of 60 mg. was given, and again the condition of the pulse improved. Thereafter it remained rapid but of fair size, and the patient eventually recovered. Dr. Philip Gilman, who had operated on this patient, expressed the opinion that the tyramin had saved him from a seemingly fatal collapse.

CASE 6 (Hospital No. 58232).—In a woman, aged 38, following a hysterectomy for fibroids and secondary anemia, the pulse became almost imperceptible. About five minutes after the injection of 60 mg. of tyramin, the pulse became full and of good tension. The patient complained of cardiac palpitation. The pulse remained good, and the patient recovered.

CASE 7 (Hospital No. 60847).—A woman, aged 45, was much emaciated and weak. A panhysterectomy was performed for tuberculosis of the ovaries and tubes. Midway in the operation the pulse became barely palpable, with a rate of 130 per minute. The systolic pressure was 60 mm. Three minutes after the injection of 60 mg. of tyramin, the pulse became distinctly palpable, fuller and somewhat slower

3. Hoyt, D. M.: The Therapeutic Application of P-hydroxyphenylethylamin (Tyramine), an Active Principle of Ergot, *Am. Jour. Med. Sc.*, 1912, **144**, 76.

4. Clark, A.: The Clinical Application of Ergotamine, *Biochem. Jour.*, 1910-1911, **5**, 236.

(120 per minute). The blood pressure rose to 100 systolic and 65 diastolic. The pulse remained palpable for about twenty-five minutes, at which time it became imperceptible and the blood pressure could not be determined. A second injection of 60 mg. caused the pulse to become palpable again. Ten minutes after the injection the pressure was 80 systolic and 55 diastolic, and twenty minutes after it was 60 systolic. Twenty-five minutes later the blood pressure could not be read. Owing to the serious condition of the patient, the operation was terminated. While Hogan's gelatin solution was being prepared, another 60 mg. of tyramin was injected. Within four minutes the blood pressure was 70 systolic and 55 diastolic, and the pulse could be counted, 150 per minute. Five hundred c.c. of Hogan's solution were then given intravenously, and the pulse remained palpable for an hour, the blood pressure being 55 systolic and 45 diastolic. The patient's condition gradually grew worse. Injections of 60 mg. of tyramin caused the pulse to reappear on several more occasions, but were ineffective during the last hour before death, which occurred eight hours after the patient had left the operating table.

CASE 8 (Hospital No. 61230).—A patient, aged 22, following exploratory operation for cerebellar tumor, returned to the ward with a pulse that was barely palpable and 150 per minute. Sixty mg. of tyramin were injected subcutaneously. Within three minutes the pulse became fuller and slower (120 per minute). The blood pressure, which could not be read previously, was now 85 systolic and 55 diastolic. Thirty minutes later the pulse again became very small, and 500 c.c. of Hogan's solution were given intravenously. There was temporary improvement in the patient's condition. The pulse remained palpable for forty-five minutes, with a rate of 150 per minute. The blood pressure was 70 systolic and 50 diastolic. Death ensued two hours later.

CASE 9 (Hospital No. 9469).—In a patient, aged 38, following a cholecystectomy, the pulse was barely palpable, and its rate was 160 per minute. The blood pressure was 100 systolic and 60 diastolic. The patient was cyanotic. Four minutes after the injection of 60 mg. of tyramin the pulse became fuller and of greater tension, the pressure being 130 systolic and 70 diastolic. Twenty minutes later it was 115 systolic and 65 diastolic, the pulse rate being 120. The pulse continued to be of good quality, and the patient recovered.

CASE 10 (Hospital No. 9609).—A patient, aged 38, following the incision of multiple abscesses attended by considerable loss of blood, returned to the ward in a state of circulatory collapse. The pulse was scarcely felt and 150 per minute; the blood pressure was 95 systolic and 55 diastolic. Four minutes after the injection of tyramin, the pulse became easily palpable, with a rate of 120, and the blood pressure was 130 systolic and 65 diastolic. There was an evident improvement in the patient's condition which aroused enthusiastic comment from the attending intern. In ten minutes the blood pressures were 120 systolic and 65 diastolic, with a pulse rate of 120 per minute. The pulse remained easily palpable for half an hour, when it became less full and strong. Five hundred c.c. of Hogan's solution were then given intravenously with benefit. The patient recovered.

CASE 11 (Hospital No. 61011).—A patient, aged 22, following an operation for the removal of an extensive neurofibromatous growth of the legs, returned to the ward in a condition of circulatory collapse. There was cold perspiration over the body. The pulse was barely perceptible and 160 per minute. The blood pressure was 50 systolic and 30 diastolic. Four minutes after the injection of 80 mg. of tyramin, the pulse became easily palpable and 130 per minute. The blood pressure rose to 95 systolic and 55 diastolic. Five minutes later it was 75 systolic and 55 diastolic. There was an evident improvement in the patient's general condition. One hour later the pulse had again become small, and the blood pressure had fallen to 65 systolic and 45 diastolic. A second injection of 80 mg. of tyramin was given, which again caused a distinct improvement in the general condition of the patient and a rise of pressure to 95 systolic and 50 diastolic. The patient continued to improve, and recovered from this threatening circulatory collapse.

In these patients with circulatory failure during or after surgical operations the injection of tyramin usually caused a transient but marked improvement in the pulse, the blood pressure and the general condition. As in the circulatory failure of infectious diseases, the rise of blood pressure was less marked than that caused by the injection of tyramin into individuals with a normal circulation. The circulatory failure that occurs during or after operations differs from that complicating the infectious diseases in that the underlying cause is less often progressive. For this reason a temporary improvement of the circulation may lead to lasting results, and in Cases 5, 6, 9, 10 and 11 the immediate improvement caused by the drug was followed by ultimate recovery. It cannot be demonstrated that tyramin saved the life of any one of these patients, for we do not know what would have been the ultimate outcome had tyramin been omitted. Nevertheless the opinion prevailed among those who attended these patients that in Cases 5, 10 and 11 the outlook was unfavorable and that tyramin saved the life of one or more of them.

Of drugs ordinarily given in order to combat the circulatory failure that may supervene during or after operation, none have withstood the test of investigation by accurate methods. In therapeutic doses, strychnin appears to exert no influence on the circulation; in normal men, at least, caffeine tends to lower the blood pressure; therapeutic doses of camphor have little if any action on the circulation, and subcutaneous injections of epinephrin usually fail to cause any rise in the mean blood pressure. Intravenous injections of epinephrin raise the blood pressure, but the effect is very transitory and difficult to control, and they have not been generally used. Most surgeons in treating this type of circulatory failure rely mainly on the application of heat externally and the addition of fluid to the body either by rectum, by hypodermoclysis, or by the intravenous injection of various solutions or of whole blood. Over most of these methods tyramin possesses the advantage of a simple technic and a rapid effect. The rise of pressure begins within five minutes and usually reaches its maximum in about ten minutes. It may be given while preparations are being made for intravenous therapy.

One possible danger from tyramin should be mentioned. Even in those with a normal circulation this drug may cause extrasystoles, and when extrasystoles are already present it may increase their number.² Since a rapid succession of ventricular extrasystoles may pass on into ventricular fibrillation, it is possible that tyramin, like intravenous injections of epinephrin, may occasionally cause a fatal ventricular fibrillation, particularly in those whose heart muscle is in an unusually irritable condition. For this reason the drug should not be administered when frequent extrasystoles are present. During chloroform anesthesia also the foregoing danger is increased, for we know that in animals chloroform in proper doses may provoke a fatal ventricular fibrillation, and it seems probable that the sudden cardiac deaths which occur occasionally during surgical operations under chloroform are due to this cause.

FAILURE OF TYRAMIN TO ABORT ASTHMATIC PAROXYSMS

It is well known that many asthmatic paroxysms may be aborted by the injection of epinephrin. Baelir

and Pick⁵ found in animal experiments that while epinephrin caused a dilatation of the bronchi, tyramin had the opposite effect. Despite this unfavorable experimental evidence, it seemed worth while to test the action of tyramin on paroxysms of asthma. As the following cases show, the drug has little, if any, beneficial effect under such circumstances.

CASE 12.—A medical student, aged 24, had been frequently relieved by epinephrin in previous attacks of asthma. During an asthmatic seizure, 60 mg. of tyramin were injected subcutaneously. The blood pressure rose from 125 systolic and 70 diastolic to 190 systolic and 80 diastolic, but no relief was obtained from the dyspnea. One c.c. of epinephrin solution (1:1,000) was then administered subcutaneously, and the paroxysm subsided. As on previous occasions, however, the patient complained of tremulous sensations, palpitation of the heart, etc., symptoms which did not occur after the administration of tyramin.

CASE 13 (Hospital No. 52993).—A patient, aged 37, during a severe attack of asthma was given 60 mg. of tyramin subcutaneously, with no effect on the symptoms. Before the injection the blood pressure was 140 systolic and 100 diastolic, with a pulse of 96 per minute. Five minutes after the injection, the blood pressure was 160 systolic and 110 diastolic, with a pulse of 100. One c.c. of epinephrin solution gave almost immediate relief. The patient complained of nervous sensations and cardiac palpitation, symptoms not experienced after the tyramin.

CASE 14 (Hospital No. 56014).—A patient, aged 26, was admitted to the ward during an acute attack of asthma. Sixty mg. of tyramin were injected with no effect on the symptoms. Thirty minutes later 1 c.c. of epinephrin solution was injected which gave temporary relief. The attack was finally controlled by morphin and atropin.

CASE 15 (Hospital No. 40930).—A patient, aged 35, suffering from a paroxysm of asthma, was given 60 mg. of tyramin subcutaneously. There was no relief from the symptoms. Epinephrin given twenty minutes later also failed to control the attack. The patient was relieved by atropin.

CASE 16 (Hospital No. 39864).—A patient, aged 38, during an asthmatic attack was given 80 mg. of tyramin with no relief. Before the administration the blood pressure was 148 systolic and 80 diastolic, with a pulse of 80 per minute. Five minutes after the injection the blood pressure was 180 systolic and 100 diastolic, with a pulse of 78 per minute.

SUMMARY

1. In four patients who showed evidence of circulatory failure during the course of infectious disease, repeated injections of tyramin were given. These usually caused a transient rise of blood pressure and an increase in the size of the pulse. These effects were less marked than those produced when the drug was given in similar doses to those with a normal circulation. In none of our cases did a permanent improvement occur.

2. In seven patients who showed evidence of circulatory failure during or after operation, repeated injections of tyramin were given. These usually caused a transient rise of blood pressure and an increase in the size of the pulse. Striking improvements in the general condition of some of these patients occurred. Five of the seven patients recovered, and in three of these the drug benefited a condition which to those in attendance seemed desperate.

3. In five patients, tyramin failed to abort asthmatic paroxysms, although other drugs (epinephrin and atropin) were subsequently used with benefit.

A BACTERIAL TOXIN AS THE CAUSE OF RETINAL HEMORRHAGE

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In the summer of 1917, a case of retinal hemorrhage came under my observation which illuminated the heretofore obscure etiology of this condition. It made definite that which, in such conditions before, had been vague. It determined causes which could be corrected, and it made precise, measures of treatment which before had been speculative. Its importance, therefore, would seem to warrant a brief report with the deductions to which it gives rise. It is briefly as follows:

A woman in middle life had been having a series of recurrent hemorrhages in the retina for a period of eight months. During this time she had been under the advice and observation of an excellent internist and an ophthalmologist of international reputation. The treatment, therefore, might reasonably be accepted as fairly expressive of that which the best professional skill would approve. It consisted of elimination through the kidneys by saline cathartics and through the skin by baths. The hemorrhages continued to recur, however, and when she was examined, patches of blood were found scattered in the vicinity of the larger vessels, with a number of minute spots near the macula which had materially reduced the acuity of vision. As this is not a technical report of the case, the exact ocular details need not here be given. It was found, however, that she was only 46 years old, that she had no arteriosclerosis, and that her blood pressure was only 120 mm. of mercury, but that she had marked leukocytosis. She had no disease of the kidneys and was apparently, aside from the eyes, in excellent health.

Further inquiry elicited the fact that five years before she had an abscess of the antrum which had seemingly recovered. She was referred to a rhinologist, however, who opened the antrum and removed a quantity of bland, sterile pus. Pyorrhea was evident to the least critical observer, while roentgenograms revealed the presence of apical abscesses of several teeth with rarification of the alveolar tissue. The infected teeth were removed with aseptic precautions and a culture made by Dr. Thibaudeau, pathologist of the Children's Hospital, Buffalo, which showed that the active organism was the *Streptococcus hemolyticus*. The removal of the source of infection was followed by a cessation of the hemorrhages, although the destruction of retinal tissue had been so great that vision was not materially improved.

In a subsequent case of recurrent hemorrhage in a man, aged 70, with a blood pressure of 200, again an infected tooth was suspected after various other measures had been ineffectively used. Its evidence was verified, and again the active organism proved to be the *Streptococcus hemolyticus*. An autogenous vaccine was prepared and employed at intervals of four days for six weeks. Since that time, now about six months, there have been no further hemorrhages. In almost every case since in which hemorrhage of the eyeball has been present, some form of focal infection has been found, and the active organism has usually been some form of the streptococcus and almost invariably in recent examinations the *Streptococcus hemolyticus*.

Retinal hemorrhage is of much more frequent occurrence than it is generally supposed to be. It is not dependent on blood pressure. It may be associated with, but is not directly caused by, arteriosclerosis, albuminuria, diabetes or other diseases involving disturbed metabolism or focal infections. In any of these conditions, protein toxins may be given off. These are easily absorbed into the circulation, more especially when they arise from focal infections that are proximal to the eye. The organism which is most commonly present is the streptococcus, and the form

5. Baehr, G., and Pick, E. P.: Pharmakologische Studien an der Bronchialmuskulatur der überlebenden Meerschweinchenlunge, Arch. f. exper. Path. u. Pharmakol., 1913, 74, 41.

frequently found is that of the *Streptococcus hemolyticus*. The hemorrhage thus produced is not the result of force from behind, but is due to softening of the tissues of the capillary or arterial walls by the local action of this toxin, thereby producing lysis.

This conception has not heretofore been recognized as a cause of retinal hemorrhage, and the reasons for the conclusions reached will be briefly given. The importance of the subject will at once be evident, as in a proportion of cases, at least, a definite etiology and one which clarifies the entire situation will be established in place of one which is vague and speculative. It explains satisfactorily many pathologic changes otherwise obscure, and gives definite and specific methods of procedure which, if determined early enough, may have a preventive value, in conditions not only endangering sight but even life itself. That our fundamental knowledge of the cause of retinal hemorrhage is still exceedingly indefinite is shown in a review of our most recent literature. In an exhaustive article from the pen of Professor Eperon,¹ the conclusion reached is that while the causes given are arteriosclerosis, albuminuria, glycosuria and menopause, still, "it is somewhat misleading to regard hemorrhagic retinitis as a single clinical entity—it is a symptomatic condition which must be evaluated according to concomitant factors."

Dr. Clegg² has confessed that "he is quite at a loss to know the explanation of retinal hemorrhage in spite of all of the suggestions made in literature," and he believes especially that "the known methods of treatment are by no means reliable, nor is it even always at once evident which line of treatment will best suit an individual case." In one of the latest and most authoritative textbooks³ it is accepted without further comment that "while most cases of retinal hemorrhage are due to arteriosclerosis, diabetes, chronic nephritis, etc., there are also a large number which have no discoverable cause." Parsons⁴ makes no attempt to describe the conditions which produce retinal hemorrhage.

It is generally assumed by ophthalmologists that one or two conditions obtain or that the two at the same time may be present—either that the internal pressure becomes so great that it can no longer be resisted by the retaining wall of the blood vessel, which consequently ruptures, or that through change of structure the vessel wall becomes so weakened that the normal pressure can no longer be resisted. Little attention has been given, as to the manner in which these structural changes take place, or on what they are dependent. This is vitally important because on its understanding is based our whole conception of the actual etiology, and therefore prognosis and treatment. It is here urged that that which actually occurs is the absorption into the blood of a soluble protein poison, usually given off from a focal infection, which has a solvent effect on the intercellular cement substance of the cell wall, and that the hemorrhage is not due to alteration of the blood pressure but to local lysis in the wall itself. That this view is not that which is commonly entertained is evidenced by a writer⁵ who, in urging the more general use of the sphygmomanometer, says that "while tuberculin is needed in many of these cases, in addition thereto means must be resorted to to reduce the

blood pressure or to make it compensate." The editorial comment on this is: "While recurrent retinal hemorrhage may be accompanied by low blood pressure, as was pointed out by the late E. W. Stevens twelve years ago, its association with variations of coagulability of the blood should also be studied. It may occur with high coagulability as well as with low." This leads to the inevitable conclusion that neither the blood pressure nor the coagulability is the essential factor to be reckoned with, but that back of this is another element which has not yet been recognized.

Happily the investigations of Vaughan and Wheeler in 1903 in which they demonstrated that the colon bacillus contains a highly active poison was epoch making and vitally important in this connection. In their subsequent studies they isolated from other bacteria a toxic substance which came to be known as the "protein poison." When undigested proteins are introduced into the blood current, this virulent poison is set free, the body becomes sensitized, and death may result without bacteria entering into the active process. They are, however, the source from which the toxin is derived. The poison thus given off from a focal nidus is slowly absorbed, and disturbing local effects result.

The differential character of the toxins given off by the different strains of bacteria has not yet been studied. It is known, however, that several varieties produce hemorrhage. The effect is not unlike that of the snake venoms, which Flexner has shown contain a chemical substance having a definite endotheliotoxic action or a solvent effect on the intercellular substance. Wells considers it quite probable that of the chemical agencies causing hemorrhage the bacterial products are the most important:

It is quite probable that the bacterial poisons that cause marked hemorrhagic manifestations likewise contain endotheliotoxins. . . . Hemorrhage in cachectic conditions is often ascribed to changes in the vessel walls due to malnutrition, but it is difficult to imagine capillary walls suffering from lack of nourishment even with the poorest of blood, and it seems more probable that the hemorrhages are due even in cachexia to chemical constituents of the blood that injure the endothelium.

As to changes of blood pressure, it will be remembered that so large is the capillary area as compared with that of the arterial system, and so great the friction of their walls as the blood stream passes through them, that even when the initial pressure is high it is reduced to the practically negligible force of between 20 and 30 mm. of mercury by the time that it reaches these terminals. Balanced, moreover, as it is by the ocular tension, a pressure rupture in a normal capillary must be impossible, as we do not have retinal hemorrhage with the high tension of glaucoma or in the greatly reduced tension of phthisis bulbi.

An added importance to the subject lies in our understanding not alone of hemorrhages within the eye but also of hemorrhages elsewhere in the body. It would seem very doubtful indeed if in cerebral apoplexy the vessel breaks because of the internal pressure from the blood; more likely, the protein poison, from whatever source it originates, has so affected the nutrition of the endothelium at that special point in the vessel's course that the normal elastic cellular substance, then replaced with calcareous or other mineral substances, is so softened that dissolution of the walls results and hemorrhage is precipitated. If, as would seem, this is what actually occurs,

1. Summarized by a writer in the British Journal of Ophthalmology, 1917, 1, 187.

2. Clegg: Paper read before the Ophthalmological Society of the United Kingdom, May, 1916.

3. Knapp, A. H.: Medical Ophthalmology, Philadelphia, P. Blakiston's Son & Co., 1917.

4. Parsons: Pathology of the Eye, New York, G. P. Putnam's Sons.

5. Am. Jour. Ophth., April, 1918, p. 289.

the recognition of this newer pathology will enable us to seek the origin of the focal nidus producing the poison, and by removing this stop the recurrence of this tragic disaster instead of wasting valuable time in eliminatives that can have no direct effect whatsoever on the disease.

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ABNORMAL REFLEXES CAUSED BY MORPHIN POISONING IN A TABETIC

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The patient is a physician, aged 48, married. He is bed-ridden and undoubtedly has a well advanced case of tabes, in the paralytic stage. The diagnosis has been confirmed by serologic and spinal fluid examinations, both of which have been performed under the supervision of Major Joseph Collins at the Neurological Institute.

Mentally, the patient shows a pure acute depression. For a number of weeks prior to the taking of the overdose of morphin, he had been talking of committing suicide, lamenting his fate and the hopelessness of his condition. He cried a great deal, and was irritable and complaining. For several days before taking the morphin he had suffered from moderately severe laryngeal and cardiac crises, and also from root pains in both lower extremities. His memory was good and there was no mental deterioration. There was no expansiveness, no excitement other than the agitated depression, and there were no indications at any time of euphoric tendencies. Mentally and neurologically, there was nothing to suggest that the patient was a paretic.

As revealed by the general neurologic examination before the taking of morphin, all the cranial nerves were functioning properly. The fundi were normal. The pupils reacted very little to light, and were small and slightly irregular, but reacted well to accommodation. There was good consensual reaction. The patient was unable to stand except by the aid of a cane or by leaning on the arm of another, and could not walk without help. There was a decided equilibratory and nonequilibratory ataxia. The deep reflexes in the upper extremity were fairly active and equal, but the ankle and patellar reflexes had been absent. There had not been any Babinski reflex, and whatever response the great toe gave to stroking of the plantar surfaces had been very mildly flexor. There was no clonus. There was loss of power in the lower extremities and loss of tone. There was no atrophy and no tremor. There were several areas of anesthesia; and various paresthesias and dysesthesias had been found in both feet, particularly on the plantar surfaces. The speech showed no defect excepting that when the patient spoke moderately long, the voice became weak and thin with much complaint of dryness of the throat. The normal blood pressure ranged between 120 and 130 with no diastolic record, except on one occasion taken about two weeks before the incident under discussion, when it had been 120 systolic and 80 diastolic. The heart and lungs were normal, and the peripheral and retinal blood vessels had been singularly free from arteriosclerotic changes. There was incontinence of feces and urine, which was of about eight months' duration.

About 5 p. m., March 23, 1918, the patient took surreptitiously eight $\frac{1}{4}$ grain tablets of morphin. In about an hour he was unconscious, cyanotic, dyspneic and apparently dangerously ill. The physician found him breathing stertorously and irregularly, with face, lips and hands cold and blue. The heart rate went from 140 to 176 within a half hour, but did not become intermittent until the more rapid rate had been reached. Later, the breathing was characteristic of the Cheyne-Stokes type. The pulse was small and weak, and the physician judged that the blood pressure was extremely low, although it was not taken. The patient was in coma and could not be aroused. He was immediately stimulated and the general condition improved somewhat, although the coma

continued as profound as before. The attending physician watched the case and studied the clinical symptoms with no idea whatever that morphin had been taken and was really the cause of the symptoms. There is no record of the reflexes during this period.

I examined the patient at his home about 8 o'clock that evening. He was breathing quietly but regularly. Occasionally there was a pause of from four to ten seconds without respiration, and the average rate was from eight to ten per minute. He was neither livid nor pale. The head was turned to the left and remained continuously in that position. If the head was placed straight, within a few minutes it would resume the position described above, although it did not seem to be pulled in that direction. The patient was in a condition of extreme muscular relaxation. There was a marked muscular flaccidity in the trunk, in all four extremities and in the neck, which could not be entirely accounted for by tabes.

All the cranial nerves appeared to be functioning properly. There was no demonstrable central or peripheral type of facial palsy, although it appeared to two of us that possibly the left side of the face was flatter than the right. However, as I had not seen the patient for a long time, I did not pay much attention to this symptom. The pupils measured about 2.5 mm., and reacted poorly to light; accommodation could not be tested, the patient being in coma. The consensual reaction was absent on repeated testing. The reflexes in the upper extremity were fairly active and equal. The patellar, ankle and dorsocuboidal reflexes were absent. The abdominal reflexes were peculiarly inconstant. At the first examination of the evening, it was almost impossible to get more than a very slight flicker from the abdominals on the left side; later, these became very active; the reflexes on the right side could not be obtained. Still later, all the superficial reflexes except the lower right abdominals were active. Most surprising was the definite presence of a well marked Babinski response on the right side which was demonstrated time and again, and which was produced at each stimulation at least eight or nine times. On the left side we obtained a doubtful Babinski response on three or four occasions. The Oppenheim reflex on the left side was surely present; on the right side, this abnormal reflex, together with a Chaddock and Shaffer reflex, was present. No Gordon reflex could be elicited on either side. There was also present at each application of the test a Klippel-Weil reflex on the right side only. Here, too, there was present the pronation sign of Strümpell. The sign of Marie-Foix was absent. The patient's muscles were extremely flaccid. There were twitchings and convulsive movements of the legs and right upper extremity. The rest of the neurologic examination was negative. The heart beat was 136 and regular. There was bradycardia. The blood pressure was 80 systolic, and the diastolic pressure could not be obtained. A few hours later, the blood pressure had fallen to 75 systolic. The face was not suffused or cyanotic, and the breathing was not stertorous. The skin was warm and dry, the temperature 97.

At the consultation that followed, several conditions were thought of. We did not dream of any toxicosis from morphin, and after considerable discussion, it was agreed that we had to deal with a cerebral hemorrhage. We felt that the patient was at the point of death, and I called attention to the fact that blood pressures were prone to take a sudden drop before death in cases of cerebral hemorrhage. The abnormal reflexes decided the diagnosis, particularly as I reasoned that the pyramidal tract irritation must be great in order to produce clinical evidence of such a pathologic condition in an advanced tabetic. I was mystified by the presence of the Babinski and Klippel-Weil reflexes, particularly in view of the hypotonia and the absence of deep tendon reflexes in the lower extremities.

The subsequent history of the case was very gratifying. Despite the fact that it was considered unwise to use stimulants of any kind and that nothing at all was done for the patient except to leave him alone, in five or six hours he began to regain consciousness, and in twenty-four hours had entirely recovered from his coma.

At an examination made two days later, all the superficial and deep reflexes were as they had been before the ingestion of

the morphin, and the abnormal reflexes mentioned had disappeared. The consensual reaction had also returned. We were informed by the patient at this examination of the deliberate attempt to take his life.

COMMENT

An investigation of the effect of morphin on the nervous system reveals that most authorities agree that the spinal reflexes are increased by morphin, both by moderate and toxic doses. The same authorities also agree that cerebral inhibitions of various types are increased by the depressant action of morphin on the brain. It has occurred to me that a combination of these two physiologic actions of morphin may be offered as an explanation for the phenomena observed in this patient.

Hare¹ says:

The action of opium upon man and the lower animals varies with the degree of intelligence or cerebral development. It quiets the brain and excites the spinal cord.

Sollmann² agrees that:

The reflexes and the spinal functions are mainly stimulated.

Wood³ says:

There is considerable physiological evidence that in frogs, at least, presumably in other animals, there is located in the optic lobes a center known as Selschenow's center, whose function is to control reflex activity, and stimulation of which diminishes reflexes. It would appear plausible that morphin in small doses excites this center so that the spinal activities would be lessened and that the large dose stimulates the ganglia in the gray matter of the spinal cord, perhaps also paralyzing the inhibitory center at the same time, thus producing marked increase of reflexes and even convulsions.

Some such physiologic action as has just been described must be called in to help us explain the phenomena observed in the patient. There must of necessity be posited the presence of a physiologic action characterized by removal of cerebral inhibition over the control of reflexes. The effect of such removal of cerebral inhibition would be to allow the drug a free hand in exciting the inherent reflexes existing in the spinal cord. Such a combined action would give us an explanation for the phenomena observed here.

It will be recalled that the Babinski phenomenon and allied abnormal reflexes, including the Klippel-Weil (in the hand), have been explained on the ground of loss or diminution of the control exerted by the corticospinal or pyramidal tracts on reflex movements. The pyramidal functions are inhibitory of voluntary and reflex movements. Phylogenetically, the pyramidal tracts are of late acquisition, and their removal, therefore, or diminution of their function for any reason would allow an older mechanism to work unhampered. Such a mechanism is found in the spinal cord reflexes which, it seems agreed, morphin excites.

CONCLUSION

A report of this case is possibly of importance in throwing some light on the physiologic action of morphin on the brain and spinal cord, particularly as it relates to the reflexes. The conception of morphin as a cerebral depressant and spinal stimulant seems to be borne out in some degree by this case.

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SIMPLE METHODS FOR PROLONGING
THE VIABILITY OF MENINGOCOCCUS CULTURES*

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The old problem of maintaining stock cultures of meningococci presented itself in our laboratory during the past year. An unusual demand for reliable control cultures has developed in connection with the detection of meningitic carriers in Army cantonments and naval training stations. The maintenance of a large number of cultures for preparing highly polyvalent antimeningitis serum has been a perennial problem of the manufacturer. The transportation of meningitis cultures presents especial difficulties. Cultures brought to this coast from New York on several occasions were sent by special messenger and, while they were on the way, fresh subplants were made at Denver, yet only a small proportion arrived safely. Another case of interest was observed in Dr. Wollstein's¹ work on parameningococci. A hurried journey was made to Paris by Dr. Louise Pearce to secure two cultures from Dr. Dopter, "since it was found that the cultures sent by post did not survive the journey."

The uncertainty of maintaining cultures on blood agar, starch agar, and sheep serum glucose agar slants led to an attempt to find a simple, stable medium in which the organisms might be kept alive with less difficulty. This has been accomplished by the use of various deep mediums, especially beef brain.

Many mediums have been devised for the cultivation of meningococci, on which they may remain alive a short while, or survive through several generations, and then suddenly die out, even with frequent transplanting. The question of viability presents a separate problem from that of artificial cultivation. With this in mind, Vedder's² suggestion as to the use of starch agar was taken up, but this necessitated frequent transplanting. Although gonococci and meningococci possess many similarities, this medium, which is suitable for the former, was not highly successful for meningococci. A modification was adopted, namely, the addition of 5 per cent. defibrinated rabbit blood, and in place of slant cultures, stab cultures, 6 cm. in depth, were made with some success. Roos³ has devised a potato extract blood agar which in our work has maintained the cultures quite satisfactorily. Eastwood,⁴ Griffith⁵ and Scott⁶ made cultures of isolated colonies of meningococci on solidified egg. As no formula was given, simple egg slants, solidified in the Arnold sterilizer, have been used in experimental work. One feature of this medium mentioned by Griffith is the viability of cultures for many weeks, and growth after seven months in the incubator at 22 C. This work has not been repeated in detail in these experiments, but the undoubted value of egg medium protected from evaporation has been determined at 37 C.

* From the Department of Bacteriology, University of California.

1. Wollstein: Parameningococcus and Its Antiserum, *Jour. Exper. Med.*, 1914, **20**, 201.

2. Vedder: Starch Agar, a Useful Culture Medium, *Jour. Infect. Dis.*, 1915, **16**, 385.

3. Roos: Culture Media for Maintaining Stock Cultures of the Meningococcus, *Jour. Bacteriol.*, 1917, **1**, 67.

4. Eastwood: Meningococcus Carriers, *Jour. Hyg., London*, 1915-1917, **15**, 405.

5. Griffith: Identification of the Meningococcus in the Nasopharynx, *Jour. Hyg., London*, 1915-1917, **15**, 446.

6. Scott: A Study of Meningococci, *Jour. Hyg., London*, 1915-1917, **15**, 464.

1. Hare, H. A.: A Text-Book of Practical Therapeutics, Ed. 15, 1914, p. 383.

2. Sollmann, Torald: A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, 1917, p. 217.

3. Wood, H. C., Jr.: Pharmacology and Therapeutics, Ed. 2, 1916, p. 122.

I was led to test the viability of meningococci in sterile brain by the apparent affinity of these organisms for nervous tissue. While the experiments were in progress, a suggestion was made by Dr. F. P. Gay as to the value of chopped beef or liver prepared and sterilized in the same manner as brain medium. Some work has already been done with these two substances, and results show that the fundamental principle necessary for growth and viability is not contained alone in brain. The observations of Wherry and Oliver⁷ on the adaptation to reduced oxygen tensions shown by gonococci and other bacteria, followed by the work of Cohen and Markle⁸ on meningococci in partial tension cultures, lead us to conclude that the depth of these mediums has an important bearing on the viability of cultures both at 37 C. and at room temperature. It may well be also that the matter of moisture retention is equally important.

blood mediums, the results of which are shown in A and B of Table 1. The success of these led to comparative studies of deep brain, blood, and other recommended mediums, as shown in C of Table 1.

It is of interest to note in connection with the use of blood that Davis⁹ made some special tests with defibrinated blood from normal persons and ineningitic patients to determine its bactericidal effect. He found that the organisms lived in some normal bloods and not in others. He noted also that cerebrospinal fluid acted much like serum. Results of the tests with normal blood serum indicated that the organisms were dead from one to two hours after their preparation.

The deep brain medium, according to von Hibler,¹⁰ is thus prepared: Beef brain is chopped fine, and one-third the volume of distilled water is added. The mixture is tubed in lots of from 12 to 15 c.c. and sterilized, preferably in the Arnold sterilizer, three

TABLE 1.—VIABILITY OF MENINGOCOCCUS CULTURES IN DAYS AT 37 C.

Medium	Date Planted	Remarks	Cultures									
			1* 296a†		10* 296b†		30* 296e†		44* 297a†		60* 297b†	
			Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
A Deep brain	Nov. 16, 1917	Cotton plug until Feb. 1, then rubber cap	148	174	174	175	175	183	183	189	175	183
B Deep blood, 5 e.c. only.....	Nov. 23, 1917	Paraffin plug until Feb. 1, then rubber cap	50	68	124	141	141	176	68	75	102	124
Deep brain	Nov. 27, 1917	Rubber eap	181	...	181	...	84	92	46	57	181	...
Deep brain ...	Dec. 12, 1917	Paraffin plug	166	...	78	105	78	105	42	57	122	163
C Deep brain	Dec. 23, 1917	Rubber eap	138	149	138	149	138	149	156	...	156	...
Deep blood	Dec. 23, 1917	Rubber eap	149	153	94	111	85	94	111	138	100	111
Roos medium slants, 20% blood...	Dec. 23, 1917	Rubber eap	156	...	156	...	156	...	156	...	149	152
Roos medium slants, 5% blood....	Dec. 24, 1917	Rubber eap	111	142	156	...	100	111	152	156	111	142
Vedder's modified, stab, 5% blood.	Dec. 23, 1917	Rubber eap	65	94	55	65	...	...	156	...	100	111
Eastwood; egg; slants.....	Dec. 23, 1917	Rubber eap	94	111	94	111	55	67	94	111	111	142
Deep brain	Dec. 31, 1917	Rubber eap	103	134	147	...	147	...	147	...	147	...
D Deep beef	Feb. 5, 1918	Rubber eap	111	...	67	93	111	...	111	...	111	...
E Deep liver	Feb. 19, 1918	Rubber eap	97	...	97	...	97	...	...	...	97	...

* Rockefeller number

† University of California number.

TABLE 2.—VIABILITY OF MENINGOCOCCUS CULTURES IN DAYS AT 37 C., ROOM TEMPERATURE, AND ICEBOX TEMPERATURE

Medium	Date Planted	Temper- ature	Cultures									
			1* 296a†		10* 296b†		30* 296e†		44* 297a†		60* 297b†	
			Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
Deep brain	Jan. 21, 1918	37 C.	122	...	122	...	122	...	122	...	122	...
Deep brain	Jan. 21, 1918	22 C.	22	36	65	82	82	90	16	22	16	22
Deep brain	Jan. 21, 1918	6-8 C.	22	36	...	...	22	36	22	36	22	36

* Rockefeller number.

† University of California number.

In the experiments under consideration, five cultures, obtained by the Cutter Biological Laboratory of Berkeley from the Rockefeller Institute, were used. All are characteristic gram-negative diplococci, fermenting glucose and maltose in Dunham's peptone solution containing 5 per cent. rabbit serum. A polyvalent serum procured from Dr. J. G. Fitzgerald, of Toronto agglutinated all the cultures in one hour at 37 C. in 1 c.c. of a dilution of serum of 1:10, with 1 c.c. of a suspension of organisms in phenolated saline. At the end of twenty-four hours at 8 C., all were agglutinated in a serum dilution of 1:100, with 1 c.c. of the organisms in suspension. The controls, containing 2 c.c. of phenolated saline with the organisms in suspension, remained unagglutinated.

Certain preliminary experiments were made to determine the viability of the meningococcus in brain and

successive days. Before we plant into this medium, it is customary in our work to transfer a loop of brain to agar medium and incubate twenty-four hours to detect any contamination.

In addition to deep brain, a deep blood medium was also used. Blood is obtained aseptically from rabbits by heart puncture, defibrinated and tubed in lots of from 12 to 15 c.c. The latter medium has been used by Miss Winegarden of the Cutter Laboratory, with considerable success, in keeping cultures over a long period. Deep blood is equally valuable, according to Miss Winegarden, for the preservation of pneumococcus and gonococcus cultures.

In the preliminary tests, the inoculated brain and blood mediums were placed in the incubator at 37 C., and subcultures were made at the end of twenty-four hours on agar slants containing 0.5 c.c. of defibrinated rabbit's blood. Following incubation of the slants,

7. Wherry and Oliver: Adaptation to Certain Tensions of Oxygen as Shown by Gonococcus and other Bacteria, Jour. Infect. Dis., 1916, 19, 288.

8. Cohen, M. B., and Markle, Louis: A Method Which Greatly Facilitates the Culture of the Meningococcus, THE JOURNAL A. M. A., Oct. 28, 1916, p. 1302.

9. Davis: Studies in Meningococcus Infection, Jour. Infect. Dis., 1905, 2, 602.

10. Von Hibler: Untersuchungen über pathogene Anaeroben, 1908, p. 85.

Gram's stains were made to confirm the purity of the cultures. At intervals the tests were repeated until the brain and blood (unfortunately in the preliminary test about 2 cm. in depth) were comparatively dried out. Feb. 1, 1918, broth warmed to 37 C. was added aseptically to the fast-drying mediums. The brain was restored to its original bulk. The blood, however, did not lend itself readily to suspension in the liquid. At this time rubber test-tube caps were placed on the tubes. Where pure subplants still develop, characteristic gram-negative diplococci are present. In all subsequent tests for growth and purity from other mediums, the same technic has been followed, except that precautions to avoid evaporation have obviated the necessity of restoring lost moisture.

Paraffin plugs were employed, but these are unsatisfactory. With constant use, the plugs became smooth and may slip down into the culture. They are also inconvenient to handle. Rubber stoppers were tried, but the opportunity for contamination was increased; both types, therefore, were discarded in favor of rubber test-tube caps, which are proving highly satisfactory. They last reasonably long, on exposure in the incubator; and, in comparison with paraffin, prevent evaporation very effectively.

It is of interest to note that successful subplants were made from relatively dry blood and brain mediums; but the results were rather irregular.

To obtain cultures for serologic work, it is preferable to subplant from the brain medium on to blood agar slants, incubate twenty-four hours, and subplant from these slants to fresh blood agar to secure suspensions of organisms free from brain.

So far, the brain and blood mediums compare favorably; but the ease of preparation rests with the former. When a large number of organisms are kept in stock, the taking of blood in quantities becomes a problem.

At the present time, cultures are being kept on several mediums, as shown in C of Table 1. From time to time, tests are being carried on to determine the viability and purity of the cultures kept at 37 C., and covered with rubber test-tube caps. The work has not as yet been concluded, but serves to point out the value of mediums recommended. In order to verify the original test on brain, we have prepared several sets of the organisms at various dates, the results of which are recorded in Table 1.

In the transportation of meningococcus cultures, it is highly desirable that viability be maintained at ordinary temperatures. Notwithstanding the remarkable resistance of the closely related gonococcus to low temperatures, as recorded by Lumière and Chevro-¹¹ tier,¹¹ it has been generally agreed and specifically proved by Flexner,¹² Elser and Huntoon,¹³ and others that viability of meningococci at temperatures lower than 37 C. is very limited. Flexner's¹⁴ more recent article emphasizes the same point of view.

That deep brain cultures remain alive for many days at lower temperatures, as shown in Table 2, is therefore highly important. There can be no doubt, however, from the tests, so far as they have gone, that even in deep brain cultures the meningococcus is of longer life at 37 C. than at room or at icebox temperature.

11. Lumière and Chevro-¹¹ tier: Sur la résistance du gonocoque aux basses temperature, *Compt. rend. Acad. d. sc.*, 1914, **158**, 139.

12. Flexner, Simon: Biology of *Diplococcus Intracellularis*, *Jour. Exper. Med.*, 1907, **9**, 105.

13. Elser and Huntoon: Studies on Meningitis, *Jour. Med. Research*, 1909, **20**, 377.

14. Flexner, Simon: Mode of Infection, Means of Prevention, and Specific Treatment of Epidemic Meningitis, Rockefeller Inst. for Med. Research, 1917.

EPIDEMIC OF GERMAN MEASLES IN A CITY ADJACENT TO AN ARMY CANTONMENT

AND ITS PROBABLE RELATION THERETO

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Much comment has been heard on the prevalence of measles in Army cantonments. German measles as a factor in disease incidence in troops has been more or less overlooked, with probably serious results. It is common knowledge that in the moving of troops, in the present selective draft and in the concentration of the National Guard for reassembling to proper training stations and to complete permanent organizations, certain epidemiologic features of diseases prevalent among them have been overlooked along with the prescribed methods of interstate quarantine. As a result, diseases like measles and German measles have occurred in Army cantonments and have in many instances produced an increase and even caused epidemics of these diseases in adjacent cities. The absolute necessity for proper diagnosis and differentiation of the infectious diseases, particularly measles and German measles; if only for control, was evidently at first disregarded.

THE OUTBREAK

Beginning in October, 1917, local physicians reported a type of measles, later diagnosed as German measles, in North Little Rock, Ark., a city of 15,000 inhabitants, situated adjacent to Camp Pike, a large Army cantonment used for training drafted troops, and Fort Logan H. Roots, used at first as a concentration point for the mobilization of the Arkansas National Guard. Coincident with the increase of the disease in North Little Rock, measles was reported to be increasing at Camp Pike and Little Rock, a city of 75,000 inhabitants just across the Arkansas River. The presence of true measles in North Little Rock made differentiation comparatively simple, each case being investigated and followed to completion, and all available data compiled.

The interesting factors noted were:

1. The difference in the combined measles and German measles curves in separate communities, illustrating graphically the effect of differentiation and a simple method of control.
2. Recurrent attacks in cases of German measles in the same epidemic.
3. The occurrence of acute arthritis in many cases as a complication, and the absence of pneumonia.
4. The isolation of a hemolytic streptococcus from four cases of acute arthritis, and its possible relation to the streptococci in the true measles pneumonia.

EPIDEMIOLOGY

Attention is called to the combined measles and German measles curves in Camp Pike,¹ Little Rock and North Little Rock (Chart 1). It will be noted that though the height of the curve, which was reached in November in the epidemics in Little Rock and North Little Rock, were identical, the curve of Little Rock remained steady, while that of North Little Rock rapidly declined. This was undoubtedly due to differentiation and measures instituted for control, there

1. The Camp Pike curve was taken from the base hospital daily report of measles patients admitted.

being no determined attempt to do either in Little Rock. The height of the combined curves for Camp Pike were reached in December, and differentiation² began about this time. It is of unusual interest to

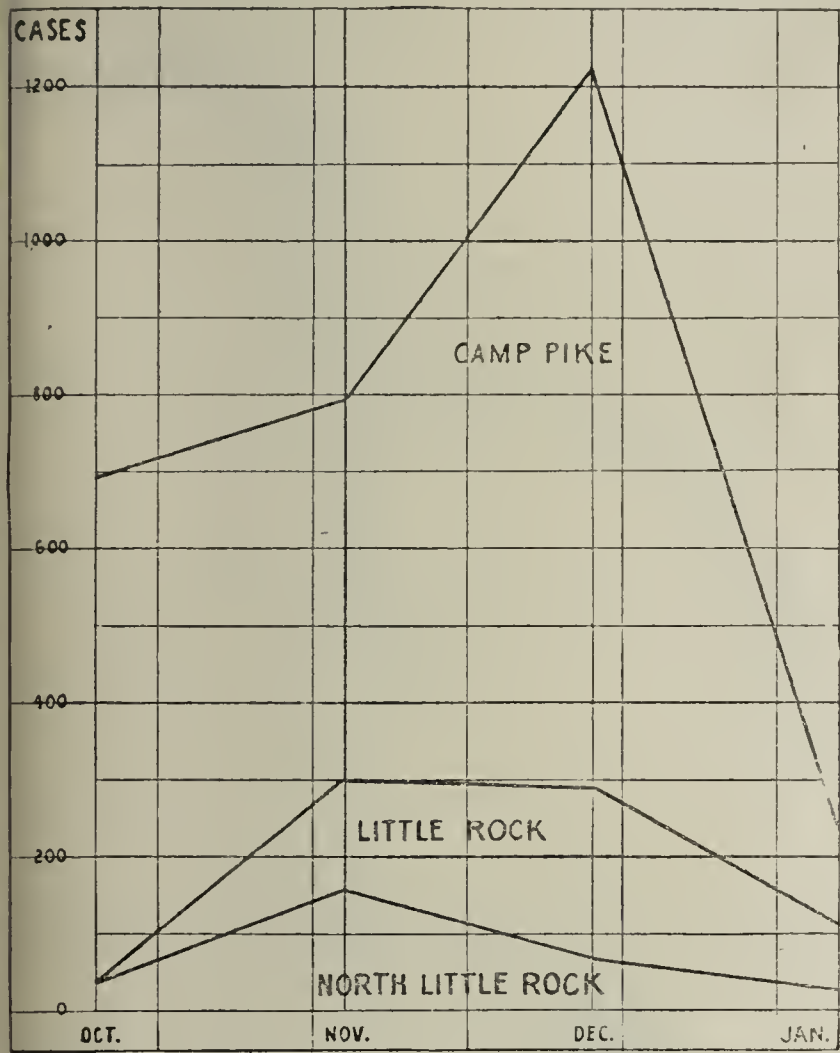


Chart 1.—Total combined cases of measles and German measles, Oct. 1, 1917, to Feb. 1, 1918.

note the separate curves of measles and German measles in North Little Rock (Chart 2). The similarity of the height curve shares in importance with the larger number of cases of German measles reported. Since the incidence of German measles was greater than measles in North Little Rock, then like conditions probably existed in Camp Pike and Little Rock, all things being practically equal. This offers an explanation for the height curve from Camp Pike not being reached until December, and the remarkably large incidence there, as patients with German measles could easily have been discharged while still in the incubation period of measles, with resulting cross-infection and new contacts and all their accumulative dangers. The contagiousness of German measles is said not to approximate measles. In schools in the classrooms of which fresh cases were known to have been from one to two days before being discovered, the resulting incidence in those exposed, each classroom being taken as a separate unit, averaged 12 per cent. The average incubation period in 173 cases was seventeen days, the shortest being eleven days and the longest twenty-one days. Recurrent attacks occurred in fifteen cases. In five, three separate distinct attacks occurred in a gradual lengthening period. For instance, in two cases, the second attack occurred three weeks after the first and was subsequently followed by a third attack, five weeks after the second. Only one of these persons was known to have been exposed to an active case before the third attack at a time not inconsistent with the known incubation period.

2. By personal communication.

SYMPTOMS AND COMPLICATIONS

In the majority of cases in this epidemic, no prodromal symptoms were noted, the eruption appearing without warning. The most constant symptom and one regarded as diagnostic was the enlargement of the superficial lymphatic glands. Koplik spots were never found. The eruption is rarely ever predominant, but there are always large confluent areas, best seen on the abdomen and the inner aspects of the limbs. The temperature may be above normal, but never higher than 101. German measles, heretofore regarded as the mildest contact disease, with complications infrequent, did not prove so in this outbreak. In thirty-six cases, acute arthritis occurred, recovery being most difficult. In four cases hemolytic streptococci in pure culture were isolated from much enlarged knee joints, one of which later presented a deformity fixation. In two cases, acute nephritis was noted, in one of which three months later there was still a transient albuminuria accompanied by an elevation of temperature. Endocarditis as a complication was noted in one case, and otitis media in eight cases. Pneumonia never followed any case in this series, and many patients could not be regarded as getting the best medical attention and nursing care.

CONTROL

The disease being regarded so lightly, no determined efforts of control were recorded. An attempt at control was made in this epidemic in one small school, situated in an average working class district, the entire control measures being based on the known average incubation period and medical inspection. Pupils of this school, reported ill, were excluded, and those diagnosed as having German measles were quarantined at home, but not isolated from the other members of the family. In ten families averaging three school members to the family, cases of German measles occurred. The other school members of these

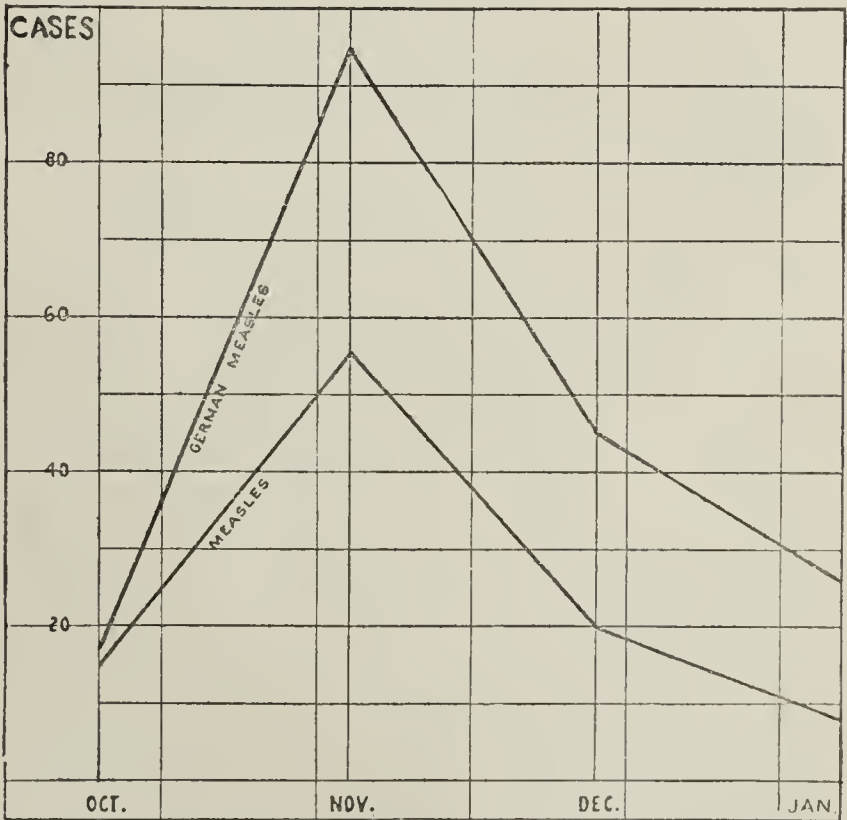


Chart 2.—Total cases of measles and German measles in North Little Rock, Oct. 1, 1917, to Feb. 1, 1918.

families not infected but being daily exposed to the cases in the homes were allowed to attend school up to the fourteenth day, when they were promptly eliminated for one week. No new cases occurred that

were traceable to the original cases excluded from school accordingly, and absentees were reduced to a minimum.

It is interesting to note here that the contagiousness of the disease in the foregoing families averaged 65 per cent. in contradistinction to that in the classroom, 12 per cent. No person should be released from quarantine without being clear of complications, and particularly until all glandular enlargement, the most consistent symptom, has disappeared.

Clinical Notes, Suggestions, and New Instruments

AIDS IN THE USE OF DAKIN-CARREL TREATMENT

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First Lieutenant, M. R. C., U. S. Army

A GLASS AUTOMATIC SIPHON, FOR DELIVERING A DEFINITE AMOUNT OF FLUID TO THE WOUND AT A DEFINITE PERIOD OF TIME

This apparatus¹ is blown entirely of glass and fused into one compact piece. It is clean, handy and dependable. It can be made in different sizes, depending on the quantity of flushing required. The periodicity of flushing is regulated by a Hoffman pinch-cock on the tubing between the solution tank and the apparatus.

Two bells (*A* and *B*) annealed one to the other are connected by a siphon tube (*C*). A drip point is annealed into the upper end of the upper chamber. Both chambers have air vents.

The apparatus works as follows: Solution from an irrigating bottle or bag is allowed to pass a pinch-cock at a fixed rate. It accumulates in the upper chamber until it reaches the highest point of the siphon, when it suddenly is emptied by the siphon into the lower chamber. Here, by virtue of its height and its weight, it forces its way through the holes in the Carrel tube and flushes the wound. The flushing is periodic and eliminates the inconstant human element which is so often the cause of failure in the Dakin-Carrel technic.

A SUCTION DRAINAGE BELL FOR APPLYING DAKIN-CARREL TREATMENT IN EMPYEMA

This apparatus can also be applied, without the suction, in sterilization and drainage of the urinary bladder.

It consists of a flattened bell of glass, resting on a wide flange (*A*), where it comes in contact with the skin around the wound opening. At the upper end of one diameter are two small tubular openings (*B*) for transmitting the usual Carrel tube into the wound cavity. One of these may be used for flushing the bell and for cleansing. On the opposite side is a large tubular opening (*C*) for carrying off drainage, by means of a rubber tube into a waxed or rubber bag. Also, to this latter opening may be applied vacuum suction in empyema cavities by connecting with a vacuum water suction pump. The apparatus is held in position by a rubber dam fitted on the flange and by adhesive. By its use one can save large quantities of dressings, a very important item. It prevents sec-

dary contamination of the wound, and permits instillation of neutral solution of chlorinated soda. It allows for drainage which seeps out beside the Carrel tube; and in the urinary bladder, it does away with that constant overflow of foul smelling urine. In empyema it permits the use of negative pressure to expand the lung and hastens obliterations

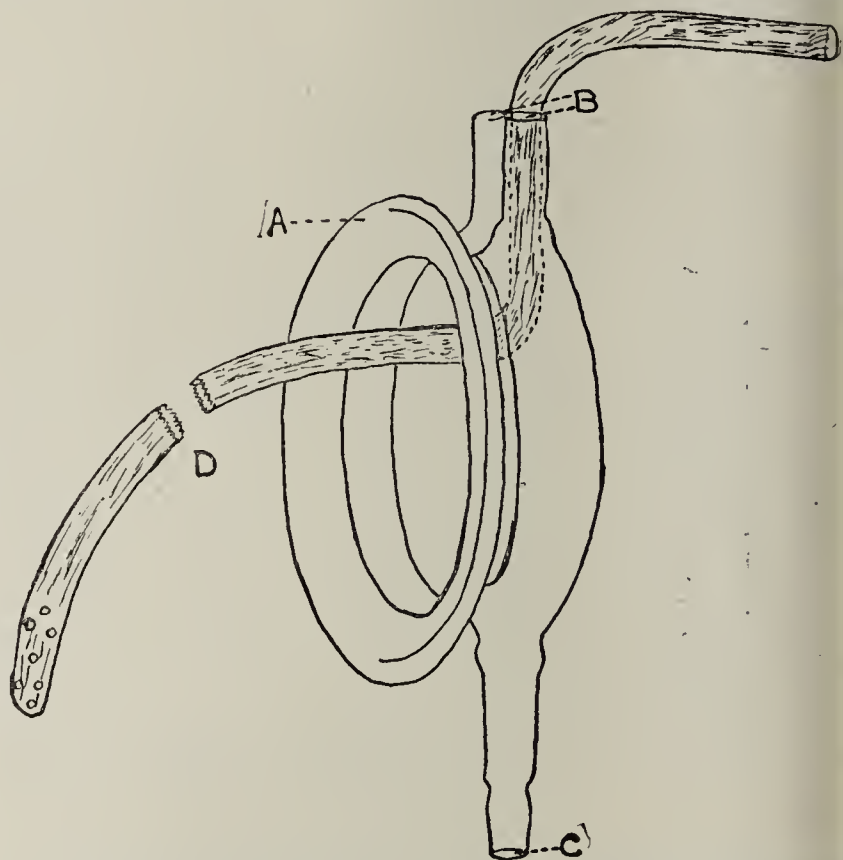


Fig. 2.—Suction drainage bell, for applying Dakin-Carrel treatment in empyema: *A*, flange on which bell rests; *B*, tubular openings for transmitting the usual Carrel tube into the wound cavity; *C*, large tubular opening for carrying off drainage; *D*, Carrel tube.

of the empyema cavity. A Furniss rubber empyema spool is a valuable aid. It is made of glass; can be removed easily for cleansing and boiling, and can be as easily reapplied.

SUCTION DRAINAGE OF SUPRAPUBIC BLADDER WOUNDS: DESCRIPTION OF A NEW PUMP

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One of the most unpleasant features of suprapubic bladder drainage is the constant saturation of the dressings with urine, together with the all-pervading odor, not to mention the present high cost of dressings. The patient's skin becomes excoriated, and he also suffers the discomfort of frequently lying in a puddle if the attendants do not promptly change the saturated pads.

Numerous attempts have been made to remedy this with various ingenious suction devices, the first of which I believe was Dawbarn's. Davis¹ uses a vacuum bottle arrangement; Hume, Logan and Kells² an electric pump with an alarm clock switch; Wallace³ an apparatus invented by Edmund White, resembling the Dawbarn. All of these appliances have faults which I have tried to obviate. Dawbarn's and White's require the bringing of several gallons of water to the pump daily and the removal of an equal amount. Davis requires an air pump to produce the vacuum, and a very tiny perforation in the rubber tubing puts the pump out of commission. The pump of Hume, Logan and Kells is dependent on the electric current and costs four times as much as mine. So far as I know, Dawbarn's has been abandoned.

As the diagram shows, my apparatus consists of 2 gallon carboys held necks opposite with the long axis in the same line by a frame pivoted at the middle to a stand. The top bottle, *A*, is filled with water to which 1 teaspoonful of

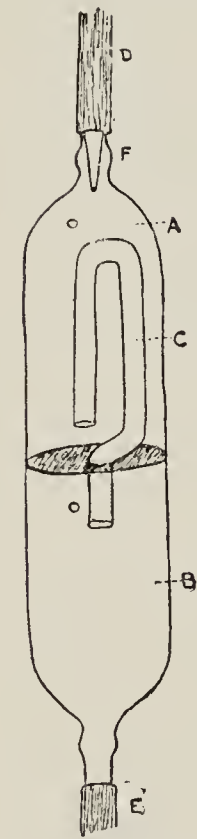


Fig. 1.—Glass automatic siphon, for delivering a definite amount of fluid to the wound at a definite period of time: *A* and *B*, upper and lower chambers; *C*, siphon tube; *D*, tube leading to solution tank; *E*, tube leading to Carrel tube; *F*, drip point.

in position by a rubber dam fitted on the flange and by adhesive. By its use one can save large quantities of dressings, a very important item. It prevents sec-

1. An apparatus improvised of syringe barrels and rubber tubing was described by Lilienthal in the February issue of the Military Surgeon.

1. Davis, E. G.: Vesical Drainage, THE JOURNAL A. M. A., May 27 1916, p. 1680.

2. Hume, Logan and Kells: An Improved Automatic Suction Apparatus for Suprapubic Cystotomy Operations, Am. Jour. Surg., June 1916.

3. Wallace, Cuthbert: Prostatic Enlargement, p. 150.

phenol (carbolic acid) is added to prevent the formation of fungi. The water drips through Tube D, on which is a drip clamp, into Bottle B, at the rate of 5 drops per second. A negative pressure is formed in the top of *A* which is transmitted down Tube V to the collecting bottle, *C*, the water in the bottom of *B* forming a valve and preventing the vacuum from being lost. Tube E forms an outlet for the air in *B* displaced by water dripping into it. A similar tube, *S*, forms a safety valve for *A*, and when the negative pressure in *A* and *C* exceeds 14 inches of water or about 1 inch of mercury, admits air into *A*, preventing too strong a vacuum.

When the top bottle is empty, which takes about eight hours, the bottles are reversed by turning them on the axle, when *S* assumes the function of *E*, and vice versa. The bottles lose a small amount of water from evaporation through *S* and *E*, and require replenishing about every eight weeks. To do this or to fill them in the beginning, a funnel is attached to Tube *S* by a rubber tube and the liquid poured in from a pitcher; or after the tube is full, the distal end is placed in a pail placed above the pump, and allowed to act as a siphon.

All parts of this pump except the frame are made from articles obtainable in any city or hospital, and in case of breakage can be replaced anywhere. Owing to unfortunate experiences in having two instruments of my invention appropriated by others as their own invention, I have applied for a patent for this pump.

My pump is self-contained and needs no accessories to operate it, is independent of all running water, air pump or electricity, and all the attention it needs is reversal of the bottles every eight hours.

The pump should be placed between the head of the bed and the wall. The tube from the *Y* on *V* to *C* should be about 6 feet long, and at some point elevated above the level

In the majority of cases the wound has closed in two weeks. Some have taken three, one four and one six weeks. Two very debilitated patients died in the eighth week with the wound still draining.

Causes of Failure to Secure Satisfactory Suction.—If the safety valve continually blows, the catheter may be stopped up; the drippings at *D* may be too fast; the suction tube may be kinked, or the suction tube may collapse through being made of too soft rubber. If the pump is working but no urine drops into *C*, the suction tube leaks; one may determine the point of the leak by beginning at the catheter and pinching the tube at intervals; when the safety valve blows, the leak must be distal to this point; or the catheter may have slipped out of the wound, or the cork of *C* may be loose.

When the pump is operating, the water in the safety valve is continually jumping up and down, and drops of urine are falling into *C* every few seconds. Care must be taken that Tube *J* projects into *C* lower than the other tube, or urine is apt to be caught up and pulled into the pump. If water is pulled from the pump into *C*, the long tube from *V* should be elevated more where it passes the head of the bed.

This pump has been in use for two years at the Sisters of Charity Hospital as well as by several urologists and general surgeons, and has been found uniformly satisfactory.

By clamping the safety valve and opening *D* fully, the apparatus is very satisfactory in nose and throat operations or wherever suction is used in operating. It has also been used with success by Dr. E. J. Meyer in draining empyemas. The pump is manufactured for me by Sands and Levy of Buffalo, N. Y.

520 Franklin Street.

Military Medicine and Surgery

THE ARMY IN RELATION TO THE TUBERCULOSIS PROBLEM *

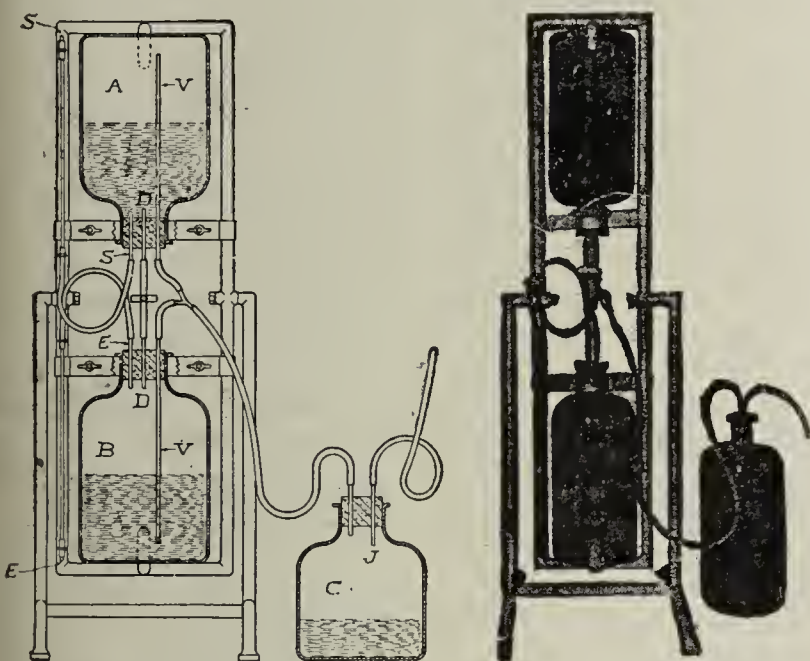
GEORGE E. BUSHNELL, M.D.

Colonel, U. S. Army, Retired

WASHINGTON, D. C.

In the early part of the year 1917, just after this country plunged into the great war, there was much anxiety expressed as to tuberculosis among our soldiers. The view held seemed to be for the most part that the health of the soldier undergoes deterioration as the result of his military service such that he who enters with an inactive or concealed tuberculosis might be expected to develop an active and serious form of the disease. Many papers were written which took this alarmist view and recommended that the extremest care be expended in examinations with a view to the elimination from the army of all those who exhibited the slightest signs even of old and completely healed tuberculosis. The assumption here evidently was that all soldiers had been submitted to an examination adequate to detect all active forms of the disease, so that tuberculosis, if found to exist at a later time, must have developed as a result of army service. Unfortunately, however, those conversant with the facts were willing, however reluctantly, to admit that this was not necessarily the case; that, given the hurry and confusion of hasty enlistments and the varying skill of the examiners, it was quite possible that some men, even many men with tuberculous disease, might be admitted as sound into the ranks of the army. The existence of tuberculosis in the army is,

* Jerome Cochran Lecture, read before the Annual Meeting of the Alabama State Medical Association, April 17, 1918.



Apparatus for suction drainage of suprapubic bladder wounds.

of Bottle A. This is best done by a loop of string attaching it to the top of the bed. The tube then runs down to *C*, placed on the floor under the bed beneath the patient's pelvis. A small catheter is inserted in the suprapubic wound and fastened to the skin by several strips of adhesive plaster. This is attached to a tube running down hill to *J* so that the only suction necessary is to draw the urine from the bladder up over the level of the abdomen.

Voluminous dressings are to be avoided, as they prevent air from entering the bladder to replace the urine sucked out. Two or three layers of gauze are sufficient. If a heavy pad is used, the bladder is apt to become distended with urine. Then it will well up through the wound alongside the tube before suction starts.

When granulations hug the catheter tightly it should be removed. The wound usually will close in a few hours if the wide strip of adhesive plaster is put over it tightly, pressing the lips together.

therefore, by no means necessarily evidence that army life in itself favors the development of the disease.

We have, then, two views to consider: First, army life per se exercises an unfavorable effect on healed tuberculous lesions and awakens active tuberculosis very easily so that the tuberculosis of the soldier develops as an active disease after entrance into the army in the persons of those who were practically well at the time of such entrance. Second, that the tuberculous soldier brought his tuberculosis in an active stage with him into the army. He should have been excluded on the entrance examination but was not; the active disease was there from the outset, and the progressive nature of the affection which finally led to its detection was only what might have been expected when a sick man was subjected to fatigue and exposure.

Which of these two views is the correct one? The answer must be that neither one is absolutely correct. Some men will develop tuberculosis though apparently free of the disease when examined for admission. The first view has, therefore, something in its favor. But the percentage of such cases, what is called the unavoidable percentage, is very small. Measures adopted to forestall such developments are useless, because the cases cannot be detected in advance, and, moreover, harmful because tending to the exclusion of many men perfectly fit to become soldiers. Practically we may say that if an army develops much tuberculosis this is due to the fact that the men brought with them the disease in an active form when they came in from civil life. The remedy, then, is evidently an examination which shall be efficient enough to exclude manifest cases of tuberculosis but which shall not regard the old and circumscribed evidences of slight impairment of the pulmonary integrity. It was an examination of this kind which was instituted and carried out on our troops during the fall and winter of 1917, the examinations, however, not being completed until the spring of 1918. In round numbers, 930,000 men were examined, and 7,500 cases of tuberculosis were detected as the result of this examination. It is not claimed that the examination was perfect. Some cases, no doubt, were overlooked that should have been detected, and some were excluded from the army who were perfectly able to serve. Mistakes must occur when large numbers of examiners go hastily over enormous numbers of soldiers. But the aim was to get rid of as many cases of manifest tuberculosis as could be detected in an examination so rapidly performed as not to interfere too much with the all-important training of the troops rather than to delay matters by seeking a perfection unattainable under the difficult conditions. That 7,500 cases of tuberculosis were removed is a cause for satisfaction. However many cases may ultimately develop, it is at least certain that the total is less by 7,500 cases than it would have been if there had been no reexamination.

THE ARMY AS A FIELD OF STUDY

The army is a good field for the study of some problems. The conditions of life are comparatively simple and the large numbers concerned give a value to the statistics greater than those derived from the much smaller number of cases available, as a rule, for study in civil life. Unexpected light has been thrown on the questions which we have just considered by the experience of the French army. As you may recall, the

distinguished French physician, Landouzy, announced that 86,000 French soldiers had been invalided on account of tuberculosis in the first year of the war. This announcement was received with dismay in this country. It served as a text for the pessimist, and seemed to warrant gloomy forebodings as to the fate of our own soldiers. But new light has recently been thrown on this subject. The French minister of war reported that of this 86,000 men, considerably less than one-half have been found on revision to have tuberculosis. And there are not wanting those who claim that of this fraction a very considerable percentage has really no active disease, so that of the 86,000 barely 20 per cent. are really tuberculous. And here is an important fact. Landouzy himself states that, as a rule, those who were found to have an active tuberculosis had brought the disease with them into the army. We have thus an unexpected corroboration on a large scale of the view expressed above. Army life is not especially favorable for the development of tuberculosis. Those soldiers who enter as sound men have every reason to expect that they will not develop tuberculosis as a result of their army experiences.

Another fact brought out by the war is worthy of note in this connection. We are accustomed to hear the view expressed without contradiction that chronic semistarvation necessarily develops tuberculosis in a large number of its victims. Consequently we were all prepared to expect an enormous incidence of tuberculosis among the half-starved French prisoners of war in Germany. The Swiss doctors predicted that 30 per cent. would become tuberculous. But experience shows that while in some groups the percentage of tuberculosis has been considerable, in others the percentage in those returned is extremely small. According to recent advices, among 175,000 repatriated French civilians who had been held as prisoners, the percentage of the tuberculous was only 0.6. This remarkable showing seems to prove that even under the most unfavorable conditions a life in the open air prevents tuberculosis from exercising a dangerous sway.

We have reached the conclusion that a serious incidence of tuberculosis in the army would mean that tuberculous men had been admitted to it. The fact would discredit the professional expertness of the army surgeon rather than the hygiene and health conditions of the army service. An important lesson may be drawn from this fact which may serve to quiet some anxieties.

CONTAGIOUSNESS OF TUBERCULOSIS

You have been told that tuberculosis will develop under the conditions of army life and that there is danger of the disease being communicated from the sick to the well; that each tuberculous man is a potential source of infection to those around him; that consequently he should be isolated at once and eliminated from the hospitals of the mobile army at the earliest possible moment. I have sometimes thought that the ease with which the program of examination for the enormous masses of men of the army was put through—appalling task as it seemed at first sight—was to be explained by the prevalence of the notion that we must be rid of the consumptive, not so much because he is a weak link in the chain, not because he occupies a place that should be filled by a fighting man, but because he will spread disease among the well. There is some advantage, then, in this idea if it has enabled

the useful work of reexamination for tuberculosis to be carried out. But though this advantage has been reaped, it is certainly well to revise our notions as to the contagiousness of tuberculosis. Everybody knows that doctors and nurses labor for years in closest contact with the consumptive, yet it is rare for them to develop tuberculosis in their own persons, and we have all seen many a delicate wife or mother tend a dying husband or son without contracting the disease. We have to admit that many are immune, however great their exposure. But on the other hand, there are cases in which both husband and wife have consumption, or in which those who occupy the same room or work at the same bench with a consumptive finally are found to be themselves infected. We do not stop to think that with a disease as common as tuberculosis it must frequently happen that cases of the disease will develop simultaneously without being derived one from the other, that a man who had or was going to have consumption might marry a wife doomed in advance to the same fate, or that if conditions of health, food, ventilation, etc., were bad enough to break down the health of one worker, they might be bad enough to have the same result with his neighbor. We do not stop to think of these possibilities, but instead we say that consumption is contagious, and the proof of the fact is that our neighbor died of consumption and his wife has caught it from him, the man who worked next to the consumptive in my factory has got the disease from him, etc. A great deal of perfectly preventable distress has been due to the alarmist's attitude toward the question of contagion of tuberculosis. The really cruel persecution of the consumptive, who is driven from his house and from his position through the fear that he will infect others, is based on what I must characterize as highly exaggerated notions of the danger of such infection. All admit that some are immune to infection; the question is, Are there others who are readily infected, and is this class a numerous one? The prevailing view is that the danger is so great as to justify the most stringent measures to abate it. A few with whom I must class myself believe that the danger is very small, so far as infection from adult to adult is concerned, and really demands preventive measures only in the case of young children.

I wish that time would permit me to set forth in detail the scientific reasons on which this opinion is based, but that is impossible. I must content myself with inviting your attention to the declaration of Landouzy. Years have elapsed since his 86,000 consumptives were weeded out of the French army. There has been time enough to judge of the end-results of their presence in the ranks, and on sober second thought the decision is reached that the consumptive brought the disease with him into the service. There appears no evidence that the disease developed frequently, at least after entrance into the army. Consequently we draw the conclusion that the disease could not have been communicated to any considerable extent, to say the least, from one soldier to another. Here is an experiment on a large scale; thousands of consumptives were put in closest contact with millions of healthy men, and the result after four years is that it cannot be shown that such proximity did the well men any harm.

RELATION OF MEASLES TO TUBERCULOSIS

We may, therefore, be reassured as to our army, so far as fear of spreading the contagion of tuberculosis

is concerned. The soldier who enters the service in good health runs very little risk of acquiring tuberculosis from association with his fellows. There is, however, unfortunately a darker side to the picture which we in our zeal for the whole truth must not overlook, namely, the relation of measles to tuberculosis. Wherever large bodies of men are brought together, measles seems to break out. The disease is relatively insignificant when it seeks to attack the city dwellers. Most of them have already had measles and are immune. Not so among the country boys. Regiments made up of men from the farms have been severely tried. Many men have died of pneumonia following measles, and in some tuberculosis has developed as a sequel, showing the strange relationship that exists between the two diseases. In order to develop the facts and to lose no time in the treatment, orders have been given that all soldiers who have had measles shall be examined twice at intervals of a month to ascertain whether or not tuberculosis has developed. It has been found as a result of these examinations that of 5,945 measles patients reported as examined, 173, or 2.91 per cent., have developed an active tuberculosis. Here it is not a question of the transmission of tuberculosis from one to another, but of the reawakening of a latent tuberculosis as a result of the infection with measles. It should be added that it is probable that the number of really tuberculous cases is less than the foregoing figures would indicate, that some of these cases classed as tuberculous are rather cases of as yet unresolved pneumonias; but on the other hand, no doubt, not all cases of tuberculosis reactivated by measles have yet been detected. There again is an experiment on a large scale, which we will hope will prove in the end to have resulted more favorably than the facts now available would seem to indicate.

RECONSTRUCTION OF THE TUBERCULOUS SOLDIER

Tuberculosis having been found to be present in an active form in a given case, what shall be done with the soldier? The answer that many have given is to retain him in the service and "reconstruct him." Many brains have been actively engaged in plans for reconstruction hospitals and workshops and for apparatus to be used in the work. The term has been most employed by the surgeon. It includes the restoration to function or the teaching of new function of maimed extremities; the recovery of some degree of comeliness in faces with horrid deformities from wounds; exercise to keep or regain the activities of wounded nerves or muscles, which as soon as possible is obtained through some useful form of labor, and the teaching of new trades suited to the altered capacity of the worker, sometimes even the development of unsuspected abilities to do more excellent and better paid work than the man has ever done in his days of health.

The wounded man who has been reconstructed in the widest sense has been made over to some extent both physically and mentally, and consequently we may hope is morally aided as well. This is certainly a noble aim; yet, if we judge from the results in similar work abroad, one that we may reasonably hope to attain if our efforts are wisely guided.

As applied to tuberculosis, however, the problem of reconstruction, while it is similar, is yet really more difficult than it is in surgical cases. Here there is no question of repair to injuries: the tuberculous soldier has all his members intact. But whereas in surgical

cases the effort is to set the patient at work at the earliest possible moment, in tuberculosis our aim must be at first to keep the patient still, to prevent him not only from working but even from moving about. And it may be necessary to continue him in this state of inertia for many months in some cases, if good and permanent results are to be attained. All the preconceived ideas of the patient, and in many cases the restlessness characteristic of the weakened nervous system of the consumptive, militate against the notion that prolonged rest in bed is needful or even desirable. To be successful in carrying out such treatment, it is necessary to instruct and to persuade. The physician must have faith in the treatment and a real interest in the patient's welfare if good results are to be attained. Not only does the physician study the patient, the patient studies the physician as well. In his daily visits the physician is weighed and judged. The patient soon knows whether the physician really believes what he says, whether he really cares to cure, or whether, on the other hand, his words of admonition and counsel are merely the perfunctory words of an official paid to perform a task in which he has no real interest. The physician must therefore have zeal in his work and a persuasiveness which succeeds because based on a true desire to help, and a belief in the efficacy of the means employed to cure. But more than that, he must be well grounded in the pathology of tuberculosis and be able to teach the patient from such a fulness of knowledge that it inspires faith in his teachings. The tuberculosis hospital or sanatorium should be a school for the education of the patient in the right way to live. But where a course of life extending over years is the thing taught, it is necessary that the patient shall know the reasons for the precepts given him. The *ipse dixit* of the physician may suffice for the moment. Its effect will fade in years to come. The facts on which the treatment of tuberculosis are based are not difficult of comprehension unless beclouded by a technical vocabulary which the patient cannot understand. Explain to him the reasons in a simple language, convince him of your interest in his welfare, and in many cases you will make a convert.

Some of the patients, however, will not be convinced, will not do well under treatment, and may seek an early discharge because restless and unhappy. A better result is not attained among those presumably more easily taught because more educated and of higher intelligence. Docility of the patient is one of the most important prerequisites of success in treatment, and a certain percentage will always be found indocile. In those who submit with good grace to the treatment, the danger exists on the other hand that the enforced idleness may become demoralizing, that having become accustomed to a life of repose the patient will shrink from the idea of resuming a life of labor; and when the time for work has come will demand his discharge in preference to undergoing a course of instruction, though that be calculated to fit him in the end for more and better work than he has ever before accomplished. The methods of instruction mentioned a moment ago are, in my judgment, the ideal methods. It can hardly be expected that the results attained by all physicians with the hundreds, if not thousands, of such patients will reach these ideals: and even the best instructed and most docile, when they pass from under the influence of their physician, will be tempted to stray from the course of life pre-

scribed or become restless and desire a change of scene.

The old pension system was demoralizing to a certain type of men in that it enabled the pensioner to live without work. Fortunately, by the act that created the Bureau of War Risks, it is provided that those who serve in the present war will not be subject to the pension laws but will have a compensation in case of injury or disease which will be determined by the War Risk Board. Now if this compensation is arranged so that one who remains in the service will be better paid than one who receives discharge and returns to his home, it will be possible to retain the patients in the military service and under treatment. If this is not arranged, I believe that the majority of the patients will in the end seek discharge; and if they desire discharge, they must be given it. In this event the program of reconstruction will be carried out but partially and imperfectly. I wish to emphasize the conviction gained by many years of experience with this class of soldiers that unless it is made pecuniarily profitable to remain in the service, the majority of the tuberculous will sooner or later prefer to be discharged and return to their homes rather than to submit to a course of treatment, even though this treatment aims at and often succeeds in effecting a permanent cure. The heart of the philanthropist glows at the thought that a generous nation is willing to keep on its payroll soldiers who can never again fight on its behalf, that it expends large sums in providing means by which these unfortunates may be cured of their disease and trained to work, or if the conflict goes against them, may be furnished an asylum in which they can spend their last days in peace. But if we are to practice philanthropy successfully, we must know the world as it is, not as we could wish it to be. These patients are not, as a rule, philosophers and sages. They know little or nothing of the treatment of tuberculosis or of the results that are to be expected from it, or of the way in which such results may be obtained. Yet many of them prefer to follow their own judgment rather than listen to advice. Such men pass quickly from an unfounded optimism to its opposite, an equally unreasoning pessimism. They wish to go home today, because they are doing very well and they can pursue the treatment to equal advantage there. Tomorrow, perhaps, they will say that it is of no use to persist in the treatment, that they are not gaining in health and that they might as well go to their homes and get such pleasure as they can from what remains to them of life. Not only the weaknesses but also the best emotions of the human heart are enrolled on the side of the opposition. The love of the patient for his family, the yearning of the wife or of the mother for the husband or son are so many cords drawing him away from what we conceive to be the path of duty. We cannot blame him if he yields; only the careless or the recreant could be insensible to such pleadings. Yet they are the voice of the siren, nevertheless, enticing him to renounce a future good for a present enjoyment. The real love for wife or mother would say: "You are dear to me, and therefore I cannot come. I love you so much that I must stay and try to save my life for your sake. I must forget you in the present in order that I may enjoy you during a long future." There is a wisdom and a moral heroism in such a resolve which commands our respect. Would that we could affirm that so heroic a determination is invariably rewarded by

the success it deserves. It is sometimes a bitter thought to the physician who has persuaded the patient to stay, that he has been responsible for keeping a patient uselessly under treatment and of thus depriving him of the loving care that friends would have lavished on him if they had been allowed the chance. Here the only consolation is the thought that so far as could be determined at the time, the decision made was the correct decision even though the result was ultimately disaster, and that the unfortunate patient gave a better proof of his affection by remaining to fight than if through weakness he had given up the conflict. But what an incentive for the physician such an event is, to give the best efforts of which he is capable in order to understand, so far as fallible man can, the nature of the disease he is seeking to combat!

UNTHINKING PHILANTHROPY

The philanthropist himself is sometimes inclined to interpose with benevolent motives to ask for action which is really to the prejudice of the patient. Thus a priest implored the hospital management in the name of God to release a patient who lived in comfort in the balmy air of the Southwest in order that he might go in the dead of winter to a bleak district of the North and to a humble home destitute of all suitable accommodations for a sick man.

Now that we are speaking of the philanthropist may I be pardoned for a slight digression? It is this: A surprising feature in many interested in philanthropy is their apparent lack of civic conscience. It is the fashion today to spend money with a lavish hand for all sorts of good things, perhaps sometimes to spend more than the goodness of the thing really warrants. When the reaction comes and taxes grow irksome, as they become more familiar, there will be a day of accounting; and in that day the size of the pension list or, more accurately, the list of those entitled under the present law to compensation will be one of the numerous things that will be severely criticized. The regular army officer brought up in an economical school has striven to diminish, as much as in him lay, the size of this list by seeking to exclude from it those who had entered the army through some oversight with tuberculosis contracted long before, a condition therefore for which army service could not justly be held accountable. This laudable effort to help the future taxpayer has, however, encountered the most strenuous opposition on the part of various philanthropists, many of them women. Though the man whose cause they champion had been in the army only a month before his disease was discovered, and though that disease was of the most chronic type, they are quite sure that the poor man had been perfectly well until he left his home and entered the army, and that the exposure of army life had certainly been the cause of all his troubles and that the government should without any doubt be required to support him.

Even the philanthropic life has its drawbacks. How different is reality to the dreams of the unthinkingly benevolent in which all the good is on one side and all the bad is on the other, and it is perfectly easy to determine what the proper course is. Such considerations, however, should not discourage philanthropy, but rather inspire caution in the practice of it. Philanthropy can be truly benevolent and altogether beneficial only when those who would benefit their fellow men are willing to make an exhaustive study of the conditions.

Physicians are constantly seeking new and infallible means of diagnosing disease. Very often a discovery is heralded as a means of establishing a certain diagnosis in some morbid state. But almost always when the first enthusiasm abates it is found that, after all, there are exceptions. The new sign or reaction is not absolutely pathognomonic. There never will be a time when a physician can practice his profession with scientific success without the use of all his brains and all his acumen. And it is very much the same way with philanthropy. Measures which seem beneficial may produce evils. What is best for one class at one place may not be best for all classes at all places. There is no easy way of always deciding what it is best to do.

PREVENTION OF TUBERCULOSIS AMONG CHILDREN

It is a pleasure, therefore, to be able to point out one philanthropic measure which is too much neglected for other measures really of much less importance, yet with regard to which there can be no doubt that it is a long step in the direction of abating the scourge of tuberculosis. I refer to the prevention of tuberculous infection among young children. I have expressed a doubt as to the seriousness of the danger of infection for the adult who has already come into contact with the tubercle bacillus. There is no question, however, that so far as the young child is concerned, where there is virgin soil for the tuberculous infection, tuberculosis is as infectious as measles. In civilization it must needs be that infection with tuberculosis come sooner or later to all; but it is important that the infection shall not come too early in life, and of the utmost importance that when it does come the size of the infection shall be small and that it be not frequently repeated.

Another measure of perhaps equal importance is the enforcement of the best conditions of hygiene as respects fresh air and sunlight and food for the growing child in order that it may have strength to master the small infection and convert it into a beneficent vaccination instead of permitting it to grow till it becomes a life-long menace and too often a source of death. It cannot be pointed out too often that in spite of our neglect of elementary precautions, the majority of our population nevertheless succeed in obtaining unconsciously that beneficent vaccination so that no matter the exposure, they do not acquire a clinical tuberculosis. What we must do by our philanthropy is to devise means whereby the unfortunate third or fourth of our race who are now not so successful in their struggle against the enemy may be enabled to join the more fortunate majority until the percentage of active tuberculosis becomes reduced to an insignificant fraction and finally vanishes entirely. Given wise philanthropy which persists in its endeavors, this is no utopian dream. Whether tuberculosis as a menace and a drain on society shall be eradicated or not depends on the care which shall be extended to the coming generations of children still unborn. To abolish the slums, to improve the housing conditions in general of the poor, to teach proper cookery, proper selection of foods and the benefits of fresh air, sunlight and cleanliness is to hasten the advance of sanitation along the road on which progress has already been made from generation to generation. Tuberculosis is already slowly diminishing in prevalence as a manifest disease in most countries. We can do much, however, to hasten its disappearance by our

organized philanthropy if wisely directed. Yet all these means will fail to attain what we could wish unless we add one additional measure, the segregation of the infant from sources of contagion. The French have seen the light more distinctly than other nations. In France the formula is: Either remove the young child from the presence of the consumptive or the consumptive from his family, if there are young children. The child must by all means be prevented from receiving the massive infections which it is sure to get if it lives with the coughing consumptive.

Here is a definite program, but what a difficult one, for against it are all the impulses of the most sacred affection, the love of parents for their children. This brings us back to the consumptive soldier. At the beginning of the war it was recommended that the tuberculous should be returned to the vicinity of their homes for treatment in order that they might visit their families or that their families might visit them. This I call unthinking philanthropy. Often it is true such visits might do no harm, but the distinction between harmless and harmful is not clearly made. The new baby will infallibly be brought along for the father to see it, unless education is vigorously instituted in advance of the father's return. What an advantage for the children if the father cannot come home to them! How much higher the moral elevation of the man who is taught to sacrifice his paternal yearnings to the best interests of his children, than that of him who cannot consent to live without his family! There is much to be effected in this direction by careful instruction of the consumptive and of the adult members of his family. But what shall be done with the minority of the careless and the wilful—those who cannot or will not understand, the weaklings who are ready to sacrifice the welfare of their infants to their own selfish longings? Shall they be restrained by the hand of the law or shall their children be taken from them to be cared for in public institutions? The French say, yes. What shall we say when the question must be met? Do we recognize sufficiently that true philanthropy sometimes hides behind a mask of sternness?

CARE OF CONSUMPTIVE SOLDIERS AND THEIR FAMILIES

Nothing could be finer than the spirit of our people in these sad times. Nearly all are anxious to help in some way, feeling that they must do something for their country. Sometimes there is the regret on the part of those who must stay at home that there are not more numerous ways in which they can do something really useful and sacrifice their ease and pleasure to some good purpose in the cause of patriotism. Intelligent cooperation in the care and management of the wounded and sick soldiers and in providing for their families is one of the directions in which the energies of the charitable can find an outlet. I bespeak your interest and sympathy for that peculiarly unfortunate class, the consumptive soldiers and for their families. Would that I could hope that my words have thrown some light on the difficult problems which must be met in the sociological study of the tuberculous and in practical benevolence as extended to them.

It is commonly remarked that this terrible and gigantic war has changed the world. We shall never again be the same people. The moral uplift of the present is unmistakable. We are willing to sacrifice ourselves now for our country. May we not hope that this patriotic devotion, this moral uplift, will con-

tinue after the war has ended? We are willing now to get together, to labor in unison for our soldiers. We are willing to work at hard tasks, without compensation oftentimes, in order that the business of the country may cooperate to the best advantage with the fighting force. Why should not this organized effort continue after the war? Our country is no less our beloved country because peace has come. Why should we not put our team-work in which we are now so experienced at the disposal of the noble cause of philanthropy, see that the poor are not oppressed, know what goes on in our jails, our asylums, our workhouses, elevate the submerged fraction of the population, and abate the causes of disease and accident. His army experience is but an episode in the life of the tuberculous soldier. He, as a rule, owed his tuberculosis to the conditions of civilian life before he entered the army. The tuberculosis of the army merges into that of the whole population. The great problem of tuberculosis will remain after our army has laid down its arms as one that calls for all our efforts, yet is, we may confidently believe, a problem for which in time we can, we must, find a triumphant solution.

WAR EDEMA (KRIEGSOEDEM)

F. S. PARK, B.A., M.B. (TOR.)

Captain, C. A. M. C.; Former Medical Officer, Fourth C. M. R.

TORONTO

From June, 1916, until February, 1918, I was a captive in the hands of the Germans, and for the most of that time I was employed as medical officer at Minden, one of the largest concentration camps for prisoners of war in the province of Westphalia. During my thirteen months there, many thousands of prisoners of all the Allies passed through our hands. One of the most prevalent diseases observed there was the condition called by some German observers *Kriegsoedem* (war edema), or, as it was officially known at Minden, *Erschöpfungszustand mit oedem* (state of exhaustion with edema).

ETIOLOGY

The condition was found chiefly among the Russians and Roumanians, and was especially common during the spring and summer of 1917. Latterly, the Italians captured in the autumn of 1917 were the chief sufferers. The French prisoners at reprisal camps and the English prisoners, who were kept working on lines of communication, also suffered from the disease. In other words, this disease was found among those prisoners who received only German rations, and the disease was most prevalent at the time when the German rations were poorest, that is, the spring and early summer of 1917. During my stay at Minden, I saw about 400 cases in all.

Undoubtedly, insufficient food is the cause of the condition. The German ration is very low in protein and is almost fat free. Unfortunately, accurate analyses could not be made. As the food is given almost entirely in the form of soup, a large quantity of fluid is ingested to obtain a small amount of nourishment. I found that many of these men were in the habit of taking considerable quantities of common salt in solution in addition to their soup. As the whole organism was weakened from insufficient food and

hard work, it is conceivable that the extra load of fluid was too great to be eliminated.

CLINICAL HISTORY

The condition commences as a slight edema of the feet and legs, disappearing when the patient is recumbent. Patients were seldom admitted to hospital in this stage, although rest in bed would restore them in a short time.

The usual type admitted to hospital presented a massive edema of the legs, thighs and genitalia, with some puffiness of the eyelids. In bad cases there was edema also of the chest and abdominal walls. Patients complain of general weakness and pain in the legs, especially in the tibiae. They are usually very apathetic. There is extreme muscular wasting and marked pallor. The whole appearance is strikingly similar to that found in chronic parenchymatous nephritis. Uncomplicated cases are afebrile.

The heart dulness is slightly increased to the left. The apex beat is diffuse and feeble. The heart's action is regular, but usually slow. Muscular tone is poor. The blood pressure is low.¹ Hydropericardium was present in a number of cases, but never marked.

Hydrothorax was common and usually bilateral. It was sometimes most copious. In one case I removed 15,000 c.c. by a series of six punctures during a space of two weeks.

Ascites was very common and was sometimes extreme, necessitating paracentesis.

The liver, spleen and kidneys were not palpable.

The amount of urine was variable. At first scanty, it became profuse, as the patient recovered. It never contained albumin or casts. No quantitative chemical tests could be made.

COURSE OF DISEASE

In most uncomplicated cases the patients improved slowly with rest in bed and an increase of German rations. Where abundant food, including meat and fat, could be obtained and was tolerated, improvement was rapid, even without rest. Digitalis and theobromin sodiosalicylate were used, but without appreciable result. Edema of the legs after work persisted for several months, even after the patient had improved markedly in general strength. Relapses were common.

COMPLICATIONS

Dermatitis of the legs was common, and in a few cases lymphangitis and cellulitis.

Bronchitis frequently was present, and in most of the fatal cases there was bronchopneumonia and edema of the lungs.

Colitis, with mucus and blood in the stool, was the most common and troublesome complication. No specific organism was isolated as a cause of this colitis. It is significant that diarrhea of this type rarely occurred among the well-fed prisoners, although they were exposed to the infection, if this was an infectious diarrhea. As a complication of edema, this colitis was often fatal.

PATHOLOGIC FINDINGS

About twenty necropsies were performed in cases of war edema. The most striking feature was the total absence of fat in the body. At the normal sites for fat deposit, in the subcutaneous tissue, in

the omentum and mesenteries, about the kidneys and on the heart, the fat was replaced by edema, producing a translucent, gelatinous tissue.

The heart muscle was pale and flabby. The ventricles were moderately dilated.

The pericardium, the pleural sacs and the peritoneal cavity were filled with clear fluid. Old pleural adhesions were often found, and in one case there were many peritoneal adhesions between the liver and the diaphragm.

The lungs usually showed bronchopneumonia and edema.

The kidneys, liver and spleen were pale, but otherwise showed no macroscopic changes.

The liver was usually small.

When colitis had been present, there was thickening and hyperemia of the rectum, sigmoid and the descending colon. Two cases of superficial ulceration were found.

CONCLUSIONS

Kriegsoedem is the result of underfeeding. I believe that the absence of fat in the diet is the chief factor in causing the condition. It is possible that there may be also a mechanical factor in its production. There is general asthenia as a result of hard work, exposure, insufficient food and depressing environment. The large amounts of fluid ingested, together with the increased amount of sodium chlorid, may form too great a load to be eliminated by a weakened myocardium through poorly nourished kidneys.

THE PREDISPOSITION OF STREPTOCOCCUS CARRIERS TO THE COMPLICATIONS OF MEASLES

RESULTS OF SEPARATION OF CARRIERS FROM NON-CARRIERS AT A BASE HOSPITAL *

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It is evident from reports coming from various Army cantonments¹ that measles, because of the severity and frequency of its complications, must be regarded as a serious camp disease. Complications necessitate long hospitalization and cause, therefore, a high noneffective rate; bronchopneumonia and empyema have been responsible for many deaths. With surprising uniformity, the complications have been due to infection with a hemolytic streptococcus.

In the report of a commission² sent by the Surgeon-General of the Army to study the pneumonia at San Antonio, Texas, two significant facts concerning the relation of the streptococcus to the complications of measles were pointed out: First, a relatively small number of measles patients (11.4 per cent.) harbored

* From the Medical and Laboratory Services, Base Hospital, Camp Zachary Taylor, Ky.

1. Duncan, L. C., and Sailer, J.: An Epidemic of Measles and Pneumonia in the Thirty-First Division, Camp Wheeler, Georgia, *Mil. Surg.*, 1918, **42**, 123. Hamburger, W. W., and Mayers, L. H.: Pneumonia and Empyema at Camp Zachary Taylor, Ky., *THE JOURNAL A. M. A.*, March 30, 1918, p. 915. Irons, E. E., and Marine, David: Streptococcal Infections Following Measles and Other Diseases, *THE JOURNAL A. M. A.*, March 9, 1918, p. 687. Cumming, J. G., Spruit, C. B. and Lynch, Charles: The Pneumonias: Streptococcus and Pneumococcus Groups, *THE JOURNAL A. M. A.*, April 13, 1918, p. 1066.

2. Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, *THE JOURNAL A. M. A.*, April 20, 1918, p. 1146.

1. No facilities were allowed me for the proper estimation of blood pressure, for blood examination or histologic work. Also the collection of statistics was forbidden me, so that I have been unable to give exact figures with regard to cases.

this organism in their throats on admission to the hospital; second, many more acquired *S. hemolyticus* in their throats for the first time during their stay in the wards. It was therefore inferred that at Fort Sam Houston, at least, the high incidence of bronchopneumonia and empyema during convalescence from measles might be directly related to the transfer of the infectious agent from one patient to another in the wards of the hospital.

PLAN OF THE PRESENT STUDY

Ward Routine.—On admission to the hospital, all measles patients were sent to a special "measles receiving ward," which was divided into cubicles by sheets, and where every patient was required to remain in bed. Each day throat cultures were taken on those admitted during the preceding twenty-four hours. Carriers of *S. hemolyticus* were on the following morning sent to the "dirty" wards. Those whose cultures were negative for this organism were held for another day, and if a second swabbing confirmed the findings of the first, were sent to the "clean" wards. Rarely did the result of a second culture contradict the report of the preceding day. All patients in each ward were swabbed again at least once a week. On discovering that a "clean" patient had become a carrier in the hospital, he was promptly transferred to a "dirty" ward.

A separate ward was set aside for the reception of post-measles pneumonia, to which, immediately on the recognition of this complication, patients were transferred.

In both "clean" and "dirty" wards, cubicle isolation was strictly observed. Each patient was provided with a gauze mask, changed every twenty-four hours, and was required to wear this mask constantly when not in his own cubicle. For infringements of this rule, punishments were meted out by the ward surgeon, who also daily gave a short talk to ward personnel and patients on the rationale of the various measures for isolation. In this way better cooperation was insured.

Ward surgeons, nurses and orderlies, when in the ward, were properly masked and gowned.

All patients, in bed or convalescent, were fed in their own cubicles; three or more waiters, chosen from among the convalescents, served the food. At all times, but especially during meal hours, crowding together was prohibited; each man ate either in bed or at his own bedside. In the washroom, only one man was permitted at a time; in the latrines, the masks were worn and no more were allowed to enter than could be accommodated at any one time. A guard, changed every two hours and picked from among the convalescents, was stationed at the door of the latrine to insure the enforcing of these rules. No smoking was permitted.

It may well be asked why such rigid precautions were observed in wards in which only either carriers or noncarriers were cared for, and why these measures are described in detail. As pointed out by Cole, and repeatedly confirmed in our own experience, *S. hemolyticus* is very readily transferred from one individual to another, and no matter how strict the supervision, an occasional lapse in discipline is bound to occur. The slightest break in the chain of precautions may result in disaster. For example, in a "clean" ward, throat cultures made at intervals of a few days revealed the fact that several "clean" cases were being converted into carriers. On swabbing the personnel

of the ward, it was found that two orderlies and a nurse harbored *S. hemolyticus* in profusion in their throats. On replacing these individuals with noncarriers, no further contamination occurred. This experience taught us to provide the clean wards with a personnel of noncarriers.

In the "dirty" wards, it is desirable to prevent one individual from becoming a carrier of another patient's strain of streptococcus; for different strains may vary in virulence. It is also worthy of note that among the 388 cases of measles described in this report, only two instances of cross-infection occurred, namely, two cases of mumps, probably admitted to the measles service in the incubation period of parotitis. Capps³ has recently emphasized the value of masking in the prevention of cross-infection in contagious wards, and has outlined a number of ward measures similar to those here described.

Laboratory Technic.—Cultures from the pharynx and tonsils were taken at the bedside with straight swabs, which were then placed into about 1 c.c. of beef infusion broth (+ 0.1), shaken and brought to the laboratory. There they were plated without incubation on 10 per cent. human blood agar plates. In order to insure proper separation of colonies, it was essential to rinse each swab thoroughly by twirling it forcibly against the side of the test tube, then wiping it further at the periphery of the plate, and streaking lightly. After from eighteen to twenty hours' incubation, single hemolytic colonies suggestive of streptococcus were transplanted into beef infusion broth (+ 0.1) and grown for twenty-four hours, when cultural characteristics, staining reactions and morphology were noted. Bile solubility was done only when the pneumococcus was suspected. Fermentation reactions and the degree of hemolysis were not studied.

S. hemolyticus occurred in wide variation in numbers, from but one or two colonies on a plate to almost pure cultures. That this variation was not due to the method of plating was confirmed by repeated swabbing of individuals, with fairly constant findings. Exceptionally, on one day a single or possibly a few colonies might be found, whereas a subsequent culture would reveal none. It therefore seemed worth while to differentiate between the "slightly infected"—those whose cultures showed only an occasional hemolytic streptococcus colony—and the "heavily infected." Those cases were classed as negative in which cultures at no time showed the presence of *S. hemolyticus*.

Twenty sputum cultures were made by spreading a fragment of thoroughly washed sputum over the surface of a blood agar plate. Bronchial secretions were obtained when possible. Of thirteen cultures from streptococcus carriers and seven from noncarriers, all corresponded to the throat swab findings, thus demonstrating that the throat culture is apparently an index of the presence or absence of *S. hemolyticus* in the lower respiratory tract.

INCIDENCE OF STREPTOCOCCUS CARRIERS IN MEASLES PATIENTS ADMITTED TO THE HOSPITAL

Table 1 is self-explanatory. These figures are in striking contrast to the percentages prevailing at Fort Sam Houston, Texas, where only 11.4 per cent. of measles patients were carriers of *S. hemolyticus* on admission to the hospital.

3. Capps, J. A.: A New Adaptation of the Face Mask in the Control of Contagious Disease, THE JOURNAL A. M. A., March 30, 1918, p. 910.

Of the eighty-nine noncarriers admitted to the wards, twenty-seven became infected during the period of their hospitalization. Contamination for the most part occurred during the early stages of the work, when the ward routine had not been firmly established. These cases are, of course, in the final analysis, classed with the carriers.

TABLE 1.—RESULTS OF THROAT CULTURES IN MEASLES ADMISSIONS

	Number	Per Cent.
Noncarriers.....	89	22.9
Carriers {Heavily infected.....	251	64.8
{Slightly infected.....	48	12.3
Total.....	388	100.0

RELATIVE INCIDENCE OF COMPLICATIONS AMONG CARRIERS AND NONCARRIERS

Coryza, bronchitis and a laryngitis of variable severity, associated with an initial fever of from three to six days' duration, have been almost constant early accompaniments of each case. A majority of patients have been admitted on the second or third day of the disease, and fever occurring after the tenth day of hospitalization has been regarded as pathologic. Often it was indicative of a manifest complication; but of the uncomplicated cases, forty-seven, or 30.4 per cent., had transient, unexplained elevations of temperature frequently associated with headache and general malaise, but many times without symptoms or ascertainable cause. These unexplained febrile paroxysms,

TABLE 2.—COMPLICATIONS

Complications	Carriers		Noncarriers	Total	Remarks
	Heavily Infected	Slightly Infected			
Bronchopneumonia..	45	2	0	47	Fourteen of these patients are dead at the time of the present writing; some have been operated on for empyema; a number are still in the hospital
Acute tonsillitis.....	18	7	1	26	Not to be confused with the initial bronchitis
Acute bronchitis.....	22	1	2	25	
Active suppurative otitis media.....	21	1	0	22	On culture, 9 specimens of pus showed <i>S. hemolyticus</i> ; 2 <i>Staphylococcus aureus</i>
Empyema.....	15	0	0	15	All followed bronchopneumonia; on culture, 13 pleural fluids showed <i>S. hemolyticus</i> ; 1, pneumococcus
Acute sinusitis.....	7	3	0	10	The face was affected in each instance Glands quite large, but never suppurated
Peritonsillar abscess	7	0	0	7	
Erysipelas.....	6	0	0	6	
Cervical adenitis.....	4	1	1	6	A terminal infection
Peritonitis.....	1	0	0	1	A terminal infection
Septic meningitis.....	1	0	0	1	
Totals.....	147	15	4	166	
	162		4	166	

usually of from one to four days' duration, have formed an interesting, though puzzling, feature of the clinical course. They were noted a little more frequently among carriers (17.5 per cent.) than among noncarriers (12.9 per cent.).

Of the 388 cases, in 119, or 30.6 per cent., there were complications, a number of patients suffering from more than one. The complications are given in Table 2 in the order of their frequency.

An analysis of this table brings out a number of interesting points:

1. The complications of measles have occurred almost exclusively among streptococcus carriers, the incidence in this group being 36.8 per cent., as contrasted with 6.4 per cent. in "clean" cases. Furthermore, the four complications noted among the noncarriers have been of distinctly minor nature—two instances of acute bronchitis, one of acute tonsillitis, and one of cervical adenitis. In the slightly infected carriers, that is, those showing only an occasional colony in throat cultures, complications have occurred less frequently (22 per cent.) than in the heavily infected (38.2 per cent.).
2. Bronchopneumonia occurred forty-seven times, or in 12.1 per cent. of all cases. This complication has been responsible for many deaths; accurate mortality statistics are not available at the time of the present writing. In fifteen, or 34 per cent., of the bronchopneumonias, the patients have developed empyema.
3. On culture, thirteen pleural fluids showed *S. hemolyticus*; one, pneumococcus. From eleven specimens of pus obtained in cases of acute otitis media, *S. hemolyticus* was grown nine times and the *Staphylococcus aureus* twice.
4. Of 326 carriers, either entering the hospital as such or becoming infected after admission, 211, or 63.2 per cent., have had no complications.

ACQUISITION OF THE CARRIER STATE IN THE WARDS

Reference has already been made to Cole's observations on the ease with which *S. hemolyticus* may be spread from one individual to another in the ward of a hospital, though it is not mentioned that during the period of these observations cubicle isolation or other precautions to prevent the spread of infection were observed.

Experiments were therefore carried out in which wards were "mixed," that is, were filled half with "clean," half with "dirty" patients, in alternate beds. Newly admitted measles patients, convalescents and patients with complications composed the ward roster. All the precautions previously noted were rigidly enforced in order to prevent the contamination of "clean" by "dirty" patients. Yet in one ward, in which fifteen "clean" and fifteen "dirty" patients were placed, at the end of a week, only six noncarriers remained. In another ward of twenty-four, of whom at the start twelve were noncarriers, at the end of the week only three "clean" cases were found. Those patients who became "soiled" as the result of this period of exposure were for the most part classed as "slightly infected." These observations emphasize the importance of rigidly observing every precaution to prevent contact spread, though casting considerable doubt on the efficacy of the methods herein described. Therefore, when possible, if the incidence of complications is to be reduced, carriers and noncarriers should be separated, and cared for in different wards. Such a procedure should prove particularly valuable in camps where the number of streptococcus carriers among measles patients is low, as at Fort Sam Houston, Texas.

DIFFICULTIES OF ERADICATING THE CARRIER STATE

Throat cultures made at intervals in many of the "dirty" wards have shown that the carrier state, once

acquired, persists throughout the patient's stay in the hospital. There have been rare exceptions to this rule.

Attempts at mouth disinfection have not been successful. Neutral solution of chlorinated soda in half strength, which has been in common use as a gargle and spray in this and other Army hospitals, will not kill *S. hemolyticus*, even in vitro. Experiments with other mouth antiseptics, notably iodine in glycerin, though successful in the test tube, have been clinically most disappointing. The organisms, apparently safely lodged in the crypts of the tonsils and in the lymphatic tissues of the nasopharynx, are not accessible to the local treatments so far employed. Of the patients discharged from the hospital, 71.7 per cent. still harbored *S. hemolyticus* in their throats.

EPIDEMIOLOGY

It was shown earlier in the year by one of us⁴ that Camp Taylor was heavily infected with *S. hemolyticus*, and during the past four months representatives from almost every organization have entered the base hospital with lesions caused by this organism. In the present epidemic of measles, it was striking that of the 388 cases studied, 346, or 89.1 per cent., came from the One Hundred and Fifty-ninth Depot Brigade, an organization into which all new men entering camp are attached during the early period of their training. Accordingly, throat cultures were made on ninety-five men of Company 5 (Second Battalion), composed of individuals from various parts of the brigade, most of them having been in service about six months. Of these, seventy-nine, or 83.2 per cent., were carriers of *S. hemolyticus*, 64.3 per cent. being heavily infected, 18.9 per cent. showing only an occasional colony on the plates.⁵ All were apparently healthy.

If these observations, made on a representative company, may be used as an index, a high percentage of soldiers in the depot brigade harbor *S. hemolyticus* in their throats. The question naturally arises, Do these men come from civil life as carriers, or do they acquire the organism in camp? The recent draft afforded an exceptional opportunity for determining this point. Throat swabs were taken on 489 new recruits, representatives of both urban and rural communities, as they stepped from the train. Of these cultures, 14.8 per cent. showed the presence of hemolytic organisms.⁶

The inference is obvious. It has previously been shown that Camp Taylor is heavily seeded with *S. hemolyticus*. A large number of the men, therefore, acquire the streptococcus carrier state during their sojourn in camp.

SUMMARY

1. Of 388 measles patients admitted to the base hospital at Camp Zachary Taylor, Ky., 299, or 77.1 per cent., were found to be carriers of *S. hemolyticus*.

2. A ward routine was instituted in an attempt to prevent the contamination of noncarriers by carriers in the hospital. All patients were admitted to a special "measles receiving ward," where throat cultures were made. Carriers of the streptococcus and noncarriers were there separated and sent to wards designated,

respectively, as "dirty" and "clean." In these wards rigid precautions were observed, the most important of which were cubicle isolation, masking of patients and attendants, guarding of latrines to prevent crowding, the feeding of each patient in his own cubicle and, in the clean wards, supplying orderlies and nurses who, by throat cultures, had been proved noncarriers.

3. Complications occurred in 119 cases in the series (30.6 per cent.); a number of patients suffered from more than one. In order of frequency the complications were: bronchopneumonia, acute tonsillitis, acute bronchitis, acute suppurative otitis media, empyema, acute sinusitis, peritonsillar abscess, erysipelas, cervical adenitis, peritonitis and septic meningitis.

4. The complications occurred almost exclusively among streptococcus carriers, the incidence in this group being 36.8 per cent., as contrasted with 6.4 per cent. in "clean" cases. Furthermore, the complications noted among the clean cases were of distinctly minor nature.

5. Bronchopneumonia occurred forty-seven times, or in 12.1 per cent. of all cases, and caused many deaths. Fifteen, or 34 per cent., of the bronchopneumonia patients developed empyema.

6. Cultures of pleural fluids and pus from ear discharges have for the most part shown *S. hemolyticus*.

7. Of 326 carriers, 211, or 63.2 per cent., have had no complications.

8. Even while observing the precautions outlined, "clean" patients became contaminated when a ward was "mixed," that is, filled half with carriers, half with noncarriers. These observations cast some doubt on the efficacy of the ward measures described.

9. Strictly "clean" wards remain "clean." Therefore, if the incidence of complications in measles is to be reduced, carriers and noncarriers must be separated and cared for in different wards. This procedure should prove particularly valuable in camps where the number of streptococcus carriers among measles patients is low.

10. Attempts at eradicating the carrier state by the use of mouth antiseptics have failed. Of the patients discharged from the hospital, 71.7 per cent. harbored *S. hemolyticus* in their throats.

11. Throat cultures were made on ninety-five men of a representative company in the One Hundred and Fifty-Ninth Depot Brigade, the organization from which came 89.1 per cent. of measles patients in this series. Seventy-nine, or 83.2 per cent., of the men in this company, though apparently healthy, were carriers of *S. hemolyticus*.

12. Throat swabs taken on 489 new recruits as they stepped from the train showed the incidence of streptococcus carriers to be 14.8 per cent.

13. A large number of the men at Camp Zachary Taylor, therefore, apparently acquire the streptococcus carrier state during their stay in camp.

The Sources of Energy.—The work of the world is accomplished in largest part by the oxidation of carbohydrates, that is to say, of sugars and starches. Bread, corn, rice, macaroni, cane sugar, these are par excellence the food fuels of the human machine. In the dinner pail of the laborer they testify as to the source of his power. They are convertible into glucose in the body, which glucose gives power to the human machine. They may be used for the production of work without of themselves increasing the heat production of the worker, as happens after meat ingestion.—Lusk, Food in War Time.

4. Alexander, H. L.: Hemolytic Streptococcus Causing Severe Infections at Camp Zachary Taylor, Ky., THE JOURNAL A. M. A., March 16, 1918, p. 775.

5. At Camp Custer, Battle Creek, Mich., Irons and Marine, during a period of respiratory infections, made a large number of throat cultures on selected companies. Hemolytic streptococci were found in about 70 per cent. of apparently healthy soldiers.

6. The circumstances under which these cultures were taken made it impossible to define the colonies further.

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE SIXTY-NINTH ANNUAL SESSION OF THE AMERICAN
MEDICAL ASSOCIATION, HELD AT CHICAGO, JUNE 10-14, 1918

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 10

The House of Delegates met in the home of the American Medical Association, 535 North Dearborn Street, and was called to order at 10 a. m. by the Chairman, Major Hubert Work, Pueblo, Colo.

Chairman's Address to the House of Delegates

Dr. Hubert Work, Chairman, presented the following address:

To the House of Delegates of the Sixty-Ninth Annual Meeting of the American Medical Association:

Your presiding officer has few recommendations to make and none to urge, holding it to be indelicate at least, to invite legislation on which members of the house might entertain different views.

It is probable that this House of Delegates has not heretofore exercised its initiative function fully as the governing body of the Association. Apparently, it has done so to its own satisfaction and to the sufficient protection of the Association, but while the officers you elect represent you, you in turn represent the profession, which may sometime expect from you closer supervision. Lack of contact breeds distrust, and ignorance of facts encourages groundless suspicions but cooperation of efforts secures the highest success.

The successful career of our Association with the proud position its journal occupies with both medical and lay press, is a tribute to your previous selection of officers, yet I believe that the members of this house should activate their obligations to the Association between annual sessions.

I would remind you of the physical value of this plant, of the money on hand and invested, for which you are responsible; of the importance of this Association to our people at peace, and of its attitude in war. Its journal has become the authentic, quoted roster of the Medical Department of the Army by common consent, and its Military Medical Honor Roll together with its survey published a week ago has not been equaled as foundation work.

By invitation your chairman has attended all trustee meetings. The business methods and exactions of your trustees enforced in this great publishing house would, I believe, appeal to you. The management is alert in medicine, and financial detail is governed by the rules of all trust companies.

An Ad-Interim Committee of the house was proposed a year ago, but not pressed for some reason.

Your Secretary will report the action of a War Committee improvised by your authority to meet an emergency call for help.

The war into which we have been drawn is a war of the chemists. Its motive power, its devices for destruction and its medication of wounds are all chemicals and their combinations. The destructive science of chemistry must kill immediately or the healing aids of chemistry will cure ultimately.

As never before, medicine has proved our faith in it by what it has accomplished. The science we represent has demonstrated to all sects, pathies and unbelievers, its quality by its performance in a world crisis. The profession you gentlemen represent is scattered over the world's greatest domain of human intelligence, yet it sensed the common danger, comprehended it and stood at attention quicker than any other profession, trade or business. Our physicians at home no longer press plans for personal advantage. The ununiformed officers of the Selective Service in every community are indeed our medical reserves. They select our soldiers, carry the burdens of those gone and contribute of their earnings to the support of their dependents—surely, chivalry among physicians was never brighter, or the spirit of self-sacrifice a national asset until now—a by-product of our

civilization that lay dormant under the complacency of our prosperity.

Surgeons transplant with impunity, either segments or shafts of bone from parts less important, to restore parts necessary to life and the healing of wounds is measured by hours rather than by weeks. These unplumed Knights of the Scalpel practice a new science of surgery, urged by the cry of necessity which opened to them opportunity.

One year ago when this house was convened it was stated that "thousands of our membership were preparing to follow," into the service of the Army. Thousands have followed and we already know that some have "carried on" beyond the war.

Each week THE JOURNAL first opens at our Gallery of Heroes, whose pictures are set over the inscription "Died in Service, M. R. C., U. S. Army." A simple epitaph; at once a eulogy, a requiem and a benediction. It comprehends preparation and service, to which the great seal of approval has been affixed by the United States of America. It matters not at all when we are called, but the manner of our going fixes the fragrance of remembrance. Our American mothers prefer a breaking heart, with pride of memory, to a living presence that needs an apology.

Although the American mind is sensitized by war, our profession must proceed coherently. The burdens war has imposed on the profession are heavy, but we must also forecast the medical problems of the peace to follow, which will tax every resource of our decimated ranks. Our losses by the hand of time, by casualties and of our premedical students, will lay a heavy hand on us afterward.

No one can now be found to say that we will not win the war or that the United States no longer produces the type of men our nation's history was builded around. The two generals through whom the medical profession serves would alone disprove both hypotheses.

The selective draft, predestined by the pacifist to failure, has proved to be the colossal achievement of the times. The man to accomplish it was already in place and able to envision the future, its contingencies and to sense the aroused American mind. Our people are giving up their sons without protest—and the selective service system has been conceived in detail and established in entirety.

The Judge Advocate-General, who framed the law and who administers it as the Provost Marshal-General, has written the name of Enoch H. Crowder in history.

In this world's crisis, when we can only live through killing, when every device for destruction is employed as an engine of death, from lethal gas to 70-mile guns; poised, undismayed, with faith in his profession and in the science it employs, with the confidence of his government and the devotion of his profession stands the Surgeon-General of the Army.

While the picture from a magazine's page, hanging by one of a uniformed boy in the humblest home, is that of William C. Gorgas; although years of service may have run against him, the mothers of our soldiers will not consent to his retirement, but will pray that his eyes be not dimmed or his natural forces abated.

The trustees bid me say that, having come home, they hope you will sense the welcome, enjoy the freedom and experience the pleasures which are the dues of those who return after a long absence; and when departing, that you will leave, with your adieus, advice, suggestions and instructions to further direct them in their stewardship.

I declare the House of Delegates now open for business.

Reference Committees

The Chairman announced the following Reference Committees:

SECTIONS AND SECTION WORK

John D. McClean	Pennsylvania
Guy L. Connor	Michigan
Frederick T. Rogers	Rhode Island
Thos. Holloway	Ophthalmology
G. A. Moleen	N. and M. D.

RULES AND ORDER OF BUSINESS

C. R. ScottIdaho
S. W. WelchAlabama
E. B. CooleyIllinois
W. T. WilliamsonOregon
A. F. RichardsTennessee

MEDICAL EDUCATION

E. A. HinesSouth Carolina
J. B. BlakeMassachusetts
Wm. S. LalorNew Jersey
Robert E. NobleArmy
R. M. FunkhouserMissouri

LEGISLATION AND POLITICAL ACTION

M. L. GravesTexas
A. E. Bulson, Jr.Indiana
George H. KressCalifornia
Southgate LeighVirginia
E. E. HarrisNew York

HYGIENE AND PUBLIC HEALTH

J. W. Schereschewsky U. S. P. H.
H. P. RitchieMinnesota
Frederic E. SondernNew York
C. D. SelbyOhio
J. R. MorrellUtah

AMENDMENTS TO CONSTITUTION AND BY-LAWS

F. M. CrandallNew York
C. L. StevensPennsylvania
Rock SleysterWisconsin
Henry E. OdellNavy
C. P. MeriwetherArkansas

REPORTS OF OFFICERS

H. G. WetherillGynecology
F. E. MurphyMissouri
S. R. RobertsGeorgia
Torald SollmannPhar. and Ther.
H. B. GibbyPennsylvania

CREDENTIALS

D. Chester BrownConnecticut
James W. MayKansas
Jos. W. AikinNebraska
M. A. KelsoOklahoma
Rudolph HorskyMontana

MISCELLANEOUS BUSINESS

C. E. HumistonIllinois
M. N. VoldengIowa
H. A. RoysterNorth Carolina
D. E. McGilivrayWashington
J. H. J. UphamOhio

Reports of Officers

Report of the Secretary

The Secretary presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

For the year 1917-18, I submit the following report:

MEMBERSHIP

The membership of the various constituent state associations, which constitutes the membership of the Association, according to the records in the Secretary's office, May 1, 1918, was 80,248, as shown in the accompanying table.

FELLOWSHIP*

The Fellowship of the American Medical Association on May 1, 1917, was 44,010. During the past year, 447 Fellows have died, 2,258 have resigned, 312 have been dropped as not eligible, 521 have been dropped for nonpayment of dues and 54 have been removed from the rolls on account of being reported "not found," making a total of 3,592 names to be deducted from the Fellowship roll. There have been added 4,297 names to the Fellowship roll, of which 3,077 were transferred from the subscription list. The Fellowship of the American Medical Association on May 1, 1918, was 44,715, a net increase for the year of 705.

This gain in the number of Fellows, as in previous years, is due largely to circularizing subscribers to THE JOURNAL who were eligible, urging them to become Fellows.

* These figures do not include those who are now Fellows by virtue of their being commissioned and on active duty as Medical Reserve Corps Officers but who previously have not been Fellows.

AD INTERIM APPOINTMENT OF COMMITTEES

Under date of Oct. 19, 1917, the following report of the Board of Trustees was submitted by the chairman of the House of Delegates and the secretary to the members of the House of Delegates of the American Medical Association,

TABLE—ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	No. Counties in State	No. Component Societies in State	Number Counties in State Not Organized		Physicians in State (6th Ed. Directory)	Number Members of State Association		No. A. M. A. Fellows in State	No. Subscribers to Journal in State*
			1917	1918		1917	1918		
Alabama.....	67	67	...	...	2,530	1,851	1,752	418	225
Arizona.....	14	11	2	3	333	153	182	122	83
Arkansas.....	75	62	13	13	2,587	1,103	1,045	376	223
California.....	59	40	19	19	5,929	2,790	2,862	1,937	891
Colorado.....	63	24	31	32	1,713	868	874	495	287
Connecticut....	8	8	...	...	1,701	1,039	1,067	658	286
Delaware.....	3	3	...	...	264	101	103	59	28
Dist. Columbia.	...	...	...	...	1,237	560	559	394	227
Florida.....	54	31	20	22	1,296	573	562	221	161
Georgia.....	152	85	58	58	3,436	1,323	1,415	674	414
Idaho.....	41	6	12	16	449	154	132	85	113
Illinois.....	102	93	1	1	10,909	6,057	6,330	3,851	1,853
Indiana.....	92	86	1	2	4,765	2,418	2,055	1,181	498
Iowa.....	99	96	2	3	4,004	2,277	2,333	1,225	554
Kansas.....	105	64	27	33	2,683	1,117	1,633	933	419
Kentucky.....	120	112	4	7	3,503	2,300	2,146	694	295
Louisiana.....	64	39	21	23	2,023	805	899	401	275
Maine.....	16	15	2	1	1,179	753	744	309	123
Maryland ¹	23	21	2	2	2,268	1,200	1,012	673	331
Massachusetts ²	14	18	...	...	5,870	3,593	3,681	2,117	939
Michigan.....	83	58	2	1	4,598	3,027	2,738	1,669	509
Minnesota.....	86	38	3	3	2,548	1,552	1,688	1,133	454
Mississippi.....	81	47	3	3	1,975	984	400	244	179
Missouri ¹	114	98	11	11	6,063	3,251	3,216	1,363	657
Montana.....	44	14	25	27	661	323	225	195	152
Nebraska.....	93	60	24	26	2,237	970	1,146	644	380
Nevada.....	16	4	13	12	152	52	89	47	35
New Hampshire	10	10	...	...	657	509	521	266	55
New Jersey.....	21	21	...	...	3,046	1,757	1,793	995	424
New Mexico....	28	11	16	17	456	199	147	157	93
New York.....	62	59	1	1	15,877	8,512	8,470	5,049	2,125
North Carolina.	100	78	17	15	2,237	1,262	1,277	430	273
North Dakota..	53	14	2	2	604	383	190	267	103
Ohio.....	88	87	1	1	7,802	4,679	4,353	2,333	939
Oklahoma.....	77	68	3	9	2,672	1,407	1,466	618	269
Oregon.....	36	13	3	3	1,128	596	709	249	233
Pennsylvania ³ .	67	63	4	4	11,539	6,800	6,928	3,946	1,473
Rhode Island ² ..	5	6	...	...	759	446	427	318	103
South Carolina.	45	40	3	4	1,237	732	705	358	199
South Dakota..	68	9	7	7	646	376	373	229	132
Tennessee.....	96	65	29	29	3,481	1,675	1,686	605	289
Texas.....	250	146	70	71	6,236	3,443	3,508	1,486	615
Utah.....	29	5	23	24	477	259	267	182	108
Vermont.....	14	11	...	...	639	380	414	162	64
Virginia ⁴	100	66	51	34	2,509	1,756	1,767	605	337
Washington....	39	19	18	19	1,673	956	965	540	288
West Virginia..	55	30	12	12	1,759	793	930	495	242
Wisconsin.....	71	54	...	...	2,783	2,894	3,001	1,070	496
Wyoming.....	22	3	15	17	254	117	82	69	70
Misc. (foreign)..	...	...	...	...	...	...	...	346	...
Alaska.....	...	...	...	...	...	...	...	4	21
Canal Zone.....	...	...	...	...	...	82	97	31	23
Hawaii.....	5	...	...	...	...	79	79	41	31
Porto Rico.....	7	2	...	...	...	114	113	38	29
Philippine Isl. .	...	...	...	...	...	101	92	35	88
Totals.....	3,036	2,085	571	587	.....	81,501	80,248	43,042	19,714
Commissioned Officers ⁵ and Honorary Fellows.....								1,673	...
								44,715	...

* Not including Fellows of American Medical Association.

Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on May 1, 1918.

The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.

Component societies are those societies which compose the state association. A component society may include one county or more.

1. The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.

2. These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.

3. Provision is made for the physicians in each of these counties to join the component society in an adjoining county.

4. Virginia has recently adopted the plan of organization and is now establishing component county medical societies.

5. This figure includes the Medical Corps of the Army, the Navy and the Public Health Service.

and was adopted unanimously by a postal vote, 116 votes having been cast:

Under date of Oct. 13, 1917, Hugh S. Johnson, Lieutenant-Colonel, Judge Advocate, Executive Officer of the Provost Marshal General, acting for the President of the United States and War Department, addressed a letter to the American Medical Association from which we quote:

"We need the active and vigorous cooperation of the American Medical Association. We need the promptest and most thorough action in this regard. Will you not call together a sufficient number of your executive council to authorize this cooperation by the Association, and to consider a definite and concrete proposition which can be presented here, and upon which we can act?"

Specifically, the cooperation desired of the Association is set forth in the following:

"It is planned to establish Medical Advisory Boards, not necessarily integrated with the territorial jurisdiction of either Local or District Boards, but having headquarters with sufficient apparatus and conveniences so located as to be accessible to boards in the portion of the state in which the Advisory Boards are situated. Any case in which the local examining physician has held the registrant disqualified for service (unless the disqualification is obvious) or in which the local physician is in doubt, or in which the registrant feels aggrieved by the decision of the local physician, or where the Local Board or the Government Appeals Agent desires to appeal the findings of the local physician, is to be sent to such Medical Advisory Board for an exhaustive [medical] reexamination upon which the Local Board can proceed to a final determination."

These Medical Advisory Boards will consist of physicians selected for their ability to make thorough and complete physical and mental examinations. This means that the boards shall be composed of specialists competent to make such laboratory and other examinations as may be required. This matter was of such importance and the urgency was so great that, in accordance with the spirit of the recommendation of the Reference Committee on Reports of Officers adopted by the House of Delegates in June, 1917, i. e.,

"We further suggest to the House of Delegates that it formally and officially offer to the government, through adoption of this recommendation, the services and facilities of the American Medical Association for such assistance as may be in its power to render hereafter", the Board of Trustees, on Oct. 19, 1917, in special session assembled for the purpose of considering the matter, all the members being present, unanimously adopted the following resolutions:

Resolved, That the Board of Trustees, for and on behalf of the American Medical Association, accepts the invitation to cooperate with the Provost Marshal General in the matter presented in the letter of Lieut.-Col. Hugh S. Johnson under date of Oct. 13, 1917.

Resolved, That a committee of three be and hereby is appointed with full power to act in conjunction with the Provost Marshal General in the premises.

The following committee was appointed: M. L. Harris, secretary, Board of Trustees; Hubert Work, chairman, House of Delegates, and E. J. McKnight, member of the Board of Trustees.

Respectfully submitted, by order of the Board of Trustees.

M. L. HARRIS, Secretary, Board of Trustees.

Later, the Board of Trustees appointed A. R. Mitchell to fill the vacancy on this committee occasioned by the death of E. J. McKnight, and the President of the Association, the Editor of THE JOURNAL and the Secretary were added to the committee as *ex officio* members. The board further extended the functions of the committee by authorizing it to act in cooperation with the Provost Marshal General's Office, the Surgeons-General of the Army and the Navy and such other military officials as may be deemed best in the interest of and for the successful conduct of the war. It is recommended that the House of Delegates, by action taken at this annual session, shall ratify the postal vote adopting the foregoing report of the Board of Trustees and, if it is in accord with the wisdom of the house, that it shall continue this committee with power to act for the Association in all matters pertaining to placing the Association at the service of the government for the war.

COOPERATION WITH THE SURGEON-GENERAL OF THE ARMY

At its annual session last year, the House of Delegates approved the action of the Secretary in offering, on March 29, 1917, the facilities of the American Medical Association to the Surgeons-General of the Army and of the Navy for whatever service the organization could render in support of the federal government in the prosecution of the war. Following the adoption of the recommendation of the Reference Committee on Reports of Officers whereby the House of Delegates "formally and officially" offered "to the government . . . the services and facilities of the American Medical Association for such assistance as may be in its power to render hereafter," an official communication of this

action was transmitted to the Surgeons-General of both the Army and the Navy and was acknowledged by each of them.

It may be of interest to enumerate briefly some of the facilities which the Association has at its headquarters and which in accordance with the foregoing action were made available to the offices of these Surgeons-General.

The facilities at the Association's headquarters are unique: they include information regarding the members of the medical profession which can not be found elsewhere. This information consists of complete records of the membership of the organization, of all licensed physicians, of data compiled from various sources, including matters relating to the professional and social standing of the individual physician. Specially, at the Association headquarters there are:

(a) A card index record of the medical students of the United States showing their preliminary education, the medical schools which they are at present attending and the schools at which each of the years of the medical course has been taken. This covers the last seven years.

(b) A biographic card index of physicians giving, in addition to the student record, information concerning the school of graduation, licenses held, hospitals in which they have served as interns, the places at which they have engaged in practice, etc.

(c) A record of the membership of recognized special medical societies and associations, as well as the names of those who have registered in the various Sections of the Scientific Assembly of the American Medical Association. These records provide information regarding the specialty in which each physician is interested or to which he limits his practice. This information is supplemented by statements from physicians themselves regarding their specialty.

(d) A personal file kept in envelopes which contains a vast amount of personal information concerning physicians; this is in the form of newspaper clippings and reports from various sources.

(e) A file in the Propaganda for Reform department of THE JOURNAL containing a most complete list of quacks, irregular practitioners, cults, 'pathies, etc.

In its organization the American Medical Association coordinates the constituent state medical associations and their component county and district societies. This organization reaches every part of the country and practically every physician. Its machinery consists among other things of:

(a) The names and addresses, corrected to date, *in type and ready for use* by the Dick Addressing Machine, of the presidents and secretaries of the state, district and county societies—some 5,156 names—making it possible to address any communication to the organized profession without delay. This is the mailing list for the American Medical Association Bulletin, which publication is available for circularizing any extended matter.

(b) When it is desired to reach the individual members of a county society, a list of these members is also quickly available.

Since the beginning of the war, the office of the Association has, as a routine procedure, made available to the Surgeon-General of the Army all its records relative to the applicants for commission in the Medical Reserve Corps. We have received almost daily lists of names of those making application for commission in the Medical Reserve Corps. When the lists were received, the names were card indexed and the cards distributed among specially trained clerks, who looked up all the information we have concerning each individual. If any information was found which called in question the personal or professional character of any of these individuals, the information was transmitted, without comment, to the office of the Surgeon-General. The amount of time and the extent of the work involved can be appreciated only by seeing the records which are assembled here and noting the response which the medical profession of the United States has made to the call of the government. The members of the House of Delegates are urged to avail themselves of the opportunity afforded at this session to acquaint themselves with the workings of the various departments at this office.

Other features wherein the Association has assisted the federal government are set forth in the reports of the Board of Trustees and of the War Committee.

MEMORIAL TO CONGRESS

The following memorial was signed in duplicate by seventeen of the general officers of the Association and by 115 of the 130 members of the House of Delegates of the Association, and on January 30 one set was transmitted to the Vice President of the United States, the presiding officer of the Senate, and the other to the speaker of the House of Representatives. Both were duly acknowledged:

The undersigned officers of the American Medical Association and the members of its House of Delegates, representing the membership of the various state associations of the United States, comprising in excess of 81,000 physicians, respectfully present the following memorial:

WHEREAS, Section 209 of the War Tax provides that, in addition to the regular income tax and surtax, there shall be a further tax of 8 per cent. on incomes in excess of \$6,000 of all professional men; and

WHEREAS, Such excess tax is unfair, unjust and vicious, in that it imposes a double tax on those who have no invested capital, but whose earned income is the result of mental effort and personal energy, after an expensive education and a long professional experience—in a word, on those whose income is the product of their brains;

THEREFORE, In behalf of the medical profession of the United States, we respectfully urge the repeal of Section 209.

REAPPORTIONMENT

The attention of the House is called to By-Laws, Section 3, Chapter I, page 6. This is the year for reapportioning the delegates of the various state associations; the by-law requires that the House of Delegates shall appoint a committee of five on reapportionment of which the President and Secretary shall be members. I suggest that this appointment be made early in the session, so that the Committee may report to the House as promptly as possible.

Other matters in which the office of the Secretary of the Association has been concerned are reported to the House of Delegates from other sources.

Respectfully submitted,

ALEXANDER R. CRAIG,
Secretary.

Report of the Board of Trustees

Dr. Thomas McDavitt, Chairman, read the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

In the report of the Board of Trustees made to you last June at New York, we expressed the fear that on account of the war our income from THE JOURNAL for the year 1917 might be seriously curtailed, unless strict economy was practiced. It was predicted that there would be great falling off in the number of Fellows and subscribers, and urged that we be prepared to meet the new conditions. As a matter of fact, the year 1917 proved to be a successful one—at least so far as THE JOURNAL is concerned. Instead of a falling off, there was an actual increase in circulation, as will be noted by tables in the addendum. On Jan. 1, 1917, the number of subscribers and Fellows was 65,661; on Jan. 1, 1918, 67,315—an increase for the year of 1,654. The actual number of copies printed for the year was 3,504,724, or a weekly average of 67,400.

The number of subscribers in foreign parts is increasing year by year. The total foreign circulation on Jan. 1, 1918, was 1,652. There was no gain in Europe for the year, because what little increase occurred in the countries of our allies was overcome by the dropping from the list of subscribers in enemy countries. On January 1 we had 72 subscribers in China, 114 in Japan, 126 in the various South American countries, and 57 in Mexico. There has been a pretty good increase in all these countries since January 1.

One of the tables gives the percentage in each state of physicians who take THE JOURNAL. The average percentage for the whole United States is approximately 46. This is an extremely gratifying record, considering all things. There

are, sad to say, a large number of physicians who regard THE JOURNAL as too scientific, although the relative number of these is rapidly decreasing. But the number of those who take THE JOURNAL does not represent the number of its readers; in many instances a number of physicians have access to the same copy, and the copies that go to libraries naturally are read by many. As was stated once before THE JOURNAL reaches a larger percentage of the profession and covers its particular field more thoroughly than does any other journal issued for any other class, profession, trade or specialty.

The revenue derived from THE JOURNAL for the past year—that is, for dues and subscriptions, as shown in the Auditors' Report, was \$318,487.25.

ADVERTISING

Also, contrary to our prediction last year, there was an increase in the receipts from advertising during the year. The total income from this source was \$264,996.52, an increase of over \$35,000. Considering the standard of the advertising pages of THE JOURNAL, the financial returns are gratifying. The fundamental rule governing advertising is that no proprietary or controlled medicine shall be advertised unless it has been investigated by the Council on Pharmacy and Chemistry and accepted for New and Nonofficial Remedies. The same general principle applies to other articles advertised, viz.: the product advertised must be an honest one, and the claims made for it must not be exaggerated. Naturally this results in the loss of a good deal of advertising, but we are sure that it pays to be thus rigid, even from a commercial point of view.

COOPERATIVE MEDICAL ADVERTISING BUREAU

The work of this bureau is giving satisfaction and it is appreciated as a good thing by the various state journals. Without exception the state publications which the bureau represents—and it represents all officially owned state journals except the Illinois—are pleased with the results of this cooperative work.

In 1915 the bureau cost the Association \$708, and in 1916, \$220; while during the past year in addition to earning its expenses and returning a pro rata honorarium to the state journals of \$900, it had \$203 to apply as a credit for the year 1918.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

This journal seems to be giving satisfaction, at least if we are to judge by the circulation, which now is 2,415. Considering that it is, in a way, a special journal, and appeals only to those who give special attention to pediatrics, this circulation must be regarded as satisfactory.

We regret to say that there was a loss—\$254.29—on the CHILDREN'S JOURNAL last year, as against a gain of \$322.38 the previous year. This loss is due principally to an increase in the amount paid for abstracts during the year.

While the regular price of this journal is \$3 a year, practically all the subscribers club it with THE JOURNAL or THE ARCHIVES, and pay only \$2 annually.

THE ARCHIVES OF INTERNAL MEDICINE

What is said regarding the AMERICAN JOURNAL OF DISEASES OF CHILDREN will apply to THE ARCHIVES OF INTERNAL MEDICINE. The circulation of this journal, as of Jan. 1, 1918, was 2,366—an increase of 264 over the preceding year. Here again there was a loss—and a rather serious one, viz.: \$1,635.40, as against a loss of \$66.52 the preceding year. This loss is accounted for by the increased size of THE ARCHIVES. The original plan outlined a journal of approximately 600 pages to the volume, or 1,200 pages a year. But the size has been gradually increasing until the number of pages in the two volumes for 1917 reached 2,082. The regular subscription price is \$4 per annum—that is for two volumes. As in the case of the AMERICAN JOURNAL OF DISEASES OF CHILDREN, THE ARCHIVES is clubbed with THE JOURNAL or with the CHILDREN'S JOURNAL, at \$3, and practically all of the subscribers receive it at this figure. This, of course, is too low a price if the size of the journal is to be what it is at present.

A comparison with other similar publications is interesting.

the *American Journal of Physiology*, the *Journal of Pharmacology and Experimental Therapeutics*, the *Journal of Zoology*, the *Journal of Bacteriology* and the *Journal of Immunology* each cost \$5 a volume of not to exceed 600 pages, or \$10 a year for those which are issued monthly. The last volumes of these journals had, respectively, 600, 562, 30, 646 and 592 pages.

While the Board of Trustees believes in encouraging these special journals, it is not intended to publish them at an actual loss. The board is considering the advisability of either asking the Editorial Board of THE ARCHIVES to reduce the number of pages, or increasing the price to \$2.50 a volume—\$5 a year. If the present clubbing arrangements are continued, this would mean \$4 a year for the great majority of subscribers. However, thus far no action has been taken in the matter.

PROPAGANDA DEPARTMENT

The results of the work of this department, so far as it relates to the public, have never been more evident than during the past year. For the first time the inquiries from laymen exceeded in number those from physicians. Possibly this is due to a growing realization on the part of the public regarding the monstrous waste—both in money and in health—connected with the exploitation of worthless or fraudulent medicines.

This department is cooperating with and advising advertising vigilance committees, associations of advertisers and advertising managers of the better class of magazines and newspapers, with the results that those who are behind the scene appreciate that great improvements are taking place in regard to the advertising standard of our leading lay publications. The number of schools and colleges that devote a certain amount of time each session to the economic, sociologic and health phases of the "patent medicine" evil continues to increase. This doubtless is due to the fact that some of the high school and college textbooks on home economics and on hygiene and physiology touch on these subjects and either use the Propaganda's publications or give them as references for supplementary reading and study. The Educational Posters prepared by the department are becoming widely used in such work.

COUNCIL ON PHARMACY AND CHEMISTRY

The war naturally has influenced the work of the Council on Pharmacy and Chemistry and, to a less extent, that of the Chemical Laboratory. Since the war started, no new synthetics or preparations of any kind have been submitted from Germany. Before that time not a month passed that Germany did not send at least one new synthetic or other drug. The value of the Council's endorsement has been recognized by the drug and chemical concerns abroad, and these concerns submitted to the Council practically every product at the outset.

Meanwhile radical changes have been taking place in this country. A large number of synthetics for which we formerly depended entirely on Germany are now being manufactured in increasing quantities by American concerns. Four concerns are now making arsphenamin to take the place of salvarsan, and such products as atophan, veronal, novocain, phenol and phenol derivatives—salicylic acid, the salicylates and particularly acetylsalicylic acid (aspirin), etc., also are being made here. To protect both the public and the profession, as well as to encourage the American manufacture of synthetics, the Council and the Laboratory have willingly investigated the quality of these substitutes for foreign made goods, and when they have been found satisfactory—which has been the case in practically every instance—have accepted them for New and Nonofficial Remedies. Certain members of the Council have been cooperating with the Federal Trade Commission in solving the problem connected with licensing manufacturers to make certain products controlled by German patents.

At the request of the head of the division of supplies in the Surgeon-General's Office, the Committee on Therapeutic Research and Useful Drugs of the Council held a meeting in Chicago, April 26 and 27, to investigate and make recommen-

dations regarding deletions from, and additions to, the list of drug supplies for the Army. Constituted as this committee is, it is thoroughly competent to do this work, and we believe it has been appreciated by the Surgeon-General.

COMMITTEE ON SCIENTIFIC RESEARCH

In 1900 a committee on Scientific Research was constituted. This committee was continued until 1914 when, in the curtailment of expenses, it was found necessary to discontinue making the annual appropriation for its work. Conditions now are such that the board has felt justified in reestablishing this grant. The committee as newly constituted consists of: Dr. Ludvig Hektoen, Professor of Pathology at Rush Medical College, Chicago; Dr. G. N. Stewart, Professor of Experimental Medicine, Western Reserve University, Cleveland; Dr. A. W. Hewlett, Professor of Medicine, Leland Stanford Jr. University, Berkeley, Calif.; Col. F. F. Russell, Surgeon-General's Office, Washington, D. C.; J. W. Churchman, Professor of Surgery, Yale University, New Haven, Conn., and Herbert Charles Moffitt, Dean and Professor of Medicine, University of California, Medical School.

DISPOSITION OF LAWSUITS

The active work of the Association in codifying and supplying to the profession and the public information concerning quackery, fraudulent medicines and low-standard medical colleges naturally has resulted in attempts on the part of those affected by such disclosures to intimidate the Association by instituting, or by threatening to institute, lawsuits. It costs very little to institute such suits, and they may be considered as good advertising. Further, they give a semblance to a claim that unwarranted statements have been made. The fact that these cases are practically never pushed to trial, evidences the care the Association takes in determining the accuracy of the information it publishes.

During the past year the following cases have been disposed of:

In the Circuit Court of Cook County, Ill.:

Julian J. Meyer *vs.* American Medical Association. Alleged damage, \$100,000.00.

Organic Chemical Manufacturing Co. *vs.* American Medical Association, and Dr. George H. Simmons. Alleged damage, \$100,000.00.

S. Lewis Summers *vs.* American Medical Association, and Dr. George H. Simmons. Alleged damage, \$100,000.00.

In the Superior Court of Cook County, Ill.:

John S. Waterman *vs.* American Medical Association. Alleged damage, \$100,000.00.

T. Leacraft Hein *vs.* American Medical Association. Alleged damage, \$100,000.00.

The cases of Julian J. Meyer, John S. Waterman and T. Leacraft Hein, all physicians, are the result of the exposure in THE JOURNAL of the Friedmann Consumption Cure fake. The other two cases, that of the Organic Chemical Manufacturing Co. and of S. Lewis Summers, are to all intents and purposes identical, since S. Lewis Summers is the president of, if not the Organic Chemical Manufacturing Co. These cases were virtually thrown out of court without trial.

The case entitled "People of the State of Illinois on the relation of Maclay Hoyne, State's Attorney, *vs.* W. W. Grant, Frank J. Lutz, Oscar Dowling, W. T. Sarles, Philip Marvel, Philip Mills Jones, M. L. Harris, W. T. Councilman and Thomas McDavitt," was finally reached and was passed on by the Supreme Court in favor of the American Medical Association. The following is the legal history of the case:

In the latter part of 1910, Dr. G. Frank Lydston applied to John E. W. Wayman, then the State's Attorney of Cook County, Illinois, to bring *quo warranto proceedings* against the Trustees of the American Medical Association to oust them from office because they were elected at meetings held outside of the state of Illinois, and because he alleged that the by-laws for the election of delegates to the House of Delegates were contrary to the laws of Illinois. The State's Attorney declined to bring the *quo warranto proceedings*. Dr. Lydston then applied to the Attorney General of the State of Illinois to bring such action in *quo warranto* against the Trustees. The Attorney General also declined to file such a proceeding because the principal office of the American

Medical Association was in Chicago, and for the further reason that the State's Attorney had declined to bring the action.

On April 28, 1911, Dr. Lydston, claiming to act on behalf of the People of the State of Illinois, filed a petition in the Circuit Court of Cook County, Illinois, General No. 305366, against John E. Wayman, State's Attorney, for a *writ of mandamus* to compel the State's Attorney to sign a petition in *quo warranto* to oust the then Trustees from office.

To that petition the State's Attorney filed a demurrer.

On May 18, 1911, the Circuit Court, after extended argument, sustained the demurrer of the State's Attorney and dismissed the petition at relator's cost. Dr. Lydston thereupon prayed and was allowed an appeal to the Appellate Court.

On Oct. 2, 1911, the case was docketed in the Appellate Court of Illinois.

On Oct. 7, 1911, Maclay Hoyne, the then State's Attorney, was substituted for Mr. Wayman.

On Oct. 9, 1913, the Appellate Court, by a divided court, two judges to one, reversed the judgment and remanded the case to the Circuit Court with directions to overrule the demurrer.

By stipulation of the parties the Appellate Court thereafter set aside its judgment, overruled the demurrer which had been sustained by the court below, entered a final judgment awarding a *peremptory writ of mandamus* commanding the State's Attorney of Cook County to sign the information in the nature of a *quo warranto*, and awarded a certificate of importance to the Supreme Court. That state of the record, it was supposed, permitted the State's Attorney to carry the case to the Supreme Court of Illinois.

At the December term, 1913, the State's Attorney filed the record of the case in the Supreme Court and the case was argued at that term.

Feb. 21, 1914, the Supreme Court filed its opinion to the effect that the Appellate Court did not have the power to award a *peremptory writ of mandamus*, and remanded the case to the Appellate Court to enter a judgment reversing and remanding the cause to the Circuit Court.

On July 15, 1914 the case was redocketed in the Circuit Court, and on the same date, in obedience to the direction of the Appellate Court, the demurrer to the petition was overruled. From that judgment an appeal was taken by the State's Attorney to the Appellate Court. On the call of the case there, it was reargued before a branch of that court different from the one which had made the previous decision.

On Oct. 6, 1915, the second branch of the Appellate Court decided that they were bound by the first decision in that court and affirmed the judgment of the Circuit Court.

On Dec. 20, 1915, the State's Attorney made an application to the Supreme Court for a *writ of certiorari* to review the judgment of the second branch of the Appellate Court, but the Supreme Court denied the writ.

Thereupon, in pursuance of said judgment of the Appellate Court, and on June 27, 1916, the People of Illinois, on the relation of Maclay Hoyne, State's Attorney, filed a proceeding in the nature of *quo warranto* in the Circuit Court of Cook County, Illinois, General No. B-22003 against Drs. W. W. Grant, Frank J. Lutz, Oscar Dowling, W. T. Sarles, Philip Marvel, Philip Mills Jones, M. L. Harris, W. T. Councilman and Thomas McDavitt, Trustees, as defendants, charging that the said Trustees were illegally holding office because elected outside the state of Illinois, under by-laws which were alleged to be illegal under the laws of the state of Illinois. (At this point the American Medical Association is technically brought into the case for the first time.)

On Nov. 13, 1916, a demurrer to the petition in *quo warranto* was filed on behalf of all the Trustees.

On Dec. 16, 1916, after extended argument, the Circuit Court sustained the demurrer of the Trustees.

The People, by the State's Attorney, thereupon perfected their appeal from said judgment to the Appellate Court sitting at its March term, 1917.

After the presentation of printed briefs and upon oral arguments in November, 1917, and full consideration, the Appellate Court filed an opinion, two judges to one, affirming the Circuit Court judgment sustaining the demurrer, and at the request of The People granted a certificate of importance to the Supreme Court. Such certificate of importance permitted an appeal to the Supreme Court of Illinois.

Thereupon such appeal was taken by the People and came on to be heard upon printed briefs and oral argument at the February term, 1918, of the Supreme Court.

On April 17, 1918, the Supreme Court filed its opinion affirming the judgments of the Appellate Court and of the Circuit Court in the *quo warranto proceedings*, which gave judgment

against the People of the State of Illinois and in favor of the Trustees.

This is the first decision by our Supreme Court on the question of whether a corporation not for profit may hold its annual meetings outside of the state of Illinois for the election of its Trustees. The Supreme Court also sustained the by-laws of the Association, which fixed the method of electing delegates to the House of Delegates, and the election of the Trustees by the House of Delegates instead of by the membership at large.

The Appellate Court in a *mandamus proceeding* against the State's Attorney, once decided that such meetings were illegal, but such decision was wholly unauthorized for the reason that it was made in *mandamus proceeding*, seeking to compel the State's Attorney to sign a petition in *quo warranto*. Under the last decision by another branch of the Appellate Court, the latter held, by a divided court, as above stated in the *quo warranto proceeding*, that the earlier decision of the Appellate Court was not *res adjudicata*, and was not a correct interpretation of the Illinois statute, and affirmed the judgment of the Circuit Court sustaining the demurrer of the Trustees to the *information in quo warranto*, which decision of the Appellate Court is now affirmed by said decision of the Supreme Court.

The Supreme Court takes the ground that, first, the Appellate Court was right in its judgment in the *mandamus action* in ordering the State's Attorney to sign the information in *quo warranto*; and second, that it was in error in undertaking to pass on the merits which would be involved in the *quo warranto proceedings*. The Supreme Court expresses the opinion further that when it (the Supreme Court) refused a *writ of certiorari* it only intended to agree to the judgment of the Appellate Court directing the State's Attorney to sign the petition in the nature of *quo warranto*, but not to what the Appellate Court said on the merits of the case which would be involved when the questions in that case came before the courts for decision.

That is a most important addenda, since the Appellate Court in its last decision divided on the question whether such earlier decision of the Appellate Court was or was not *res adjudicata* the counsel for the relator, one justice strongly insisting that the Appellate Court's decision in the *mandamus suit* was decisive against the Trustees in the *quo warranto proceeding*.

The decision of the Supreme Court is of great importance to many other nonprofit Illinois corporations which hold annual meetings outside the state of Illinois. Had the earlier Appellate Court decision been sustained, all acts of such associations at meetings held outside the state would necessarily have been illegal and void.

All questions so long litigated in these cases have now been finally set at rest and in favor of the Association. The by-laws are declared to be in conformity with the Illinois laws; the methods of electing Delegates and Trustees are approved as lawful; and the holding of annual meetings for the election of Trustees and the doing of all other business of the Association required to be done under the by-laws at such annual meetings are approved as being in strict conformity with the laws of Illinois.

ADDENDA TO TRUSTEES' REPORTS

Appended to this report will be found the reports of the Treasurer and Auditors, which speak for themselves. This year, it will be noticed, for the first time in four years, the showing is very satisfactory. This is in part owing to an increased income from advertising, but in part also to the curtailment of some of the Association's work, especially that of the Council on Health and Public Instruction.

The Board of Trustees invested \$17,000 in the first Liberty Loan and \$23,000 in the second. The option which the first issue of these bonds provided was taken advantage of, namely: they were exchanged for the second issue. Hence the Association has \$40,000 of the second Liberty Loan, 4 per cent. bonds. The Board also invested \$25,000 in the third Liberty Loan, 4.25 per cent. bonds. Thus it has a total of \$65,000 invested in these bonds.

DEATH OF DR. MCKNIGHT

It is with sincere regret, and with the feeling of great loss, that we record the death of Dr. Edward J. McKnight, a

member of the Board of Trustees. Dr. McKnight died at his home, in Hartford, Conn., on Christmas Day last, from angina pectoris. While he had been a member of the Board of Trustees only a short time, he had endeared himself to each of the members of the Board. Few men in the medical profession were more highly regarded than he, not alone because of his personalities and his delightful character, but also because he was an earnest, conscientious worker, with a humanitarian interest in his fellow men such as few possess.

WAR WORK

A word as to the part the Association has been taking in the war medical work. In certain quarters there seems to be an idea that the Association has not made use of its opportunities or rendered to the government the service of which it was capable. War was declared April 6, 1917. *THE JOURNAL* for April 7 contained four editorials in which it was stated that war was certain. These editorials emphasized the needs of the Army and of the Navy for medical officers, and called on the medical profession to be ready to respond. The following week it published the facts relative to the number of graduates available from medical colleges, and emphasized the importance of maintaining the supply of physicians through the medical schools. In the issue for April 21 it issued a call to the profession of the United States, through the county societies, to supply the Army with medical officers. In that issue were printed 65,000 blank forms for making application for commission in the Medical Corps, and also in the Reserve Corps, and the announcement was made that the Association was prepared to send pamphlets, circulars and other information regarding the medical service of the Army and of the Navy. In addition to other information regarding the Reserve Corps, *THE JOURNAL* on April 28 published the first list of medical examining boards. On May 26 it again published application blanks—this time 67,000. From this time *THE JOURNAL* carried on a propaganda to build up the Reserve Corps, and in other ways to cooperate with the Surgeon-General's Office of both the Army and the Navy.

In connection with this work there naturally has been a large amount of correspondence. Since the beginning of the war the Association officers have answered, both by letter and by publication, thousands of questions relative to the service, thus relieving the offices of the Surgeons-General of this burden. Besides the application forms contained in *THE JOURNAL* (132,000), the Association has printed and sent out over 60,000 additional forms, or a total of nearly 200,000.

In May, 1917, a proposition was submitted to the Surgeon-General providing for a personal appeal to all physicians under 55 years of age. The plan was endorsed by the Surgeon-General, and Major J. R. McKnight of the Medical Corps was assigned to *THE JOURNAL* office to represent the Surgeon-General and to supervise the work. By detailing an officer for this work, the Surgeon-General made it possible to use franked envelopes and so saved the Association postage charges. The work was begun on May 28, and completed about the end of October. The Association, in addition to supplying the biographical data from its files and records, did the necessary printing connected with the work and furnished other facilities. However, the work was conducted ostensibly by the Central Division of the War Department, in Chicago, which means that the Association was unknown in the work.

The proposition as outlined, and as carried out, required the sending of a circular letter to every physician under 55 years of age. This letter extended an invitation to the one addressed to apply for commission in the Medical Reserve Corps, and was signed by Major McKnight, representing the Medical Corps. A card was enclosed—with a return franked envelope—on which the recipient was asked to give certain information regarding himself, his social conditions, and whether he would apply for commission at that time, or later—in the latter case when. An application blank and all the information necessary, including a list of examining boards, also was enclosed. To those physicians who did not answer, a second letter was addressed. All told—including the first letter and the follow-up—68,597 letters were sent out; and up

to the time Major McKnight was relieved, returns had been received from 34,479 physicians. These replies are still coming in.

In his final report to the Surgeon-General, Major McKnight said:

"In following this work and noting the number of applicants for commissions in the Medical Reserve Corps, we have seen a marked increase in these applicants reported from the different states immediately following the mailing of letters to the physicians of those states. This increase was noted to follow the mailing of both the first and second letter.

"This work, which has been conducted in connection with the American Medical Association and in cooperation with Major Simmons, will be completed in a few days, with the exception of the delayed replies and certain letters of inquiry on subjects related to the Medical Reserve Corps. . . .

"The American Medical Association have not only placed their files at our disposal for this work, but have rearranged their card system from time to time for our convenience, have furnished all materials other than the franked envelopes, have done all the printing and rendered every possible assistance in a most admirable manner."

In addition to this effort to increase the Reserve Corps, the Association's plant has printed a large amount of material without cost to the government. In a word, from the beginning of the war all the facilities of the Association, including its biographical information, its printing plant—everything—have been at the disposal of the Surgeon-General's Office, and every aid possible was rendered him.

As regards this point, the following letters from Surgeon-General Gorgas, dated February 22, bear witness. The first is addressed to the chairman of the Board of Trustees; the second, to the Secretary of the Association.

Dear Doctor McDavitt:—In answer to your letter dated Feb. 14, 1917, I am very glad to acknowledge the great service which the American Medical Association has given, with and without solicitation, to me personally and to the Office of the Surgeon-General, in the solution of the important problems of preparedness for war and of the medical and surgical care of our boys in training camp and field by the Medical Department of the Army.

Through the officers, *THE JOURNAL* and educational propaganda distributed by the American Medical Association, we have secured thousands of officers of the Medical Reserve Corps. The Office of the Surgeon-General and the Medical Department of the Army still need your aid and support.

Permit me to thank you and through you the other trustees and officers of the Association for the valuable help already rendered and for the acceptable offer of a continued life service.

Dear Doctor Craig:—It gratifies and affords me pleasure to acknowledge the great services rendered by the American Medical Association, to me personally and to the Office of the Surgeon-General, in organizing the Medical Department of the Army for the efficient care of our soldiers in training camp and field.

Since April, 1917, the Board of Trustees, the officers at the Chicago headquarters, *THE JOURNAL* and all the machinery of the American Medical Association have been important and distinctive factors through which many thousands of physicians have been influenced to apply for commissions in the Medical Reserve Corps; medical officers have received valuable instruction by means of special articles printed in *THE JOURNAL* and also through literature distributed in pamphlet form from the office; and in other ways too great to enumerate here.

The spirit of service expressed by the officers and members of the American Medical Association in so many helpful ways, in the work of preparation for war and for actual surgical and medical care of our soldiers in war, evidences a patriotism and devotion to country which is a credit to the American medical profession.

I accept and thank you and through you the other officers of the Association for the offer to continue the same services of the Association to the Medical Department of the Army as long as may be.

On October 13, on invitation of the Provost Marshal-General's Office, the general manager held a consultation with Colonel Johnson and Major—now Colonel—Easby-Smith relative to establishing medical advisory boards in connec-

tion with the carrying out of the selective service regulations. Supplementary to this conference the following letter was received from the Provost Marshal-General:

WAR DEPARTMENT
OFFICE OF THE PROVOST MARSHAL-GENERAL

Washington, D. C., Oct. 13, 1917..

Dr. G. H. Simmons,
Cosmos Club,
Washington, D. C.

My Dear Dr. Simmons:

There is, in course of preparation, new regulations governing the draft. These new regulations put into effect a plan built on principles that constitute a radical departure from anything that has been done before. In brief, it is proposed to inquire into the economic, family, and industrial relations of every person liable to military service. This is to be done by means of an exhaustive questionnaire which every registrant is required to submit to his Local Board. On receipt of the questionnaires of all registrants, the Local Board will proceed to classify all registrants in five classes, arranged in the order of their availability for military service. Classes two, three, four and five are, for all substantial purposes, temporarily discharged from the draft. Class one, alone, is immediately available for military service. Class one is composed largely of single men, and those whose relation to industry and agriculture is such that they can be taken without disturbing the economic interests of the nation.

The question of determining the physical fitness of registrants is not the least of our difficulties. In the proposed scheme it would be futile and unwise to examine those registrants who are in deferred classes. Our problem, then, is to provide immediately for the physical examination of Class one.

Under the plan for physical examination in effect for the first draft, an examining physician attached to a Local Board examined registrants before the list had been culled by exemption and discharge. If the examination resulted in a finding of physical disqualification, the registrant was reexamined by another physician. If both physicians found him disqualified, he was ordinarily discharged from draft.

This system left much to be desired. Examinations were made most hurriedly in the absence of proper apparatus. Sometimes enormous personal pressure was brought to bear on the discretion of the physician, and while no single case of improper conduct has arisen, it is not in the nature of things that, in the close relation between local physicians and their clientele, impartial consideration was not in some instances clouded. The system is not fair to the examining physician, nor to registrants, nor to the government.

It is proposed to cure this fault. It is planned to establish Medical Advisory Boards, not necessarily integrated with the territorial jurisdiction of either Local or District Boards but having headquarters with sufficient apparatus and conveniences so located as to be accessible to Boards in the portion of the state in which Advisory Boards are situated. Any case in which the local examining physician has held the registrant disqualified for service (unless the disqualification is obvious) or in which the local physician is in doubt, or in which the registrant feels aggrieved by the decision of the local physician, or where the Local Board or the Government Appeals Agent desires to appeal the findings of the local physician, is to be sent to the Medical Advisory Board for an exhaustive reexamination on which the Local Board can proceed to a final determination.

We are going to strive to give this great sifting and classification of registrants definition as a National effort in the accomplishment of which we hope to have the President call upon every citizen to assist according to his qualifications and talents. Our problem as to the Medical Advisory Boards is, I think, one of organization. The system of Advisory Boards must, if it is to be effective and if it is to be given an official status, be 100 per cent. perfect. In order to accomplish this it is necessary to have at each state headquarters some person, I think a physician, who will be responsible for the prompt, scientific and efficient organization of the state. His problem will be to consider the transportation difficulties, to locate an Advisory Board in places within his state where there are proper apparatus and conveniences, to select and to recommend to the governor, or it may be to the President, the personnel of each of such Boards. In short, he must envision his state as a system, and must create the working boards of that system. It has been suggested that a physician in the Medical Reserve Corps in each state should be called to active service, given an official status in supervision of

Medical Advisory Boards, and possibly of local examining physicians within the state. I like this. I think it is practicable. I am inclined to believe that it is the only way to obtain a responsible person in each state to whom we can look for efficient organization.

We need the active and vigorous cooperation of the American Medical Association. We need the promptest and most thorough action in this regard. Will you not call together a sufficient number of your executive council to authorize this cooperation by the Association, and to consider a definite and concrete proposition which can be presented here, and upon which we can act?

Yours very truly,
HUGH S. JOHNSON,
Lieutenant-Colonel, Judge Advocate,
Executive Officer.

In response to this, the Board of Trustees met in special session on October 19. It officially offered the cooperation of the Association and its officers to the Provost Marshal-General in the proposed formation of these medical advisory boards. A committee was appointed, to be known as the War Committee of the Association, composed of: Dr. Hubert Work, chairman of the House of Delegates, as chairman; Dr. E. J. McKnight, a member of the Board of Trustees; and Dr. M. L. Harris, Secretary of the Board of Trustees. On the death of Dr. McKnight, Dr. A. R. Mitchell of Lincoln, Neb., a member of the Board of Trustees, was appointed on the War Committee; and the President and Secretary of the Association and the Editor of THE JOURNAL, *ex-officio*, were made members of the committee. This committee will make a report covering its work.

Respectfully submitted,
THOMAS MCDAVITT, Chairman, OSCAR DOWLING,
M. L. HARRIS, Secretary, PHILIP MARVEL,
WENDELL C. PHILLIPS, W. T. SARLES,
A. R. MITCHELL, H. BERT ELLIS.

Addenda to Trustees' Report

SUBSCRIPTION DEPARTMENT

The regular weekly issue of THE JOURNAL of the American Medical Association, from January 1, 1917, to December 1, 1917, inclusive (52 issues), was as follows:

January 6.....	66,842	July 7.....	65,457
January 13.....	66,412	July 14.....	65,606
January 20.....	64,531	July 21.....	65,564
January 27.....	65,299	July 28.....	65,603
	263,084		262,230
February 3.....	65,379	August 4.....	65,249
February 10.....	64,641	August 11.....	65,801
February 17.....	64,522	August 18.....	66,646
February 24.....	64,561	August 25.....	66,597
	259,103		264,293
March 3.....	66,242	September 1.....	72,017
March 10.....	64,434	September 8.....	70,207
March 17.....	65,190	September 15.....	72,459
March 24.....	65,098	September 22.....	72,582
March 31.....	64,873	September 29.....	72,773
	325,837		360,038
April 7.....	66,638	October 6.....	72,862
April 14.....	65,086	October 13.....	66,718
April 21.....	64,615	October 20.....	70,673
April 28.....	67,494	October 27.....	75,670
	263,833		285,923
May 5.....	72,344	November 3.....	70,600
May 12.....	64,845	November 10.....	66,864
May 19.....	70,612	November 17.....	68,031
May 26.....	67,514	November 24.....	67,808
	275,315		273,303
June 2.....	65,897	December 1.....	67,914
June 9.....	65,927	December 8.....	68,525
June 16.....	65,778	December 15.....	68,910
June 23.....	65,671	December 22.....	68,591
June 30.....	65,938	December 29.....	68,614
	329,211		342,554
Total			3,504,724
Weekly average.....			67,399

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

This table gives the number of physicians (based on the fifth edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL, and the approximate percentage in each state. Copies to physicians

in the United States Army, United States Navy, United States Public Health Service, etc., are not included.

State	Number Receiving JOURNAL	Physicians in State 5th A. M. Dir.	Approx. Percentage 5th A. M. Dir.
Alabama	630	2,569	25
Arizona	206	307	67
Arkansas	608	2,637	23
California	2,917	5,687	51
Colorado	814	1,733	47
Connecticut	998	1,678	54
Delaware	92	261	35
District of Columbia..	593	1,482	40
Florida	400	1,321	30
Georgia	1,092	3,421	32
Idaho	212	439	48
Illinois	5,902	10,648	55
Indiana	1,734	4,872	36
Iowa	1,786	3,751	48
Kansas	1,322	2,683	49
Kentucky	1,042	3,584	29
Louisiana	665	2,060	32
Maine	461	1,205	38
Maryland	1,020	2,292	45
Massachusetts	3,194	5,869	54
Michigan	2,294	4,360	53
Minnesota	1,668	2,447	68
Mississippi	416	2,048	20
Missouri	2,085	6,399	31
Montana	361	636	57
Nebraska	1,071	1,911	56
Nevada	83	154	54
New Hampshire	349	690	51
New Jersey	1,442	3,239	45
New Mexico	230	430	53
New York	7,486	15,670	48
North Carolina	737	2,102	35
North Dakota	371	586	63
Ohio	3,457	8,045	43
Oklahoma	891	2,634	34
Oregon	488	1,187	40
Pennsylvania	5,705	11,502	50
Rhode Island	457	772	59
South Carolina	517	1,399	37
South Dakota	371	676	56
Tennessee	984	3,457	28
Texas	1,987	6,240	32
Utah	284	465	63
Vermont	240	668	36
Virginia	963	2,547	38
Washington	837	1,695	49
West Virginia	769	1,729	45
Wisconsin	1,599	2,803	56
Wyoming	143	251	57

The following table shows the number of Fellows and subscribers on THE JOURNAL mailing list, for each year, commencing with 1900:

Year	Fellows	Subscribers
January 1, 1900.....	8,445	4,633
January 1, 1901.....	9,841	8,339
January 1, 1902.....	11,107	10,795
January 1, 1903.....	12,553	12,378
January 1, 1904.....	13,899	14,674
January 1, 1905.....	17,570	15,698
January 1, 1906.....	20,826	17,669
January 1, 1907.....	26,255	20,166
January 1, 1908.....	29,382	20,880
January 1, 1909.....	31,999	18,983
January 1, 1910.....	33,032	19,832
January 1, 1911.....	33,540	20,504
January 1, 1912.....	33,250	21,620
January 1, 1913.....	36,082	19,863
January 1, 1914.....	39,518	19,751
January 1, 1915.....	41,254	20,430
January 1, 1916.....	41,938	22,921
January 1, 1917.....	42,744	22,156
January 1, 1918.....	43,420	23,117

During 1917 there were 2,943 names transferred from Subscription Department and 158 from *The Archives of Internal Medicine* and *The American Journal of Diseases of Children* to the Fellowship Department; also 120 from *The Archives* and the *Children's Journal* mailing list to that of THE JOURNAL A. M. A., and 56 from THE JOURNAL list to *The Archives* and *The American Journal of Diseases of Children*.
The total number of transfers to Fellowship was 3,101.
There were 394 discontinued as Fellows, but continued as subscribers.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ended December 31, 1917.

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1916.....	\$120,648.95
Receipts for the year ended December 31, 1917:	
Investments	\$ 40,000.00
Interest	5,587.32
	45,587.32
Reserve Fund as at December 31, 1917.....	\$166,236.27

TREASURER'S GENERAL ACCOUNT

Balance as at December 31, 1916.....	\$ 3.52
Receipts for the year ended December 31, 1917:	
Transfer from General Working Fund.....	\$ 40,000.00
Interest on Bank Balances.....	276.41
	40,276.41
	\$ 40,279.93
Disbursements for the year ended December 31, 1917:	
Transferred to Reserve Fund.....	\$ 40,023.31
Balance as at December 31, 1917.....	\$ 256.62

DAVIS MEMORIAL FUND

Balance as at December 31, 1916.....	\$ 3,440.71
Interest received for the year ended December 31, 1917....	103.98
Balance as at December 31, 1917.....	\$ 3,544.69

AUDITORS' REPORT

CHICAGO, ILL., Jan. 24, 1918.

*The Board of Trustees of the
American Medical Association, Chicago, Illinois.*
Gentlemen:
In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1917, and now submit our report thereon.

SURPLUS ACCOUNT

The surplus at the beginning of the year amounted to \$382,135.69, and the surplus at the end of the year amounted to \$423,433.87, an increase of \$41,298.18, which is accounted for as follows:

Net Gain on Operations.....	\$77,303.56
Transfer from Liability Insurance Reserve Fund.....	4,017.93
	\$81,321.49
Less Transfer to Reserve Fund.....	40,023.31
Net Increase in Surplus.....	\$41,298.18

The net increase in surplus is spread over the assets and liabilities as follows:

Increase in Assets:

Property and Equipment.....	\$ 1,174.11
Current and Working Assets.....	43,982.05
	\$ 45,156.16
Less Decrease in Prepaid Expenses.....	489.96
	\$ 44,666.20
Less Increase in Liabilities:	
Accounts Payable	\$ 4,907.29
Less Decrease in Advance Payments on Publications	1,539.27
	3,368.02
Net Increase in Surplus, as above.....	\$ 41,298.18

FINANCIAL POSITION

The financial position of the Association as at December 31, 1917, is shown in the following statement:

BALANCE SHEET AS AT DECEMBER 31, 1917

ASSETS:	
Property and Equipment at Cost, less Depreciation:	
Real Estate and Buildings.....	\$240,264.09
Machinery	42,875.95
Type and Metals.....	7,853.72
Furniture and Equipment.....	13,518.00
Chemical Laboratory	1,564.91
Library	1,278.04
	\$307,354.71
Reserve Fund Investment.....	166,236.27
Current and Working Assets:	
Inventory of Materials, Supplies and Work in Process	\$41,720.59
Accounts Receivable:	
Advertising	\$26,351.58
Cooperative Medical Advertising Bureau	6,548.47
Reprints	2,904.45
Miscellaneous	3,778.62
	39,583.12
Notes Receivable	437.74
Directory, 6th Edition (Labor and Material)..	20,252.38
Cash in Bank and on Hand.....	23,107.88
Office Fund	50.00
	125,151.71
Prepaid Insurance	1,244.18
Total	\$599,986.87

LIABILITIES:

Accounts Payable:	
Cooperative Medical Advertising Bureau.....	\$ 4,412.62
Sundry	3,210.37
	\$ 7,622.99
Advance Payments on Publications.....	2,693.74
Association Reserve Fund.....	166,236.27
Surplus	423,433.87
Total	\$599,986.87

The balance sheet submitted, in our opinion, correctly reflects the financial position of the Association as at December 31, 1917, subject to provision for accrued interest, taxes and "Journal" subscriptions paid in advance, less subscriptions and memberships due and unpaid.

We examined the securities representing the investment of the Association Reserve Fund, and we found them in order.

We verified the cash on hand by actual count and the cash in bank by certificates obtained from the various depositories. The following is a statement of the cash balances:

Continental and Commercial National Bank.....	\$ 22,546.77
First Trust and Savings Bank (Treasurer's Account).....	256.62
Cash on Hand.....	304.49
Cash Fund	50.00
Total	\$ 23,157.88

OPERATIONS

The operations of the Association for the year ended December 31, 1917, are shown in the following statements:

INCOME AND PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED
DECEMBER 31, 1917

JOURNAL:

INCOME:	
Fellowship Dues	\$ 43,569.00
Subscriptions	274,918.25
Advertising	264,996.52
Jobbing	7,349.67
Books	4,990.84
Reprints	3,079.21
Buttons	80.36
Miscellaneous Sales	8,670.39
Interest	2,006.07
	\$609,660.31
Expenses, Schedule "1"	452,692.31
Net Income from "Journal"	\$156,968.00

MISCELLANEOUS INCOME:

Cooperative Advertising Bureau.....	\$ 203.06
Directory, 5th Edition.....	1,608.10
Rent, Building "B"	300.00
	2,111.16
	\$159,079.16
Association Expenses, Schedule "2".....	\$67,972.22
Less:	
Rentals	\$ 3,720.00
Interest on Treasurer's Account.....	276.41
Session	2,918.49
	6,914.90
	\$61,057.32
Miscellaneous Expenses, Schedule "3"	20,718.28
Net Gain on Operations.....	\$ 77,303.56

JOURNAL EXPENSES—SCHEDULE "1"

Wages and Salaries	\$158,659.87
Editorials, News and Reporting.....	9,815.32
Paper—JOURNAL Stock	165,966.73
Paper—Miscellaneous	7,280.61
Electrotypes	6,691.44
Binding	216.25
Ink	5,213.96
Postage—First Class	15,551.61
Postage—Second Class	27,924.85
JOURNAL Commissions	8,649.14
Collection Commissions	2,650.19
Discounts	4,147.44
Express and Cartage	2,800.72
Exchange	2,673.22
Office Supplies	609.89
Telephone and Telegraph.....	873.43
Office Jobbing	3,148.90
Miscellaneous	7,103.90
Power and Light	3,422.18
Fuel	3,310.93
Factory Supplies	4,384.53
Repairs and Renewals—Machinery.....	3,623.10
Bad Debts Written off, Less Recoveries.....	210.70
	\$444,928.91

DEPRECIATION:

Property and Equipment:	Rate	Amount
Building "B" (New).....	2½%	\$ 4,289.21
Machinery	Reinventoried	566.67
Furniture and Equipment.....	Reinventoried	1,161.51
Factory Equipment	Reinventoried	70.60
Type	15%	691.26
Metal	20%	984.15
		7,763.40
Total		\$452,692.31

ASSOCIATION EXPENSES—SCHEDULE "2"

Propaganda	\$ 7,930.56
Association	15,657.72
Health and Public Instruction.....	8,778.34
Pharmacy and Chemistry and Chemical Laboratory.....	12,998.79
Medical Education	7,200.00
Organization	3,686.54
Therapeutic Research	729.55
Laboratory Depreciation—10%	173.88
Biographical	10,398.80
Building "A" Expense:	
Depreciation, 2½%	\$ 388.12
Sundries	29.92
	418.04
Total	\$ 67,972.22

MISCELLANEOUS EXPENSES—SCHEDULE "3 "

Insurance and Taxes	\$ 6,237.03
Legal and Investigation Expense.....	10,046.16
Building "B" Maintenance.....	1,534.16
Archives	1,635.40
Children's Journal	254.29
Cumulative Index	691.73
Depreciation on Library—20%.....	319.51
Total	\$ 20,718.28

The audit embraced an exhaustive test of the various sources of income and the verification of the cash disbursements with proper vouchers on file.

We are pleased to report that we found the accounting records to have been kept in the usual good order, and that every facility was afforded us for the proper conduct of the audit.

Yours truly,
MARWICK, MITCHELL, PEAT & Co.,
Chartered Accountants.

Report of the Judicial Council

To the Members of the House of Delegates of the American Medical Association:

There has been presented to the Judicial Council by the president of the University of Minnesota the following contract asking for an opinion whether or not the adoption of this agreement would be contrary to the standards and code of medical ethics of the American Medical Association.

This Agreement made in triplicate this day of January, A. D. 1918, by and between E. C. Kendall, party of the first part, William J. Mayo and Charles H. Mayo, parties of the second part, and University of Minnesota, party of the third part, witnesseth:

WHEREAS, The party of the first part, working under the auspices and in the employment of the parties of the second part, has discovered an agent for the treatment of disease, which has been by him designated "Thyroxin" and has applied for letters patent of the United States thereon, and intends hereafter to apply for letters patent in various foreign countries; and

WHEREAS, It is the desire of all the parties hereto that said substance shall not be commercially exploited for private gain, and that it shall be manufactured and sold with the expressed object of making it available for use in such a way as to do the greatest amount of good for the greatest numbers, and that the same may be dispensed free of charge to patients unable to pay for it;

NOW, THEREFORE, To carry said objects into effect, it is mutually agreed by and between the parties hereto, that the said party of the first part does hereby give, grant and convey unto the said party of the third part the said preparation and trade name and all and every of his rights as a discoverer thereof, and in order further to vest title thereto in said party of the third part, does hereby agree to make, execute, acknowledge and deliver unto said party of the third part so soon as any patent or patents shall be granted unto him, all deeds, assignments and other conveyances necessary to transfer to said party of the third part any and all patents, whether domestic or foreign, which may be hereafter issued to said party of the first part in connection with said discovery, and any and all patents, foreign or domestic, concerning the production of the active constituent of the thyroid, and does hereby further give, grant and convey all his right, title and interest in and to the trade-name hereinbefore set forth.

The said parties of the second part do hereby also give, grant and convey unto said party of the third part all their right, title and interest in and to said preparation and said trade-name.

It is further mutually understood and agreed by and between the parties hereto that said gift is made by said parties of the first and second part, and accepted by said party of the third part, upon the following conditions, to-wit:

1. That the said party of the third part shall cause said preparation or any improvement or alteration thereof to be manufactured and placed upon the market for such monetary return as shall be consistent with making it available for use in such a way as to do the greatest good and render the use thereof most generally available for the benefit of the human race, and may cause the same, when so manufactured, to be distributed without charge to persons who cannot afford to pay for it. The party of the third part shall have the right to grant subsidiary rights and privileges thereunder, either upon royalties or otherwise. The party of the third part agrees that it will use reasonable diligence to utilize said rights as aforesaid, but it is particularly agreed, and the party of the third part accepts said gift only upon the condition, that it shall be sole judge as to what is reasonable diligence in the respect mentioned, and that it shall not be pecuniarily or legally responsible for any want of diligence in such respect unless the same be in bad faith or the equivalent of bad faith, and that in view of the fact that the party of the third part is a public corporation all of whose funds are derived from the public, or held upon trust, the party of the third part shall not be pecuniarily or legally liable under any circumstances whatsoever except to the extent of such rights or the proceeds, profits or returns in its hands at the time of recovery against it.

2. That said party of the third part may annually pay said party of the first part such sums as the party of the third part may deem to be equitable but in no event to exceed in any year 10 per cent. of the net proceeds received by the party of the third part from the sale of the substance in that year; and in the event of the death of said party of the first part may annually pay such sum as said party of the third part may deem equitable to the wife or heirs at law of said party of the first part not to exceed in any year 10 per cent. of the net proceeds received by the party of the third part from the sale of the substance in that year; providing that all such payment to the heirs at law of the party of the first part shall cease when the youngest child of the said party of the first part shall become 21 years of age.

3. That the money which shall have been derived from the sale of this substance shall become part of the funds of the "Mayo Foundation for Medical Education and Research," and except as hereinbefore provided, shall be expended for research into the physical and chemical properties and mode of action particularly of the substance now known as Hormones in the animal organism, and generally, into the physical and chemical properties and mode of action of the substances now known as Enzymes.

4. The expenditure of the funds so derived shall be under the direction of an Executive Committee consisting of three men engaged primarily and directly in research work, which said committee shall be appointed by said party of the third part. Members of the said Committee shall each be appointed for a term of six years and shall be eligible for reappointment. The first appointees, however, shall serve as designated in their appointments for terms of two, four and six years respectively. Any member of said committee may be removed upon recommendation of two-thirds thereof and upon a vote, in favor of such removal, of the majority of the Regents of said party of the third part.

5. Should it at any time be decided, by the vote of two-thirds of said Executive Committee, concurred in by the vote of a majority of said Board of Regents, that it shall no longer be desirable to continue such research work along the lines hereinbefore set forth, and that the same shall be permanently abandoned, then, and in that event, all of the funds then on hand arising from the sale of said preparation, and all funds which may thereafter arise therefrom, shall become and be part of the funds of said "Mayo Foundation for Medical Education and Research" and be administered in accordance with the contract relating thereto heretofore entered into by the said parties of the second and third part.

IN TESTIMONY WHEREOF, The said parties of the first and second part have hereunto set their hands and seals; and the said party of the third part has caused this instrument to be executed by its proper officers and its Corporate Seal to be hereunto affixed the day and year first above written.

This contract is evidently a bona fide agreement proposed to be entered upon between a chemist, two members in good standing in the American Medical Association and a state university conducting a high grade and ethical medical school, the members of the medical faculty of which are members of the American Medical Association.

The Judicial Council must therefore assume and does assume that its official opinion is honestly sought and honestly desired. This is therefore no mere hypothetical question asking for an expression of opinion which cannot be considered by the Judicial Council according to its Rules of Procedure (Rule 6, Rules of Procedure and Rules 1 and 2, Methods of Procedure).

On the contrary, this is an agreement which the Judicial Council has discretionary powers to consider since "the Judicial Council may at its discretion investigate general professional conditions and all matters pertaining to the relations of physicians to one another and to the public and shall make such recommendations to the House of Delegates and to the constituent associations as it deems necessary" (Chapter VII, Section 4, last section of By-Laws). The relations of physicians to one another and to the public are questions raised in this agreement and its consideration by the Judicial Council is a proper one whether this be asked for by the public as here represented in the president of a state univer-

sity, a public institution, or whether this request has come to the Judicial Council at the instance of the physicians who are parties to the agreement. There are no set rules for the exercise of the discretionary power of investigation by the Judicial Council, it alone can decide whether or not such questions as are under discussion shall come before it and how they shall be presented. This agreement under consideration is therefore one properly presented to the Council and over which it has original jurisdiction and which in its discretion it may consider and upon which it may duly make recommendations to the House of Delegates.

This agreement states that E. C. Kendall, an employee, working under the auspices of Drs. William J. and Charles H. Mayo has discovered an agent "Thyroxin" for the treatment of disease and has applied for letters patent of the United States thereon and intends to apply for letters patent in foreign countries. E. C. Kendall agrees to give all patent rights and titles and trade name to the University of Minnesota and the Drs. Mayo agree to give all their rights, titles, etc., in this same medical discovery, to the same university. The university agrees to do all the selling and exploiting of the medical discovery and agrees to give 10 per cent. of the returns to E. C. Kendall and to cover in to the present Mayo foundation fund of the university the remainder and use them for scientific investigations and for the furtherance of scientific study.

From time immemorial it has been unethical for members of the American medical profession to patent medical discoveries and use the proceeds for gain. The Judicial Council is of the opinion that the same standard which applies to individuals must also be conformed to by partnership companies and corporations of which a physician is a member. In other words, a physician cannot escape personal responsibility by making a group of which he is one the agent that acts in a manner in which the physician himself would not act. In recent years, it has been held to be ethical and the Judicial Council has so considered it that any physician could patent a medical discovery and give the patent rights and titles to the trustees of some medical society to hold and not use or exploit for commercial gain. This has been done to prevent the exploitation of the profession and public for personal gain on medical discoveries. The American medical profession has always held it to be more honorable and more in conformity to its high ethical ideals and standards to refuse to burden any medical discovery with the added tax imposed by patents and has universally considered that the greatest good to the greatest number could best be obtained by foregoing the patenting and commercial exploitation of medical discoveries for gain. It would not be unethical for the Drs. Mayo to have E. C. Kendall, their employee, and working under their auspices, patent his medical discovery and give these letters patent and patent rights and titles to some medical society to hold and not use for gain. But it would be unethical to convey the rights of this patented medicine to any third party to use and commercially to exploit for gain, no matter to what honorable use the commercial proceeds may be put. The ethics of patenting a medical discovery are not overshadowed or affected by the use to which the returns from the sale of the patented medicine may be put.

It is therefore the opinion of the Judicial Council that it would be unethical to consummate this agreement. It would be unethical for the University of Minnesota because it would be unethical for the members of its medical faculty to agree to accept a patent and patent rights which the university proposed to use for commercial gain, just as much so as it would be unethical for these medical men individually to patent or accept a patent of a medical discovery and exploit it for personal gain. It would be unethical for the Drs. Mayo on their part to consummate this agreement for they would be patenting a medical discovery and using the commercial proceeds therefrom to increase a fund given by them to the university and it would still be unethical for them to patent the medical discovery and turn over to a third party the commercial exploitation thereof.

It will be recalled that at the Detroit session in 1916, the House of Delegates adopted the following resolution:

Resolved, That the Board of Trustees of the American Medical Association may accept, at their discretion, to hold, to control and to manage, as trustees for the benefit of the people and the protection of the medical profession, such patents on chemicals, remedial or diagnostic substances, medical or surgical instruments or appliances, or anything whatsoever that may be used in the treatment of disease or infirmity and for which a patent may be issued, as the patentee may desire to convey to the American Medical Association for the

public protection and benefit; provided, that the patentee shall surrender all claim to remuneration from the royalties or otherwise on such patent or patents to the Board of Trustees of the American Medical Association, which Board of Trustees shall not exact from the manufacturer or producer under such patent or patents, any royalty or other pecuniary compensation or return therefrom, unless, in the judgment of the Board of Trustees, the exaction of such royalty shall appear to be wise and just and for the better protection of the public or the medical profession.

This resolution was substituted for a previous resolution relative to this matter, adopted by the House in 1914, which was as follows:

Resolved, That the Board of Trustees of the American Medical Association shall be permitted to accept, at their discretion, patents for medical and surgical instruments and appliances, as trustees, for the benefit of the profession and the public; provided, that neither the American Medical Association nor the patentee shall receive remuneration from these patents.

According to the resolution now in force, the Board of Trustees, at its discretion, may exact such royalties as "shall appear to be wise and just and for the better protection of the public or the medical profession."

The Judicial Council recommends that the resolution adopted in 1916 be rescinded and that the resolution adopted in 1914 be reaffirmed. It will be noted that the resolution of 1914 empowers the Board of Trustees to protect the medical profession and the public by accepting as trustees patents, provided that neither the Association, nor the patentee receive a remuneration from these patents. This is in accord with the principles of Medical Ethics which states, "It is unprofessional to receive remuneration from patents for surgical instruments or medicine" (Principles of Medical Ethics, Chap. II, Art. 1, Sec. 5).

Respectfully submitted,

ALEXANDER LAMBERT, Chairman,
A. B. COOKE,
JAMES E. MOORE,
H. A. BLACK,
RANDOLPH WINSLOW,
A. R. CRAIG, Secretary.

Report of the Council on Health and Public Instruction

Dr. Frank Billings, Chairman, read the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Legislation and Political Action.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The work of the Council on Health and Public Instruction, like all of our other national activities, has been greatly reduced during the past year on account of war conditions. This is due not only to the absorbing interest of the public mind in problems directly connected with the conduct of the war, but also to the fact that the entire membership of the Council has been actively engaged in public service. Almost immediately after the New York Session in 1917, Dr. Frank Billings, the Chairman of the Council, was sent to Russia as chairman of a special commission. On his return after four months' absence, he was ordered to active service as an officer of the Medical Reserve Corps, first as aide on the staff of the governor of Illinois, then as special adviser to the Provost Marshal-General's office in Washington, and later to the Surgeon-General's Office for the formulation of plans for the care of the crippled and injured soldiers after the war. Dr. Walter B. Cannon of Boston went to France as an officer in the Medical Reserve Corps attached to the Harvard Base Hospital Unit, one of the first medical organizations to be sent abroad. Dr. Wilton Board has been on duty in the Medical Reserve Corps at the base hospital, Camp Zachary Taylor, near Louisville, Ky. Drs. Henry M. Bracken and Watson S. Rankin, the two remaining members of the Council, have been on constant duty as secretaries and executive officers of the boards of health of their respective states and have been cooperating with the federal government in guarding public health interests. The Secretary of the Council was ordered into active service early in August of 1917 and has been on continuous duty as an officer in the Medical Reserve Corps since that time.

Necessarily with all five members of the Council and the Secretary in service, the activities of the Council during the year have been limited to routine work. The Council office at the headquarters building in Chicago has been maintained and operated continuously, and routine correspondence and the filling of orders for educational pamphlets, charts, posters, etc., have been carried on. Owing to existing conditions and the absorption of the public mind in other topics, it has not been considered advisable to undertake any new activities or the development of any new lines of work for the present. As soon as the war is over, the Council will resume its function of public education and stimulation of interest in health topics, public health legislation, etc., with the expectation of finding a public sentiment in favor of organized, concerted and constructive public health work resulting from the educational influence of our military activities greater than has heretofore been possible. The demonstration on a large scale of the effectiveness of modern preventive medicine which has been going on in our camps cannot fail to have a marked influence on public sentiment. The entrance into the service of nearly 20,000 physicians as officers of the Medical Reserve Corps will insure in the future a degree of discipline and cooperation in the medical profession that has heretofore been impossible. The Council confidently anticipates a degree of public interest and of constructive effort along public health lines following the war such as has never before been possible in this country. To meet this situation, it is more than ever necessary that the organized medical profession should be represented in this field by a permanent board capable of carrying on a definite constructive policy, looking toward the development of the largest amount of cooperation between the organized medical profession on the one hand and the general public on the other.

The following tables show the work done by the Council during the past year in the distribution of educational material:

TABLE 1.—NUMBER AND CHARACTER OF PAMPHLETS PRINTED AND DISTRIBUTED, MAY 1, 1917, TO APRIL 1, 1918

Conservation of Vision, Pamphlet III. "Wearing Glasses".....	1,000
Conservation of Vision, Pamphlet VIII. "Lenses and Refraction"	1,000
Conservation of Vision, Pamphlet XI. "Infant Blindness, or Ophthalmia Neonatorum"	500
Sex Hygiene. "Chums"	500
Sex Hygiene. "Life Problems"	1,000
Public Health. "Baby Welfare"	7,000
Public Health. "Hookworm"	8,000
Public Health. "House-Fly"	13,000
Public Health. "Measles"	11,000
Public Health. "Pure Water"	2,000
Public Health. "Scarlet Fever"	3,000
Public Health. "Smallpox"	6,000
Public Health. "Typhoid Fever"	4,000
"What You Should Know About Tuberculosis"	97,250
"Save the Babies"	18,000
"Summer Care of the Baby"	1,000
"Health Charts"	5,000
"An Outline for a Study Course on Public Health"	250
Total	179,500
Score Cards	15,000
Record Sheets	10,000
Total	25,000
Grand Total	204,500

From May 1, 1917, to April 4, 1918, the Council has received 2,992 and sent 5,622 letters. Requests for information and the sources from which they have come are indicated in Table 2.

TABLE 2.—SOURCES OF REQUESTS FOR INFORMATION

Source	Number
Boards and departments of health	37
Boards of Education	5
Clubs	22
Federal departments	15
Hospitals and sanitariums	14
Libraries	43
Life insurance companies.....	2
Medical societies	7
Nurses	60
Physicians	251
Publications	16
Universities, colleges, high schools, etc.	78
Y. M. C. and Y. W. C. associations	8
Miscellaneous	787
Total	1,345

The reports of the Chairman of the Committees on Women's and Children's Welfare and on Cooperation with the National Education Association follow.

Respectfully submitted.

FRANK BILLINGS, Chairman,
WALTER C. CANNON,
WATSON S. RANKIN,
HENRY M. BRACKEN,
MILTON BOARD,
FREDERICK R. GREEN, Secretary.

REPORTS OF SUBCOMMITTEES OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

COMMITTEE ON COOPERATION WITH THE NATIONAL EDUCATION ASSOCIATION

To the Council on Health and Public Instruction:

Your committee charged with coordinating the work of the American Medical Association with that of the National Education Association reports by submitting the following memorandum of a meeting of the Joint Committee at Atlantic City:

1. An increasing number of letters is being received by the chairman of the Joint Committee for the committee reports and for information regarding various aspects of our committee program.

2. Ten thousand copies were printed of our committee third report, entitled "Health Charts." About 8,000 copies of this report have been distributed.

3. A few days before the meeting of the Joint Health Committee at Atlantic City, the chairman of the Joint Committee received a telegram from Mrs. Ira Couch Wood, Director of the Elizabeth McCormick Memorial Fund of Chicago, stating that the trustees of that fund had taken action making available \$2,000 for the printing of our health chart sets. Mrs. Wood has suggested or asked, on behalf of the Elizabeth McCormick Memorial Fund, that three charts on Open-Air School and Open-Window Rooms should be printed and distributed with the Health Charts sets of the committee. The additional cost involved in this will be met by the Elizabeth McCormick Memorial Fund.

4. The Joint Committee approved the plan proposed by its chairman for the printing of a fourth pamphlet report to be called "Health Improvement in Rural Schools." This pamphlet report, not to exceed fifty pages, will give information regarding the best health work which is being carried out at the present time in the rural schools of the country. The material for this report is being provided by the generous responses which the chairman has received in answer to 1,072 questionnaires and letters which have been sent out to state superintendents of education, health officers, rural school supervisors, county superintendents, and others who are acquainted with the work in this field.

The concensus of opinion at the meeting of the Joint Committee in Atlantic City expressed itself in favor of the extension of the committee program for the consideration of health problems of the city schools as well as those in the country.

A brief summary of certain activities undertaken under the personal direction of the chairman of the Committee of the Council on Health and Public Instruction is appended:

In southern Colorado, we have kept up the protection of the teeth, eyes and health of the schoolchildren in the rural schools.

In the coal camps, an eye, ear, nose and throat specialist has been examining and treating the schoolchildren of these schools. A dentist and a special nurse are at work among the schoolchildren of the camps, treating and repairing teeth and teaching mouth hygiene.

At these camps, visiting nurses are working who devote their entire time to teaching hygiene and sanitation in the homes of the miners. This work is having a decidedly beneficial effect on the health of the community and does much to improve the schools. Owing to the importance and timeli-

ness of first aid work, we are continuing classes in camps and schools.

The importance of architecture of schoolhouses is not being lost sight of—and whenever possible we speak of the importance of properly constructed schoolhouses, giving the unit schoolhouse as an illustration, with its faultless lighting and ventilation.

Respectfully submitted.

R. W. CORWIN, Chairman.

REPORT OF COMMITTEE ON WOMEN'S AND CHILDREN'S WELFARE *To the Council on Health and Public Instruction:*

This last year, the work of our committee has been largely advisory and cooperative, instead of initiative. This has been necessary because of the lack of appropriation and the absence of the majority of the members of the Council, especially the absence of its secretary, Dr. Green. One new feature of the work has been an effort to get the various state fair boards to make provisions for a department of child welfare. The effort has met with a gracious response in all instances and a number have already established permanent departments. At one state fair, alone, 500 babies were measured and scored. A very fair and promising proportion of these were self-competing—that is, children who had entered in 1916, failed to score high because of remediable defects, were worked on according to advice received at the conference, and returned in 1917 to measure their improvement against that of the previous year.

As we have said, the bulk of our work has been cooperative. As chairman of the Child Hygiene Division of the General Federation, it has been possible to come in contact with, and help direct, the plans for child welfare in the women's clubs of the country. In this capacity, we have submitted two lines of work closely allied with the work of the American Medical Association: insistence on adequate vital statistics laws and development and furtherance of baby health conferences. The latter recommendation has necessitated the distribution of the American Medical Association Score Card, Anthropometric Table and Pamphlet No. 7, in addition to bulletins from the federal bureau, and material from the Association for the Study and Prevention of Infant Mortality.

In response to a summons from the Children's Bureau, we met in conference with child welfare workers at Washington, D. C., March 14 and 15, to discuss plans for the children's year. These plans cover three proposed drives: The measuring and weighing of all children under 5 in the United States; the establishment and increase in numbers of public health nurses; and the training of home health volunteers.

As these plans are being executed by the National Council of Defense with the assistance of the General Federation of Women's Clubs and the Parent-Teacher's Associations of the country, they offer a far-reaching field of cooperation. The American Medical Association Baby Welfare Charts, Save the Babies pamphlets and Anthropometric Tables are especially in demand. If the funds were available, and office force sufficient, an unlimited supply of material from our committee would be demanded. It is our keenest regret not to be able to meet that demand in an aggressive way, for wherever permanent stations are established there will be a demand for material and work.

The score card used for the weighing and measuring test is very simple and consequently exceedingly practical for uniform use. It is hoped that in localities where the data secured reveals the need of further investigation such investigation may be made. The Smithsonian Institution of Washington, D. C., and the Iowa Child Research Station have signified their willingness to cooperate in an advisory capacity wherever possible. In this day of reckless expenditure of adult life, we are doubly inexcusable if the rate of infant mortality is not decreased in proportion to the increased destruction of life by war. Organized effort, continuously made, and backed by adequate funds is the only solution of the problem.

Respectfully submitted.

LENNA L. MEANES, Chairman.
M. L. TURNER, Secretary.

Report of the Council on Medical Education

Dr. Horace D. Arnold, Chairman, presented the report of the Council on Medical Education, which was referred to the Reference Committee on Medical Education.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

Fourteen years ago the Council on Medical Education was established and began its efforts to improve medical education in the United States. In 1904 the number of medical schools in this country exceeded the total in all the rest of the world. As to the character of its medical schools, however, this country suffered in comparison with other countries. Medical schools abroad were mainly departments of large universities, liberally financed either by governmental or private agencies. In the United States most of the medical schools were independent and not only met all expenses from student's fees but many actually derived profits from that source. In most European countries entrance requirements were the equivalent of one and a half or two years of work as measured by courses in standard colleges and universities in this country. In the United States, in 1904, only four medical schools were requiring any college work for admission and the large majority were not even requiring a four-year high school education. Medical schools of Europe were mostly supplied with full-time, salaried teachers, including some who devoted their attention to clinical subjects. In 1904, only a few medical schools in this country had any full-time teachers in charge of their laboratory subjects. Most of the medical schools in Europe as well as those of South America were connected with large teaching hospitals. In 1906, in the United States, when the first inspection of medical schools was made, only a small proportion of the medical schools had relationships with hospitals sufficiently large to supply satisfactory clinical teaching material.

PROGRESS IN FOURTEEN YEARS

During the last fourteen years the situation has been decidedly improved. Largely through the merging of two or more colleges into one in each of many instances the sum total of medical schools has been reduced to what is more nearly the normal supply for this country. Most of the medical schools at present, however, are stronger and better equipped in every way; many of them now compare favorably with the best medical schools abroad, and a score or more are in some respects superior to the very best found anywhere. The advantages in this country at present are the higher and better supervised entrance requirements; larger staffs of well qualified, full-time laboratory teachers; closer relationships with large and well conducted hospitals; and the use of the more modern methods of practical and clinical teaching. Commercialism has been practically eliminated from medical teaching and only a few seriously low grade medical schools continue to exist. Now, as shown in Chart 1, 80 per cent. of the medical schools are requiring for admission two years of collegiate work; the majority have teaching relationships with one or more hospitals in which clinical material is abundant and being used in accordance with the latest methods of teaching.

IMPORTANCE OF PRELIMINARY EDUCATION

Of all the improvements enumerated, the one of greatest importance has been the increase in entrance requirements. Without a thorough preliminary education, including a training in physics, chemistry and biology, students would not be able to master the present-day medical course, and would be seriously handicapped, however well equipped the medical school might be with teachers and laboratories. It is noteworthy that the higher admission requirements were adopted voluntarily by the majority of medical schools. In this increase, as a rule, the medical schools were supported by their local state licensing boards, so that now two years of college work have been made an essential qualification for the license in thirty states. This action by the licensing boards also induced certain other medical colleges to go

on the higher standard which would not do so voluntarily. Meanwhile, it is those who are interested in medical schools of the latter type who are quick to seize on any pretext to urge a retrogression in entrance requirements, and they have recently been magnifying the country's "dire need of doctors" in the present war emergency, in the hope of securing a retrogression in the entrance requirements of medical schools. As already shown, however, the two-year standard of preliminary education has brought the entrance requirements of medical schools in this country on a par with the essential preliminary qualifications in Great Britain and the other countries of Europe. With the present standards, therefore, Americans need no longer apologize when they speak of medical education in the United States.

REFORMS IN MEDICAL EDUCATION AND THE WAR

It is gratifying to know that the reforms in American medical education were so nearly completed before this country was finally drawn into the world war. For the last six or seven years the majority of medical schools have not only been enforcing the higher entrance standards but have also been operating under greatly improved conditions in other respects. The majority of students graduating in the last several years, therefore, have received a medical training equal to the best obtainable anywhere. Furthermore, it is these recent graduates who, in larger proportions, have entered the government medical services and who will be responsible for the medical care of our American soldiers and sailors. It is a matter of congratulation, therefore, that those fighting for the preservation of America and American ideals will have as skilled medical care as those of the opposing armies. This could not have been said had it not been for the energetic campaign of the last fourteen years to improve medical education.

NO DEARTH OF PHYSICIANS BUT AN INCREASED DEMAND

The war has affected the supply of physicians, even as it has reduced the supply of those in other technical occupations. In recent years also the demand for medical graduates to fill positions as hospital interns, health officers, medical inspectors, medical teachers and other positions of responsibility has been greatly increased. This increased demand is due, not to any scarcity of medical graduates, but to the improved qualifications of those now graduating from our medical schools. In former years this demand did not exist, for the very reason that many of the graduates then turned out were not qualified, educationally or professionally, to occupy the positions now open to them. The increase in the demand has been in direct proportion to the improvements in preliminary and medical education.

DEMAND FOR BETTER, NOT LOWER, EDUCATION

Even for Army purposes the great demand is not so much for ordinary physicians or surgeons as for those of highly technical and special training. Emphatically, therefore, the present demand does not call for a lowering of educational standards, but for the maintenance of present entrance requirements (two years of college work); for further improvements in laboratory and clinical equipment and, particularly, for improved methods of teaching in all medical schools. It is only by maintaining these fair standards that the demand will be supplied, since in the better medical schools, the number of graduates has steadily increased each year for the last five years, while the number graduating each year from the lower grade colleges has steadily decreased.

MEDICAL EDUCATION FOR NEGROES

One result of the campaign for an improved medical education has been that a generous financial support has been provided for medical schools, either from state appropriations or private sources. The gifts, which at first were of a few thousands of dollars, were soon increased to hundreds of thousands and then to millions, and in recent years gifts of the larger sums have become almost commonplace. These generous gifts indicate the general recognition of the fact that a medical school needs a liberal income in addition to

students' fees if it is to furnish a training in accordance with present-day medical knowledge.

In the providing of funds, however, it appears that medical schools for negro students have been largely overlooked, although their need for such support is proportionately

TABLE 3.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama.....	.....	.....	1915-16	1919
Alaska.....	1914-15	1918	1918-19	1922
Arizona.....	1914-15	1918	1918-19	1922
Arkansas.....	1915-16	1919	1918-19	1922
California.....	1915-16	1919	.....	.....
Colorado.....	1908-09	1912	1910-11	1914
Connecticut.....	1911-12	1915	.....	.....
Delaware.....	.....	.....	.....	.....
Dist. of Columbia.....	.....	.....	.....	.....
Florida.....	1914-15	1918	1918-19	1922
Georgia.....	.....	.....	.....	.....
Idaho.....	.....	.....	.....	.....
Illinois.....	1915-16	1919	.....	.....
Indiana.....	1910-11	1914	1911-12	1915
Iowa.....	.....	.....	1911-12	1915
Kansas.....	1910-11	1914	.....	.....
Kentucky.....	1914-15	1918	.....	.....
Louisiana.....	1915-16	1919	1918-19	1922
Maine.....	.....	.....	.....	.....
Maryland.....	1914-15	1918	1918-19	1922
Massachusetts.....	.....	.....	.....	.....
Michigan.....	1914-15	1918	1918-19	1922
Minnesota.....	.....	.....	1908-09	1912
Mississippi.....	1915-16	1919	1919-20	1923
Missouri.....	.....	.....	.....	.....
Montana.....	1914-15	1918	1918-19	1922
Nebraska.....	.....	.....	.....	.....
Nevada.....	.....	.....	.....	.....
New Hampshire.....	1914-15	1918	1915-16	1919
New Jersey.....	1915-16	1919	1916-17	1920
New Mexico.....	1914-15	1918	1918-19	1922
New York.....	1917-18	1921	1918-19	1922
North Carolina.....	1914-15	1918	1918-19	1922
North Dakota.....	.....	.....	1908-09	1912
Ohio.....	.....	.....	.....	.....
Oklahoma.....	1914-15	1918	1917-18	1921
Oregon.....	.....	.....	.....	.....
Pennsylvania.....	1914-15	1918	.....	.....
Rhode Island.....	1914-15	1918	1918-19	1922
South Carolina.....	.....	.....	1916-17	1920
South Dakota.....	1908-09	1912	1911-12	1915
Tennessee.....	1916-17	1920	1918-19	1922
Texas.....	1914-15	1918	.....	.....
Utah.....	1913-14	1917	.....	.....
Vermont.....	1913-14	1917	1918-19	1922
Virginia.....	1914-15	1918	1917-18	1921
Washington.....	1914-15	1918	1918-19	1922
West Virginia.....	1917-18	1921	.....	.....
Wisconsin.....	.....	.....	1915-16	1919
Wyoming.....	.....	.....	.....	.....

greater than for medical schools generally. Now they not only lack this outside financial aid, but also their income from students' fees has been considerably reduced as a result of the general adoption of higher entrance requirements. For these reasons, largely, medical schools for negroes have not been able to keep pace with the rapid improvements made in other medical schools.

There are about eleven million negroes in the United States and only four negro medical schools. One of these is in Class A; two in Class B and one in Class C. The Howard University School of Medicine at Washington receives only about \$5,000 each year—not nearly sufficient to meet its needs—from the United States government, and has access to the large Freedmen's Hospital which is financed by the government. The Meharry Medical College at Nashville in recent years has received a few thousands from private donations and a larger sum to build a small teaching hospital. It is much in need of funds for its further development and maintenance. Still smaller sums have been received by Leonard Medical School, the medical department of Shaw University, which gives only the first two years of the medical course. A few years ago this school discontinued the clinical courses so as to concentrate its efforts on improving the laboratory portion of the school. To show the need of these medical schools it should be stated that, at the lowest estimate, no college can properly teach modern medicine without an income of at least \$25,000, in addition to students' fees.

This figure should be doubled, if the college is to be even moderately well conducted. These funds are needed to provide more salaried, full-time teachers, more laboratories, more equipment, and to provide for better administration. Further more, in the coming requirement of an internship in a hospital as a requisite for the license, increased provision for internships will need to be made for such graduates. This means more hospitals for negroes. Although most of the northern white schools accept negro medical students into their classes, it is difficult to provide them with internships in suitable hospitals. These problems in connection with negro medical education are worthy of careful consideration. No better object could be found for generous donations at the present time than medical schools for the colored race.

PROGRESS IN MEDICAL LICENSURE

Since 1904, the Council has had, as one of its regular functions, the collection and tabulation of statistics which are published in the State Board Number of the *Journal* in April of each year. These statistics have had a large influence in the improvement of both medical education and medical licensure. Four tables published this year are of particular importance and are reproduced in this report. Table 1 has been published with the statistics for each of the last five years and its influence on medical education has been profound. It is based on reports signed by officials of the various boards and shows in what states the diplomas granted by various medical colleges are not recognized as an acceptable qualification for

TABLE 4.—ADVANCES IN STATE LICENSE REQUIREMENTS IN FOURTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1918	Increase	
Preliminary Education—				
Any provision for.....	21	46	25	4 ¹
Any standard fixed.....	18	44	26	6 ²
A standard four-year high school education or higher.....	7	44	37	6 ²
One year or more of college work..	0	38 ³	38	11
Two years of college work as a minimum	0	30 ³	30	19
That all applicants be graduates of a medical college.....	36	49	13	0
That all applicants undergo an examination for license.....	45	48	3	1 ⁴
Requirements of practical and clinical tests in the license examinations.....	1	5 ⁵	4	43
Hospital intern year required.....	0	7 ⁶	7	42
Full authority by board to refuse recognition to low-grade colleges.....	14	43	29	6 ⁷
Boards refusing to recognize low-grade colleges*	5	37	32	11 ⁸
Reciprocal relations with other states..	27	41	14	8 ⁹
Single boards of medical examiners....	36	42	6	7 ¹⁰

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges.

1. District of Columbia, Massachusetts, Oregon and Wyoming.

2. Idaho; Nevada and the states named in Footnote 1.

3. See Table 3.

4. New Mexico.

5. The states in which the boards are regularly using practical laboratory and clinical tests in their examinations are Illinois, Minnesota, North Dakota, Ohio and South Dakota. A few other states use practical tests to a greater or less extent but not as extensively or invariably as in the five states named.

6. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; North Dakota and Rhode Island, 1918; Illinois, 1921, and Michigan, 1922.

7. District of Columbia, Idaho, Massachusetts, Oregon, Utah and Wyoming.

8. Arizona, California, Nevada, Tennessee, Washington and the states named in Footnote 7.

9. Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island and Washington. To this list should be added the outlying territories of Alaska, Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.

10. Multiple boards still remain in Arkansas, Connecticut, Delaware, District of Columbia, Florida, Louisiana and Maryland.

the license. This table has been published each year in the State Board Number of the *Journal*, in the annual report to the House of Delegates and in a pamphlet published for and widely circulated among prospective medical students. Prior to the publication of this table medical students had no way of ascertaining whether or not the diplomas of the colleges they were attending would enable them to secure licenses.

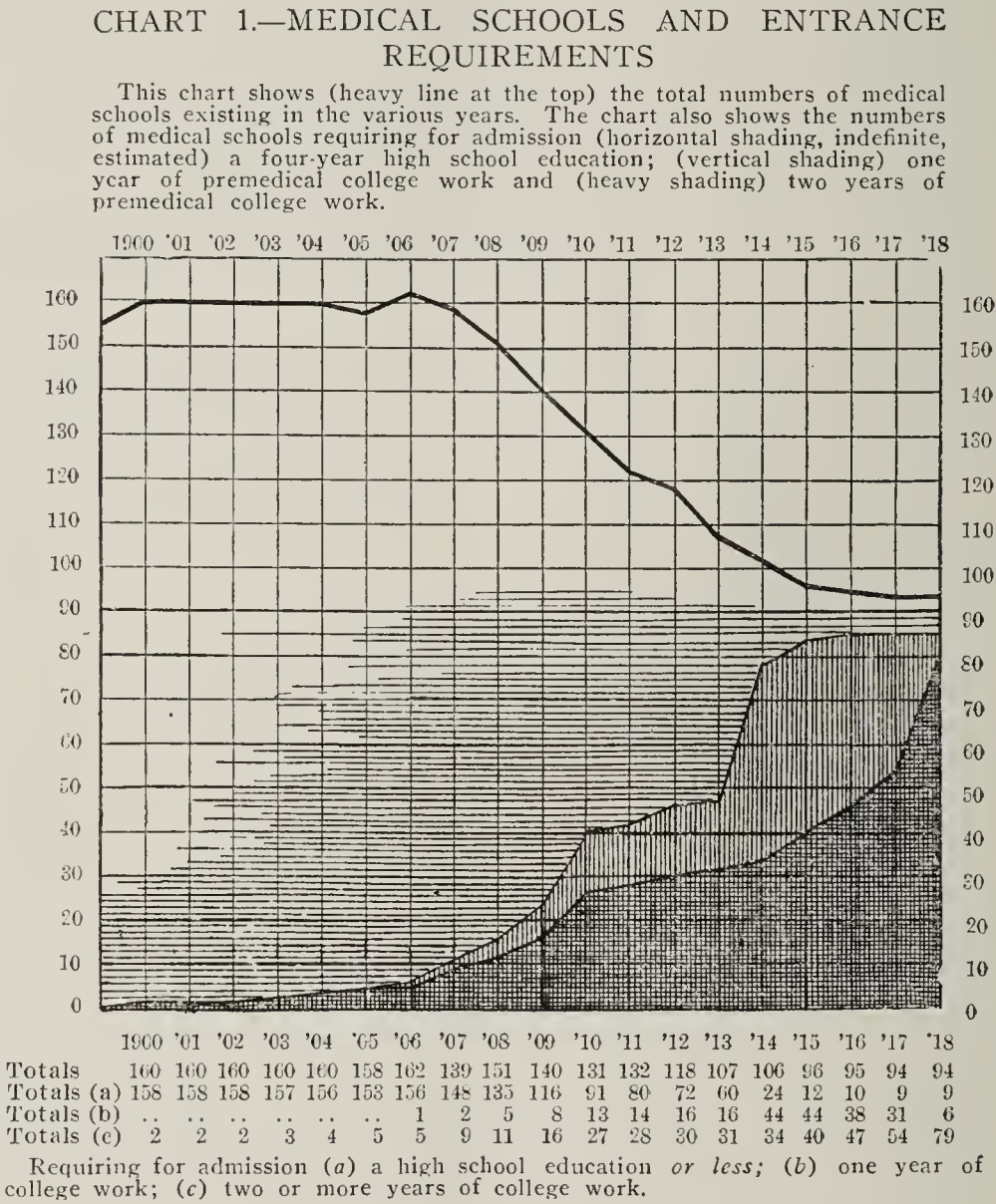
Students have actually attended certain colleges for four years, graduated and applied for licenses before they learned that the colleges were not recognized in adjoining states. Besides being a guide for the prospective medical student, this table shows what boards are safeguarding the people of their states against the incompetent graduates of low standard medical colleges. Based as it is on strictly official information this table last year was used by the Surgeon-General in establishing a list of "well-recognized" colleges. Unless a college is recognized by the majority of state licensing boards it is not considered as "well-recognized," and its students who are drafted are not permitted to enter the "enlisted reserve corps."

Table 2 shows the classification of the colleges of each physician licensed by examination and reciprocity during 1917. Graduates of medical schools which ceased to exist or which merged with other schools prior to 1907 are included among miscellaneous candidates. Of the physicians licensed by reciprocity, all physicians who graduated prior to 1907, when the Council's first classification was prepared, are included in miscellaneous. Members of the House of Delegates can see just how many of the physicians licensed in their respective states during 1917 were graduates, respectively, of Class A, B and C medical schools, and whether the people of those states are being adequately protected against the output of low grade colleges.

Table 3 shows that at present thirty-eight states require one or two years of collegiate work as a minimum standard of preliminary education and that, of this number, thirty require *two years* of such college work. The twelve states which have not adopted the higher standard are: District of Columbia, Massachusetts and Wyoming, in which as yet no standard has been fixed; Idaho and Oregon, in which the standard is less than a four-year high school education; and Delaware, Georgia, Maine, Missouri, Nebraska, Nevada and Ohio, in which a four-year high school education is the minimum requirement.

Various improvements brought about in medical licensure during the last fourteen years are set forth in Table 4. Next to the improvements in the standards of preliminary education the greatest increase (32) is in the number of states (now 37) which are refusing to recognize low grade colleges. The greatest needs at present are a wider adoption of the requirement of the hospital intern year; a general adoption of the standard of two years of premedical college work, and—a matter of extreme importance—a more general and larger use of practical laboratory and clinical tests in the state licensing examinations. Such tests to a fairly satisfactory extent are now being used in Illinois, Minnesota, North Dakota, South Dakota and Ohio and to a lesser extent in a few other states. An excellent example of how these examinations could be conducted is now being furnished frequently by the National Board of Medical Examiners.

Reference has just been made (see Table 3) to the adoption by state licensing boards of higher requirements of preliminary education. Progress in this particular since 1900 is shown in the accompanying Chart 2. This chart shows just how many states in each year had adopted, respectively, a four-year high school education or higher standards of preliminary education. In 1900, only six states had made provision for preliminary education in their practice acts and in only one of these was the standard fixed at a four-year high school education or its equivalent. Since 1900, wide publicity has been given to the serious conditions in medical education and progress since that time has been rapid. In 1904, the Council on Medical Education advocated two standards of medical education, one for immediate adoption which recommended a four-year high school course as the minimum entrance requirement and another—the "ideal standard"—which advocated one year of college work including courses in physics, chemistry and biology. Colleges and state boards were urged to adopt the latter standard by Jan. 1, 1908, but the time was extended till Jan. 1, 1910. By 1910 the number of states providing for preliminary education had increased to thirty-six, in twenty-eight of which a four-year high school course was required. The light and heavy dotted lines indicate the number of boards each successive year beginning in 1912, which have adopted, respectively, one or two years of collegiate work in addition to a four-year high school education as the minimum preliminary qualification for the license in those states. Note that the marked increase occurred in 1914 for the adoption of one year of college work and in 1918 for the two year requirement. These are the years when, respectively, one year and two years of college work were made an essential requirement for admission to Class A medical



The increases in the numbers of states adopting the higher preliminary standards as indicated by the dotted lines correspond quite closely also with the increases in the numbers of medical colleges which adopted those standards (see Chart 1). The dotted lines show when the requirements affected students *matriculating* in medical colleges. Those requirements did not become effective for all *graduates* until four years later; hence the portions of the chart shown by the vertical and the heavy shading indicate for each year the numbers of states in which, respectively, one year and two years of college work were required of all graduates seeking licenses to practice in those states.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was organized in 1915 and sought the endorsement of the House of Delegates. That matter was referred to the Council on Medical Education for special investigation which was made during the fall of 1915. Further information was brought out in a series of papers read at a joint conference of the Council and

the Federation of State Medical Boards in February, 1916. It was found that the personnel of the board consisted of men of high qualifications and that the methods being followed were such as would uphold the standards of education established by the Council and which had been adopted by many of the state licensing boards of the country. On recommendation of the Council, therefore, the National Board of Medical Examiners was endorsed by this body in June, 1916. The personnel of the board at present is as follows: Rear Admiral William C. Braisted, Surgeon-General, United States Navy; Surg.-Gen. William C. Gorgas, United States Army; Surg.-Gen. Rupert Blue, United States Public Health Service; Capt. Edward R. Stitt, Col. Louis A. LaGarde, Assistant Surg.-Gen. William C. Rucker, Dr. Victor C. Vaughan, Dr. Horace D. Arnold, Dr. Austin Flint, Dr. Walter L. Bierring, Dr. Henry Sewell, Dr. E. Wyllys Andrews, Dr. Louis B. Wilson, Dr. Herbert Harlan, and Dr. Isadore Dyer. Funds to meet the expenses of the board have been provided by the Carnegie Foundation for the Advancement of Teaching, which has given \$15,000 per year for that purpose, for an indefinite number of years. This generosity has

Two other examinations were held in April at Forts Oglethorpe and Riley, but the final grades have not been received.

EDUCATION PRELIMINARY TO THE STUDY OF MEDICINE

At the annual meeting of the American Medical Association, held in June, 1916, the House of Delegates adopted the recommendation of the Reference Committee on medical education, instructing the Council to not retain in Class A after January 1, 1918, any medical school that was not requiring for admission at least two years of work in a college of arts and sciences approved by the Council or in lieu thereof an equivalent education as demonstrated by the properly conducted examination approved by the Council. The recommendation further stated that two years of college work represented "the highest requirement of preliminary education that should be legally established in this country."

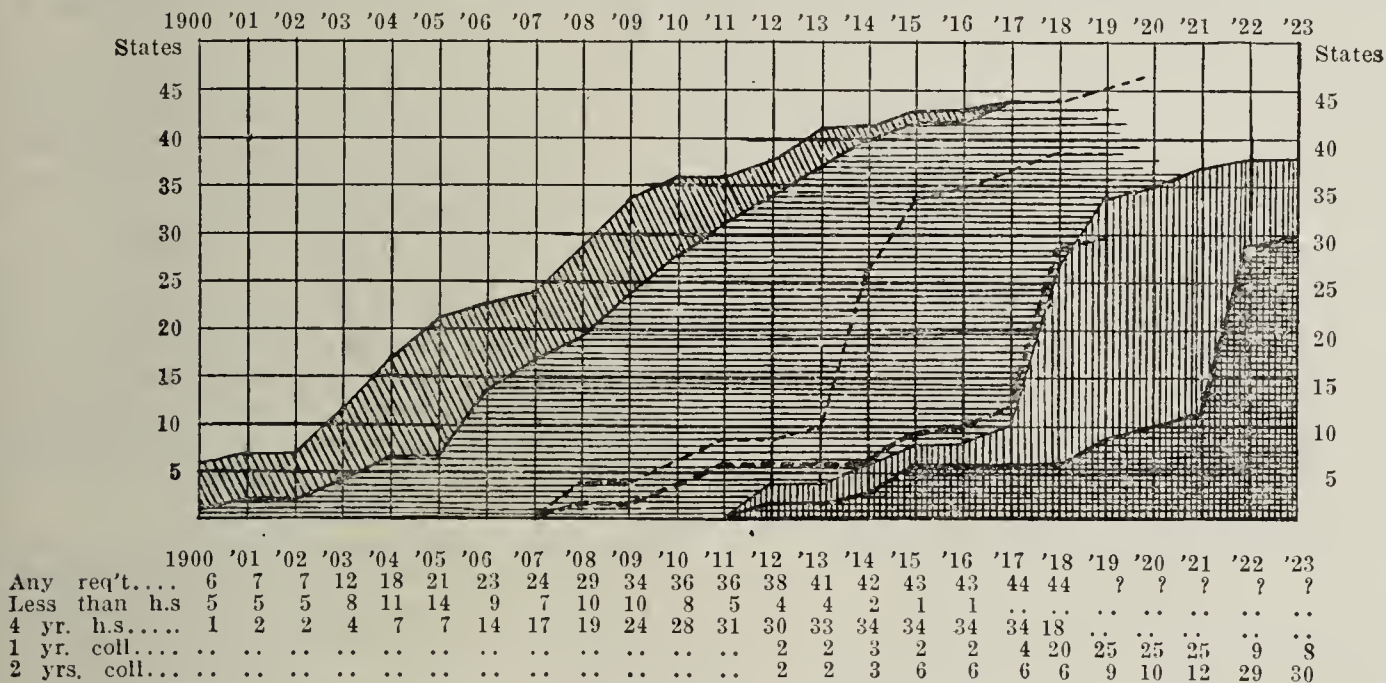
In February, 1917, a special committee was appointed by the Council to study the problem, to suggest a subject content of the two-year premedical college course, and to develop a schedule of the subjects which would best prepare the student for his subsequent medical studies.

CHART 2.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

As shown by Medical Practice Acts and Board Rules

Showing by years the increased number of states requiring (diagonal shading) any preliminary requirement (horizontal shading); a four-year high school education (vertical shading); one year of college work, and (heavy shading) two years of college work.

The light and heavy dotted lines in the horizontal shading indicate, respectively, when the one-year and the two-year requirements were adopted—when they began to affect *matriculants* in medical schools. The requirements did not affect *graduates* until four years later, as indicated by the vertical and heavy shading. Each vertical line represents a year as indicated. (Compare this chart with Chart 1.)



enabled the board to get its work well started without having to charge examination fees. The only fee for each candidate is \$5 for registration.

Recognition of the National Board has already been granted by eleven states and holders of its certificates will be registered without further examination in Colorado, Delaware, Idaho, Kentucky, Maryland, New Hampshire, North Carolina, North Dakota, Pennsylvania, Rhode Island and Vermont. When the permanency of the Board is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all, states.

The board has held six examinations, the first two in Washington, D. C., held respectively, in October, 1916, and June, 1917; third in Chicago in October, 1917, and the fourth in New York in January, 1918. At these examinations altogether 70 physicians were examined, of whom 54 passed and 16, or 23 per cent., failed. The figures for each of the four examinations are shown in the following table:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
October, 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
October, 1917	Chicago	28	22	6	21.5
January, 1918	New York	20	18	2	10.0
Totals		70	54	16	23.0

The committee was made up as follows: Dr. Kendric C. Babcock, Urbana, Ill., chairman, formerly specialist in higher education of the United States Bureau of Education; now dean of the College of Liberal Arts and Sciences of the University of Illinois and intimately identified with the work of the North Central Association of Colleges and Secondary Schools and the Association of American Universities in standardizing colleges of arts and sciences.

Prof. George Gailey Chambers, director of admissions, University of Pennsylvania, Philadelphia, representing the Association of American Universities.

Dr. W. F. R. Phillips, professor of anatomy of the Medical College of the State of South Carolina, Charleston, representing the Association of American Medical Colleges.

Dr. Theodore Hough, dean of the University of Virginia Department of Medicine, Charlottesville.

Dr. N. P. Colwell, secretary of the Council on Medical Education of the American Medical Association, Chicago.

Although of great importance to medical education, this was a matter which chiefly concerned academic colleges and universities; and for that reason, associations of such colleges were ably represented on the committee. Presidents and deans of such colleges were generally and freely consulted in the study of the problem. A preliminary report of the committee was published in *The Journal* of Aug. 18, 1917.

Following the discussions at the annual conferences of the Council on Medical Education and the Association of American Colleges in Chicago in February, 1918, the committee met and completed its report, which, as finally adopted, is as follows:

I. HIGH SCHOOL REQUIREMENTS

(a) For admission to the two-year premedical college course, students shall have completed a four-year course of at least fourteen units (fifteen after Jan. 1, 1920) in a standard accredited high school or other institution of standard secondary school grade, or have the equivalent as demonstrated by examinations conducted by the College Entrance Examination Board, or by the authorized examiner of a standard college or university which has been approved by the Council on Medical Education. Unless all the entrance units are obtained by examination, a detailed statement of attendance at the secondary school, and a transcript of the student's work, should be kept on file by the college authorities. This evidence of actual attendance at the secondary schools should be obtained, no matter whether the student is admitted to the freshman or to higher classes.

(b) Credits for admission to the premedical college course may be granted for the subjects shown in the following list and for any other subject counted by a standard accredited high school as a part of the requirements for its diploma, provided that at least eleven units must be offered in Groups I-V:

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PREMEDICAL COLLEGE COURSE

Subjects	Units*	Required
GROUP I, ENGLISH—		
Literature and composition	3-4	3
GROUP II, FOREIGN LANGUAGES—		
Latin	1-4	2†
Greek	1-3	
French or German	1-4	
Other foreign languages	1-4	
GROUP III, MATHEMATICS—		
Elementary algebra	1	1
Advanced algebra	1/2-1	1
Plane geometry	1	1
Solid geometry	1/2	1
Trigonometry	1/2	1
GROUP IV, HISTORY—		
Ancient history	1/2-1	1
Medieval and modern history	1/2-1	
English history	1/2-1	
American history	1/2-1	
Civil government	1/2-1	
GROUP V, SCIENCE—		
Botany	1/2-1	1
Zoology	1/2-1	1
Chemistry	1	1
Physics	1	1
Physiography	1/2-1	1
Physiology	1/2-1	1
Astronomy	1/2	1
Geology	1/2-1	1
GROUP VI, MISCELLANEOUS—		
Agriculture	1-2	1
Bookkeeping	1/2-1	1
Business law	1/2	1
Commercial geography	1/2-1	1
Domestic science	1-2	1
Drawing, freeland and mechanical	1/2-2	1
Economics and economic history	1/2-1	1
Manual Training	1-2	1
Music: Appreciation or harmony.....	1-2	1

* A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

† Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

Of the fourteen units of high school work (fifteen after Jan. 1, 1920), eight units are required, as indicated in the foregoing schedule; the balance may be made up from any of the other subjects in the schedule.

II. PREMEDICAL COLLEGE COURSE

(c) Beginning Jan. 1, 1918, the minimum requirement for admission to acceptable medical schools, in addition to the high school work specified above, will be sixty semester hours of collegiate work, extending through two years, of thirty-two weeks each, exclusive of holidays, in a college approved by the Council on Medical Education. The subjects included

in the two years of college work should be in accordance with the following schedule:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PREMEDICAL COLLEGE COURSE

Sixty Semester Hours* Required		Semester Hours
Required Subjects:		
Chemistry (a)	12	12
Physics (b)	8	8
Biology (c)	8	8
English composition and literature (d)	6	6
Other nonscience subjects (e)	12	12
Subjects Strongly Urged:		
French or German (f)	6-12	6-12
Advanced botany or advanced zoology	3-6	3-6
Psychology	3-6	3-6
Advanced mathematics including algebra and trigonometry..	3-6	3-6
Additional courses in chemistry	3-6	3-6
Other Suggested Electives:		
English (additional), economics, history, sociology, political science, logic, mathematics, Latin, Greek, drawing.		

* A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be not less than fifty minutes net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

SUGGESTIONS REGARDING INDIVIDUAL SUBJECTS

(a) *Chemistry*.—Twelve semester hours required (eight until Jan. 1, 1919) of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours (required after Jan. 1, 1919) may consist of additional work in general chemistry or of work in analytic or organic chemistry.

(b) *Physics*.—Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by a course in trigonometry. This requirement may be satisfied by six semester hours of college physics, of which two must be laboratory work, if preceded by a year (one unit) of high school physics.

(c) *Biology*.—Eight semester hours required, of which four must consist of laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) *English Composition and Literature*.—The usual introductory college course of six semester hours, or its equivalent is required.

(e) *Nonscience Subjects*.—Of the sixty semester hours required as the measurement of two years of college work, at least eighteen, including the six semester hours of English, should be in subjects other than the physical, chemical or biologic sciences.

(f) *French or German*.—A reading knowledge of one of these languages is strongly urged. If the reading knowledge in one of these languages is obtained on the basis of high school work, the student is urged to take the other language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign languages. In case a reading knowledge of one language is obtained by six semester hours of college work, another six semester hours may be well spent in taking the beginner's course in the other language; if this is followed up by a systematic reading of scientific prose, a reading knowledge of the second language may be readily acquired. When a student spends more than two years in college he may well spend twelve semester hours of his college work in the second language.

REVISION OF THE COUNCIL'S CLASSIFICATION OF MEDICAL COLLEGES

The reorganization of medical education has now advanced to the point where another general classification of medical schools is essential and should be made as soon as circumstances will permit. This reclassification has been considered repeatedly by the Council during the last three years, but each time for good reasons definite action was postponed. Aside from the necessity of this revision on general grounds, it is now of special importance in connection with the recog-

dition of medical schools by the federal service under the regulations of the selective service law. Since the effect of these regulations will be the closure of such institutions as are not considered "well-recognized" because of the drafting of their students, if the war continues any length of time, it is particularly important that the Council's classification shall be made in strict justice and that it be based on the actual conditions now existing in the schools.

At its February meeting, the Council voted to submit to the House of Delegates, for its approval, a slightly modified basis for the classification of medical schools and asked for authority to proceed with the general reclassification on the new basis. The revised schedule for the grading of medical schools is as follows:

NEW SCHEDULE FOR THE GRADING OF MEDICAL SCHOOLS

Schools will be rated as heretofore on a civil service basis on a scale of 1,000 points. The data relating to each school will be grouped under ten general heads in such manner that the groups will have as nearly equal weight as possible, each group allowing a possible 100 points (10 per cent.) out of a possible 1,000 points (100 per cent.). The revised schedule showing the general heads under which the data will hereafter be arranged are as follows:

1. Character of curriculum, grading of course, sequence of subjects, supervision, administration, etc.
2. Medical school buildings; adaptability, light, heat, ventilation, cleanliness, etc.
3. Laboratory facilities and instruction.
4. Dispensary facilities and instruction.
5. Hospital facilities and instruction in medicine, surgery, obstetrics, and gynecology.
6. Hospital facilities for instruction in medical specialties and provision for clinical clerkships, necropsies, etc.
7. Full-time instructors and assistants with special reference to their special qualifications and evidences of their work, including research.
8. Faculty, number, qualifications and organization of, including the staff of teaching hospitals.
9. Library, museum, charts and special apparatus and evidences of the use made of them.
10. Showing of graduates at state board and other examinations and other evidences by which the training received is indicated.

It will be noted that the question of financial income is not directly referred to in the ten heads outlined. It is quite evident, however, that no college can secure an adequate number of expert full-time teachers, provide well equipped laboratories, library and museum, and be conducted in accordance with present-day medical knowledge without a liberal income in addition to students' fees.

Class A Colleges will, as heretofore, be those which are acceptable; Class B, those which, under their present organization, give promise of being made acceptable by general improvements, and Class C those which (a) require a complete reorganization to make them acceptable; (b) which do not keep satisfactory records of their students in regard to entrance requirements, attendance, grades in courses, division into classes and reasons for promotion; (c) which do not enforce their requirements in regard to admission (including those admitted to advanced standing), promotion and graduation; (d) which give the major portion of their instruction after 4 o'clock in the afternoon; (e) which are privately owned and conducted for profit, and (f) which for other specific reasons are not eligible for inclusion in Class B.

CONTINUOUS SESSIONS IN MEDICAL SCHOOLS

At the conference held in February, the chairman of the Council who is a member of the Surgeon-General's staff at Washington, presented a scheme for a continuous session in medical schools. The scheme outlined, suggested that for the duration of the war, each year be divided into three periods, of four months each, these sessions beginning in October, February and July of each year. It was shown that the student could enter on the study of medicine at the beginning

of any one of these periods and continue for eight successive periods of four months each, at which time he would graduate and enter on an intern service of one calendar year. This would require just four calendar years when he would be ready for active service with the Army. It was argued that by the adoption of this or some similar scheme the summer periods heretofore looked on as vacation time would be utilized; the extensive teaching plants would be kept in continuous operation, and students would be graduated from nine to twelve months earlier than under the methods heretofore prevailing. Under this scheme the present junior class would be graduated four months earlier; the present sophomore class would be graduated eight months earlier, and the present freshman class would be graduated a year earlier than under the former method. It was argued also that since there would be no vacations for the boys in the trenches, or for the medical officers in the service, there appeared to be no reason why those remaining at home in the enlisted reserve corps, or on the teaching staffs should not utilize the summer months to good advantage. The Council, however, is not unanimously in favor of the continuous session, since one member believes that the speed of production gained would not compensate for the loss of the thoroughness in teaching and the drain on the students health. It is stated that at McGill and Toronto Universities in Canada the system has been abandoned excepting for the last year students.

PRESENT SCOPE OF THE COUNCIL'S WORK

During the fourteen years since the Council on Medical Education was established its work has developed and broadened under the direction of the secretary of the Council:

(a) Statistics are collected each year regarding the successes and failures of physicians at examinations conducted by state medical licensing boards. This material is tabulated and published in April each year in the State Board Number of THE JOURNAL.

(b) Statistics are collected each year in regard to medical colleges, students and graduates in the United States and Canada. These statistics are tabulated and published in August each year in the Educational Number of THE JOURNAL. Information also in regard to foreign medical colleges is being regularly obtained and kept on file.

(c) During the last five years the secretary of the Council has also had supervision of the American Medical Directory. This is a logical arrangement since so much of the data going into it is regularly obtained by the Council.

(d) The biographical index of physicians of the United States, which was begun with the publication of the American Medical Directory, is now under the direction of the secretary of the Council. Official information in regard to the graduation and licensing of each physician, which is regularly obtained, enables the Council to keep the biographical index of physicians up to date. This file now contains cards for 152,000 physicians of the United States and Canada.

(e) Since 1910 a register of medical students has been kept by the Council. This consists of an index showing full data regarding medical students from the time they enter the medical school. When the student has graduated, has obtained a license and has secured a location, his card is transferred to the biographical index of physicians. The information in this file is such that, should the records in any of the colleges be destroyed by fire or otherwise, the Council could replace the essential data regarding the students.

(f) The "Personal File" of information regarding physicians has thus far been kept up by various departments of the Association, but has always been an important adjunct to the biographic index of physicians. Recently, through the urging of the Federation of State Medical Boards, arrangements have been made to enlarge this file, so as to make the Council's headquarters a central bureau of information, especially in regard to illegal practitioners of medicine.

(g) The Council keeps in touch with all state licensing boards, noting changes in the personnel of those boards and in the requirements regulating the practice of medicine in the various states, particularly in regard to the educational

standards enforced. At certain intervals information regarding the requirements to practice medicine in foreign countries is also obtained, through the American ambassadors or consuls in those countries. On the basis of this information a book of "Laws (Abstract) and Board Rulings Regulating the Practice of Medicine in the United States and Elsewhere" is compiled by the Council and published each year.

(h) Three tours of inspection of all the medical colleges in the United States have been completed, and of certain medical colleges six or more inspections have been made. Of the medical schools of Canada, two tours of inspection have been made. The classification of medical schools is published at frequent intervals in *The Journal of the American Medical Association* and in pamphlets. It is revised each year in accordance with changes made in the ratings of individual colleges.

(i) The Council conducts an annual conference on medical education and licensure. The conference has grown until it has drawn to it the annual meetings of other educational agencies, resulting in what might be termed an annual congress on medical education and licensure. This congress is now participated in by the Council, the Association of American Medical Colleges and the Federation of State Medical Boards of the United States. Other educational bodies are also holding meetings during the time of the conference. This annual conference has been the "open forum" where educational standards and other problems relating to medical education have been brought up for discussion. These conferences have resulted in securing united action by the various agencies interested in medical education, which accounts partly for the rapid progress since the Council was organized.

(j) From the beginning of this work the Council has carried on a campaign for higher standards of preliminary education, not only with medical colleges but also with state licensing boards.

(k) Since 1913, of the annual reports of the United States Bureau of Education, the chapter on medical education has, on request, been furnished by the secretary of the Council.

(l) The improvements resulting from the Council's work, through its conferences, its classifications of colleges and its campaign for standards of education, has made the Council an important factor in the standardization of high schools, and, more recently, of colleges of arts and sciences. Several years ago an effort was made to ascertain whether an education in an approved four-year high school was actually being required for admission by medical schools. More recently, under the increased entrance standard, it became equally essential to ascertain whether the medical school was actually requiring two years of work in an approved college of arts and sciences. In 1912 the secretary of the Council collected the material for the preparation of a list of approved high schools, the list to include only those high schools which were accredited by the various state universities. It was found unnecessary to continue that work, however, since Dr. Kendrick C. Babcock, then specialist in higher education of the United States Bureau of Education, consented to take it up. During the last two years the Council has compiled a list of approved colleges of arts and sciences, basing that approval on the list of colleges approved by standardizing agencies in whose methods the Council has confidence. This list by the Council may also be unnecessary at a later time when the Bureau of Education or other agencies shall be in position to compile such a list and keep it up to date.

(m) At the beginning of its work the Council published two standards, one for immediate adoption by the medical schools and state boards. The first was for immediate adoption and advocated a four-year high school education, a four-year medical course, and an examination for the license to practice. The second, then termed the "ideal" standard, advocated a year of preliminary collegiate preparation, including courses in physics, chemistry and biology, a four-year medical course and a year's internship in a hospital, preceding the examination for the license. This ideal standard has been exceeded in the matter of preliminary requirements, since two years of college work, instead of one, has

proved to be the most satisfactory arrangement in this country. There remains the general adoption of the hospital intern year to entirely fulfill the requirements of the ideal standard suggested by the Council in 1905. Special effort in this direction is now being made. In 1914 a list of hospitals considered in position to furnish acceptable internships was prepared and published. During 1915 this list was carefully reviewed by state advisory committees and in 1916 a revised edition was published. At the annual meeting in 1917 the House of Delegates adopted the recommendation of the Reference Committee on Medical Education that \$2,500 a year for three years be appropriated to further the work of investigating and standardizing hospitals. This increased appropriation has been granted by the board of trustees. The work will be advanced, therefore, definite standards will be fixed and a limited amount of hospital inspection will be done. In this work, the Council will cooperate with medical colleges, state licensing boards and other interested agencies.

(n) The Council has naturally kept itself fully informed regarding the various medical cults and has been in position to furnish reliable information in regard to them where such information was needed. Most of the cult schools have been inspected and first hand information regarding them is available, especially in regard to some of them which during the last year or so have received the legal right to grant M.D. degrees. On account of (a) the lack of, or exceedingly low entrance requirements; (b) the lack of teachers who have had a complete medical training; (c) the failure to study and recognize the various factors entering into the causation of diseases; (d) the resulting failure to ascertain the effective therapeutic measures which might be used, and (e) the lack of adequate laboratories, laboratory equipment, hospitals and clinical material—on account of all these deficiencies, no cult college could be considered as equal to the average medical college rated in Class C. The chief objection to the medical cult colleges has not been to the medical cults *per se*, but to their lack of, or seriously low educational standards.

(o) The headquarters of the Council have, in fact, become a clearing house of information in regard to medical education, medical licensure, medical cults and other matters pertaining to these subjects. The Council has at its headquarters information which cannot be obtained in any other place. The use which state boards and others are making of this information has grown tremendously, as indicated by the voluminous correspondence that comes regularly to the headquarters of the Council. A tremendous amount of information goes also to prospective medical students and the demand for the pamphlet entitled "Making the Right Start," which was prepared especially for prospective medical students, has been constantly increasing. The volume of correspondence required to answer inquiries is already large and is steadily increasing. Much of the information is now regularly published in the *Monthly Bulletin* of the Federation of State Medical Boards, which goes to all members of all state boards.

THE COUNCIL'S PERMANENT FILES

The files of data at the headquarters of the Council are as follows:

(a) Announcements of medical schools of the United States: These files are being kept up to date and so far as possible back numbers of the announcements of schools have been obtained. Catalogues of many of the foreign medical schools are also on file.

(b) Lists of medical graduates: This file consists of alumni lists, either in printed or card index form, which are complete for all schools existing as well as for the majority of schools which have become extinct. For the extinct schools our information is occasionally being added to and our files are gradually becoming more complete.

(c) Information in regard to foreign medical colleges, foreign graduates and the legal requirements for practice abroad.

(d) Biographical index of physicians of the United States and Canada. Every card shows the personal and educational history of each physician. Official data regarding the medical graduation and licensure of each physician is shown.

(e) Biographical card index of medical students enrolled in the medical colleges of the United States and Canada. Reports are received each year which keep this index up to date.

(f) Data obtained from the inspections of all medical colleges.

(g) Miscellaneous pamphlets bearing on medical education.

(h) Catalogues and other information in regard to medical cults. Much information has been obtained by actual inspection.

THE COUNCIL'S WORK AND THE WAR

As already stated, by the time this country entered the world war the reforms among medical colleges had made sufficient progress that for several years most of the medical graduates had benefited from the improved conditions in medical schools, such as the higher entrance requirements, the more skilled teachers, the better laboratories and laboratory equipment, the better clinical material and the greatly improved methods of medical teaching. It is the graduates of the last several years also, who, in largest proportions, have entered the government medical services. But the Council and the information it has collected have rendered other important services to the government, which are briefly enumerated as follows:

(a) When the selective service law was enacted, it made no provision for the exemption of medical students. In the Medical Students' Register, the Council had the home addresses of the majority of the students enrolled during 1916-1917, and was able by direct correspondence to secure reliable information showing the proportion of students who would be taken by the draft. The data collected had much to do with the provision made later whereby drafted students were permitted to enter the enlisted reserve corps and to remain in the medical colleges until they should complete their medical training.

(b) Only such students were eligible for admission to the enlisted reserve corps as were enrolled in "well-recognized" medical colleges, which were defined as those recognized by the majority of state medical licensing boards. The only information immediately available by which it could be decided which colleges were so recognized, was Table D published last year in State Board Statistics (similar to Table 1 in this report) and which was based on reports signed by the various state board officers.

(c) The Council's files of information in regard to medical colleges were also placed at the disposal of the Surgeon-General, and the secretary of the Council has cooperated in inspecting and furnishing reports to the Surgeon-General regarding a number of medical schools.

(d) The biographical information in the files at the Council's headquarters has been used for the Surgeon-General in checking the qualifications of applicants for the medical reserve corps before commissions were granted. That information has also made possible the compilation and publication of the Honor Roll of Physicians in the campaign for the enlistment of additional medical officers.

(e) The Council's files of information in regard to standards of preliminary and medical education have likewise been utilized by the Surgeon-General's Office. This information included, also, a list of the approved colleges of arts and sciences and a list of hospitals considered in position to furnish acceptable internships, both of which lists were compiled by the Council.

IN CONCLUSION

The above outline of the Council's work shows the character of the information gathered and the great service it has rendered to the public, to the medical profession, and, more recently, to the government. Some idea, also, can be formed of the influence which, through its Council on Medical Education, the American Medical Association is wielding in the educational world. Through the work of the Council the medical profession is being recreated by shutting off the supply from low grade colleges and increasing the output of high grade, well equipped colleges. Under the increased standards of preliminary education and the highly improved

methods of teaching, the entire medical profession will be on a much higher plane of education, culture, training and technical skill than has ever before been true. This will place so wide a zone between the qualifications of physicians and those of followers of the various cults, that all laymen of average intelligence will be able to note the difference. Of more importance, however, because of this successful campaign for an improved medical education, the average physician will be able to render a far better service to the public and to the soldiers and sailors who are fighting with our allies in the world war.

Respectfully submitted.

Council on Medical Education,

H. D. ARNOLD, Chairman	WILLIAM PEPPER
R. C. COFFEY	HARRY GIDEON WELLS
W. D. HAGGARD	N. P. COLWELL, Secretary

Report of the Council on Scientific Assembly

The report of the Council on Scientific Assembly was received as printed in the Handbook and referred to the Reference Committee on Reports of Officers.

The report is as follows:

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly desires to repeat and to emphasize what it said last year with regard to the number of section meetings in the Scientific Assembly. It will be recalled by those members of this house who were seated at the 1915 session, this same opinion was presented in the excellent report of the special committee on Sections and Section Work: that is, that at our annual sessions too many section meetings are held at the same time. There is no question as to this. The annual sessions of the British Medical Association are often compared with our annual sessions to the advantage or disadvantage of the one or the other, according to the point of view. The British Medical Association is charged with devoting too much time to social functions and renewing acquaintances and too little time to scientific work. We are accused—and the Council on Scientific Assembly believes this is a just criticism—of devoting too much time to scientific work and too little to social enjoyment and getting acquainted with each other.

Your Council is of the opinion that a more effective distribution of time will be presented if the Sections are limited to one meeting a day. Those men who are particularly interested in what they regard as their particular section feel it their duty to attend all the morning and afternoon meetings, any one of which is liable to be extended.

It is a strain to attend every meeting of a section.

It is possible to have too much of a good thing.

There is such a bewildering abundance in the program of the Scientific Assembly that the average man is at a loss to know what section to attend and not infrequently finally ends by not attending any. The man who is faithful to one particular section has no opportunity of attending the meetings of other sections. It would be a good thing for the ophthalmologist if he were free in the morning or the afternoon, to attend the laryngological section and it would do him no harm if he attended the Section on Practice of Medicine or the Section on Nervous and Mental Diseases, or some other; nor would it injure the laryngologist to visit the ophthalmological section or any of the others. This applies also to the internist, the surgeon, the obstetrician, the neurologist, the dermatologist, in fact to all physicians. Our Scientific Assembly ought to be so conducted that a man would not think he was neglecting the section in which he has an especial interest when he takes time to keep in touch with what is being done in other sections or to meet other physicians outside the sections.

The present division of the Scientific Assembly has developed gradually as a result of groups of men, engaged in a special line of practice, requesting the formation of separate sections for their specialties. At the present time, certain

individuals and groups cannot get away from the opinion that the sections are independent organizations to which they belong by virtue of "membership" and to which they must give allegiance. They seem not to realize that there is no provision for affiliation with a section other than that a Fellow registering as in attendance at an annual meeting is privileged to "designate the section in which he wishes to be enrolled," and this is for the purpose of voting for section officers. It should be emphasized that the Scientific Assembly of the American Medical Association is an entity and that the sections are merely parts of a whole.

The Council would not be misunderstood. Allegiance to a particular section is desirable. It has been and is an important factor in developing scientific work.

The Council is gratified to note that in addition to the Section on Ophthalmology, which by the standing rules of the section has limited the number of papers admissible to its program for any annual session to twenty-five, the Section on Practice of Medicine took action last year fixing twenty as the maximum number of contributions to be listed on its program.

FRIDAY MEETINGS OF THE SCIENTIFIC ASSEMBLY

The Council desires to lay stress on the importance of the sections arranging attractive programs for the meetings of Friday of the week of the annual session. Prior to the annual session of 1917, it was the custom for the Scientific Assembly to close with the Thursday afternoon meetings, the sections listing their papers in not more than five units or meetings. The first of these meetings was held on Tuesday afternoon. Rarely, one or two sections continued through to Friday morning. Apparently, when the opening meeting of the sections was fixed for Wednesday morning there was a tendency on the part of the sections to make available only the four meetings on Wednesday and Thursday. The Council on Scientific Assembly has endeavored to induce the sections to utilize the two units on Friday for such meetings. It is important that this shall be done in order that the scientific program may be distributed through six units, two each on Wednesday, Thursday and Friday so as to maintain and improve the scientific value of the program and yet permit fewer meetings held simultaneously. With this end in view, the Council on Scientific Assembly has been successful in securing the cooperation between the sections and arranging for a continuation of the program throughout Friday. If the full three days are used for section meetings, it will be very easy to carry out the suggestion that the number of these meetings being held at the same time shall be not more than eight.

MEETINGS OF THE SECTION ON MISCELLANEOUS TOPICS

In accordance with the authority vested in this Council, it has arranged for two series of meetings of the Section on Miscellaneous Topics and has appointed officers for each of these series of meetings. The first series of two meetings under this section is assigned to a discussion of questions relating to the reeducation and reclaiming of the war injured and is being conducted under the chairmanship of Lieut.-Col. Frank Billings, Chicago, who is in charge of this work in the Surgeon-General's Office, with Major James Bordley, Jr., Baltimore, vice chairman, and Major Harry Mock, Chicago, secretary. A second group of meetings of the Section on Miscellaneous Topics is assigned to the discussion of questions pertaining to the execution of the selective service regulations and the Council appointed the following officers for these meetings: Major Hubert Work, Pueblo, Colo., chairman, who is medical aide in Provost Marshal General's Office; Major Reuben Peterson, Ann Arbor, Mich., medical aide to the governor of Michigan, vice chairman, and Major John M. Dodson, Chicago, medical aide to the governor of Illinois, secretary.

Respectfully submitted.

E. S. JUDD, Chairman,

ROGER S. MORRIS,
GEORGE H. SIMMONS,

J. SHELTON HORSLEY,
ALEXANDER R. CRAIG.

Report of the War Committee of the American Medical Association

The report of the War Committee was presented by the chairman, Dr. Hubert Work, Colorado, and referred to the Reference Committee on Reports of Officers.

The report is as follows:

To the Members of the House of Delegates of the American Medical Association:

The War Committee, constituted by action of the Board of Trustees at its annual meeting held Oct. 19, 1917, and ratified by a postal vote of this House of Delegates, as soon as it was empowered, proceeded to Washington in company with the Editor of THE JOURNAL. On its arrival there, your committee sought and obtained an interview with the Provost Marshal-General and his associates and formally tendered the services of the American Medical Association to that office for such service as the Association could render in the creation of medical advisory boards. The Provost Marshal-General asked the committee to submit a definite working proposition for the formation and supervision of these boards. This the committee did and the general plan was approved by the Provost Marshal-General and afterward adopted.

Your committee then returned to Chicago and arranged a meeting with representatives of the Committee on States Activities, General Medical Board, Advisory Commission, Council of National Defense. At this conference Drs. Edward Martin, Philadelphia; F. F. Simpson, Pittsburgh, and John D. McLean, Philadelphia, announced that they were in position to serve as a committee from this Committee on States Activities to cooperate with the Committee of the American Medical Association and it was agreed that these three, together with the three constituting the American Medical Association committee, should become a joint committee and that it should have authority to name a seventh member. Subsequently, this joint committee met in Washington, D. C., November 1, when the joint committee organized by electing Dr. Edward Martin, Philadelphia, chairman, adding the secretary of the American Medical Association to the committee and selecting him as its secretary.

The joint committee was advised that the Provost Marshal-General desired immediately to have suggested to him for each state the name of a member of, or of a physician who would accept a commission in the Medical Reserve Corps, in order that a request might be made to have these medical officers ordered to active duty as medical aides to the governors of the states in the erection of the medical advisory boards. The joint committee thereupon proceeded to select a physician in each state to be recommended for this duty. On November 16, the joint committee reconvened in Washington at which time the members representing the American Medical Association were advised by Dr. McLean, Secretary of the Committee on States Activities, Medical Section, Council of National Defense, that it had been found necessary to substitute twenty-four names of men for a like number agreed on at the previous meeting of the joint committee to serve as medical aides to the governors. He further reported that the men who had finally been selected, including the substitutions, had been notified of their appointments and had been ordered to present themselves in Washington to be commissioned and instructed at a conference held on Saturday, November 18. The joint committee was then called into session by Dr. Franklin Martin and the following were added to the committee: Drs. Franklin Martin, ex officio; Charles H. Mayo, President of the American Medical Association, and Robert L. Dickinson, Brooklyn. Just before the adjournment of this last named committee, the chairman of the War Committee of the American Medical Association announced that the Association stood ready to cooperate to further war interests stating definitely that the work volunteered by the Association must be done through its war committee in order to maintain the identity of the organization.

Since this meeting, held from November 16-18, inclusive, no advantage has been taken of the Association's offer to

cooperate with the Council of National Defense in the matter of establishing and standardizing the medical advisory boards, or in any other direction.

In January, the War Committee of the American Medical Association learned that the medical aides to the governors were being advised by the Committee on State Activities, General Medical Board, Council of National Defense, that their work had been completed, and that their active duty would cease. An inquiry addressed to the office of the Provost Marshal-General brought a reply stating that under the Selective Service Regulations that office has, under the Secretary of War, sole and exclusive jurisdiction of the administration of the Selective Service Law and the proper steps have been taken to continue the services of medical aides to governors until such time as this office is satisfied that their services are no longer necessary.

At its meeting, held on Feb. 1, 1918, the Board of Trustees further empowered the War Committee to act in cooperation with the Provost Marshal-General's Office, the Surgeon-Generals of the Army and Navy, and such other military offices as may be deemed best in the interest and for the successful conduct of the war, and directed Dr. A. R. Mitchell of Lincoln, Neb., to succeed Dr. E. J. McKnight, deceased, as a member of the War Committee representing the Board of Trustees. It further added to the War Committee as ex officio members thereof, the President and Secretary of the American Medical Association, and the editor of THE JOURNAL.

Under date of April 3 the Surgeon-General of the Army addressed the American Medical Association submitting a memorandum of a plan for the utilization of the organization and machinery of the Association, in addition to the activities of the other bodies, viz., the Medical Section of the Council of National Defense and the different sections and organizations of the American Medical Association, for the purpose of securing future increment to the Medical Reserve Corps and for keeping the numerical strength of the Corps up to the requirements of the service. This plan contemplates a close cooperation between the office of the Surgeon-General and the officials of the American Medical Association, through the officials of the different state and county medical societies and through the different section organizations of the American Medical Association. On receipt of this communication, the War Committee convened in Chicago, April 16, and by formal action undertook the task assigned to it by the Surgeon-General of the Army, and issued a statement announcing its action and declaring its confident anticipation of the hearty, active, patriotic cooperation of all physicians for the successful accomplishment of the task. Immediately, a call was issued for a conference of the secretaries of the constituent state associations which was held at the headquarters of the Association in Chicago on April 30.

At this conference, thirty-eight constituent state associations were represented by their secretaries or an accredited alternate. Dr. Thomas McDavitt, secretary of the Minnesota State Medical Association and chairman of the Board of Trustees, was elected chairman of the conference and the entire day was devoted to the discussion of how the organized medical profession can be utilized effectively for the winning of the war and, specifically, how the American Medical Association, its constituent state associations and their component county societies can assist in enrolling the required increments for the Medical Corps of the Army and Navy. On the adjournment of the conference, the secretaries of the state associations returned to the several states with the determination to coordinate the forces of the organized medical profession in their states with other agencies working with similar objects.

To determine to what extent the medical profession in various parts of the country had met its responsibility to the government the War Committee published in THE JOURNAL for June 1 a survey or Honor Roll of the medical profession of the United States. This survey presented under each state a table which showed important facts regarding each county in the state: the area, population, total number of physicians, number of physicians under 45 and under 55 years of age, number of women physicians, number of physicians

members of the county society, and the number of physicians under commission in the Army and in the Navy. In addition to this table, there was published for each state, under the counties and postoffices the names of all those physicians of the state, who had accepted commissions in the Medical Reserve Corps of the Army and Navy or who were in active service in the Medical Department of the Federalized National Guard. The published list did not include the names of the members of the regular Medical Corps, those who had been commissioned in the Reserve Corps but who had not accepted their commissions, nor those who were serving as contract surgeons. This Honor Roll has proved effective in stimulating applications of commissions in the Medical Reserve Corps. The War Committee, with the cooperation of the war committees of the state associations and of the county societies, is confident that the increments for the Medical Corps of the Army and Navy which are or will be required will be supplied. Your committee is gratified to note the prompt and altruistic response of the profession to every appeal which the American Medical Association has made to the medical profession of the United States to serve in winning the war.

Respectfully submitted,

HUBERT WORK, Chairman,
M. L. HARRIS,
A. R. MITCHELL,
Ex-officio { CHARLES H. MAYO, President,
A. R. CRAIG, Secretary,
GEORGE H. SIMMONS,
Editor of THE JOURNAL.

Address by the President, Dr. Charles H. Mayo

The Chairman introduced Dr. Charles H. Mayo, Rochester, Minn., President of the Association, who addressed the House of Delegates as follows:

To the Members of the House of Delegates of the American Medical Association:

I am very glad to meet you. These are momentous times in medicine. Never before has medicine had the opportunity that it has today to make a record for itself in the world's work. The war could not be carried on if it were not for the work that has been done by medicine. We are today able to accomplish in wholesale manner the things that we used to fight for as units.

Medicine has changed from that in the past history of the world, and especially in army life and army work. It came about through much tribulation. Away back in the earliest history of our country, Washington, an engineer himself, gave the engineers first position. The physician then was a contract surgeon, and it took a long time before he was able to get a uniform. When he first got the uniform, soldiers were instructed that they need not salute medical officers. After a time the physician got an epaulet on his left shoulder, and later he was able to wear two of them; but slowly has the physician made progress in army life. We find this lack of appreciation evidenced in various ways all over the country, and especially in Washington. Medicine is very large in what it does, but it accomplishes things by various boards in various capacities all over the country, always splitting up, never a harmonious whole. In Washington today there are seventeen different boards and bureaus of medicine. Under the Treasury Department we have the National Public Health Service; under the Bureau of Labor, the Welfare of the Children and Protection of Industries; under the Department of Commerce, we have the Census Bureau, mortality statistics, and various other things connected with that department. Under the Department of the Interior we have control of the insane and the housing of the insane, all who do not belong to some local community. The various boards and bureaus are supported by appropriations, so that while we have an opportunity to have a wonderful national bureau of health, it cannot be because we are not permitted to coordinate this work, which is the ultimate goal of medicine.

In Europe the best organized department of the army is the medical service. War has changed in its conduct today. It is the business man that conducts war, and it is necessary that he prepare for it here as was done in France and in England. It is the business of war to use in every way the highest intelligence we have, not only to bring about the best fighting force, but to look after the preservation of the health of the soldiers and to keep the nation behind it, and this is the work of trained minds.

It has been the part of physicians for ages past to allow personalities, little bickerings and trouble to prevail among themselves. I often think that probably medicine stands as high today as it deserves to stand from the manner in which we have conducted ourselves. A lack of harmony in the profession itself has resulted in the position that we occupy. There are lots of good men in the profession. In fact, all are good men. But there has been a failure to work together in the past, a failure due to conducting our business as a personal unit in competition with others. This naturally led to the present conditions. We now have the opportunity due the greatest profession in the world. Our troubles are all our own fault, and I hope that in the discussions before this body, and in the work conducted at this meeting, we shall realize our great opportunity in developing this battle against the Hun. The part that we are to play in the world was never so great as at this time, and if it is possible to eliminate in every way anything that detracts from medicine as a whole, we shall have accomplished much for the future of medicine.

The work we are carrying on is great. It must not be allowed to be belittled by any one who would bring before this body anything that would tend to defeat us, because that would be aiding and abetting the enemy. It should be looked on as treason.

In our country, I think every member of the American Medical Association is doing his bit. All of the ex-Presidents and the President of this Association are in Washington helping to conduct the medical side of things. Our Chairman of the House of Delegates is an all-time worker in Washington. In Washington we have Dr. Billings, Dr. Vaughan, Dr. Welch, Dr. William J. Mayo, and Dr. Reed and Dr. McMurtry on the medical board; and in the administration we have Surgeon-General Blue and Surgeon-General Gorgas, ex-Presidents of the Association, so that the members of this Association have in no way been negligent of their duties from the highest to the lowest.

The Chairman said: I am very glad to assure you, Mr. President, that there is no feeling in the House of Delegates except the one of cooperation. We have no animosities, no axes to grind, no friends to reward, no enemies to punish. We represent the American Medical Association for what it has tried to do in the past.

At the conclusion of his report the Secretary presented a communication by Dr. John W. Trask urging that the Committee on Nomenclature be revived and reconstituted.

Address by Major Rist

The Secretary escorted Major E. Rist of France to the platform. Major Rist said:

Mr. Chairman and Members of the House of Delegates:

I thank you very much for your warm welcome. I feel very much honored to be present at this meeting of your Association. Your Chairman has asked me to say a few words. I hesitate to do so because I know that your time is precious.

It has always been my desire to be present at one of the meetings of the House of Delegates of the American Medical Association. I am an old friend and a diligent student of your medical organizations, of your universities and medical schools, and I am particularly glad that now so many physicians and surgeons of the United States are coming over to France that ties are going to be tightened between the medical professions of both countries. I think we in France have

very much to learn from you. Especially we have to learn and to try to imitate your admirable spirit of association and organization. I know a little of the perfectly marvelous work which your Association during the last sixteen or twenty years has been doing in elevating the standards of the medical profession, in improving the conditions of medical education to a degree which I think is absolutely unparalleled in the history of medicine. This you owe to the leaders of this Association and to the characteristic spirit of association work in America. We have much to learn from you in this respect, and I should like to devote as much time as possible and in some way be to France a messenger from America, to tell them what can be done if one has really that spirit of association that you possess, and to urge my fellow physicians to try and in some way do some of the things which you are doing here.

I have been studying medical education in France, in Germany, in Great Britain, and in the United States. I think medical education in the United States is now the model of the world. I am perfectly sure that nowhere could there have been established as high standards for entrance into medical schools and as high standards of education in your schools. You lead the world in this respect. And there is another field in which the United States leads the world, and that is the field of public health. In this respect, the example which is being given now by your medical officers in France is a very inspiring one which, I am quite sure, we will try to follow even during the stress of war, but in a more complete and more perfect way when this war, thanks to the powerful cooperation of the United States as a nation, and the United States Army and Navy, will be brought to a victorious conclusion.

The Chairman said: Major Rist is known as the Osler of France. You will all agree, I am sure, that our only Sir William* Osler might feel very much complimented at the designation.

The Chairman appointed as the Committee on Reapportionment Drs. Edward B. Heckel, Pennsylvania; P. S. Roy, District of Columbia, and John Ridlon, Illinois.

At 12:30 the House took a recess until 3 p. m. and reconvened at 3 o'clock.

Report of Committee on Credentials

Dr. D. Chester Brown, Connecticut, Chairman, presented a report for the Committee on Credentials, that 112 delegates had registered, and their credentials had been found correct, properly authorizing them to represent the states, sections and government services from which they came.

The Committee on Credentials reported further that Dr. E. D. Kilbourne had presented himself with letters of credit from the Hawaiian State Medical Association, but the Committee finds that the Doctor has not been a Fellow of the American Medical Association for the term of two years immediately preceding this Annual Session. In consequence the Committee recommends that the courtesies of the floor of the House of Delegates, without the right to vote, be extended to Dr. Kilbourne.

Dr. Dwight H. Murray, New York, moved the adoption of the report together with the recommendation.

Seconded and carried.

Resolution for Ad-Interim Committee

Dr. Charles H. Mayo, Minnesota, introduced the following resolution:

Resolved, That the House of Delegates create an Ad-Interim Committee to deal with emergency problems which constantly arise, such committee to consist of the President, President-Elect, the Chairman of the House of Delegates, the Secretary of the Association, the last two living retiring presidents, and Chairman of the Board of Trustees.

Resolved, That the President of the American Medical Association be authorized to appoint such members of committees which have not been provided for by the House of Delegates or the Board of Trustees. The work of such committee to be reported for consideration and action to the Ad-Interim Committee. (Referred to the Reference Committee on Amendments to the Constitution and By-Laws.)

Report on Red Cross Medical Work

Major W. C. Rucker, District of Columbia, Chairman, reported on Red Cross Medical Work, stating that this Committee had had no meeting and had done no work during the past year. The responsibility for this rested on the chairman, who had been in France, and therefore had been unable to give any attention to the matter.

Resolution on Use of Drugs

Under the head of "New Business," Dr. M. L. Graves, Texas, presented a resolution relative to the use of drugs originated or manufactured by citizens of nations with which we are at war. This was referred to the Reference Committee on Miscellaneous Business.

Report of Reference Committee on Reports of Officers

Dr. H. G. Wetherill, Colorado, reported for the Reference Committee on Reports of Officers, recommending that the report of the Council on Medical Education be referred to the Reference Committee on Medical Education. There being no objection, the Chairman ordered the reference recommended.

Resolutions on Animal Experimentation

Dr. P. S. Roy, District of Columbia, offered two resolutions, which he presented as a representative of the Medical Society of the District of Columbia. The first one conveyed a protest against endeavors to check animal experimentation, declaring that persons who endeavored to arrest any aid that the medical profession through such animal experimentation or otherwise is giving to our soldiers constituted a dangerous class and were aiding the enemy. The second related to the inadequacy of the supply of trained nurses to meet the needs in civilian life, while at the same time caring for the armed forces. Both these resolutions were referred to the Reference Committee on Hygiene and Public Health.

Resolution on Rank for Women Physicians

Dr. E. O. Smith, representing the Section on Genito-Urinary Diseases, introduced a resolution recommending that the President of the United States, Secretary of War, and Surgeon-General of the Army appoint women physicians to the Medical Reserve Corps of the United States Army on the same footing and with the same rank and pay as men. This resolution was referred to the Reference Committee on Legislation and Political Action.

Dr. H. G. Wetherill, Colorado, offered a similar resolution and requested that it be referred to the same Reference Committee. The resolution was so referred.

Dr. Abraham Jacobi, New York, an ex-president of the American Medical Association, was escorted to the platform and introduced to the House of Delegates amid great applause.

Dr. John Ridlon, delegate from the Section on Orthopedic Surgery, presented a resolution in reference to universal military training, which was referred to the Reference Committee on Miscellaneous Business.

Resolution for Revision of Patent Laws

Dr. E. Eliot Harris, New York, offered a resolution calling for a revision of the patent and trademark laws as applied to all medical and surgical products and devices, which resolution was referred to the Reference Committee on Legislation and Political Action.

Resolution on Health of Civilian Communities

Dr. Floyd M. Crandall, New York, offered a resolution calling for cooperation in securing the greatest possible degree of health in the community, which was referred to the Reference Committee on Medical Education.

Amendment to By-Laws

Dr. Rock Sleyster, Wisconsin, presented the following amendment to Article IV, Section 3, by adding the following:

"Provided, however, that the House of Delegates may change the time of election by an action taken at a meeting at least a day in advance of that to which the election is to be changed, and provided, further, that the motion to change the time of election shall be supported by three-fourths of the delegates present and voting."

The amendment was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Dr. M. A. Kelso, Oklahoma, presented a resolution which was referred to the Reference Committee on Miscellaneous Business.

Resolution on Rehabilitation and Reeducation of Disabled Soldiers

Dr. George H. Kress, California, presented two resolutions. The first referred to the conserving of means now being established for the rehabilitation and reeducation of crippled soldiers, in order that these facilities may be available for similar work at the close of the war in connection with those who are injured in the course of their civil occupations. This resolution was referred to the Reference Committee on Hygiene and Public Health. The second resolution referred to the utilization of the services of women physicians of the country as members of the Medical Reserve Corps. This was referred to the Reference Committee on Legislation and Political Action.

On motion, which was duly seconded and carried, the House of Delegates adjourned, to meet at 9:30 a. m., Tuesday.

Second Meeting—Tuesday Morning, June 11

The House of Delegates met at 9:30 a. m. and was called to order by the Chairman.

A quorum being present, the Secretary read the minutes of the previous meetings.

Dr. F. C. Warnshuis, Michigan, moved that the minutes be adopted as read.

Seconded and carried.

Supplementary Report for Committee on Credentials

Dr. D. Chester Brown, Connecticut, chairman, made a supplementary report for the Committee on Credentials, stating that six additional delegates had registered and were entitled to seats in the House of Delegates.

It was moved that the report be accepted.

Seconded and carried.

Report of Reference Committee on Medical Education

Dr. E. A. Hines, South Carolina, chairman, presented the report of the Reference Committee on Medical Education, as follows:

Your committee reports to the Council on Medical Education as follows:

We recommend that the report be endorsed as a whole. No one can read and study this report and consider the results obtained without being impressed with the great importance of the Council's work and its far reaching effect on the medical profession and on the practice of medicine in the United States.

In the excitement and confusion which temporarily resulted from the entrance of this country in the war, it is pleasing to know that educational standards are still being upheld. Nothing short of extreme emergency should be permitted to in any way lower the standards which the Council has so creditably been able to establish, and in this connection several portions of the Council's report deserve special consideration and emphasis:

A thorough knowledge shows that the conditions of the government medical service are not such as to either demand or warrant any reduction in educational standards in regard to either preliminary or medical education. On the contrary, the present needs indicated are of more careful preparation and more thorough instruction than at any previous time. If, in an emergency, any change becomes necessary, it should

be by establishing continuous sessions or more intensive instruction than at present prevails. But this should not result in lowering the standard of preliminary education or in reducing the number of hours or their thoroughness of instruction. Even if extreme emergency should demand shortening of the medical course, it should be at the expense of the final portion of the student's work and not at the expense of either preliminary education or of the student's training in the fundamental medical branches.

Attention is called to the standard of education preliminary to the study of medicine prepared by a special committee of the Council on Medical Education. It is evident that this report has been prepared by those who are authorities on those subjects and who have considered carefully the needs of both general and medical education in the country taken as a whole. Your committee recommends that the standard of high school and premedical college preparation included in the report of this special committee receive the endorsement of the House of Delegates.

It is recommended that the Council be given authority to proceed to prepare a new classification of medical colleges just as soon as circumstances will permit, and that the new schedule for the grading of medical schools in future classifications be endorsed.

Attention is called to the fact that the work of the Council in connection with the standardization of hospitals has been in progress since 1913 and represents the only part of the "ideal standard" suggested by the Council in 1904 which has not been generally adopted by the medical schools and state licensing boards in this country. The Council's first list of hospitals which were considered in position to furnish acceptable internships was issued in 1914 and has passed through its second edition. A third revised edition is now in course of preparation. Considering the extensive machinery provided by the American Medical Association through its various constituent state associations, your committee considers that the Council is in an unusually strong position to continue to do effective work along this line. It is recommended, therefore, that the Council be instructed to continue its work in the investigation and standardization of hospitals and that it cooperate as far as possible with medical colleges, state licensing boards and other interested agencies.

Attention is called to the paragraphs in regard to the progress in medical licensure and to the chart showing the advances in the requirement of preliminary education by state boards. These advances are paralleled only by the advances made by medical schools.

Special attention is called, however, to one portion of the Council's routine work, namely, its presentation of statistics regarding physicians licensed in various states. For example, Table 2 in the Council's report is of unusual importance, and the attention of each delegate is called particularly to the line for his home state. It will be seen that in some states graduates of low grade colleges are still being registered in large proportions. Worse than this, it will be seen that in California not only have graduates of low grade colleges been licensed, but the doors have been thrown open to graduates of osteopathic colleges. As noted in Footnote 2: "Of the 83 graduates, 73 were graduates of eight osteopathic colleges which are not generally recognized as medical schools by state licensing boards and only one of the colleges has been recognized by the California board." Attention is also called to the situation in Arkansas, Connecticut, Florida and elsewhere, where two or more separate and independent boards have to do with the licensing of physicians. As noted in Footnote 1, there is a sectarian board in Arkansas which is licensing the graduates of low grade colleges. Improvements in medical laws or in methods of medical licensure are clearly necessary in several states. The states in which changes are most needed are further indicated in Table 4.

The attention of the House of Delegates is called to the statements in regard to the scope of the Council's work and to the extensive files of information at the Council's headquarters. A reading of the statements in regard to these files will give a better appreciation of the tremendous influence exerted by the Council and its work. In fact, the Asso-

ciation can view with satisfaction the great assistance which, through the Council on Medical Education, the Association has been able to render to the office of the Surgeon-General in the present national crisis.

E. A. HINES, Chairman,
J. B. BLAKE,
W. S. LALOR,
ROBERT E. NOBLE.

It was moved and seconded that the report be adopted as read. Carried.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. Floyd M. Crandall, New York, chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws.

The Reference Committee on Amendments to the Constitution and By-Laws would respectfully report as follows:

Amend Chapter VII, Section 3, of the By-Laws, by adding

(f) Ad-Interim Committee.

Sec. 9. AD-INTERIM COMMITTEE.—There shall be an Ad-Interim Committee, which, between the annual sessions of the House of Delegates, shall consider and act on emergency problems which may arise. This committee shall consist of the President, the President-Elect, the Speaker of the House of Delegates, the Secretary of the Association, the Chairman of the Board of Trustees, and the last two living ex-Presidents. The Speaker of the House of Delegates shall be the Chairman of the Committee, and the Secretary of the Association its Secretary. This Committee shall be subject to the call of its Chairman.

Renumber present Sections 9, 10 and 11.

Amend Chapter V, Sec. 1, of the By-Laws by inserting the following:

He is authorized to nominate committees which have not been provided for by the House of Delegates or the Board of Trustees, which nomination shall be subject to the approval of the Ad-Interim Committee. The Committee so organized shall exist only until the next meeting of the House of Delegates. They must report to the Ad-Interim Committee before the next meeting of the House of Delegates.

At the conclusion of the report, Dr. Crandall moved its adoption, which motion was seconded by Dr. Cyrus L. Stevens, Pennsylvania.

After discussion by Dr. George D. Head, Minnesota; Dr. Floyd M. Crandall, New York; Dr. Alexander Lambert, New York; Dr. Lewis S. McMurtry, Kentucky; and the Chairman of the House of Delegates, the motion to adopt was put and carried.

Dr. Floyd M. Crandall, New York, Chairman, presented the following report for the Reference Committee on Amendments to the Constitution and By-Laws.

Amend Article 9, Section 1, of the Constitution by striking out the words "Chairman and Vice Chairman of the House of Delegates" and substitute the words "Speaker and Vice Speaker of the House of Delegates."

FLOYD M. CRANDALL, Chairman,
H. E. ODELL, Medical Inspector, U. S. Navy,
C. P. MERIWETHER,
ROCK SLEYSER,
C. L. STEVENS.

The committee recommends the adoption of the amendment.

It was moved and seconded that the recommendation of the Committee be concurred in. Carried.

Dr. Floyd M. Crandall, New York, moved that the Secretary of the Association be empowered to rearrange the paragraphs and make such changes in numbering as may be necessary to render the Constitution and By-Laws consistent.

Seconded and carried.

The committee reports further:

Amend Chapter IV, Section 3 of the By-Laws by the addition of the following words: "provided, however, that the House of Delegates may change the time of election by action taken at a meeting at least one day in advance of that to which the election is to be changed, and provided, further, that the motion to change the time of election shall be supported by three fourths of the delegates present and voting."

The section will then read:

Sec. 3. TIME OF ELECTION.—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the afternoon of the fourth day of the Annual Session of the House of Delegates (the second day of the Scientific Assembly), provided, however, that the House of Delegates may change the time of election by action taken at a meeting at least one day in advance of that to which the election is to be changed, and provided further that the motion to change the time of election shall be supported by three fourths of the delegates present and voting.

It was moved and seconded that the amendment be adopted. Carried.

It was moved that the report be adopted as a whole. Seconded and carried.

Report of Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, U. S. Public Health Service, Chairman, presented the report of the Reference Committee on Hygiene and Public Health, as follows:

There has been referred to your Reference Committee on Hygiene and Public Health, among other matters, a resolution introduced by Dr. George H. Kress, California, which reads:

WHEREAS, Our European Allies have, in their vast necessity, found it advisable to undertake a systematic rehabilitation of crippled soldiers through occupational therapeutics, followed by reeducation; and,

WHEREAS, There are more people crippled in industry than there will be in our Armies if all the men now in service enter the field, if their experience corresponds to that of the Allies; and,

WHEREAS, A bill has recently been introduced in Congress which, if passed, will provide occupational therapeutic hospitals and auxiliary workshops for rehabilitation of crippled soldiers and sailors, and will provide reeducation with compensation for services during rehabilitation. Therefore, be it hereby

Resolved, By the Medical Society of the State of California in its forty-seventh annual meeting, held at Del Monte, April 16, 17 and 18, 1918, that the necessities of the industrially injured require and warrant that the scope of the above referred to legislation be broadened to permit of provision for rehabilitation and training of those who have been incapacitated by industrial injury or by personal injury.

Dr. Wilmer Krusen, Pennsylvania, moved the adoption of the resolution as read.

Seconded and carried.

The committee also had referred to it a resolution by Dr. Roy, representing the Medical Society of the District of Columbia, which reads:

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

At a meeting held May 29, 1918, the following report was received and the resolutions therein adopted:

Your Committee on Nursing begs leave to submit the following report:

In view of the present inadequate supply of trained nurses and the great and increasing demand for them both for war work and in civil life; and in view of the fact that many persons in moderate circumstances, or on fixed salaries, with the present high cost of living are unable to afford the services of a registered nurse when ill; and in view of the fact that the present system of training and registering nurses seems to many members of our profession to have serious defects that may be remediable, your Committee recommend the following resolutions:

1. Resolved, That our delegate to the American Medical Association be instructed to ask for the appointment by that body of a committee to consider the whole question of training and registering nurses, with special reference to standardizing and simplifying the curriculum and requirements and the advisability of establishing a grade of practical nurses who, with a lower preliminary educational requirement and a much shorter course of training may be registered as attendants or practical nurses, and who shall receive a smaller compensation than the graduate nurse; such attendants or practical nurses to be used especially for chronic and convalescent cases and others not requiring the highest nursing skill, thereby relieving many graduate nurses for war work and critical cases in civil practice.

2. We also recommend that our delegate to the American Medical Association be furnished with a copy of this preamble and resolutions for use in the House of Delegates of the A. M. A. and instructed to urge prompt action with such arguments as he deems advisable.

W. P. CARR,
G. WYTHE COOK,
I. S. STONE,
J. B. NICHOLS,
J. A. GANNON,
N. P. BARNES,
FRANK LEECH,

M. F. CUTHBERT,
P. S. ROY,
G. N. ACKER,
C. S. WHITE,
E. Y. DAVIDSON,
Committee.

Your committee desires to endorse not only the needs as expressed in the resolution, but also the necessity for the enlargement of all civilian training schools and necessary propaganda to secure a sufficient number of pupils for these. It recommends the adoption of the resolution and the appointment of a committee as suggested.

J. W. SCHERESCHEWSKY, U. S. P. H. S.
H. P. RITCHIE, Minnesota.
FREDERIC E. SONDERN, New York.
C. D. SELBY, Ohio.
J. R. MORRELL, Utah.

Dr. Henri P. Linsz, West Virginia, moved the adoption of the resolution.

Seconded by Dr. E. J. Goodwin, Missouri.

After discussion by Dr. Thomas S. Cullen, Maryland; Dr. John D. McLean, Pennsylvania, and Dr. J. W. Schereschewsky, U. S. Public Health Service; Dr. Frederic E. Sondern, New York; Dr. P. S. Roy, District of Columbia, and Dr. George H. Kress, California, the Reference Committee substituted for the final paragraph of its report, which reads:

Your Committee desires to endorse not only the needs as expressed in the resolution, but also the necessity for the enlargement of all civilian training schools and necessary propaganda to secure a sufficient number of pupils for these. It recommends the adoption of the resolution and the appointment of a Committee as suggested.

the following:

Your Committee desires to endorse not only the needs as expressed in the resolution, but also the necessity for the enlargement of all civilian training schools and necessary propaganda to secure a sufficient number of pupils for these. It recommends the adoption of the principle of the resolution and that the resolution be referred by the House of Delegates to the Council on Health and Public Instruction with the following instructions:

1. That the Council on Health and Public Instruction appoint a subcommittee to consider this matter.
2. That this Committee consider especially the needs of the civic population with regard to nursing.
3. That this Subcommittee cooperate and advise existing nursing associations and other agencies concerned in this matter.

Whereupon the motion to adopt the report as amended by the Reference Committee was put and carried.

The Reference Committee on Hygiene and Public Health reports further that the following resolution had also been referred to the committee:

The Medical Society of the District of Columbia, at a meeting held May 23, 1918, adopted the following recommendation of the Executive Committee:

WHEREAS, The work of the American Red Cross is largely medical in character, and

WHEREAS, Modern medicine is largely dependent for continued progress on the use of animals for experimentation and in the course of treatment of disease, and

WHEREAS, The War Council of the American Red Cross, by reason of pressure brought to bear by certain misguided people ignorant of medical matters, has seen fit to issue the statement that it will not take a position either for or against the question of animal experimentation, and further has issued the statement that no money is to be taken from the General Red Cross Fund for this purpose, therefore be it

Resolved, That the Medical Society of the District of Columbia vigorously protest against such action by the Red Cross and its attitude of passive compliance with such demands concerning purely medical matters, and further be it

Resolved, That the Society state its belief that such persons who endeavor to arrest any aid that the medical profession is giving to our soldiers constitute a dangerous class giving aid to the enemy.

The delegate to the American Medical Association is instructed to ask the American Medical Association to take suitable action in this matter.

Your committee desires to fully endorse the sentiment of the resolution as undoubtedly in the best interests of humanity and medical progress.

As the Councilors of the American Red Cross have, however, found it expedient to act as they have, and we have the assurance that ample funds have been provided for essential research and no restrictions exist for the proper conduct of the work, your committee recommends that these resolutions be not adopted on account of any possible embarrassment to the Red Cross they might cause.

Dr. P. S. Roy, District of Columbia, moved as an amendment that the House of Delegates strongly endorse the use of animal experimentation for saving the lives of our soldiers and proclaimed all who are opposed to such animal experimentation belong to a dangerous class and aid the enemy.

Seconded by Dr. G. F. Cott, New York.

After discussion by Dr. H. M. Brown, Wisconsin; Dr. Thomas S. Cullen, Maryland; Dr. Alexander Lambert, New York; Dr. Torald Sollmann, Ohio, and Dr. John D. MacLean, Pennsylvania. Dr. M. L. Graves moved that the amendment be laid on the table.

Seconded and carried.

It was then moved that the report as amended be adopted as a whole.

Seconded and carried.

Report of Reference Committee on Legislation and Political Action

Dr. M. L. Graves, Texas, chairman, presented the report of the Reference Committee on Legislation and Political Action as follows:

Your committee has carefully considered the report of the Council on Health and Public Instruction. The enlistment of three of the five members of the Council in war service and the engrossment of the remaining two in state health work and cooperation with the federal Health Department has necessarily greatly restricted the activities of the Council; but the service rendered the public is still of importance and deserves our commendation. It is believed that the organization should be continued and proper appropriations made by the Trustees not only for the perpetuation of such work as may be done during the war, but for enlarged usefulness after the war. The public mind is now and will in all probability continue to be more receptive of health propaganda than ever before. The removal of physicians and nurses in large numbers from the communities of our country makes it imperative that health conditions be more carefully guarded, and we think the organization of home nursing and sanitation now being undertaken by many hospitals and women's organizations will be very helpful in public health education. Moreover, new and revolutionary processes of disease prevention and health protection are being constantly developed by the experiences of all the nations engaged in the war, and this information comes at a time of intense public interest and will find a more ready acceptance and adoption. The committee believes and therefore recommends that the work of this Council be continued as far as possible, and that sufficient financial provision be made therefor. Careful consideration has also been given to the three resolutions pertaining to women physicians introduced by Smith, Wetherill and Kress. The committee is of the opinion that the very character of military service and women's natural limitation for such service must require wise discrimination in their employment in war work. The principle of equal rank and pay for equal service is inherently just without regard to sex, and the committee feels this should be unhesitatingly approved by the House.

We therefore recommend that the resolutions offered by Wetherill as a substitute be approved with the following amendment. In the last paragraph use the words "Surgeon-Generals of the Army, of the Navy, and of the Public Health Service to authorize the employment of such unselfish women physicians in the service of the government in any of the many fields for which they are especially fitted by natural ability and training and that when so employed, adequate rank and pay be provided in every way equal to that of men similarly employed."

Resolution by Harris of New York pertaining to patent and trademark laws is approved.

Respectfully submitted,

M. L. GRAVES, Chairman,
A. E. BULSON, JR.,
GEORGE H. KRESS,
SOUTHGATE LEIGH,
E. E. HARRIS.

Committee on Legislation and Political Action.

The committee appends hereto copies of the resolutions referred to in their report which were submitted, respectively, by Drs. Kress, Smith and Wetherill.

RESOLUTION INTRODUCED BY DR. GEORGE H. KRESS

WHEREAS, Women physicians in Great Britain, France, Russia, Serbia and Germany have performed invaluable services during the present war, services which have been signally recognized by their respective governments; and

WHEREAS, In the United States there was a large number of women physicians fitted and equipped to render equally valuable service, and to render service as efficient and valuable as can be rendered by men physicians, not only as anesthetists, radiographers, and hospital and laboratory directors, but also as surgeons, now therefore, be it

Resolved, That the Medical Association of the State of California express its desire that the American Medical Association do all in its power to further the utilization of the service of women physicians of the country as members in full standing of the Medical Section of the Officers' Reserve Corps and United States Public Health Service.

RESOLUTION INTRODUCED BY DR. E. O. SMITH

WHEREAS, There are at this time 5,124 women physicians in actual practice in the United States; these having graduated from recognized medical colleges and presumably qualified to practice medicine; most, if not all of them, having signified their readiness to do war work either at home or abroad;

WHEREAS, There are at present many women physicians, who have especially fitted themselves to do the kind of laboratory and research work for which the government is now fitting men at a great expense of time and money;

WHEREAS, The sixty-five American women physicians who are now working under the Red Cross in the war zone with many other women physicians from Great Britain, France, Russia and Italy have demonstrated that it is possible for women to endure the hardships of life in the war zone and still do creditable work;

WHEREAS, Our highest and most patriotic duty at this time is conservation, and the indiscriminate sending abroad of women physicians to do work other than under government supervision and direction is a pernicious waste of money, time and service; therefore be it

Resolved, That we, the members of the House of Delegates of the American Medical Association in session at Chicago, June 10, 1918, hereby recommend that the President of the United States, the Secretary of War and the Surgeon-General of the Army appoint women physicians to the Medical Reserve Corps of the United States Army on the same footing and with the same rank and pay as men.

RESOLUTIONS INTRODUCED BY DR. WETHERILL AS MODIFIED BY REFERENCE COMMITTEE

WHEREAS, The nation is at war and all our resources and energies must be devoted unreservedly to the winning of the war, wherever they may be made available, and

WHEREAS, Many of our women physicians have distinguished themselves by giving to the government and to the cause of humanity most unselfish and capable service in the fields of work for which they are particularly adapted and trained, and

WHEREAS, These critical times demand universal sacrifice and individual readiness to serve in any field in which one may be most useful regardless of official recognition or reward, and

WHEREAS, Thousands of loyal Americans are serving our country without adequate pay or appropriate place or rank, therefore, be it

Resolved, By this House of Delegates of the American Medical Association, that we wish to express our appreciation of the unselfish sacrifices so many of the women physicians of America are making, and, that we honor those who have so employed their skill and energy in our common cause; and furthermore be it

Resolved, That we petition the President of the United States, the Secretary of War and the Surgeon-Generals of the Army, of the Navy and of the Public Health Service to authorize the employment of such unselfish women physicians in the service of the government in any of the many fields for which they are especially fitted by natural ability and training and that when so employed, adequate rank and pay be provided, in every way equal to that of men similarly employed.

Report of Reference Committee on Reports of Officers

Dr. H. G. Wetherill, Colorado, chairman, presented the following report of the Reference Committee on Reports of Officers:

Your committee is prepared to make only a partial report on some matters, and as others are regarded of such great importance, we ask for more time to consider them.

Regarding the report of the Secretary, your committee desires to refer to a matter which has already been referred in this morning's session, namely, that which pertains to an Ad-Interim Committee. We find in the report of the Secretary under date of Oct. 19, 1917, the following report of the Board of Trustees was submitted by the Chairman of the House of Delegates and the Secretary to the Members of the House of Delegates of the American Medical Association and was adopted unanimously by a postal vote, 116 votes having been cast. The Secretary recommends that action be taken by the House of Delegates at its annual session to ratify this action of the Board of Trustees and to continue this committee with

power to act for the Association in all matters pertaining to placing the Association at the service of the government.

Your committee recommends, therefore, the ratification of this action of the Board of Trustees, and I move that the ratification be made by the House of Delegates and the power of the committee be endorsed.

Seconded and carried.

In the report of the Board of Trustees we find several matters which we believe should be endorsed by the action of the House of Delegates. The Propaganda Department under the Board of Trustees with reference to quack advertising, and so forth, has commended itself to your committee, and we desire to recommend it to the House for endorsement.

Furthermore, with reference to the disposition of law suits, we think the Board of Trustees should be congratulated on the excellent results attained in the various law suits, particularly the Lydston suit, which has gone through the courts for a long time before it reached the American Medical Association, and we recommend that the House of Delegates approve the work of the Board of Trustees in this particular.

The most important of all is the work of the War Committee which the Board of Trustees has carried out. Your committee feels that the war work of the Board of Trustees has been very efficient, and we recommend for approval by the House of Delegates the report the Board of Trustees made regarding the work in connection with the war.

I move you, sir, that these recommendations be adopted by the House of Delegates, and that the Board of Trustees be commended for the excellent work done in these various particulars.

Motion seconded by George A. Moleen, Colorado, and carried.

It was moved that the report be adopted as a whole.

Seconded and carried.

Under the head of "new business," Dr. M. L. Graves, Texas, presented, at the request of William G. Priester, a communication relative to insignia for physicians' automobiles so as to distinguish them from other automobiles, and moved that the communication be referred to the Board of Trustees for consideration.

Seconded and carried, and the communication was so referred.

Dr. Rock Sleyster, Wisconsin, moved that the election of officers be held Thursday at 10 a. m. instead of in the afternoon at 2 o'clock.

Seconded by Dr. C. P. Meriwether, Arkansas.

Dr. Stewart R. Roberts, Georgia, moved to amend that the House of Delegates meet at 8 a. m. Thursday.

The amendment was seconded, accepted, and the original motion as amended was put and carried.

Report of Reference Committee on Miscellaneous Business

Dr. Charles E. Humiston, Illinois, chairman, presented the Report of the Reference Committee on Miscellaneous Business in regard to the following resolution offered by Dr. John Ridlon:

WHEREAS, The partial inventory of our national health made possible by the physical examinations under the Selective Draft Act showed a large percentage of our young men unfit for military service, and, further, that as most of these disabilities are curable, the American Medical Association is prompted to speak formally on this subject; and

WHEREAS, In view of the wonderful mental and physical benefits which have been manifested in the young manhood of America through intensive military training in the National Army cantonments; and

WHEREAS, Knowing that this training has done much to inculcate the knowledge and value of sanitation and personal hygiene in the individual; therefore be it

Resolved, That the American Medical Association in annual convention assembled urges the early adoption of a permanent national policy of universal military training for all young men before the right of suffrage is granted them.

Your committee recommends the adoption of this resolution.

It was moved and seconded that the resolution be adopted as recommended by the committee. Carried.

Regarding the resolution offered by Dr. Kelso, which reads:

WHEREAS, The medical profession of America is called on to do its duty inherent in those rights vouchsafed by our common constitution, with the innate idea and belief that our membership constitutes true

patriotism and, that we as men of a high calling are entitled to equal standing with the profession in all parts of the world; therefore be it

Resolved, By the American Medical Association, the representative organization of the one hundred and forty thousand physicians of America, that we unqualifiedly endorse the proposed Medical Officers Law now before Congress, known as the Owen-Dyer bill, and urgently request its immediate enactment into law.

Your committee recommends that this resolution as rewritten be adopted, namely,

WHEREAS, The medical profession of America has been called on to do its duty in the present crisis and

WHEREAS, The physicians of America are entitled to equal standing with the profession in all parts of the world, therefore be it

Resolved, By the American Medical Association, the representative organization of the physicians of America, that we unqualifiedly endorse the principle of the Owen-Dyer bill, and request Congress to take prompt and favorable action on this measure as it has been framed by the Senate Subcommittee.

I move its adoption.

Seconded by Dr. G. F. Cott, New York.

After discussion by Dr. H. M. Brown, Wisconsin; Gen. Robert E. Noble, District of Columbia, and Dr. Miles F. Porter, Indiana, the amended resolution was adopted.

Dr. Thomas S. Cullen, Maryland, offered the following resolutions and moved their adoption:

To the President of the American Medical Association and Members of the House of Delegates:

The following resolutions are herewith submitted for your consideration:

WHEREAS, In accordance with Army regulations, Major-Gen. William C. Gorgas, now Surgeon-General of the United States Army, will reach the prescribed age of retirement in October, 1918; and

WHEREAS, By virtue of his scientific attainments and his statesman-like vision he has proved himself eminently qualified not only to meet the extraordinary exigencies of the present situation, but also to plan with great foresight for the future development of the Medical Department of the Army; and

WHEREAS, By his conduct of affairs and by his character as a man he has gained the admiration and complete confidence not only of the medical profession of the country but of the civilian population as well, be it therefore

Resolved, That it is the sense of the American Medical Association, now in session in Chicago, Illinois, that it would be for the best interests of the nation, if General Gorgas be continued in his present office as Surgeon-General of the United States Army, and be it further

Resolved, That this expression of appreciation and confidence be communicated to the President of the United States.

Motion seconded by Dr. Wilmer Krusen, Pennsylvania, and carried.

Report of Reference Committee on Miscellaneous Business

Dr. Charles E. Humiston, Illinois, chairman, presented a report of the Reference Committee on Miscellaneous Business in regard to the resolution offered by Dr. M. L. Graves, Texas, which reads:

Resolved, That the House of Delegates of the American Medical Association is opposed to the use or prescription for use of all drugs, chemicals, medicines, medical and surgical instruments and supplies of German or Austrian origin or ownership. That the medical profession be urged to cease their purchase or use, and

Resolved, further, That the medical and lay press of America be requested to discontinue advertisements of all such articles to the profession and to the public.

Your committee recommends the passage of this resolution, and I so move.

Seconded by Dr. Wilmer Krusen, Pennsylvania.

After discussion by Drs. Torald Sollmann, Ohio, and Charles E. Humiston, Illinois, Dr. H. Bert Ellis, California, moved that the resolution be laid on the table.

Seconded and carried.

Dr. J. B. Blake, Massachusetts, offered the following resolution. The house suspended its rule, and, on motion duly seconded and carried, adopted the resolution.

Resolved, That the House of Delegates of the American Medical Association is in sympathy with and endorses the general outline of the plans of the Surgeon-General for the creation and operation of an army school of nursing.

Dr. V. G. Vecki, California, presented a resolution relative to establishing an undergraduate class of medical students, which was referred to the Reference Committee on Legislation and Political Action.

Dr. W. T. Wootton, Arkansas, presented the following preambles and resolutions, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, We recognize the liberty enjoyed by the practicing physician of today in that he may follow along broad lines in the management of the sick entrusted to his care and that we would not deprive him of one iota of that liberty; and,

WHEREAS, We believe that the mobilization of our Army and the experience of the hospital units show it to be to the best interest of the patient that he receive at all times a more uniform treatment, one recognized and endorsed by the best medical minds of today; and

WHEREAS, At present there is no committee or council within our ranks to give such endorsement; therefore, be it

Resolved, That the President of the American Medical Association, the Chairman of the House of Delegates, with the chairmen of the various sections be and they are hereby appointed a standing committee to select a Council on Standardizing Surgical Procedures and Medical Practice, the number and personnel to be entirely at the committee's discretion, power being hereby given them to fill vacancies or enlarge said Council as necessity may demand; and further appoint an Advisory Committee to said Council should they desire. Be it further

Resolved, That no action of this Council shall be deemed binding on any physician or surgeon, that no effort shall be made to foster any creed, sect, dogma or other stigma; the object being strictly to weed out fallacies, gather data, and give the profession an unbiased report as to efficacy of procedures in order that we, the rank and file, may not linger in doubt as to what may be considered judicious, conservative practice.

Dr. Torald Sollmann, Ohio, offered the following resolution, which was referred to the Reference Committee on Miscellaneous Business with the request that the committee report on it as soon as possible:

Resolved, That the American Medical Association calls on its members to further the conduct of the war by confining their prescribing to products owned and manufactured by loyal citizens of this country or of our allies, whenever the interests of the patients permit.

Dr. Charles E. Humiston, Illinois, chairman, reported that the Reference Committee on Miscellaneous Business recommends the adoption of the resolution offered by Dr. Sollmann, and he so moved.

Motion seconded by Dr. Lewis S. McMurtry, Kentucky, and carried.

Dr. Southgate Leigh, Virginia, presented the following resolution:

In order that the tabling of the resolution offered by Dr. Roy in regard to animal experimentation shall not be misconstrued by the press and others, it is moved that the Reference Committee on Hygiene and Public Health should be instructed to frame and present a resolution reaffirming the belief of this Association in the efficacy and necessity of animal experimentation.

The chairman stated that the committee would be so instructed.

It was moved that the chairman of the House of Delegates be authorized to transmit to the proper reference committee any resolution which may be received from the sections prior to the meeting on Thursday morning, so that the committees could bring in such resolutions to the House of Delegates for action.

Seconded and carried.

Dr. J. W. Schereschewsky, U. S. P. H. S., moved that in view of the fact that industrial medicine and surgery is now a definite branch of medicine, the question of proper designation of industrial physicians and surgeons be referred to the Reference Committee on Sections and Section Work for a report on Thursday morning.

Seconded and carried, and the motion was so referred.

On motion, which was duly seconded and carried, the House of Delegates adjourned until 8 a. m. Thursday.

THE SCIENTIFIC ASSEMBLY

THE OPENING GENERAL MEETING

Tuesday Evening, June 11

The opening meeting of the Association was held in the Auditorium theater and was called to order at 8:15 p. m., by the President, Dr. Charles H. Mayo, Rochester, Minn.

Dr. John Timothy Stone delivered the invocation.

Almighty God, our Father in Heaven! Thou who art guiding this nation, and Thou who hast guided this nation, as history has spoken, we thank Thee for what Thou art, and for what Thou hast been, and for what Thou art to be. And we thank Thee for our land with all its splendid enthusiasm for righteousness, justice and truth, and all the splendid power, all the freedom of the heart and conviction of soul, for that which is true and godlike. And now tonight as this assembly meet together in this our city, and as we welcome them in the spirit of gratitude and earnest, thoughtful pride, we pray that Thy blessing may be with all of their deliberations and that their good effect may extend even to France, and to the uttermost parts of the world. We thank Thee that the love of service belongs with the heart of faith. We thank Thee for the courage and for the skill and the faithfulness and the patience of the men of medicine and surgery whose life is not held dear in any cause where they may give their service and their heart to the nation and to the nations warring in the strife for freedom. O God! We thank Thee for what they are with the men at the front. We thank Thee for what they are with those who are training here at home. And we do pray, O God, at this time a signal and earnest devotion to our country, of honest and holy patriotism; that they may prove that we as a people in this land are grateful to Thee, Almighty God, for the service and the devotion and the faithfulness of these men who are doing so much today to make our cause a permanent cause, and to make the lives of our sons and the life of this nation all that Thou wouldst have it. And, O God, we close our petition with this great world prayer:

We do not ask Thee, Almighty God, to be on our side. But we pray Thee, Eternal One, that we as a nation, and our allies may more and more, in the cause of freedom and righteous liberty, be on Thy side, where Thou hast placed us. And O God, be with us as we unite in the prayer that the Great Physician, Thy Son, taught us:

Our Father who art in heaven, hallowed be Thy name. Thy kingdom come. Thy will be done on earth as it is in heaven. Give us this day our daily bread, and forgive us our trespasses as we forgive those who trespass against us. Lead us not into temptation, but deliver us from evil. For Thine is the kingdom and the power and the glory forever. Amen.

Before the opening of the meeting the distinguished visitors from abroad, the ex-Presidents of the Association, the Surgeon-Generals of the Army and Navy and other government officials, together with the physicians in uniform, including the physicians' band from Fort Reilly, occupied the stage. The national anthem was played by the band while the audience stood, the officers at salute.

Addresses of Welcome

Dr. E. W. Fiegenbaum, president of the Illinois State Medical Society, was introduced, and welcomed the members on the part of the profession of the state.

ADDRESS OF WELCOME BY DR. E. W. FIEGENBAUM

Mr. President, Fellows of the American Medical Association, Ladies and Gentlemen: The medical profession of the great state of Illinois sends you a most hearty greeting. Speaking in their behalf and in behalf of the organized medical profession, I bid you a most hearty welcome. We are not all here tonight. Nearly 2,000 of the foremost medical men of Illinois have volunteered in the service of their country. (Applause.) They have commissioned me to speak for them this evening. They have projected themselves over thousands of miles of land and water and are here with us tonight in spirit, giving you their greetings. They are in

the camps and cantonments in this country. They are on the battleships and transports on the high seas. They are in the base hospitals, and on the firing line "over there," each one in his own way doing his duty by his country in a medical way. They have left their families and their homes; they have left their business interests; they have left the prominent places that they have occupied in their respective communities and have gone to the front, eager and anxious to serve the government when it called; they have left safety and security and are braving disease and death. All hail to the medical profession that has laid its all on the altar of its country. (Applause.)

It is very appropriate and pleasing to us of this state that your annual meeting should be held here this year, for this is our centennial year. All over the broad prairies of this state great preparations are being made to celebrate this event in a befitting manner. But medicine in this state is older than that. The nineteenth century was only 2 years old when in 1802 Dr. George Cadwell left his home in Kentucky, came down the Ohio River and up the Mississippi River, and landed in Madison County, Ill., just opposite the present site of St. Louis. He at once laid the foundation of organized medicine, because we find that this state was only about 4 years old when the first medical society was organized, and a little later on we even find an attempt made to register the physicians and surgeons of the state, foreshadowing our present registration and education. Those old pioneer physicians worked faithfully and hard. They upheld the banner of scientific medicine to the very best of their ability, and to the standard of scientific knowledge which they had at that time. Following this came decade after decade of their worthy successors, always upholding the principles of scientific medicine, upholding the standard of physicians practicing in the state of Illinois; and it can be truly said that at no time was there any state that exceeded the state of Illinois in its organized medical profession.

With the dawning of the twentieth century greater steps were taken; more earnest efforts made, eradicating medical schools that were not up to the standard and purifying these schools by consolidation and elimination. (Applause.)

The latest achievement of the medical profession of this state was to give us through the legislature one of the best medical practice acts found in any state. We find the medical profession always laboring faithfully and hard to uphold and to increase the standards of medical education at all times. These are the men we represent; these men that laid the foundation; these men that built on that foundation and erected this magnificent superstructure; these men, who, guided by high ideals, will carry the banner of organized medicine and put it on the highest pinnacle; and it is not only a possibility, but it is almost an assured probability that these men will, in the near future, bring within the confines of this state the medical center of the universe. (Applause.) These, ladies and gentlemen, are the men who have bid me to say, "You are Welcome." (Applause.)

President Mayo then introduced Dr. Charles E. Humiston, president of the Chicago Medical Society, who delivered the following address:

ADDRESS OF WELCOME BY THE PRESIDENT OF THE
CHICAGO MEDICAL SOCIETY

Chicago is proud to be host to such distinguished company. This is the home town of the American Medical Association. There is perhaps no city on this continent that does not in some degree share in this honor, as this greatest of all medical organizations is literally at home everywhere, but it is more at home in Chicago than in any other city.

The American Medical Association ranks high among the resources of the country. It is the one great comprehensive democratic medical body to which every reputable physician may belong and for the most part does belong.

As the individual turns to his physician for relief from the common ills of life, so the nation, in its present time of peril, in confidence is depending vitally on its physicians, on the organized medical profession, the American Medical Association, and in this confidence the nation will not meet disappointment.

Three thousand and more members of the Chicago Medical Society greet you with a cordial welcome. The shades of its former presidents, the immortals, Davis, and Senn, and

Fenger, and Murphy, look down with favor on your coming and join with the guiding living spirits of the present, Quine and Billings, in bidding you Godspeed in your noble work.

The Chicago profession trusts you will find its atmosphere conducive to achievement, an atmosphere just now surcharged with every form of activity that should characterize a community wholly awake to its proper part and place in the world's war for decency in which we are now engaged.

Our members are not all here to greet you. Many are now engaged in building and conserving the military strength of our beloved country, and not a few who were thus engaged have already gone beyond the zone of combat to the "undiscovered country from whose bourne no traveler returns." May their sacrifice and their example inspire us to renewed endeavor.

Eminent visitors from afar, from Belgium and from France, from Great Britain and from Italy, from Australia and from far away New Zealand and nearby Canada: Chicago extends to you the right hand of fellowship. We stand by you. We stand with you; and now while the stars in our service flags are turning from blue to gold, we pledge again our allegiance to the cause you represent.

And to the Fellows of the American Medical Association, from the youngest recruit just faring forth, to the illustrious Surgeon-Generals of Public Health, of the Navy, and of the Army: Welcome! Chicago is proud to be host to such distinguished company.

Mr. Bob Dyrenforth sang "Keep the Home Fires Burning," accompanied by the band.

President Mayo in a few felicitous phrases in each instance framed and oriented for the audience the distinguished home and foreign visitors present at the meeting and occupying the stage, who were received with tremendous applause from the large audience. They were, in the order of their presentation, Surgeon-General Gorgas of the Army, Admiral Braisted, Surgeon-General of the Navy, Sir James Mackenzie of London and Scotland, Sir William Arbuthnot Lane, England, Major Rist and Major De Helly of France, and Colonel Bruce, representing Canada.

Hon. Frank O. Lowden, Governor of Illinois, was introduced and said:

ADDRESS BY THE GOVERNOR OF ILLINOIS

Mr. President, Distinguished Representatives of Our Allies and the Champions of Civilization, Members of the Medical Association, and Ladies and Gentlemen: It is a very great honor which you and your organization, Mr. President, have conferred on me tonight. Never, I suppose, in the history of this country has so distinguished a body of the medical profession been gathered together as in this hall tonight. (Applause.)

It is not only an honor which we appreciate, but it is an honor which I covet, because I want to say to the American Medical Association that we of Illinois are under very great obligations to the Association. During the last eighteen months we have been reorganizing the health agencies of our state to the end that we might enlarge their scope and increase their efficiency. In every step we have taken we have had the hearty sympathy and cooperation of the American Medical Association. And when we have sought to elevate the standards of the profession they again have assisted us. I have discovered from time to time that whenever any man in our state thinks he has a constitutional right to practice medicine, provided only he frequented some place, somewhere, with the magical words "medical college" written above the door, that man is against your Association. (Applause.) And again, when some of our citizens who have a license to practice medicine feel that it gives them the right to prey on the helpless and the unfortunates of society, those men have been against the American Medical Association. (Applause.)

It is a great pleasure tonight to admit the obligation under which Illinois, the whole country and the civilized world are to the medical profession of America for the unselfish way in which, forgetful of all selfish interests, it has thrown itself heart and soul into the greatest war the world has ever known. (Applause.) I am here tonight to explain to you why it is that the American physician and surgeon has been so keen to appreciate the significance of this colossal con-

flict. He is different from the German professional man because he has never come under the influence of "kultur." He is still simply under the influence and guided by the old fashioned thing we call civilization. (Applause.) And sometimes I think that we of America, as well as our allies, do not dwell enough on the contribution which our scientific men have made to civilization, and they are likely to take far too much for granted of the claims which the autocratic central powers make. I want to remind you tonight that "kultur"—I do not know whether I can pronounce it right—I hope I may never learn it well enough to practice it—(applause) is based on the theory of an English scientist; the whole doctrine is based on the biologic law of the survival of the fittest. But while that was an Englishman's philosophy and invention, the Germans misapplied it when they brought it into their own country. The Englishman knew that while it was a correct law of biologic existence, the law of the survival of the fittest, they also knew that that law did not respect the moral and spiritual laws of the universe, which in the end control the physical laws. (Applause.) The Germans adopted this law in their philosophy and then announced that not only were the strong alone to survive, but that they were to rule the world. They then discovered that what we call moral laws have become outgrown, and they developed their superman. But all the while the scientists of the rest of the world knew that that law had nothing to do with the law of right and wrong. All the rest of the world knew that the moral forces they understood were the final arbiters of the universe and that therefore the "kultur" of the German is but a materialistic philosophy founded on a half truth, and was possible only by the exclusion of other truths. (Applause.) But to the physicians of England and Scotland, of France and Italy and to American physicians—not the physicians of Germany—but to the physicians of the rest of the world the biologic truth meant to them that it was their duty and only by removing the causes of weakness and disease, by improving the environment, by aiding and tenderly protecting the weak and lifting them up, could they give expression both to the moral laws of the universe and to the biologic laws. That is what they have been doing all these years, while "kultur" applied to simple man destroyed the weak, destroyed the unfortunate, blotted them out of existence, and thus made the superman supreme. That is the difference that has come in the last half century in the development of "kultur" as compared with our own civilization. (Applause.) So tonight it is a great pleasure to be here to honor that noble profession, because not only does it regard the physical, but it tenderly ministers to the mental and the moral. It is busy all the while in devising ways and means by which the weak may become strong, by which those who fall may be made to stand; in other words, the physician of civilization, as contrasted with the physician of "kultur," shares with the minister of religion in the tenderest ministry which comes to the human heart and the human home. (Applause.)

I was very much interested in what was said about the number of physicians who are engaged in this war, and it heartened me more than anything else, because with that thoroughness which has distinguished the Germans they have methodically and precisely rated the value of every man engaged in the service. They found that a physician is the equivalent of 500 men in the ranks. The American Medical Association is going to contribute something like 40,000 of its men to the Army, and a simple calculation will show that the Association will contribute to the war the equivalent of 20,000,000 men. (Laughter and applause.) If these men are directed by the genius of General Gorgas we know what the results will be, because this is not the first enemy that General Gorgas has met. (Applause.) I refer to his work on the Panama Canal. His enemy there was not Germans, but mosquitoes, but they are very much alike in many respects. (Applause.) They have the same notions precisely of the rules of civilized warfare. And the mosquito is no enemy to trifle with. The mosquito in the past in Panama succeeded in doing what the German armies have not done in four years, and that is that the mosquitoes of Panama drove the French out, but the French so far have held the German armies. (Applause.) And when I speak of France it is always reverently. The great masters of French romance have delighted the world for generations with their marvelous

creations; but not one of her great masters of romance has ever written pages one-twentieth as thrilling as her soldiers in the field have written in fact during the last four years. (Applause.)

And now another difference between the civilization of the allies and the "kultur" of the central empires: It is true that "efficiency" is the word that is oftenest on our enemy's lips, and it must be admitted that they appropriate the inventions and discoveries of other countries with consummate skill and with fine results. But after all it is the free countries, it is France and England and Italy and America that have made these discoveries. I read this evening that smallpox had broken out in the Krupp works, and today they are vaccinating these men. They are vaccinating their population, not with anything that they discovered, but because of the discovery of a great English physician, Sir William Jenner. And the anesthetics with which Germany soothes her wounded and dying soldiers were not the discovery of German scientists, they were the discovery of American scientists. Again, the only thing that has enabled them to keep up this war so long was another discovery of the modern antiseptic treatment of wounds, and that again was not found by German "kultur," but was the discovery of an English physician and scientist (Applause.) And so they have been able for four years to hold the world at bay because of the discoveries which free professional training and genius have given to the world. They have taken these products of civilization and with them they seek to destroy civilization itself.

I read last night, and I read with a good deal of feeling, the statement made by Dr. Esther Lovejoy, a physician who has recently returned from France, that Germany did not take the women who were mothers of two children back to their land or under their care, because they only wanted children and mothers of children with German fathers; and that statement I have no doubt is true and is justified by the "kultur" which they have been preaching for forty years. Because if all that is needed is strong men physically, if in the end the world is to belong to might and might alone, and if "kultur" must be made to spread around the world before the stream is clear, why is it not logical and consistent? If they have the courage of their convictions, the thing to do would be to take the defective, the deformed and the helpless and exterminate them, because in that way they will have a stronger race of men, and they have learned that they cannot impose their "kultur" on foreign races. Just as sure as they win this war Germany will not attempt to convert the people of other races to their "kultur"; they will exterminate the men and reduce the women to slavery in order to make "kultur" triumphant around the earth. That is the logic of the most damnable philosophy that has ever been evolved from the brain of man. The one single notion in the kaiser's savage brain, so deadly to everything in civilization that we hold dear, is this "kultur" which, if they win this war, will overshadow and shock the world. I want to tell you that if they win—and I am speaking with all the seriousness with which I ever spoke in all my life—the superman, the German, will become the superfiend of all the rest of the world. (Applause.)

I saw the other day that our government had discovered circulars of propaganda in Spain to intimidate that nation against entering the war. They gave out a statement of what was done to Belgium, because they said Belgium was foolish enough to fight after she had been beaten; and they recounted all the things they had done to France. They catalogued the spoils they had taken in the war; not simply military spoils, but watches and spoons and other articles of domestic use. I recall that they classified the articles—so many first class watches, etc. That is German thoroughness; that is "kultur" practically at work in the field. And so many spoons. And they closed the list with the statement that they had also captured over 500,000 bottles of champagne. They went on with another list containing the churches and cathedrals they had destroyed; and I could not help but say of that list, "How logical and thorough these wonderful people are; they capture and keep the spoons and the champagne, and they destroy the churches and cathedrals." And why should they not? Every church with its spire pointing heavenward was a rebuke to their materialistic creed, to the people who had plundered for centuries men, women and children who sought sanctuary and quiet and inspiration. Every cathedral that

was standing was an act of reproach to that German god whom they worship and whom they have brought out of the dark German forests of 2,000 years ago. So, if we only know what this war means, we will win it. (Applause.)

We have had dark days, indeed; and I want to say in this presence tonight that the darkest hour to me came a few weeks ago in the thought that the gallant English and the gallant French armies would be separated and destroyed. It was the darkest hour for this reason and for this reason alone: We not only might have lost all; England and France would, too, have lost all—all but honor and the privilege of dying free men rather than to live slaves—and the thing that depressed me was that America was not there with a million men to stand between the heroic English and French armies. While we would have lost no more than they, they would have had the supreme satisfaction of knowing that they had done all they could and those that died had sought an honored grave rather than a cowardly peace. (Applause.)

Now that that danger is past, we still are confronted with dangers many and great. I do not know as I speak what the fate of our allied armies is tonight. It may be, so far as I know, that these horrid huns will reach and seize and despoil Paris. What then? We shall go on. (Applause.) I do not believe they will, but it may be that they should succeed in separating the English from the French; but if they do (which God forbid), and they drive the English forces into the Channel, and if they annihilate the French army before the campaign is over, England, France, Italy and America will still go on. (Cries of "Good," and applause.) Germany may seize the body of France, but never her indomitable soul. We will all go on until justice comes, and until this horror, war, is for all time put to rest. (Applause.) If I have any influence with my people I want to say that not only would these catastrophes not end the war, but even if—which we cannot believe—the German fleet should sail out some night and destroy the allied fleet, we still would go on, because the spirit of France and England and Italy and America still would live. (Applause.) And if Germany under her piratical flag—and I use that term advisedly: she ran up the black flag of the middle ages—if these fleets under the black flag entered the harbor of New York and conquered that beautiful metropolis of the new world, still the spirit of England and France and Italy and America would go on, and I want to say that for myself there is no point that can come, there is no reverse which can be met by our armies, which can conquer us, because we now have, we shall have, and in any crisis that may come we shall fight and die like men. He who would not die like a man rather than live a slave has no place in any of these United States.

Just one word more: You will hear from now on insidious whispers of peace; but listen not. Russia! Russia was seduced by the word, and you know what happened to Russia. Russia at peace with Germany has suffered worse than she ever suffered at war, and so would we, and so would all the world, until a peace can come by victory and victory alone. (Applause.)

When they talk to us of peace with these crimes unrepented, when they talk to us of peace and there is no possible guarantee of peace, let us heed them not. Do you know what I think we shall tell them? I think we shall say, "Go and tell that to the marines," and they know now where the marines are and that the marines will be the American answer to their insolent proposition. (Applause.)

President Mayo said: It is a great honor to be president of this Association, and that honor I feel slipping from me; and feel that it will wholly slip away in about eight minutes.

Before terminating my office, I wish to speak briefly upon some of the phases of the world's topic in its relation to medicine. The part played by medicine has never been recognized as so responsible as it is today. The Medical Department of our Army in surgeons, enlisted men, nurses and aids numbers over one-tenth of the Army. I believe it is conceded as the best organized of any department in France. The work of organization was begun a year before war was declared, and the wonderful results of the work of organized medicine in the protection, prevention of disease, care of wounds and sickness with the salvage has never before been approached even in civilian life.

The peculiar type of the warfare conducted for the past four years has been scientifically dealt with by medicine from

every angle, and while spectacular heroics are noted in the Army in small combats and large drives, they are the everyday portion of the medical department as the doctor carries on his routine work.

The National Medical Museum is now a comparatively small institution, barely existing on the meager appropriation of \$10,000, lacking in index, supplies and general educational phases. It, however, can be made one of the greatest institutions for medical instruction in the country. Very early as we entered war, the written medical and surgical history of it was planned, and later a committee was formed by the Executive Board of the Council of Defense to develop the tangible medical and surgical records of the war for the National Medical Museum, under the Surgeon-General, the collection of specimens, types of weapons, missiles and the kind of wounds created by them, and the destruction made by each. This committee consists of myself as chairman, Colonel William Welch and Colonel Victor Vaughan as committeemen, with Colonel Owen, the curator of the Museum. The committee appointed Dr. Louis B. Wilson as Foreign Director of the work. There are artists, plaster and wax workers, also moving picture apparatus connected with this historical work representing the care of the soldiers, the prevention of disease, the surgical care of injuries and salvage of our casualties.

It is proposed that in the reorganization of the Museum that the double-headed monsters and curious anomalies of human form will be relegated to an inner room for medical study only, while the wonderful work in sanitation and hygiene, the protection and care of babies, the care of industrial workers will be shown in the main room.

What of the future of medicine in Europe? England has just started her medical schools with a limited number of students after they were closed for four years. France has not yet re-established her medical schools. After the war, is Germany and Austria to again become the European center for medical instruction? It is to be hoped, at least, not until it is earned. We are now raising funds with which to establish a Postgraduate Medical School in Paris under the auspices of an American Board to give the final training to our medical officers when sent to France. It is hoped the school can care for upwards of 1,000 surgeons. A third of the institution would be turned over for the use of France and two-thirds would be placed under the control of the Surgeon-Generals for the period of the war. There would be given the last word in military medicine. At the close of war to be presented to the medicine of France by the medicine of America as a permanent Postgraduate Medical School and headquarters for all nations. It is expected the institution will be connected with several of the larger hospitals and become the coordinating center for development of the National Medical Museum, Research Work, School of Language, etc.

Concerning medicine in our own country, it looms large and never was on such a safe foundation. In Washington, however, it is divided into many bureaus and boards, overlapping in responsibilities and duties. Yet, each is permanent as they are supported by funds or appropriations. The greatest is the Public Health Bureau under the Treasury Department, under Labor is Care and Protection of Industry and Child Welfare, under the Department of the Interior is the Care of the Insane not otherwise provided for and other activities, under Commerce is Census and Statistics, including Mortality Records, under Agriculture are the Pure Foods and Drugs activities, and there are many other smaller boards and bureaus, almost too numerous to mention.

The future goal of medicine, the establishment of a National Bureau of Health, to coordinate and centralize these great problems which so largely govern the health and happiness of our people will surely come, with the aid of the organization of medicine now developed, at the close of the war.

After the singing of America, led by Mr. Bob Dyrenforth, Chairman Mayo in introducing the President Elect said:

I wish to introduce to you one of the great surgeons of this country, a man who is known to us all for his surgical work, but whom we think of possibly more for what he has done in organizing medicine in the advanced position it occupies in this country today. I now present to you your next President, Dr. Arthur Dean Bevan.

Dr. Bevan read his address.

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SATURDAY, JUNE 15, 1918

THE FOOD OF THE ARMY

One reads everywhere in the public print about the energy needs of our citizens and about ways in which the requisite calories of food fuel can be adequately supplied with due regard to the economies and sacrifices demanded by the food situation. Little mention is made, on the other hand, of the food problems of the great armies at war or in the course of training. In the minds of an untutored public our soldiers are thought of by many either as fed to satiety with a lavish liberality that is supposed to represent a government's way of gaining fighting results, or as subjected to dietary privations that represent real hardships. Army life, until recently, has been so far removed from the sphere of information of the average civilian that his conjectures of the rationing of groups of men in uniform have had little real experience as a basis.

Interesting official statistics have lately been made available from the Food Division of the Surgeon-General's Office of the War Department by Major Murlin.¹ It appears from these that our troops have the most liberal allowance of food among all the Allies' rations. The United States garrison ration calls for 4,600 calories; indeed, in the so-called modified garrison ration, 4,800 calories are provided. Among the food quota allotted to the British, Canadian, French and Italian troops the highest does not exceed 4,200 calories, the estimated value of the British field and trench ration.

Thanks to the unique food surveys now being made by the Food Division of the newly established Sanitary Corps, the average actual food intake in the training camps has been ascertained with considerable accuracy. The data from eighty-seven messes show a consumption of 4,000 calories a day, thus distributed between the groups of nutrients: proteins, 14 per cent.; fats, 30 per cent.; carbohydrates, 56 per cent. On this diet, supplemented by a certain consumption of food from the camp exchanges, the men, according

to Murlin, have gained in weight, on an average, about 9 pounds since entering the training camps.

These figures indicative of an adequate energy allowance, to say the least, for the American soldier under the present regimen, deserve to be compared with statistics in related situations. A study of the dietaries of 110 families has indicated somewhat less than 3,200 calories as the energy allowance estimated on a "per man per day" basis. Of course the food requirement bears an inevitable relationship to the nature of the occupation or muscular activity of the individuals concerned. The American farmer—a worker of average intensity—is usually credited with a need of about 3,500 calories a day. The average actual food consumption gathered from 18,000 observations among munition workers in England, in 1917, was reported as 3,463 calories. There is, accordingly, no occasion to assume that the present ration of our forces in training is not liberal, from the standpoint of its energy content. The same feature of abundance characterizes its content of protein. Murlin's report indicates that whereas the British army allows 1 pound of meat per man per day, the French army $\frac{3}{4}$ pound, and the Italian army only $\frac{1}{2}$ pound, our allowance is $1\frac{1}{2}$ pounds. However, the actual consumption by our army up to the present time in the camps of this country does not exceed $\frac{3}{4}$ pound.

Much has been said about the subject of food waste in the camps and cantonments at a time when our civilian population is making great sacrifices in the direction of food economies. There has, undoubtedly, been a modicum of truth and likewise a measure of exaggeration in the statements circulated through hearsay reports. Without condoning any offense in this direction even in the early stages of large army organization—or lack of organization—there is reason to believe that such wanton waste has been reduced to an insignificant point. Conservation is being practiced under the critical supervision of the officers in charge. Not only a system of garbage inspection, but even the examination of the individual's dinner plate has been put into operation.

Even now, after only a few months of actual organization, we have, according to Murlin, the first instance in the history of warfare in which the actual amount of food consumed is estimated directly in the camp and in the field where the troops are operating. It is comforting just now, the nutrition expert of the Surgeon-General's Office reminds us, to remember that the status of the science of nutrition in America is fully equal to its status in the land of our enemies at the beginning of the war. If we fail in the trial that is on us, it will not be for lack of information. If we fail, he adds, to keep our civilian population properly nourished, it will not be because we do not know the functions of food, or because we do not know what foods are suitable. Likewise with the army.

1. Murlin, J. R.: Some Problems of Nutrition in the Army, Science, 1918, 47, 495.

CORN IN THE WAR TIME DIETARY

In the shortage of wheat, which is likely to remain serious for some time to come, we shall inevitably turn for a substitute to corn, or maize, the cereal that is most abundant in this country. In practice, the admonition to "save the wheat" will be coupled with the inevitable necessity of eating something else. Corn is produced in such large quantities in the United States that only one sixth of the crop need be eaten in order to replace or save one half of the wheat crop. A recent writer¹ has stated that, if consumed as human food, a fifth of the total corn crop, or a third of what is suitable for milling, would set free all the wheat needed for our friends abroad and leave enough corn on the farms for the adequate feeding of all the live stock now on hand.

What are some of the objections urged against corn, both here and among the Allies? The foremost one, perhaps, is that of palatability, a feature associated with the culinary aspects of the diet. There is evidence on hand that the new interest in all win-the-war activities has given an impetus to the improvement of the cookery of corn products. Despite the aversion of the human palate to innovations in diet, it is not at all unlikely that the near future will see corn foods gaining widely in popularity throughout this country, in the southern parts of which they do not need any recommendation even now.

Another objection that has been urged concerns the quality of the protein and the deficiency in the inorganic salt content of corn. These factors might represent a real difficulty if maize formed the sole or even the major portion of the diet, as it sometimes is made to do in the ration of some of the domestic animals. One-sided dietaries, derived from single sources, are likely to prove inadequate in some details; but so long as the admonition to vary the intake and to use well selected supplements is not forgotten, this liability to harm is no greater with corn than with many other single foods. That man cannot live by bread alone is literally true.

Lately there have been reports of digestive disturbances attending the liberal use of corn in the diet. According to Sherman¹ as well as other observers, the exclusion of this difficulty, magnified perhaps by an apprehensive public, lies in proper cooking. Referring to the experiments in the laboratory of food chemistry at Columbia University he says:

It is evident that corn meal, suitably cooked, can be substituted for corresponding wheat products even to an extent equivalent to the whole of the usual consumption of wheat in the dietaries of those who live largely on bread, without detriment to the nutritive value of the diet. When conditions are unfavorable or the subject is particularly sensitive to a

change of food, a considerable substitution of corn for wheat may give rise to some discomfort in digestion; but in the three cases here observed, the nutrition of the body tissues appeared to be as well maintained as when the digestive process was entirely regular. It is confidently believed that suitably cooked corn products can enter into the dietary, even of those not accustomed to their use, in large proportion without any effect whatever on digestion. Nor need the palatability of such a diet suffer when even greater quantities of corn products are introduced in varied forms.

Above all, we need at this time to dispel the fear that corn and pellagra have a direct etiologic interrelationship. To quote Sherman again: If pellagra is due to faulty diet, the fault lies not in the use of corn, but in the fact that the diet contains too little of foods of other types.

FACTORS IN THE REGENERATION
OF BLOOD

The factors that determine the regeneration of the blood after hemorrhage have by no means been satisfactorily ascertained. In some types of anemia, obstacles to the maintenance of the integrity of the red corpuscles undoubtedly exist. Hematolysis here plays an important part. In chlorosis the characteristic feature of the blood is the relatively small amount of hemoglobin in proportion to the number of the corpuscles. Apparently the fault lies in defective hematogenesis—in the inadequate manufacture of blood pigment rather than in either a destruction or a deficient formation of corpuscles. A few years ago the favorite hypotheses involved the part taken by iron in the formation of hemoglobin. But persistent lack of blood pigment in many cases certainly is something more than the expression of lack of iron; for iron therapy fails to produce the desired hematopoiesis in many instances.

It would seem most rational, as a preliminary to the attempted unraveling of the secrets of such complex pathologic conditions, to learn first of all what is involved in the more fundamental process of blood regeneration in simple anemia such as exists after uncomplicated hemorrhage. Whipple and Hooper,¹ of the Hooper Foundation for Medical Research at the University of California, have addressed themselves to this problem. As a result, they have ascertained that blood regeneration in dogs after simple anemia of definite grade can be influenced at will by various dietary factors. The curve of blood regeneration on a meat diet is very rapid, a matter of days or a few weeks, while the curve of regeneration on a diet rich in carbohydrates is very slow. In some of the animals on a diet of bread and milk it has required months for complete blood regeneration. Iron in the

1. Sherman, H. C.: Use of Corn (Maize) as Human Food, *THE JOURNAL A. M. A.*, June 1, 1918, p. 1580. Sherman, H. C.; Wheeler, Lucille, and Yates, Anna B.: Experiments on the Nutritive Value of Maize Protein and on the Phosphorus and Calcium Requirements of Healthy Women, *Jour. Biol. Chem.*, 1918, **34**, 383.

1. Hooper, C. W., and Whipple, G. H.: Blood Regeneration After Simple Anaemia, I, Curve of Regeneration Influenced by Dietary Factors, *Am. Jour. Physiol.*, 1918, **45**, 573. Whipple, G. H., and Hooper, C. W.: Blood Regeneration After Simple Anaemia, II, Curve of Regeneration Influenced by Starvation, Sugar, Amino Acids and Other Factors, *ibid.*, 1918, **45**, 576.

form of Bland's pills, administered daily during the anemia period, had no appreciable effect on it.

Some of the details of the slower regeneration incident to a bread and milk diet are worth recording. The curve of replenished pigment ascended slowly for a short initial period of a few weeks, when the animals lost weight, the hemoglobin fell, and the anemia progressed until they were placed on a meat or mixed diet. In some instances, the number of red blood cells increased very rapidly, and within three or four weeks after the initial bleedings the total number of red cells was even greater than at the beginning of the experiment. The cells, however, were small and fragmented. The percentage of red blood cells as indicated by the hematocrit readings was the same as on the days immediately following the initial bleedings. In other words, the increase in red cells was only relative, owing to the development of small and fragmented forms. Strangely enough, in starvation a small initial degree of repair may be observed; likewise when sugar alone is fed. This observation that animals will form hemoglobin and red corpuscles when they are receiving no nitrogen by mouth is noteworthy. Obviously some breaking down of tissue protein must take place at such periods. The pigment formation appears to be more extensive in the starving animals, in which, of course, the protein catabolism is most extensive. Whipple and Hooper, therefore, venture the hypothesis that the body conserves certain substances from this body protein autolysis and uses them over again to construct red cells.

Equally striking are the results obtained with different types of protein in the diet. One "incomplete" protein — the gliadin of wheat — influences the curve of pigment regeneration no more than sugar feeding, and is associated with only minor fluctuations in the pigment volume. Four or five weeks of gliadin feeding may show the pigment volume at the same level as at the start. On the other hand, another protein, gelatin, which lacks several amino-acid groups, has a pronounced effect on the curve of pigment regeneration and red cell formation. Gelatin added to a sugar diet will usually cause a sharp rise in the curve of pigment regeneration. This rise is not as marked as after meat feeding. It usually reaches its maximum after from two to four weeks, and then may show a fall coincident with malnutrition, which may develop after prolonged gelatin feeding. Gelatin combined with cracker meal and lard may show a complete regeneration to normal within three weeks. The California investigators have been unable to demonstrate that any amino-acid or group of such protein derivatives is the single essential factor in this reaction that determines the curve of pigment construction and regeneration of the red cells. It seems very probable to them that several diet factors are concerned — as well as body conservation of certain elements of protein catabolism.

Whipple and Hooper regard it as suggestive that a meat diet gives a maximum hemoglobin production and a minimum bile pigment secretion in the same bile fistula dog. Also, a bread and milk diet gives a minimum hemoglobin production and a maximum secretion of bile pigment. We are left by the investigators with this hypothesis: Some substance in meat enables the body to conserve or fix and reconstruct certain substances resulting from tissue catabolism. The amount of body protein autolysis or catabolism certainly is an important factor. There is a constant wastage of pigment substance (bile pigment) and a uniform construction of pigment substance in the body even during starvation. The products of protein catabolism in the body as well as dietary factors contribute to the steady construction of body pigment, especially hemoglobin.

GLYCURESIS VERSUS GLYCOSURIA

The average normal person ingests several hundred grams of digestible carbohydrate every day. Whether in the form of sugars, dextrans or starches this quota is utilized quite perfectly; at any rate it leaves the alimentary tract and disappears in the processes of metabolism. Glucose is always circulating in the blood stream. It has long been recognized that traces of sugar or sugar-like reducing substances occur in the excreta of healthy persons. They can be detected by refined methods of examination and have in part been identified as glucose. Hence one reads in textbooks that "the kidney is not a perfect filter, and small amounts of glucose can penetrate it. The appearance of enough dextrose to give a precipitate of cuprous oxid in the Fehling test is abnormal."¹

Stanley Benedict² and his collaborators at the Cornell University Medical College, New York City, working in cooperation with the Harriman Research Laboratory at the Roosevelt Hospital, have pointed out anew that the factors lessening the delicacy of the copper tests for sugar in the urine are probably numerous. By improving the current methods of analytic examination, they believe that it is possible to estimate sugar in the urine in extremely small concentrations—in hundredths or even thousandths per cent. The carbohydrate is alleged to be of more than one sort, part of it being unfermentable by yeast. The improved technic may show an average daily elimination of "sugar" amounting to 1 gm. under ordinary conditions of mixed diet. It may undergo variations as wide as 100 per cent. or more in absolute amount

1. Mathews, A. P.: *Physiological Chemistry*, 1915, p. 753.

2. Benedict, S. R., and Osterberg, E.: *A Method for the Determination of Sugar in Normal Urine*, *Jour. Biol. Chem.*, 1918, **34**, 195; *Studies in Carbohydrate Metabolism, I, A Preliminary Report on the Sugar Elimination in the Urine of the Normal Dog*, *ibid.*, p. 209. Benedict, S. R.; Osterberg, E., and Neuwirth, I, *Studies in Carbohydrate Metabolism, II, A Study of the Urinary Sugar Excretion in Two Normal Men*, *ibid.*, p. 217.

per hour, and in percentage in the urine. Most of these variations would wholly escape detection by qualitative methods.

In view of the known facts, Benedict urges the abolition of the term "glycosuria." "This word," he says, "was not created by the mind of man, but by the inefficiency of the copper tests. Glycosuria implies a sudden point at which sugar appears in the urine. Since there is no such point, the term glycosuria is without special significance and is misleading." Consequently the term "glycuresis," representing an increase rather than a new appearance of sugar in the urine, is proposed.

If we are to emphasize the continual existence of a glycosuria in man, what is to be said of the so-called tolerance for sugar? Assuredly there has been little agreement on this phenomenon in the past. The "tolerance" of human individuals for glucose on an empty stomach is commonly placed at about 150 gm. Taylor and Hulton³ reported practically no limit to the tolerance for orally administered glucose in human subjects. Myers⁴ found glycosuria following the ingestion of 75 gm. of glucose in a normal subject. According to the newer observations of Benedict and his co-workers, there is no absolute tolerance for carbohydrate except during the fasting state. Here it may reach an upper limit of 50 gm. of glucose; but feeding with either meat or a carbohydrate diet causes an increase in the sugar elimination.

The fact, Benedict concludes, that foods, even when free from any sugar, cause marked glycuresis must serve to emphasize the narrow margin of absolute sugar tolerance even in the normal individual. A certain portion of the sugar from starch or even from meat taken at each meal is waste sugar. This is not due to simple leakage through the kidney. The glycuresis is independent of urinary volume and follows a definite course, reaching a minimum during the fasting hours. Carbohydrate stands apart from other foodstuffs in that the normal organism fails to utilize it completely, even in physiologic quantities. Therefore, Benedict adds, the unique disease, diabetes, springs from seed ever present in the normal organism. Nevertheless, we may perhaps be justified in warning the reader against undue apprehension at first consideration on this score. With an intake of even 500 gm. or more of carbohydrate per day, the wastage of an equal number of milligrams of sugar, if it actually is such, is not a serious indictment of the efficiency of the organism. Meanwhile we shall await with interest the expansion of these observations to a degree where the statistics on persons of unquestionable health and normality will give a more permanent basis for clinical and therapeutic deductions.

Current Comment

THE CHICAGO SESSION

As our forms close, Wednesday morning, there is every indication that the 1918 session of the American Medical Association will be a success in every way. Even the attendance is proving to be far greater than war conditions would warrant one in expecting. The fact that over 20,000 physicians are in active service and the recent increase in railroad rates naturally have interfered with the attendance. In spite of these things, however, the registration for the first two days was 3,552,¹ which was within 231 of being as large as the registration last year, in New York, for the first two days. The Opening Meeting indicated the spirit that is prevailing at this session—a spirit of patriotism, of loyalty, of self-sacrifice. Never before has there been such a large attendance at an Opening Session. There was added enthusiasm and patriotism on account of the presence of the band of the Fort Riley Medical Officers Training Camp, of the two hundred medical officers of the Army and Navy, from that and other camps, who marched on the stage in double file, and of the distinguished medical officers of the allied nations who occupied the foreground. The stirring addresses of the Opening Meeting will be found elsewhere in this issue. The medical military features of the meeting, many of them provided especially by the Surgeon-General's Office, include a late model motor ambulance with spare parts trailer, which drove overland to the meeting from the U. S. Army Motor Ambulance Supply Depot, Louisville, Ky.; the flight to the meeting by a physician aviator, Major H. M. Strong, Post Surgeon at Rantoul, Ill.; the exhibition of the Fort Riley Sanitary School, including over fifty-five models of all of the various types of sanitary devices in use at Army posts and camps; a continuous military motion picture show, with motion pictures issued under the authority of the Commission on Training Camp Activities and the Surgeon-General's Office; and a military medical headquarters in which advice is being given relative to enlistment in the service of the Army and Navy, and in which numerous recruits for the Medical Reserve Corps were enlisted. These and other features too numerous to mention are making the sixty-ninth annual session a historic medical military patriotic meeting.

NECESSITY FOR CARE IN ADMINISTERING ARSPHENAMIN

It is evident that more than the ordinary number of severe reactions from arspenamin have occurred lately, or that more are coming to light. There are certainly indications that there is need for especial care in its administration at the present time. There is a tendency in some places to make the treatment with it very intensive, even giving daily doses for several successive days. About 50 per cent. of a dose of arspenamin is excreted during the first three days after intravenous administration, and the remaining part is excreted with diminishing rapidity over a

3. Taylor, A. E., and Hulton, F.: Jour. Biol. Chem., 1916, **25**, 173.

4. Myers, V. C.: Proc. Soc. Exper. Biol. and Med., 1915-1916, **13**, 178.

1. At 12 noon Wednesday the registration had reached 4,595.

longer time. The daily intensive use of the drug therefore means that it accumulates rapidly in the system; in view of the fact that some of the most serious accidents develop only after several days, the question may justly be raised whether this intensive use is not exposing the patient to added risk, which should not now be taken. It is true that many serious reactions lately reported occurred immediately, indicating also that it would be wise to begin with a small dose—say 0.3 gram. Boiling arsphenamin is also an occasional practice. This should be discontinued. The brand “arsenobenzol” is of difficult solubility, but this brand can be safely dissolved in hot water. The more soluble brands do not stand heat well and should be dissolved in water at room temperature. In general, practitioners should be more than ordinarily cautious in the use of arsphenamin at the present time. We are working under great pressure in medicine as in other lines. This is not the time to be careless of risks in the intensive use of this drug or indifferent to the possibilities of its being made toxic by boiling or other incautious manipulations.

MORPHIN AND REACTION TIME

The announcement of a new journal, *Psychobiology*,¹ states that it is established for “the publication of research bearing on the interconnection of mental and physiological functions. It will include in its volumes, therefore, not only investigations of what is sometimes called ‘psychological physiology,’ but also investigations in pharmacology, physiology, anatomy, neurology, and psychiatry in so far as the results of these investigations have explicit bearing on problems of mental life, or mental factors are included in the essential conditions of the investigation.” The first number illustrates the relation of psychology to pharmacology in a research on the effect of some opium alkaloids on the psychologic reaction time.² The effects of alcohol and alcoholic beverages on psychic functions have been investigated frequently; some attention has likewise been paid to coffee and tea and the caffeine that they contain. In connection with such commonly used drugs it is often asked whether they really stimulate in the true sense of the word, or, in refined analysis, are they merely found to depress or inhibit? In the case of morphin alone or in combination with other opium alkaloids, Macht and Isaacs² of John Hopkins University have found that the answer depends on the dose used. In man, after small doses of morphin, there is generally a primary stage of stimulation or quickened reaction time; this may or may not be followed by a secondary stage of depression, as indicated by narcosis and prolongation of the reaction time. After large doses of morphin, the primary stimulation stage is very short and may be overlooked, whereas the secondary or stage of depression is predominant. The small doses, which gave a distinct primary stimu-

lation, were from 4 to 6 mg. of morphin. The ordinary therapeutic dose of from 8 to 15 mg. ($\frac{1}{8}$ to $\frac{1}{4}$ grain) is reported to be usually too large to make the quickened reaction in normal persons very noticeable; and therefore it seems to have been overlooked. It is the opinion of Macht and Isaacs that the primary stage of quickening or stimulation probably corresponds to the stage of euphoria or well-being, so well known to the pharmacologist, which occurs after small doses of opiates. It is in this sense of well-being, they add, which probably is responsible in a great measure for the greater accuracy in mathematical calculations which they tested, especially in subjects with a nervous temperament, since the narcotic action of the drugs is just sufficient to “take the edge out” of the subject’s anxiety.

Medical Mobilization and the War

The Smith Bill Passes the House

The Smith bill for vocational rehabilitation which passed the Senate recently, as described in THE JOURNAL for May 11, passed the House of Representatives on Monday, June 10.

Honorary Degree Awarded Surgeon-General Gorgas

The honorary degree of doctor of laws was conferred on Surg.-Gen. William C. Gorgas by the New York University and the Bellevue Hospital Medical College, of which Surgeon-General Gorgas is a graduate, at a special meeting in New York on June 5. In an address to the audience he contrasted the methods of military surgery of fifty years ago with those of today; he also stated that the general practitioner, skilled in all fields of medicine—the one who can do anything necessary for the health of the soldier—is the one most urgently needed by the Army.

Personnel of the Medical Department

For the week ending June 7, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 395 lieutenants.

MEDICAL RESERVE CORPS: 19,358, including 1,380 majors, 5,119 captains and 12,859 lieutenants. On active duty: 17,474, including 1,297 majors, 4,799 captains and 11,378 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,297, including 19 lieutenant-colonels, 255 majors, 181 captains and 744 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 157, including 8 brigadier-generals, 18 colonels, 123 lieutenant-colonels and 8 majors.

The discharges to date are:

Causes	Number	
	M.R.C.	M.C.N.G.
Physical disability	671	52
Inaptitude	265	20
Other branches of service	363	72
Resignations	140	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	81	5
Dismissals	10	3
Duty completed	1	0
No reasons given	14	0
	1,654	185

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 31, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):

		Last Week
All Troops	974.5	1,068.1
Divisional Camps	757.8	764.5
Cantonments	1,098	1,260.9
Departmental and other Troops	979.4	1,109.1

1. *Psychobiology*, a journal devoted to the field common to psychology and the biologic sciences, edited by Knight Dunlap, in association with J. J. Abel, W. B. Cannon, R. Dodge, S. I. Franz, H. S. Jennings and G. H. Parker, Baltimore, Williams and Wilkins Company.

2. Macht, D. I., and Isaacs, S.: Action of Some Opium Alkaloids on the Psychological Reaction Time, *Psychobiology*, 1917, 1, 19.

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	36.8	39.8
Divisional Camps	31.7	33.4
Cantonments	43.1	46.4
Departmental and other Troops	32.7	35.8

3. ANNUAL DEATH RATE PER 1,000 (disease only):

All Troops	4.01	5.7
Divisional Camps	2.5	1.9
Cantonments	9	9.0
Departmental and other Troops	7	4.1

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK I G MAY 31, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admis- sion Rate per 1,000 (Dis- ease Only)	Noneffective per 1,000
				Total	New infec- tions						
Beauregard.....	...	4	15	84	3	...	1	..	3	1,073.3	44.3
Bowie.....	1	..	2	62	59	...	..	..	2	754.8	25.8
Cody.....	1	..	..	6	...	1	..	..	0	266.6	16.0
Doniphan.....	4	..	3	21	...	..	..	1	1	1,472.4	53.8
Fremont.....	17	1	..	10	4	19	1	1	3	839.6	34.0
Hancock.....	1	..	..	43	...	1	..	..	0	851.4	38.2
Kearny.....	2	..	..	4	...	9	..	1	1	433.5	22.6
Logan.....	1	..	..	20	12	2	..	..	0	387.6	24.5
MacArthur.....	...	..	..	...	...	...	..	..	0	832.7	33.9
McClellan.....	1	..	3	59	27	11	..	..	1	786.8	25.2
Sevier.....	1	..	6	17	9	9	1	..	1	436.3	32.6
Shelby.....	3	3	4	18	...	3	..	1	2	772.6	32.3
Sheridan.....	...	..	5	39	...	18	..	5	1	913.3	37.1
Wadsworth.....	6	..	1	49	...	15	..	..	0	2,236.3	69.4
Wheeler.....	7	2	6	65	...	...	..	..	4	559.7	24.7
Custer.....	8	..	..	83	3	9	..	2	3	535.3	21.0
Devens.....	18	..	..	21	5	16	1	..	2	609.3	39.1
Dix.....	...	..	1	79	2	11	2	2	2	814.2	32.8
Dodge.....	15	..	..	82	...	23	2	1	7	1,189.7	67.4
Funston.....	4	..	1	63	10	10	3	1	7	919.0	56.2
Gordon.....	8	..	1	194	5	40	1	..	11	1,891.6	61.3
Grant.....	2	..	..	15	...	13	..	3	4	336.0	16.7
Jackson.....	11	1	1	276	...	45	2	1	6	1,763.1	57.4
J. E. Johnston.....	6	..	3	40	...	9	..	..	3	1,047.8	37.8
A. A. Humphreys..	2	..	..	21	8	4	2	..	0	622.0	15.9
Lee.....	1	..	..	804	...	7	..	..	1	2,090.6	91.0
Lewis.....	5	..	..	271	4	12	1	17	1	1,063.3	32.1
Meade.....	4	..	..	21	16	6	..	..	3	862.0	27.7
Pike.....	11	1	13	59	7	7	2	..	7	1,377.0	54.3
Sherman.....	2	..	..	94	...	4	..	..	0	1,001.4	53.8
Taylor.....	...	..	..	76	7	32	2	..	3	979.7	47.7
Travis.....	15	5	11	56	1	34	..	1	4	1,499.0	39.5
Upton.....	...	..	..	261	12	1	..	..	3	836.5	34.8
Northeastern Dept.	...	..	..	43	32	...	..	..	1	858.6	28.4
Eastern Dept.	3	..	4	163	100	16	..	2	5	785.4	20.0
Southeastern Dept.	1	..	5	121	95	3	..	..	3	1,109.7	33.7
Central Dept.	7	..	..	114	69	15	..	8	1	1,384.0	44.8
Southern Dept.	7	2	8	237	31	11	..	2	7	1,250.6	38.9
Western Dept.	3	..	1	54	22	9	..	6	5	785.8	22.3
Aviation S. C.	7	16	2	127	17	17	..	6	10	1,009.7	27.8
Alcatraz, D. B. ....	...	..	..	...	...	...	..	..	0	626.6	15.0
Columbus Bks.	1	..	..	27	1	1	..	..	0	875.2	23.9
Edgewood Arsenal.	1	..	..	...	...	...	..	..	0	513.1	8.9
El Paso.....	...	..	..	...	...	...	..	..	0	400.8	17.3
Hoboken.....	6	..	6	105	15	17	1	12	2	532.4	32.0
Holabird.....	...	..	..	...	...	1	..	..	0	218.6	1.2
Jefferson Barracks	3	..	..	154	1	7	..	..	1	1,543.9	88.3
Leavenworth, D. B.	1	..	..	2	...	...	..	..	0	809.7	34.2
Fort Logan.....	1	..	..	19	3	1	..	5	0	3,407.5	75.6
Fort McDowell....	...	2	..	30	...	1	..	1	0	1,713.7	84.6
Newport News.....	7	..	5	333	16	22	1	1	5	1,169.6	47.6
Raritan.....	...	..	..	...	...	1	..	..	0	502.6	19.3
Fort Sloeum.....	...	..	..	18	1	1	..	..	0	850.7	35.2
Springfield Arm. ...	...	..	..	...	...	...	..	..	0	1,100.5	10.6
Fort Thomas.....	...	..	..	12	...	5	..	..	1	1,663.8	55.8
Watervliet.....	...	..	..	...	...	...	..	..	0	319.0	36.8
West Point.....	...	..	..	1	...	...	..	..	0	384.7	8.0
Total.....	205	35	109	4,573	597	499	23	80	127	974.5	36.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 31, 1918	Departmental and Other Troops, Week Ending May 31, 1918	Divisional Camps, Week Ending May 31, 1918	Cantonments, Week Ending May 31, 1918	Expeditionary Forces, Week Ending May 23, 1918
Pneumonia.....	7.9	5.27	7.5	10.3	20.8
Dysentery.....	1.35	1.97	1.7	0.64	1.7
Malaria.....	4.2	3.6	7.5	2.85	0.77
Venereal.....	174.6	171.5	83.0	232.0	75.4
Paratyphoid.....	0.0	0.0	0.0	0.0	0.67
Typhoid.....	0.08	0.1	0.0	0.09	0.19
Measles.....	19.2	14.0	14.7	26.0	9.7
Meningitis.....	0.88	0.2	0.5	1.65	1.1
Scarlet fever.....	3.08	4.7	1.5	2.58	3.0

COMMISSIONS ACCEPTED

ARIZONA	NEW HAMPSHIRE
O. S. PHILLIPS, Fort Defiance	C. F. NUTTER, Nashua
ARKANSAS	NEW JERSEY
J. H. M. HARDY, Malvern	H. M. REILLY, Summit
CALIFORNIA	C. B. BORN, West Hoboken
C. STEIN, Bellflower	NEW MEXICO
C. A. SHEPPARD, Needles	F. A. DILLON, Clovis
W. A. BAYLEY, Los Angeles	NEW YORK
D. D. LUCEY, Los Angeles	J. L. BENDELL, Albany
J. M. SEVERSON, Los Angeles	H. S. BONTECON, Beacon
E. H. JORDAN, Tecate	W. B. EBERLING, Brooklyn
COLORADO	R. A. EDSON, Buffalo
W. P. HARLOW, Boulder	F. H. CARBER, Forest Hills
CONNECTICUT	C. H. BRUSH, Kings Park
H. G. JARVIS, Hartford	W. H. SANFORD, Kings Park
L. C. WHITING, New Haven	T. P. BERENS, New York City
E. H. J. HENNESSY, Stratford	A. A. BERSIN, New York City
DISTRICT OF COLUMBIA	J. GOLDSTONE, New York City
R. M. CHAPMAN, Washington	T. A. KENYON, New York City
GEORGIA	A. G. LANGMANN, New York City
S. A. CLARK, Eatonton	P. J. MANHEIM, New York City
O. S. COFER, Smyrna	J. S. RICHARDS, Randall's Island
ILLINOIS	W. F. PLUMLEY, Rochester
P. E. GREENLEAF, Bloomington	A. C. SILVERMAN, Syracuse
J. E. ARNOLD, Chicago	M. J. J. COLUCCI, Yonkers
H. N. CHAMBERLAIN, Chicago	NORTH CAROLINA
F. L. FORTELKA, Chicago	J. B. BULLITT, Chapel Hill
T. H. RENN, Chicago	OHIO
H. W. TRAUB, Chicago	E. P. KENNEDY, Cleveland
S. F. WHISTLER, Loami	F. FLETCHER, Columbus
INDIANA	R. B. STEVENSON, Columbus
G. M. COOK, Mooresville	OREGON
IOWA	F. P. FIREY, Portland
J. A. HULL, Ottumwa	PENNSYLVANIA
W. M. NESBIT, Waterloo	E. M. BLEW, Allentown
KANSAS	S. H. HOLLAND, Industry
C. A. McGUIRE, Topeka	H. M. OSTRUM, Philadelphia
KENTUCKY	K. EMMERLING, Pittsburgh
D. B. ROACH, Cadiz	W. R. CAMPBELL, Smithfield
W. M. EWING, Cave City	R. R. WHITTAKER, Williamsburg
C. T. WILFONG, Louisville	SOUTH CAROLINA
G. L. THOMPSON, Lovelaceville	C. B. MILLS, Cross Hill
LOUISIANA	SOUTH DAKOTA
T. A. COMBIE, Hohnville	A. F. GROVE, Dell Rapids
B. R. HENGER, New Orleans	TENNESSEE
H. P. JONES, New Orleans	R. E. GARRETT, Dixon Springs
C. G. SALLAS, Thibodaux	J. D. CARPENTER, Lavinia
MAINE	M. L. BLACK, Wind Rock
J. R. HAMEL, Portland	TEXAS
MARYLAND	L. E. HASTINGS, Dallas
J. E. BURNS, Baltimore	W. E. VANDEVERE, El Paso
R. V. HOFFMAN, Baltimore	M. E. HASTINGS, Galveston
L. A. M. KRAUSE, Baltimore	B. A. SWINNEY, JR., Newton
L. L. SMITH, Baltimore	F. A. ALLIN, San Antonio
G. B. LYNCH, Hillsdale	H. P. CALMES, San Antonio
F. H. CHARLES, Midland	N. M. KENNEY, San Antonio
G. W. BEACH, State Sanatorium	R. A. ROBERTS, San Antonio
MASSACHUSETTS	J. R. DESTIGNER, San Marcos
A. KLEIN, Boston	E. B. BUCHANAN, Texarkana
H. A. JOHNSON, Lynn	F. I. FIELD, Waco
I. F. ARMSTRONG, Marlborough	UTAH
W. A. MACINTYRE, Worcester	C. E. WARDLEIGH, Ogden
MICHIGAN	VERMONT
J. H. ROCK, Detroit	D. R. BROWN, Lyndonville
B. H. VAN LEUVEN, Petoskey	C. H. SMITH, Rupert
MINNESOTA	G. G. HALL, South Woodbury
W. H. EATON, Duluth	VIRGINIA
MISSISSIPPI	J. M. HOLLOWAY, Port Royal
T. Y. FLEMING, Minter City	WASHINGTON
MISSOURI	M. J. LACEY, Auburn
U. P. G. HAW, Benton	H. S. JUDD, Tacoma
A. M. UNDERWOOD, Holstein	WEST VIRGINIA
P. O. HURFORD, St. Louis	S. L. BOSSARD, Belleville
C. A. LEAVY, St. Louis	O. F. COVERT, Moundsville
MONTANA	C. DENHAM, Weston
A. N. J. DOLAN, Great Falls	WISCONSIN
J. L. TREACY, Helena	S. E. GAVIN, Fond du Lac
	S. R. MITCHELL, Milwaukee

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp A. A. Humphreys, Accotink, Va., to examine the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HENRY C. HARRIS, Birmingham.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. ELDRIDGE T. BROWN, Cleveland.

To Fort Barrancas, Fla., for duty, Capt. FRANK P. PETTEY, Albany.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. ROBERT R. DIXON, Tuscaloosa.

Arizona

To Fort Riley for duty, from Camp Cody, Lieut. ISAAC L. GARRISON, Phoenix.

Arkansas

To Camp Pike, Little Rock, Ark., for duty, Lieut. JOHN H. M. HARDY, Malvern.

To Portland, Ore., Yeon Building, for duty, Lieut. SAMUEL B. DEGNAN, Little Rock.

California

To Fort Oglethorpe for instruction, Lieut. ARTHUR J. HOLETON, San Diego.

To Fort Sam Houston, Texas, base hospital, Capt. HARRY H. KOONS, Los Angeles.

To Portland, Ore., Yeon Building, for duty, Capt. JOHN G. GRAFFIN, Fallbrook; Lieuts. GILES S. PORTER, Los Angeles; FREDERICK K. LORD, San Francisco.

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. CHARLES STEIN, Belleflower; Lieuts. DANIEL D. LUCEY, THOMAS A. MCINTYRE, Los Angeles.

Colorado

To New Haven, Conn., for duty Capt. WILLIAM P. HARLOW, Boulder.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. HARVEY R. HALL, La Junta.

The following order has been revoked: To Fort Logan, Colo., for duty, Capt. CHARLES H. FISCHER, Walden.

Connecticut

To Camp Jackson, Columbia, S. C., for duty, Lieuts. GEORGE J. SCHUELE, Bridgeport; E. H. J. HENNESSEY, Stratford.

To Fort Oglethorpe for instruction, Lieut. ELROY W. SMITH, Brookfield.

To New Haven, Conn., for duty, Lieut. LEONARD C. WHITING, New Haven.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. ARTHUR S. GRANT, Hartford.

To New York City, Neurological Institute, for instruction, Lieut. HENRY G. JARVIS, Hartford.

District of Columbia

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Major JOSEPH H. BRYAN, Washington.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Lieut. DILLON G. O'NEILL, Washington.

Georgia

To Douglas, Ariz., for duty, from Camp Dix, Capt. WILLIAM G. HUNTER, Augusta.

To Fort McPherson, Ga., for duty, Lieut. HENRY W. SHAW, Augusta.

Idaho

To Hoboken, N. J., for duty, from Camp Dix, Lieut. ELTON B. ROGERS, Winchester.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. CHARLES J. MARTIN, Dwiggis; FRANCIS S. MILLER, Inkom.

Illinois

To Boston, Mass., Harvard Graduate School of Medicine, for instruction from Army Medical School, Lieut. BEVERIDGE H. MOORE, Chicago.

To Camp Colt, Gettysburg, Pa., for duty, Lieuts. MORRIS B. KARATZ, BENJAMIN M. WELIN, Chicago; FRANK L. TOWNSELEY, East Chicago; SENN F. WHISTLER, Laomi.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. GEORGE E. SANDERS, Chicago.

To Camp Grant, Rockford, Ill., base hospital, from Fort Oglethorpe, Capt. ROBERT S. GREGG, Chicago.

To Camp Pike, Little Rock, Ark., for duty, Lieuts. MYRON I. INGRAM, WILLIAM R. READ, Chicago.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieuts. JAMES E. ARNOLD, HUGO W. TRAUB, Chicago.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Sherman, Lieut. WALTER G. MOHR, Chicago.

To Fort Oglethorpe for instruction, Lieut. ROY GRIFFY, Oblong.

To Jefferson Barracks, Mo., for duty, Lieut. MAX L. FOLK, Elgin.

To New Haven, Conn., for duty, Lieut. ROBERT M. CARPENTER, St. Charles.

To report to the commanding general, Central Department, for duty, Major JOHN A. ROBISON, Chicago.

The following order has been revoked: To Camp Bowie, Fort Worth, Texas, for duty from Fort Riley, Lieut. RUSSELL A. HENNESSEY, Chicago.

Indiana

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. VENICE D. KEISER, Indianapolis.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Clark, Texas, Lieut. EDGAR R. HIATT, Portland.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. CHESTER A. MARSH, Newcastle.

Iowa

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Sherman, Capt. HERBERT W. PLUMMER, Lime Springs.

To Camp Hancock, Augusta, Ga., base hospital, Capt. CHARLES B. MCGLUMPHY, Iowa City.

To Camp Pike, Little Rock, Ark., for duty, Capt. JAMES A. HULL, Ottumwa; Lieut. BENJAMIN L. MEIGS, Fort Dodge.

To Portland, Ore., Yeon Building, for duty, Lieut. MARTIN L. HOOPER, Indianola; FRANK W. MILLS, Ottumwa; FREDERICK H. GRABER, Stockport; EVERETT E. RICHARDSON, Webster.

Hawaii

To Hawaiian Department for duty, Capt. CHARLES ADAMS, Honolulu; FLETCHER G. SANBORN, Molokai; Lieut. FRANK R. MISSNER, Maui.

Kansas

To Camp Pike, Little Rock, Ark., for duty, Lieuts. SEBREE S. MCGINNIS, Dighton; JAMES B. DONNELL, Kingsley.

Kentucky

To Camp A. A. Humphreys, Accotink, Va., to examine the troops for cardiovascular diseases, from Camp Meade, Capt. THOMAS F. MILLER, Glasgow.

To Camp Colt, Gettysburg, Pa., for duty, Lieuts. HARTMAN A. LICHTWARDT, Berea; GEORGE L. THOMPSON, Lovelassville.

To report to the commanding general, Southern Department, for assignment to duty, from Fort Sam Houston, Capt. JETHRA HANCOCK, Louisville.

Louisiana

To Camp Jackson, Columbia, S. C., Base hospital, Lieuts. PANAGIOTIS M. PAPOULACOS, Boston; FREDERICK A. MEAD, Willimansett.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. JOSEPH C. MENENDEZ; JONAS W. ROSENTHAL, New Orleans.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. ALBERT A. SHAPIRA, Boston.

To Fort Bliss, Texas, base hospital, Major HAMILTON P. JONES, New Orleans.

To Fort McPherson, Ga., for temporary duty, Capt. CARLOS G. SALLOS, Thibodaux.

To Fort Riley for duty, from Camp Beauregard, Major JAMES B. GUTHIE, New Orleans; from Camp Cody, Lieut. JAMES E. DYSON, Manila.

To Hoboken, N. J., for duty, Lieut. GEORGE H. SCHWARTZ, East Boston.

To New Haven, Conn., for duty, Lieut. BEN R. HENINGER, New Orleans.

Maryland

To Camp Jackson, Columbia, S. C., Camp Hancock, Augusta, Camp Wheeler, Macon, Camp Gordon, Atlanta, and Camp Forrest, Chickamauga Park, Ga., Camp McClellan, Anniston, and Camp Sheridan, Montgomery, Ala., Camp Shelby, Hattiesburg, Miss., and Camp Jackson, Columbia, S. C., for orthopedic instruction, Capt. HENRY P. MAUCK, Baltimore.

To Hoboken, N. J., base hospital, from Camp Meade, Lieut. AUSTIN H. WOOD, Baltimore.

Massachusetts

To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HARRY A. WALKER, Somerville.

To Hoboken, N. J., for duty, from Camp Meade, Lieut. EVERETT A. MERRILL, Lynn.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. WHITMAN K. COFFIN, West Medford.

Michigan

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. GEORGE W. WILSON, Detroit.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. JOHN H. ROCK, Detroit; BUELL H. VAN LEUVEN, Petoskey.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. CHARLES R. DENGLER, Jackson.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. ARCHIBALD MCKILLOP, Wolverine.

The following order has been revoked: To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. OTIS B. MALLOW, Detroit.

Minnesota

To Camp Colt, Gettysburg, Pa., for duty, Lieut. RICHARD N. JONES, Minneapolis.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Colt, Capt. JOHN W. LEE, Minneapolis.

To Fort Oglethorpe for instruction, Lieut. HARRY OERTING, Minneapolis.

To Jefferson Barracks, Mo., for duty, from Fort Riley Lieut. LINWOOD M. KEENE, Alexander.

To New Haven, Conn., for duty, Capt. GEORGE W. BEACH, Walker.

To Portland, Ore., Yeon Building, for duty, Lieut. JOSEPH W. LECLERC, LeSueur.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Upton, L. I., N. Y., base hospital, Lieut. LESLIE H. REDELINGS, Rochester.

Mississippi

To Camp Jackson, Columbia, S. C., for duty, Lieut. TUCKER T. FLEMING, Minter City.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to his proper station, from New York City, Major JOHN W. BARKSDALE, Winona.

Missouri

To Camp Bowie, Fort Worth, Texas, as assistant to camp surgeon, from Camp Hancock, Lieut. ROY F. MILLS, Odessa.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. GEORGE H. MORELAND, Butler.

To Camp Jackson, Columbia, S. C., for duty, Capt. URIEL P. HAW, Benton.

To Fort Riley, base hospital, Lieut. GEORGE W. SMITH, Kansas City.

To Hoboken, N. J., for duty, from Camp Sheridan, Capt. ERNEST G. MARK, Kansas City.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Capt. PHELPS G. HURFORD, St. Louis.

To Washington, D. C., for duty in the Surgeon-General's Office, from Jefferson Barracks, Major HENRY G. WYER, Kirkwood.

Montana

To Fort Snelling, Minn., for duty, from Camp Grant, Lieut. HERBERT HAYWARD, Darby.

To Hoboken, N. J., for duty, Lieut. Thomas B. Scott, Butte.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. ANDREW K. RESNER, Ronan.

Nebraska

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. HENRY B. LOMERE, Omaha.

Nevada

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Riley, Lieut. JOHN G. KITCHEN, Mina.

To Portland, Ore., Yeon Building, for duty, Lieut. GEORGE F. POPE Winnemucca.

New Jersey

To Army Medical School for duty, from Rockefeller Institute, Lieut. WALTER W. SCHMIDT, Cliffside.

To Camp Colt, Gettysburg, Pa., for duty, Lieut. CHARLES E. BORN, West Hoboken.

To Fort Des Moines, Ia., base hospital, from Fort Oglethorpe, Lieut. ELMER W. SMITH, Passaic.

To Fort McPherson, Ga., for temporary duty, Lieut. JOHN F. MCGOVERN, New Brunswick.

New Mexico

To Camp Cody, Deming, N. M., with the board examining the troops for tuberculosis, Capt. FRED A. DILLON, Clovis.

New York

To Allentown, Pa., for temporary duty, and on completion to his proper station, Major PERCY R. TURNURE, New York City.

To Camp A. A. Humphreys, Accotink, Va., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. JOHN L. BYRNES, Hudson Falls.

To Camp Dix, Wrightstown, N. J., with the board examining the command for nervous and mental diseases, Lieut. CHARLES H. BRUSH, L. I., N. Y.

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILLIAM G. FLICKINGER, Brooklyn.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. WALTER H. SANFORD, Kings Park, L. I.; Lieuts. CHARLES L. WOITZ, Mt. Vernon; ARTHUR H. McFARLAND, New York City.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. DAVID TROPAUER, New York City.

To Fort Oglethorpe for instruction, Lieuts. ABRAHAM RAVICH; HENRY H. BEINFELD, HENRY L. PILZER, Brooklyn; DOUGLAS F. ROBBINS, Poughkeepsie.

To Fort Oglethorpe for temporary duty, from Fort Riley, Lieut. JOHN F. CURTIN, New York City.

To Hoboken, N. J., base hospital, Lieut. MILTON J. WILSON, Mount Vernon. For duty, Lieuts. GEORGE P. DE TUNCO, Blackwells Island; JOHN H. ROBERTSON, New York City.

To Hoboken, N. J., for duty, from Camp Dix, Lieut. ADOLPH A. WEISS, New York City.

To New Haven, Conn., for duty, Lieut. MORRIS A. SAGOWITZ, New York City.

To Plattsburg Barracks, N. Y., for inspection and on completion to his proper station, Major RICHARD H. HUTCHINGS, Ogdensburg.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. ROBERT P. DOBBIE, Buffalo. For instruction in the treatment of infected wounds, and on completion to Camp Devens, Ayer, Mass., base hospital, Lieut. WILBUR C. TRAVIS, Northport.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Lieut. CLARENCE F. FOWLER, New York City.

To Williamsbridge, N. Y., for temporary duty, from New York City, Lieut. FREDERICK C. KELLER, New York City.

The following order has been revoked: To Camp Jackson, Columbia, S. C., for duty, Lieut. PAUL T. HARPER, Albany.

North Carolina

To Fort Oglethorpe for instruction, Lieut. AUSTIN P. KLUTZ, Maiden.

To New York City, Neurological Institute, for instruction, from Camp Gordon, Lieut. LOUIS N. WEST, Raleigh.

Ohio

To Fort Oglethorpe for instruction, from Camp Kelly, Capt. JOHN C. MILLER, Payne.

Oklahoma

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. WILLIAM B. NEWLON, Tulsa.

To Camp MacArthur, Waco, Texas, for duty, Capt. GREGORY A. WALL, Tulsa.

To San Francisco, Calif., Letterman General Hospital, for temporary duty, Major ROBERT L. MULL, Oklahoma City.

Oregon

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. ERNEST N. CROCKETT, Portland; Lieut. WILLIAM P. CHISHOLM, Gold Hill.

Pennsylvania

To Army Medical School for duty, from Rockefeller Institute, Capt. WILLIAM H. BAILEY, Philadelphia.

To Camp Colt, Gettysburg, Pa., for duty, Lieut. RALPH R. WHITAKER, Williamsburg.

To Camp Jackson, Columbia, S. C., for duty, Lieut. STANLEY H. HOLLAND, Industry.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. FREDERICK W. KNOLL, Reading.

To Fort Riley for instruction, Lieut. CLARENCE J. McCULLOUGH, Washington.

To Lakewood, N. J., for duty, from Camp Cody, Major WILLIAM H. THOMAS, Philadelphia.

To Mineola, L. I., N. Y., for temporary duty, and on completion to his proper station, Major ISAAC H. JONES, Philadelphia.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. WILLIAM B. SWARTLEY, Philadelphia.

To New Haven, Conn., for duty, Capt. WILLIAM G. TURNBULL, Cresson; Lieut. JAMES W. WOOD, Chester.

To New York City, for duty, from Camp Zachary Taylor, Lieut. ARCHIE W. DUNN, Philadelphia. Cornell Medical College for instruction in military roentgenology, from Camp Meade, Lieut. CHARLES A. FITZGERALD, Clarion.

To Portland, Ore., Yeon Building, for duty, Lieut. JONATHAN M. MANSFIELD, Clinton.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. WILLIAM H. JONES, Shaft.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Devens, Ayer, Mass., base hospital, from Camp Forrest, Capt. FREDERICK B. ALLEN, North Wales; for instruction in the treatment of infected wounds, from New York City, Lieut. DAVID B. HAWKINS, Philadelphia.

To report by wire to the commanding general, Eastern Department, for assignment to duty, Capt. WILLIAM S. STEWART, Sagamore.

The following order has been revoked: To Camp Crane, Allentown, Pa., base hospital, Lieut. JOHN R. DAVIES, Jr., Philadelphia.

Philippine Islands

To Hoboken, N. J., for duty, from Baltimore, Capt. HENRY W. KENNARD, Manila.

To Philippine Department for duty, Capt. JAMES L. BOOTH, Lieut. JUAN L. PAYSWALL, Manila.

Porto Rico

To Camp Las Casas, San Juan, P. R., for duty, Lieut. RAMON L. RODRIGUEZ, Bayamon.

South Carolina

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Lieut. CHARLES A. McLURKIN, Chester.

Tennessee

To Camp Jackson, Columbia, S. C., for duty, Lieut. MARTIN L. BLACK, Windrock.

To Camp Pike, Little Rock, Ark., for duty, Lieut. RHEA F. GARRETT, Dixon Springs.

To Clemson, S. C., Agricultural College, to make physical examinations and give medical attention to the drafted men enrolled at this institution, from Fort Oglethorpe, Lieut. JAMES M. SMYTH, Camden.

To Fort Barrancas, Fla., for duty, Capt. JAMES H. McCALL, Huntingdon.

To Fort Oglethorpe for duty, from Camp Greene, Capt. BERNARD C. McMAHON, Memphis.

Texas

To Camp MacArthur, Waco, Texas, for duty, Lieuts. WILLIAM P. MEREDITH, JAMES McC. MITCHNOR, Houston; BLUFORD A. SWINNEY, Newton.

To Camp Pike, Little Rock, Ark., for duty, Lieuts. ROBERT A. ROBERTS, San Antonio; JOHN R. DESTIEGUER, San Marcos.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. MARION L. COMPTON, Galveston.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Apache, Capt. ROBERT H. McLEOD, Palestina.

To Fort Logan, Colo., for duty, Lieut. DEWITT G. BURKES, San Antonio.

To report by wire to the commanding general, Southern Department for assignment to duty, from Fort Worth, Lieut. TRUMAN C. TERRELL, Fort Worth.

Utah

To Fort Douglas, Utah, base hospital, from Camp Grant, Lieut. CLARENCE A. NYVALL, Salt Lake City.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. CLAUDE E. WARDLEIGH, Ogden.

Vermont

To Camp Jackson, Columbia, S. C., for duty, Lieut. CLIFTON H. SMITH, West Rupert.

Virginia

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. JOSEPH H. HOLLOWAY, Fort Royal.

To Newport News, Va., for duty, from Army Medical School, Lieut. ALBERT P. TRAYNHAM, Richmond.

Washington

To Fort Riley for instruction, Capt. WILLARD G. PALMER, Seattle.

To Portland, Ore., Yeon Building, for duty, Capt. HERMAN S. JUDD, Tacoma; Lieut. CHARLES A. HAUBER, Chewelah.

To San Francisco, Calif., for instruction, and on completion to Camp Kearny, Linda Vista, Calif., base hospital, Lieut. BURTON E. FLEMING, McCleary.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. MARTIN J. LACEY, Auburn.

West Virginia

To Camp Lee, Petersburg, Va., for duty, Lieut. JOHN C. LAWSON, Logan.

To Fort Oglethorpe for instruction, Lieut. LESLIE E. SAUGHERTY, Davis.

Wisconsin

To Camp Colt, Gettysburg, Pa., for duty, Capt. STEPHEN E. GAVIN, Fond du Lac.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Capt. ALBERT A. AXLEY, Butternut.

To Portland, Ore., Yeon Building, for duty, Capt. ALBERT A. PARKER, Clinton; Lieuts. JOHN C. SCOTT, Marinetta; WORTHINGTON L. RANTZ, Rosholt.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

GEORGIA

State Association Meeting.—The sixty-ninth annual meeting of the Medical Association of Georgia was held in Savannah, April 17 to 19, and the following officers were elected: president, Dr. Jarrett W. Palmer, Ailey; vice presidents, Drs. George R. White, Savannah, and Lee B. Clarke, Atlanta, and delegates to the American Medical Association, Drs. Henry H. Martin, Savannah, and Stewart R. Roberts, Atlanta. Atlanta was selected as the next place of meeting.

The Venereal Campaign.—At a recent conference in Atlanta between Prof. C. Wardell Stiles, U. S. P. H. S., and a representative of the state board of health, it was planned to establish a venereal clinic in each of the twelve congressional districts of the state. The regulations provide for a report of every case of venereal disease to be made by number; for the dissemination of information regarding venereal disease; for the examination and investigation of all cases; for the protection of others from infection; for the quarantine of affected persons, and for the prohibition of treatment by druggists. The regulations further declare that the spread of the disease is unlawful and that prostitution will be repressed, and that no physicians shall give a certificate of freedom from venereal disease, and that all records must be kept secret.

Personal.—Dr. R. Holmes Mason has been elected president and Dr. F. F. Jones, secretary, of the Rotary Club of Macon.—Dr. Thomas R. Wright, Augusta, has been reappointed a member of the board of trustees of the Georgia State Sanatorium, Milledgeville.—Dr. D. K. Dowd has been appointed city physician of Atlanta, succeeding Dr. James G. Hall, who is in the military service.—Dr. Charles H. Richardson, Jr., Macon, has been appointed a member of the state board of health, succeeding Dr. Howard J. Williams, deceased.—Dr. James E. Paullin, professor of practice of medicine in Emory University, Atlanta, has been appointed chief of medicine in the Emory Base Hospital, succeeding Major Stewart R. Roberts, who has been appointed commander of the base hospital at Camp Jackson, Greenville, S. C.

IDAHO

Reciprocal Relations Extended.—A letter from Dr. Ray H. Fisher, secretary of the Idaho State Board of Medical Examiners, states that at a meeting held in April, 1918, it was voted to extend the registration of physicians by reciprocity to those who have been licensed by examination in Arizona, California, Colorado, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. Applicants will be eligible for registration, provided the intellectual requirements of these states meet the Idaho board's approval, and provided the applicant's moral and ethical record is above reproach. The reciprocal license fee is \$50.

ILLINOIS

Higher Requirements in Illinois.—A letter from the department of registration and education states that after Oct. 15, 1918, no medical college will be recognized as in good standing in Illinois unless it requires for admission two years of work in an approved college of liberal arts or a fully equivalent education.

Diphtheria at Camp.—June 9, four cases of diphtheria were found among the troops of the third company of the first provisional regiment at the college students' training camp at Fort Sheridan. The company barracks were placed under quarantine. Most of the men of this company are from Purdue University and the University of Chicago.

Northwestern Alumni Elect Officers.—At the annual meeting of the Northwestern Medical School Alumni Association held in Chicago, June 10, Major Samuel C. Stanton ('92), M. R. C., U. S. Army, Chicago, was elected president; Dr. Luther J. Osgood ('03), Chicago, secretary-treasurer, and Dr. Horace M. Starkey ('78), Rockford, necrologist. At the smoker that followed the meeting, Col. William N. Bispham, M. C., U. S. Army; Majors Franklin H. Martin and Edmond

J. Doering, Lieut.-Com. David S. Hillis, President Thomas F. Holgate of Northwestern University, and Dr. Luther J. Osgood, newly elected secretary of the faculty, were the speakers.

Course for Community Nurses.—According to the *Illinois Health News*, plans have been practically completed to establish in Springfield a two months' emergency graduate course for community nurse. This will be conducted by the state department of health, the state department of public welfare, and the Illinois Tuberculosis Association, with the cooperation of the Chicago School of Civics and Philanthropy, the Elizabeth McCormick Fund, the Chicago Tuberculosis Institute, and other state and city welfare organizations. No fees will be charged. Graduate nurses registered in Illinois, or in their own states, will be eligible to the course. Graduates must agree to engage immediately in public service nursing in Illinois.

Chicago

Venereal Disease Hospital Opened.—The old contagious disease hospital, at West Thirty-Fourth Street and Lawndale Avenue, was opened by the city health department, June 3, for the treatment of women suffering from venereal disease, under the new regulations for the eradication of venereal disease.

Investigation of Irregulars.—The state department of medical registration has taken up the investigation of irregular practitioners in Chicago, and already about fifteen have been required to appear before the board of registration to confirm the correctness of their methods, and their right to practice medicine in the state.

KENTUCKY

Hospital Unit Called.—After a long period of training Dr. Barrow, Base Hospital Unit No. 40, was called, May 25, for active duty in France. The unit was recruited from the central Kentucky towns.

Officers Elected.—The Southwestern Kentucky Medical Association at its meeting at Paducah, May 14, elected the following officers: president, Dr. Benjamin B. Keys, Murray; vice presidents, Drs. Finis M. Travis, Benton, and Stanley Mullins, Wingo; secretary, Dr. Edwin A. Stevens, Mayfield (reelected); treasurer, Dr. Henry G. Reynolds, Paducah. The association will meet again in October at Murray.

Personal.—Dr. Jesse I. Whittenberg, health officer of Jefferson County, has resigned and Dr. Clarence H. Harris has been appointed to succeed him.—Dr. Argus D. Willmoth, Louisville, and Dr. Elijah H. Maggard, Wayland, have been appointed members of the state tuberculosis commission by the governor.—Dr. Arthur M. Barnett, president of the Jefferson County Board of Health, has been appointed jail physician to succeed Dr. Llewellyn P. Spears.—Dr. Vernon Robins, previously bacteriologist of the health department but recently state director of sanitation in Alabama, has been reappointed to the position of city bacteriologist under Health Officer Thomas H. Baker.—Dr. J. E. Stuckey has been urged to accept an appointment as head of a hospital in Panama, Canal Zone.—Dr. William S. Petrie, Fairview, who was recently operated on for a gastric ulcer, is now improving.

MARYLAND

One Hundred and Forty-Three Nurses Qualify.—One hundred and forty-three nurses, representing twenty-one training schools in Maryland, passed the examinations for state registration, held under the direction of the Maryland State Board of Examiners of Nurses at the Medical and Surgical Faculty building, Baltimore, May 9 and 10. While the majority of these nurses are still in training, they were admitted to the examinations at an earlier date than usual because of the demand for Red Cross nurses. Since obtaining certificates from the state board, they are eligible for Red Cross work immediately on completion of the courses at their respective training institutions.

Personal.—Sir James Mackenzie of Edinburgh, Scotland, and physician to the London Hospital, and an authority on diseases of the heart; Sir William Arbuthnot Lane, an authority on treatment of fracture and cleft palate, and consulting surgeon of Guy's Hospital, London, and Col. Herbert A. Bruce, Toronto, consulting surgeon to the British armies in France, were in Baltimore during the past week to visit the Johns Hopkins Hospital and other medical institutions.—Dr. William M. Dabney, captain in the American Red Cross organization, has returned to Baltimore from France, where

he has been in charge of a large experimental hospital of the Red Cross.—Capt. Alexander D. McConachie, Baltimore, who is attached to the Medical Reserve Corps, U. S. Army, has arrived in France.—Dr. J. Percy Wade, superintendent of the Spring Grove State Hospital, Catonsville; Dr. Charles G. Hill, Mount Hope Retreat, and Dr. Edward N. Brush, superintendent of the Sheppard and Enoch Pratt Hospital, Towson, attended the annual meeting of the American Medico-Psychological Association in Chicago, last week.—Dr. Arthur P. Herring, secretary of the State Lunacy Commission of Maryland, was elected secretary of the American Medico-Psychological Association at its recent meeting in Chicago.—Mrs. Agnes C. Hartridge, a Johns Hopkins graduate of 1900 and former superintendent of nurses at the University Hospital, Augusta, Ga., has been placed in charge of the admitting office at the Johns Hopkins Hospital. Mrs. Hartridge takes the place of Dr. William C. Leavenworth, who has taken charge of the dispensary at the Hopkins. The latter succeeds Dr. L. Palmer Holmes, who has entered the Medical Reserve Corps, U. S. Army.—Dr. Cornelius DeWeese, one of the directors of the Laurel Sanitarium, at Laurel, was acquitted by the Circuit Court of Montgomery County of criminal blame in connection with the death of Ambler McManus, who died as a result of injuries sustained when struck by an automobile driven by Dr. DeWeese.

MASSACHUSETTS

Officers Elected.—At the thirty-fifth annual meeting of the American Climatological and Clinical Association, held at Boston, June 6, the following officers were elected: president, Dr. Guy Hinsdale, Hot Springs, Va.; vice presidents, Drs. Joseph H. Pratt, Boston, and Hugh M. Kinghorn, Saranac Lake, N. Y.; secretary-treasurer, Dr. Arthur K. Stone, Boston, and recording secretary, Dr. William D. Robinson, Philadelphia.

Harvard Medical Alumni Association.—The annual meeting of the Harvard Medical Alumni Association will be held this year at the time of the meeting of the Massachusetts Medical Society, Wednesday, June 19, at 2 p. m., in the Boston Medical Library. Reports will be received and officers elected. Graduates of the Harvard Medical School are invited to be present at this meeting and also at the alumni spread at Cambridge on Commencement Day, June 20, at 12 o'clock.

NEW YORK

New York City

Surgeon-General Gorgas Addresses Medical Faculty.—On the afternoon of June 5, Surgeon-General Gorgas delivered an address before the faculty of New York University and Bellevue Hospital Medical College on "The Activities of the Medical Department of the United States Army," at the Carnegie Laboratory of the medical college.

Personal.—Dr. Charles Gilmore Kerley resigned as professor of pediatrics at the New York Polyclinic Medical School and Hospital, and his resignation took effect June 1, 1918.—Drs. George E. Vincent and Livingston Farrand have returned from France, where they have been engaged in antituberculosis work for the Rockefeller Foundation.

Program of War Camp Community Service.—The Rockefeller Foundation has contributed \$25,000 as an initial step to make possible a demonstration of a plan of adequate care and entertainment of negro troops in a typical war camp community. In explaining the reasons for the appropriation, the announcement says that while plans have been evolved in all the communities, no carefully developed program has been worked out. The medical departments of the Army and Navy, the state and the federal health service, the Red Cross, the training camps commission, the Y. M. C. A., and similar organizations are to cooperate with the American Social Hygiene Society in the demonstration. More than \$135,000 is available for the work.

Women Demand Control of Medical College.—An appeal has been made to the New York Board of Regents by a committee of women physicians and surgeons, who are members of the medical board of the New York Medical College and Hospital for Women, asking that the charter of that institution be revoked and a new charter issued forthwith which will place the institution permanently under the control of women workers. It is claimed that certain men physicians on the board of trustees have violated the provision of the charter, that the institution's functions shall be largely educational, in that they have adopted a resolution abolishing

the college and clinic of the institution and dismissing the teaching faculty. It is also contended that the meeting at which these resolutions were adopted was irregular and was held without due notice. The men who passed the resolutions abolishing the college contend that the college and dispensary were being conducted at a loss. The board of regents has promised an early ruling.

Threatened Dissolution of Alliance Between Hospital and University.—The alliance between Columbia University and the Presbyterian Hospital, which was made in 1911, and was to have resulted in the establishment of a great medical center which should combine Columbia College of Physicians and Surgeons and the Presbyterian Hospital into a new institution to be erected on Gun Hill Road in the Bronx, is about to come to an end. The board of managers of the hospital have asked the trustees of the university to join with them in cancelling the agreement. This request came before the board of trustees of Columbia University and was referred to the committees on education and finance of the board of trustees. President Butler has issued a statement declaring that the cooperation which has existed between the hospital and the university has worked admirably and to the advantage of both institutions. The difficulties which have arisen relate solely to the plans for future development. The hospital has been fortunate in raising funds which would defray its part of carrying out the plans for consolidation, whereas all the efforts made by the university to obtain funds to meet its share of the obligation have been futile. It has also been found that the total cost of the amalgamation would far exceed the original estimates of \$15,000,000.

PENNSYLVANIA

Philadelphia

Fly Campaign.—Dr. Wilmer Krusen, director of public health and charities, in his weekly bulletin urges methods for combating the fly—the enemy at home. He especially urges that fly traps and fly paper be put in the homes, that foodstuffs be kept under cover, that sinks be kept clean and that all garbage be kept in a tightly covered receptacle.

University Chair Endowed.—A \$50,000 bequest to the University of Pennsylvania is included in the will of the late Dr. William C. Goodell. In the event of the estate not equaling the total of the university bequest a trust fund is to be created and a bequest paid from the income in instalments. The money is to be used to endow a chair of gynecology.

Personal.—Dr. Judson Daland has been placed on active duty as consulting physician to the Fourth Naval District, which includes Philadelphia, with the rank of lieutenant-commander.—Raymond M. Trice, Philadelphia, attached to the central medical department, American expeditionary forces, has been awarded the Croix de Guerre for services near Paris during one of the recent air raids.

TENNESSEE

District Association Meetings.—The West Tennessee Medical and Surgical Association held its annual meeting, May 24, and elected the following officers: president, Dr. John Yarbrough, Covington; vice presidents, Drs. John D. Brewer, Newbern, and Hermon Hawkins, Jackson; secretary-treasurer, Dr. R. A. McSwain, Paris, and assistant secretary, Dr. George R. McSwain, Paris. Dyersburg was selected as the next place of meeting.—The forty-eighth semiannual meeting of the Middle Tennessee Medical Association was held in Shelbyville, May 16 and 17. Columbia was designated as the next place of meeting. Dr. Jesse F. Adams, Bradyville, was elected president; Dr. John Witherspoon, Nashville, vice president, and Dr. Milton Tharp, Nashville, secretary-treasurer.

Personal.—Dr. W. H. Brice, Mount Pleasant, is seriously ill at his home, as the result of taking poison by mistake instead of quinin.—Dr. J. B. Bond, superintendent of the Western Hospital, Bolivar, has resigned and will resume practice at Union City.—Drs. Reese Q. Lillard, Lebanon, secretary and executive officer, and Harrison H. Shoulders, assistant secretary and registrar of vital statistics, of the Tennessee State Board of Health, have resigned.—Dr. Olin West, Nashville, has been elected secretary of the state board of health, succeeding Dr. Lillard.—Elmo W. Mitchell, superintendent of the Eastern Hospital for the Insane, Nashville, has resigned and will resume practice at Crossville.—Dr. Christopher C. Carpenter, Fayetteville, has succeeded Dr. Charles L. Goodrich as local railway surgeon.

CANADA

Personal.—Lieut.-Col. John Nisbet Gunn, Calgary, Ont., commanding officer of the 8th Field Ambulance in France, who is home in Toronto on sick leave, has received word by cable that he has been awarded the Distinguished Service Order.—Lieut.-Col. Archibald L. C. Gilday, Montreal, who went overseas as medical officer to a Montreal battalion and was promoted to the rank of commanding officer of a field ambulance, returned to Montreal, June 5, on sick leave. He was wounded just six weeks ago, and it is considered quick work to have a wounded officer returned to Canada in so short a time.—Among those decorated for service, in the King's birthday honor list, is Major Theodore A. Lomer, C. A. M. C., who received the D. S. O. Major Lomer was medical officer of health for Ottawa when he enlisted with the first contingent. He has served in France more than three years. Major Lomer was for a time on the staff of the Montreal General Hospital. He was superintendent of the Alexandra Hospital, Montreal, when he resigned to become medical officer of health for Ottawa.—Capt. Gerald Allison, R. A. M. C., Picton, Ont., has returned to the front after a few weeks' furlough in Canada. Captain Allison has served in Egypt, Gallipoli, India and France.—Lieut.-Col. Harold R. Ker, C. A. M. C., has been ordered to report at Halifax, N. S., under appointment as assistant director of medical services in charge of wounded soldiers from overseas.—Capt. Henry Crassweller, formerly of Windsor, Ont., who has been in active service more than three years, is reported missing. He was with the R. A. M. C. in Egypt, and later on the Saloniki front.

GENERAL

Railway Surgeons Hold Meeting.—At the annual meeting of the Central Georgia Railway Surgeons' Association held in Montgomery, May 16, the following officers were elected: president, Dr. Walter E. Saunders, Arlington, Ga.; vice presidents, Drs. Charles A. Thigpen, Montgomery, Ala., and George L. Alexander, Forsyth, Ga.; secretary-treasurer, Dr. Craig Barrow, Savannah, Ga.

New Section on Medicines.—A commodity section on medicines and medical supplies has been incorporated by the War Industries Board. Lieut.-Col. F. F. Simpson will be chief. The new section will deal with surgical supplies, instruments, dressings, serums, and other hospital and medical supplies, and will cooperate with the work of the chemical division in dealing with fine chemicals, photographic chemicals, etc.

Personal.—Dr. J. Christ O'Day, formerly of Mankato, Minn., and Oil City, Pa., delivered an address at a town mass meeting held, April 21, in Honolulu, urging the establishment of a permanent internment camp in the territory of Hawaii.—Senior Surg. Charles E. Banks, U. S. P. H. S., in charge of the Camp Funston Civil Sanitary District, with headquarters at Manhattan, Kan., has been appointed medical director of the War Risk Insurance Bureau, with headquarters in Washington, D. C.

Antityphoid Inoculations Free.—The Treasury Department authorizes the statement that in order to protect the health of workers and others at a time when the labor of every man possible is needed, the U. S. Public Health Service has been directed to give antityphoid inoculations without charge to all who apply to any of its hospitals or field offices. This will include the territory in the extracantonment zones, U. S. Marine hospitals, etc. Other preventive measures, such as the disposal of excreta, are being vigorously applied.

Army School of Nursing.—The Secretary of War has authorized the Surgeon-General of the Army to establish an army school of nursing with branch training schools in various selected military hospitals throughout the United States. The necessities of the war required the establishment of this training to supplement the present supply of trained graduate nurses. The opening of this course of nursing will give opportunity for patriotic young women to become army nurses. The courses in nursing will conform, as far as possible, to the courses in the civil hospitals, and diplomas will be granted, providing these hospitals remain open long enough to complete the course in accordance with present civil hospital standards.

Optical Industry Organized for War Service.—In compliance with the request of the government for the mobilization of industry for aiding in the prosecution of the war, a meeting of optical manufacturers in New York, May 15, resolved to appoint a war service committee to represent the entire optical industry. A subcommittee of this committee, appointed

to report on organization, submitted to the main committee a series of resolutions for adoption pledging the support of the optical manufacturers in securing accurate information with respect to the facilities of the industry; in acting with the priority committee of the war industries board in establishing rules for the distribution of materials, manufacture and transportation; in cooperating with the departments of the government with advice relating to matters affecting the optical industry, and in presenting to the government for consideration all questions relating to the optical industry in which the government is interested.

Bequests and Donations.—The following bequests and donations have recently been announced:

People's Hospital, New York City, \$50,000, the proceeds of a benefit theatrical performance.

Long Island College Hospital, Brooklyn, as residuary legatee, \$265,044 as its share of the estate of Charles W. West.

Birchard Library, Fremont, Ohio, \$2,000, to be used for the purchase of medical books; and for the Sandusky County Medical Society, his medical library, by the will of Dr. Martin Stamm.

Madison, Wis., General Hospital Association, the Clark apartment building, Madison, Wis., valued at about \$70,000, by the will of Miss Lucinda W. Rice.

Children's Memorial Hospital, Chicago, \$10,000 by the will of Mrs. Potter Palmer.

Harvard Medical School, a donation of \$7,500, the income to be used annually to present a gold medal and \$500 in cash to the person who may discover in any branch of science means that will result in the greatest good to humanity in connection with the prevention of disease, and the conservation of health, by M. Douglas Flattery.

Michael Reese Hospital, Chicago, \$20,000 by the will of Joseph Schaffner.

Fort Wayne, Ind., Lutheran Hospital Association a donation of the property of Dr. Herman Duemling, valued at \$8,000 by Dr. Herman A. Duemling.

The clinical building of the Medical College of Georgia, Augusta, \$125,000, and for the establishment of a camp for the treatment of tuberculosis, \$75,000, by the will of J. B. White, Augusta.

Mailing of Liquids and Oils in Glass.—In Order No. 1490 the Postmaster-General gives revised rules for shipment of admissible liquids and oils not exceeding the limit in weight of fourth class mailing matter, giving the manner in which they shall be packed, etc. Admissible liquids and oils, salves, pastes and other articles easily liquefiable shall be accepted for mailing regardless of the distance, when they conform to the conditions prescribed. The following directions are of interest to physicians: When in strong glass bottles holding 4 ounces or less, the total quantity of liquid shall not exceed 24 ounces. Each bottle shall be wrapped in paper or other absorbent and placed in a box of cardboard or other suitable material and packed in a container made of double-faced corrugated pasteboard of good quality, with tight corners and sealed with tape to prevent escape of liquid, the whole parcel to be securely wrapped with strong paper and secured with twine. Liquids in strong glass bottles holding more than 4 and not more than 16 ounces must be inclosed in a block or tube of metal, wood or papier-mâché, and there must be between the bottle and the block or tube a cushion of cotton, felt or other absorbent. The block or tube must be at least $\frac{1}{8}$ inch thick for bottles of 8 ounces or less and at least $\frac{3}{16}$ of an inch thick for bottles holding more than 8 ounces. The container must be rendered water-tight by an application of paraffin or other substance to the inside, and must have a screw top, with a washer so that no liquid can escape if the bottle should be broken. Such bottles may also be packed in tight receptacles of wood, metal or waterproof corrugated pasteboard, if surrounded with bran, sawdust or other absorbent in sufficient quantities to absorb all the liquid if the bottle is broken. Larger bottles may also be shipped, if packed in strong boxes surrounded with sawdust or other substance which will prevent breakage, but must be marked "Fragile. This side up," and must be transported outside mail bags.

FOREIGN

Japanese Mission to Study Typhus.—The *Policlinico* reports that a party of Japanese physicians, in charge of Dr. K. Mogi, has arrived in Roumania to study typhus. The party expects to remain eight months for the purpose.

Carnegie Hero Prizes for Civilians.—The *Riforma Medica* relates that among the prizes distributed recently at Rome by the board of the Carnegie Foundation were some to the nuns who have charge of the city hospital at Udine, in recognition of their devotion in remaining at their posts and tending the sick and wounded during the recent bombardment of the hospital.

Scabies at Amsterdam.—Scabies is so prevalent now at Amsterdam that two dispensaries have been arranged and

another is planned to which all the scabies patients are sent. The other members of the family are given treatment also, and the bed and body linen is disinfected. The authorities hope to stamp out the epidemic before the increasing scarcity of sulphur will render treatment more difficult.

Dogs Trained as Guides for the Blind.—The *Hospitalstidende* quotes a German exchange to the effect that an institution was organized in 1917 in Germany to train dogs to serve as guides for the blind. Dr. Bauer is in charge of the work, and he recently exhibited five dogs that had finished their training. They not only serve as guides but warn the blind man they are leading of every obstacle, watch out for anything he may drop, and, in short, it is said, serve as a friend and protector as well as guide.

A New Enslaving Drug.—The *Nederlandsch Tijdschrift* states that the combination of morphin, cocain and caffen which is marketed under the name "trivalin" is sowing addictions broadcast, as the advertisements state that the combination deprives cocain and morphin of their dangerous properties. Müller of Godesberg recently reported that he had had occasion to treat eleven cases of addiction from this drug. The consequences and symptoms are those mainly of cocain poisoning. All the patients had been given the drug first by a physician with the assurance that it was less harmful than the opiates. The odor of valerian about the drug is an advantage as this would deter some from using it.

American Poets' Ophthalmic Ambulance.—The *British Medical Journal* describes the ophthalmic motor ambulance given to the Italian army by the group of American poets. It was designed by Professor Busi of Bologna and Major Balestra, and the whole packs into a trolley of the dimensions required by the railway authorities. It provides a small operating room with wooden walls and roof covered with impermeable canvas, and a waterproof tent mounted on iron frames with a rainproof roof. This forms the reception room and also on occasion a radiologic cabinet and ophthalmoscopic examination room when it is covered inside with black cloth. The *Riforma Medica* states that the ambulance has been completed and has already left for the front in charge of Major Alfonso Neuschuler.

Premiums for Breast Feeding.—The *Nederlandsch Tijdschrift* quotes a Berlin exchange to the effect that the number of women nursing their children nowadays is much above the average before the war. The infant death rate shows a corresponding decline. The authorities ascribe the greater prevalence of breast feeding to the premiums given nursing mothers. Each mother has to apply weekly for the premium and bring the child, and consequently an opportunity is thus afforded for instructing the mother in the care of the child. This combination of premiums and consultations is proving of the greatest advantage in reducing the infant death rate. It is suggested, however, by the *Tijdschrift* that the scarcity of food for the children may have something to do with the increase in breast feeding.

Public Warning Against Venereal Diseases in the Netherlands.—The *Nederlandsch Tijdschrift* gives the text of a circular of about 400 words warning of the dangers of venereal disease for the individual and for the nation, and the importance of early and thorough treatment. It is issued by the Public Health Service of the Netherlands, sanctioned by the minister of the interior, and it is to be made public throughout the country, although it is not mentioned how this is to be done. It is emphasized in the circular that, "generally speaking, there is no danger from the venereal diseases for those who refrain from extra-conjugal sexual relations, but that the danger of contracting venereal disease is greater now than ever before, as the war has brought about unprecedented conditions in our land also, and brought into the country many foreign elements, including many undesirable elements."

Death of Forlanini.—The cable brings word of the death of Dr. Carlo Forlanini of Pavia, the inventor of the method of treating pulmonary tuberculosis with induced pneumothorax, aged 71. Until he reached the age limit he was professor of physiology and clinical medicine at the University of Milan, and was always interested in aerotherapy and medicopneumatic measures. It was in 1894 that he published what he called "The First Attempt to Treat Pulmonary Tuberculosis with Artificial Pneumothorax," and the following year published the "First Case of Monolateral Advanced Pulmonary Tuberculosis Successfully Treated with Artificial Pneumothorax." He has published numbers of works on this and other subjects, notably on venesection in treatment of uremia, on the influence of tobacco, alcohol, morphin and caffen on the arterial circulation in a case of a large gap

in the skull, and on thoracentesis with introduction of filtered air (1902).

Discussion of Venereal Diseases in the German Senate.—The *Nederlandsch Tijdschrift* relates that a bill pending in the German Reichstag imposes a penalty of 10,000 marks or a prison term of one year on any who treats venereal disease without being a qualified physician. The promoters of the bill stated that with this penalization the bill must stand or fall. It was adopted in the committee by a vote of eighteen for and seven votes against the measure. In the discussion, one of the members insisted that the present laws against personal injury cover the subject, and that there is no need for further legislation. Another member remarked that many qualified physicians have turned aside from "school medicine," and that the worst forms of advertising were introduced into the world by physicians. He also stated that the working classes have lost confidence in "school medicine" on account of the treatment by the social insurance physicians of the insured, adding, "Qualified physicians are themselves to blame for the resort to the nature healers by such a large part of the populace." (There are said to be 12,000 nature healers in Germany at present.) Another member contended that whether there are ignorant or careless physicians has nothing to do with the bill. "The question is to determine the minimum of knowledge compatible with the treatment of venereal diseases." A penalty of 1,000 marks and prison term of six weeks was demanded for those who, knowing that they have some venereal disease, neglect to have it treated by some qualified physician. After much discussion this measure was adopted except that the fine was reduced to 500 marks and the prison term to four weeks.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Adulteration of Drugs.—The Public Health Service of Mexico has sent out notices to the governments of the different states warning against three falsified drugs which have been found in the City of Mexico. Pharmacists are warned to be on the lookout. One of the drugs is labeled benzonaphthol, but is merely calcium silicate; it bears the apocryphal label "Riethel." Another is simply acetanilid, labeled cocain chlorid from the Mallinckrodt firm at St. Louis. The third drug thus falsified is euchinin, which consists merely of calcium carbonate and a little quinin sulphate.

Deaths in the Profession Elsewhere.—Dr. Sanchez Toledo, a Cuban physician long practicing in Paris, aged 58. He was the representative of Cuba at various international gatherings, and during the present war has been serving in a Red Cross hospital.—Dr. M. G. Zavala, professor of obstetrics in the Facultad de Medicina of Mexico, aged 68.

CUBA LETTER

HAVANA, May 26, 1918.

Contagious Diseases in Cuba

One hundred and five cases of typhoid fever have been reported in Havana during the last month. Typhoid vaccine is supplied free of charge in all branches of the board of health department. In the interior of the island, typhoid fever has also shown an increase over the statistics of former months, but this small epidemic is by no means threatening, according to the health authorities.

Malaria does not exist in Havana except when imported from other communities, Oriente and Camagüey, where there are various foci to which the board of health is now attending. Last year, 133 malaria patients died in Oriente, and twenty-eight in Camagüey. Professor Guiteras, director of sanitation of Cuba, has proved that most of those cases were imported with the negro laborers who came to work in the sugar cane fields from Haiti and Jamaica.

The campaign against these two diseases is being carried on conscientiously, and their early control is expected.

Cuban Physicians and Nurses to the Front

The Cuban senate has passed a bill ordering 100 physicians and surgeons to go to lend their services in the Allied hospitals in France.

The Cuban Red Cross has selected twelve nurses, who will be sent to France after a short period of training.

Death of Dr. Sanchez Toledo

Dr. Domingo Sanchez Toledo, a Cuban physician practicing in Paris and a captain in the French medical reserve corps, died in France last month. He was a brother of Dr. Miguel Sanchez Toledo, professor of physiology in the University of Havana.

LONDON LETTER

LONDON, May 14, 1918.

The Outbreak of Acute Infective Ophthalmoplegia

The outbreak of acute infective ophthalmoplegia in London and other places in England has already been described (*THE JOURNAL*, June 1, 1918, p. 1619). Some further particulars may now be given. Against the suggestion that it is the form of food poisoning known as botulism is the fact that a case has been observed in an infant at the breast and another in a vegetarian. Moreover, no one article of food has proved to be responsible. Some cases have simulated meningitis, and in others the suggestion has been made that the cases are poliomyelitis of unusual distribution in the nervous system. The duration of illness has varied from six weeks or longer to a few days. The onset of illness may be sudden or gradual. The one constant symptom is the rapid development of languor and drowsiness. This may be the most pronounced symptom throughout. The patient as a rule does not become completely unconscious. He lies in bed like a log, but is easily aroused. The respirations are increased in number. The pulse is not rapid. There is a moderate amount of pyrexia in the earlier stages. Muscular tremors, especially of the eyeball, are a marked symptom in some cases. Usually there is unilateral or bilateral weakness of muscles supplied by the third, fourth or seventh cranial nerves. Ptosis is very frequent. As a result of the weakness of the facial muscles, the patient's face commonly has a masklike appearance. Constipation is usual. Retention of urine frequently occurs. There is marked dryness of the mouth and throat, and may be some dysphagia. The mouth, as well as the general condition, may simulate uremia or the typhoid condition. Death, which has occurred in a large proportion of the severe cases so far observed, seems to be due to bulbar paralysis.

Ophthalmologists and Public Affairs

At a representative meeting of ophthalmologists at the rooms of the Royal Society of Medicine, it was decided to form a council to take action in matters of ophthalmologic interest in connection with public affairs. In proposing the resolution, Sir Anderson Critchett said it would meet a definite need and would tend to weld the elements of ophthalmology more closely together, as well as making for the welfare of the public. Mr. Richardson Cross seconded, remarking that governments and governing bodies require expert advice in order to be efficient, and that the best experts are those who enjoy the confidence of their colleagues in that special line of practice. Owing to the amalgamation of the journals devoted to ophthalmology into one organ, and the representation on the Ophthalmological Society of the various similar bodies in the kingdom, the profession is now well organized and can present a powerful front on all questions specially concerning it. He instanced ophthalmia neonatorum, navy and army visual standards, visual and lighting requirements in various kinds of industry, organized inquiries concerning the blind, grades on compensation payable according to degrees of visual disability, and so on. Mr. J. B. Lawford, in supporting the resolution, said that the days are rapidly passing when we can afford to ignore scientific discoveries and the new methods based upon them. He believes that more attention will be paid in future to the views of representative bodies, and less to the opinions of individuals, however eminent. The state is now more and more assuming the rôle of parent, and, like other parents, will be all the better for sound advice. He would like to see ophthalmology made a compulsory subject of the medical curriculum, a matter on which we are much behind other civilized countries. At present, a man receiving the minimal qualifying medical diploma can at once take up the practice of ophthalmology; and if the proposed committee should do no more than insist that men should not take up this work without special training, it would fully justify its formation. It was decided that the Council should consist of all the past and present presidents of the Ophthalmological Society of the United Kingdom, and of the Section of Ophthalmology of the Royal Society of Medicine as permanent members, four members nominated annually by the councils of each of these societies, and one representative from the Oxford Ophthalmological Congress.

Physical Deterioration of Boys Under War Conditions

In a letter to the *British Medical Journal*, a physician practicing in a munition area calls attention to the dangers that

beset boys between the ages of 14 and 18 (that is, up to the military age) under the present abnormal conditions. Three or four years of absence of paternal control (because their fathers have joined the army), of practically unlimited supplies of money and cigars, lack of sufficient sleep through frequent cinemas and music halls, and finally, in many cases a tendency to indulgence in alcoholic drinks, must all exact an inevitable toll on the growing boy. In many instances mere boys have become physical and moral wrecks. The trouble can be traced to the high wages, \$15 or \$20 a week, which these boys earn. For this the government is responsible. At the beginning of the war the obtaining of munitions in sufficient quantities was all important. In order to avoid trouble with labor, wages for piece work were fixed at a high figure, sometimes ridiculously high, so that unskilled persons were able to earn three or four and even more times the wages they received before the war. Probably for the same reason—a desire to avoid trouble with labor—these wages have never been altered. The physician in question suggests that no one under the age of 18 should be allowed to receive more than \$7.50 a week, and that the remainder should be held in trust till the war is over.

The Latest Ambulance Train

A short time ago I described an ambulance train constructed in this country for the American Army which was then the last word in ambulance trains. But progress never stops. A train has just been constructed for the use on the continent, probably in Italy, and is being exhibited by Red Cross officials in London and other cities. In general design and internal arrangement this train closely resembles the one made for the American Army. Certain mechanical modifications were suggested by recent experience. Painted khaki color outside and white inside, this train is 960 feet long and weighs 440 tons. There are sixteen coaches, providing accommodation for 342 cot patients, besides infectious and mental cases in special isolation wards. There are also sitting and dining compartments for officers; staff, pharmacy, and personnel cars; two kitchen cars; refrigerating chambers for perishable food, store rooms, linen presses, and brake vans. The windows are fitted with "louvre" blinds covered with wire netting to keep out the flies, and ventilation and sanitation are carried out on the most approved principles. More than 3,000 gallons of water are carried on the train, and the two kitchen cars can supply about 50 gallons of hot water at any time. The train is electrically lighted and fitted with detachable electric fans throughout. It is steam heated, and the staff and personnel cars have a special self-heating apparatus which can be brought into use when the engine is not attached. The beds for the patients have been specially designed, and can, if necessary, be used as stretchers.

PARIS LETTER

PARIS, May 9, 1918.

Plastic Operations on the Skull

At the request of the army medical department, this subject was discussed at a reunion of the members of the Société de neurologie de Paris and of the chiefs of the Centres neurologiques d'armées and de l'intérieur. Dr. Louis Mourier, undersecretary of state for the Service de santé militaire, presided. The conclusions contained in a report made by Dr. Georges Guillaud, professeur agrégé à la Faculté de médecine de Paris and médecin des hôpitaux, were adopted by the assemblée as follows: Before a cranioplasty is done, the *trépané ancien* should be systematically examined from the neurologic standpoint. Cranioplasty is contraindicated when (1) there is present any nervous trouble connected with modifications in the circulation in the brain; (2) if the cerebrospinal fluid is not absolutely normal as to tension, chlorids and albumin content, and if it contains leukocytes; (3) if ophthalmoscopic examination discloses the existence of a papillary stasis or choked disk; (4) if the patient shows partial or general epileptic phenomena; (5) if the roentgen rays reveal an intracranial projectile; (6) if the patient has exhibited serious meningeal symptoms. In those cases in which the extensibility of the cicatrix seems to be the cause of nervous symptoms, it is wise, before undertaking any plastic operation, to make sure that these symptoms will disappear on the application of a protective external plate.

From the medicomilitary standpoint, any decision that maybe taken should be based, above all, on the proper appreciation of the cerebral or mental condition. All reserves made so far as concerns the brain trouble, an extensive loss

of cranial substance, whether a plastic operation has been done or not, does not mean, in itself alone, obligatorily and immediately, a retirement pension, but only, and during a period of four years, an invalidism with renewable allowance equal to a retirement pension.

Nerve Suture

The question of nerve suture was also discussed at this meeting. In a general way, in cases in which there is no evidence of the return of motion or sensation, an unfavorable opinion should not be given until two years have elapsed after the date of the suture. During this waiting interval the patient is invalidated temporarily and examined several times by the same neurologist. In cases presenting evidence of a possible return of function, it is impossible to foretell the period of time that must elapse before the case can be pronounced incurable. The patient after suture should be treated in the same neurologic center in which the suture was done, and for as long as is judged necessary by the chief of the center. The latter is the one to determine, according to the case, the moment when the incurability can be shown. The *réunion* also passed a resolution to the effect that after sufficiently long treatment of those patients who show signs of progressive regeneration, the chiefs of the centers should be authorized to send them away either on repeated leaves of absence during convalescence or on renewable *congés de travail*, with return to the center for further examination and final decision.

Nerve Prostheses

It was also stated at this meeting that patients with nerve injuries supplied with prosthetic apparatus intended to remedy transient motor insufficiencies often continue to use such apparatus although certain movements have already returned. Some of those keeping on with the use of the apparatus believe that it is still necessary to their progress; others, although recognizing that it should be worn only temporarily, continue to wear it, either for ostentation or to hide the improvement which they have made. The *réunion* insisted that all men who have been using such an apparatus for more than six months should be examined in the center where it was ordered, to determine the necessity for further wear or to discontinue its use, and also to make such changes in its construction as may be needed.

Autochthonous Malaria

At the *Réunion médico-chirurgicale de la III-e Armée*, Drs. Grysez and Pierret reported on cases of malaria seen in the army during 1917, in which the diagnosis had been confirmed in the laboratory. Among the thirty-two cases there were twenty-four of autochthonous malaria. These patients had never had malaria previously, they had never been out of France, and they inhabited regions that were nonmalarial. In twenty-three cases the *Plasmodium vivax* was the cause; the *Plasmodium falciparum* was encountered in only one case. This particular patient had lived in Paris during peace times, had never been outside of France and had never had malaria before. He had been stationed for several months in the neighborhood of troops from Morocco and had contracted a tropical fever, confirmed by the presence in the blood of rosettes and crescents. Dr. Rieux discussed the symptomatology of primary autochthonous malaria. In the cases observed, the first impression was that they were not malaria but cases of typhoid and paratyphoid fever. Nevertheless, even then certain differential clinical signs were present which are not of the symptomatology of the last named diseases: the onset generally with distinct febrile manifestations; bilious vomiting, pulse rapid and thready; finally, the apparently contrary fever curve, with some falls of the temperature more or less brief in duration. These particulars are always important in the early clinical diagnosis of primary tertian malaria; which does not in its initial manifestations resemble the established tertian or double tertian type—secondary tertian malaria. If the clinical evidence is in favor of primary malaria, blood examination and the finding of the hematozoon will remove all doubts.

Primary Retarded Suture of War Wounds

Dr. A. Chalié of Lyon recently reported to the *Société de chirurgie de Paris* thirty-two observations of war wounds which he has treated by retarded primary suture, that is to say, not in the first twelve or twenty-four hours but after the thirty-fifth, the fortieth hour, even up to intervals of three, four, five and even eleven days. Up to the present it has been admitted that primary union of war wounds should be

attempted only, with prudence, when the wound has been cleaned in a very thorough manner before the twelfth hour, in the preinfectious stage, and when systematic bacteriologic control has failed to reveal the streptococcus. Now, Chalié's cases demonstrate that the game need not be considered lost if the patient does not arrive in the first twelve hours, and even if bacteriologic control is not possible. In fact, in the absence of a bacteriologic examination it is often possible to decide whether the wound is seriously or only slightly infected by the aspect of the wound and surrounding tissues, and by estimating the general condition of the patient: An infected wound, in the bacteriologic sense of the word, may be only very slightly so from the clinical standpoint. These wounds can often be sutured, provided they can be kept under close surveillance. The thirty-two delayed sutures of Chalié's cases gave rise to only three occasions for reopening the wound. In the remaining cases the convalescence was uncomplicated and the final results were as good and achieved as rapidly as in the cases of early primary suture; the scars were linear and soft and nonadherent. Many of these patients rejoined their corps in less than a month, including even their leave of convalescence, in spite of the fact that these patients had been seriously wounded, with bone lesions in five cases and projectiles in the tissues in seventeen cases.

Chalié insisted that between early primary suture—the ideal method, and nearly always applicable in the cases in which operation is performed within twelve or twenty-four hours—and secondary suture, done later in cases that had previously been disinfected surgically, chemically or spontaneously, there is a place for a late primary suture, which is applicable only to certain cases in which there is only slight infection. Dr. Potherat stated that he, too, had treated by retarded primary suture wounds of the soft parts which had been inflicted three, four, five, six and even nine days previously. Dr. Pierre Delbet, professor of clinical surgery in the Faculty of Medicine of Paris, stated that he had recently treated some patients between twenty-two and forty-eight hours after they had been wounded. Several were infected bacteriologically but, in spite of this, he made a free excision and sutured the wound tightly without drainage. The results had far surpassed his expectations.

Cross of Legion of Honor for Military Nurses

Contrary to the custom in vogue as applying to civilians, the cross of the Legion of Honor conferred on army people carries with it pecuniary advantages (varying according to the degree conferred). It was recently decreed that these benefits should be extended, under certain conditions, to the military nurses and the Red Cross nurses mobilized in the *formations sanitaires* of the army.

Treatment of Bone Tuberculosis

The administration of the Assistance publique has decided, in accordance with a report made by M. Rendu, member of the city council, to establish at Salies-de-Béarn a center for the treatment of bone tuberculosis in children. Such children will be treated here as were sent during times of peace to Berck-sur-Mer.

Brazilian Medical Mission

A party of Brazilian military surgeons who came to France under the leadership of Dr. Rodrigo Bulcao for the purpose of studying the work of the Service de santé, have gone to the front.

Marriages

MAJOR W. WAYNE BABCOCK, M. R. C., U. S. Army, Philadelphia, on duty at Fort McPherson, Atlanta, Ga., to Miss Marian C. Watters of Swarthmore, Pa., June 10.

LIEUT. FRED LAWVILLE RHODES, M. R. C., U. S. Army, Toledo, Ohio, to Miss Mary Z. Howard of Columbus, June 4.

FREDERICK WILLIAM JONES, Verden, Okla., to Miss Blanche E. Armstrong of Oklahoma City, Okla., March 31.

ARTHUR GALLOWAY BEALL, Hutchinson, Kan., to Miss Hattie May Stewart of Kansas City, Mo., June 1.

MALCOLM ROBERT MARKSON, Calumet, Mich., to Miss Irene H. Wright of Hancock, Mich., May 18.

E. BERT WILEY to Mrs. J. K. Scott, both of Helena, Mont., at Bozeman, Mont., May 17.

E. FREEMAN ROBBINS to Miss Maude Farrar Taylor, both of Houston, Tex., May 29.

Deaths

John Edward Jones, Altha Hall, Alexandria County, Va.; George Washington University, Washington, D. C., 1897; aged 51; consul and consul general at Dalny, Manchuria, in 1905 and 1906, consul at Winnipeg, Man., in 1907 and 1908, and consul general from 1908 to 1913; consul general at Genoa, Italy, from 1913 to 1915, and since that time consul general at Lyons, France; for sixteen years a member of the staff of the Washington *Evening Star*; died at his home, May 20, from nephritis.

George W. Berntheisel, Columbia, Pa.; Jefferson Medical College, 1866; aged 74; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; and once president of the Lancaster County Medical Society and Columbia College of Physicians and Surgeons; a veteran of the Civil War; president of the Medical and Surgical Staff of the Columbia Hospital; died in that institution, May 28, from cerebral hemorrhage.

Neil Jamieson Hepburn, New York City; College of Physicians and Surgeons in the City of New York, 1868; aged 71; a Fellow of the American Medical Association; and a member of the American Ophthalmological Society, and American Otological Society; consulting ophthalmologist to the Manhattan Eye, Ear and Throat Hospital, and the Paterson (N. J.) Eye and Ear Infirmary; a veteran of the Civil War; died at his home, May 28.

Alfred Wiles Schooley, Braddock, Pa.; Jefferson Medical College, Philadelphia, 1871; aged 70; a member of the Medical Society of the State of Pennsylvania; for nearly forty-five years a member of the medical staff of the Pennsylvania Railroad; also surgeon for the Pittsburgh and Lake Erie Railroad; dean of the medical staff of the Braddock General Hospital; police surgeon of Braddock; died at his home, May 24.

Nathan Ryno Garter, Baltimore; University of Maryland, Baltimore, 1879; aged 57; a Fellow of the American Medical Association; and a member of the Legislative Committee of the American Medical Association; for several terms a member of the state board of health; commissioner of health of Baltimore from 1913 to 1915; died at his home, June 1, from septicemia, following an infection of the throat.

Richard H. Smith, Kokomo, Ind.; Medical College of Indiana, Indianapolis, 1880; aged 72; a member of the Indiana State Medical Association; also a druggist; for many years coroner of Howard County; for several terms treasurer of the Howard County Medical Society and a member of the board of health of Kokomo; died at his home, May 29, from uremia.

Walter Darwin Williamson, Portland, Maine; University of Vermont, Burlington, 1888; aged 54; a Fellow of the American Medical Association; and once president of the Maine Medical Association; a member of the surgical staff of the Maine General Hospital, and of the National Association of Railway Surgeons; died at his home, June 2, from nephritis.

Lieut. Wyvern Almon Coombs, M. C., Maine N. G., Westbrook, Maine; Bowdoin Medical School, Brunswick and Portland, Maine, 1913; aged 27; a Fellow of the American Medical Association; on duty at Camp Greenleaf, Fort Oglethorpe, Ga.; was thrown from his horse at Camp Greenleaf, April 20, and died from his injuries, April 23.

Lyman F. Babcock, Deadwood, S. D.; Rush Medical College, 1864; aged 79; formerly a Fellow of the American Medical Association; whose fifty-first anniversary in the practice of medicine was celebrated at the annual meeting of the Black Hills District Medical Association in 1915; died in the Yankton State Hospital, May 30.

Frederich Curt Harnisch, Chicago; University of Leipzig, Germany, 1890; aged 57; a Fellow of the American Medical Association; a specialist in ophthalmology; ophthalmic surgeon to Alexian Brothers', St. Elizabeth's, and St. Mary's of Nazareth Hospital; died in the Alexian Brothers' Hospital, Chicago, May 25, from heart disease.

David Miller Barr, Philadelphia; Jefferson Medical College, 1864; aged 81; assistant surgeon U. S. Army, and on duty at the Catherine Street Hospital, Philadelphia, in 1864 and 1865; later medical director of sanatoriums in Ocean Grove and Long Branch, N. J.; died at his home, June 2, from myocarditis.

Nicholas Berdan Van Houten, New City, N. Y.; College of Physicians and Surgeons, in the City of New York, 1867; aged 76; a member of the Medical Society of the State of New York; for forty years physician of Rockland County; died at his home, May 29.

Frank Wesley Searles, Mokena, Ill.; Northwestern University Medical School, Chicago, 1877; aged 65; formerly a Fellow of the American Medical Association; died March 26, six days after an operation for a malignant tumor of the pylorus.

Marcus Whiting, Bruce, Wis.; Rush Medical College, 1883; aged 57; formerly a Fellow of the American Medical Association; for many years a practitioner of Peoria, Ill., and alderman from the first ward; died at his home, near Bruce, May 22.

Joseph Alva McCullough, Steubenville, Ohio; Western Reserve University, Cleveland, 1878; aged 62; a Fellow of the American Medical Association; for eighteen years local railway surgeon; died at his home, May 23, from pneumonia.

Raoul S. Dossmann, Ville Platte, La.; Kentucky School of Medicine, Louisville, 1900; aged 40; formerly a member of the Louisiana State Medical Association; coroner of Evangeline Parish; died at his home, May 23.

William Thomas Goldsmith, Washington, D. C.; Medical College of Georgia, Augusta, 1853; aged 87; a surgeon in the Confederate Service during the Civil War; died at his home, May 25, from cerebral hemorrhage.

Lucius Norton Henry, Ripley, Ill.; Miami Medical College, Cincinnati, 1890; aged 48; a member of the Illinois State Medical Society; formerly a druggist; died in Kansas City, March 26, from gastric ulcer.

Samuel Hiatt Burnside, Wichita Falls, Tex.; University of Pennsylvania, Philadelphia, 1882; aged 62; a Fellow of the American Medical Association; died at his home, March 28, from cerebral hemorrhage.

Benjamin B. Fishburn, Lebanon, Pa.; Medico-Chirurgical College of Philadelphia, 1898; aged 47; while walking over a grade crossing in Lebanon, May 27, was struck by a train and instantly killed.

John Bennett, Fowlerton, Tex.; University of Louisville, Ky., 1910; aged 33; formerly a Fellow of the American Medical Association; died in San Antonio, Tex., May 19, from ptomain poisoning.

Isaac Todd Mullen, Chicago; University of Buffalo, N. Y., 1884; aged 76; for many years postoffice inspector in the railway mail service; died at his home in Chicago, May 12, from heart disease.

Seymour C. Williamson, Canisteo, N. Y.; College of Physicians and Surgeons, Baltimore, 1885; aged 77; for one term coroner of Steuben County; died at his home, May 21, from pneumonia.

William Pitt Dunbar, Campbell, Tex.; Vanderbilt University, Nashville, Tenn., 1880; aged 67; a member of the State Medical Association of Texas; died at his home, May 27.

Walter D. Chaffee, South Bend, Ind.; Hahnemann Medical College, Chicago, 1887; aged 52; died at his home, May 16, from nephritis.

Thomas Price Tisdale, Alameda, Calif.; Cleveland University of Medicine and Surgery, 1858; aged 88; died at his home, May 18.

Adin F. Large, Braddyville, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 64; died at his home, May 10.

George Alfred Hurst, Dorset, Ohio; Eclectic Medical Institute, Cincinnati, 1884; aged 70; died at his home, about May 12.

Adam Raymond Klein, Muscatine, Iowa; Jefferson Medical College, 1904; aged 42; died at his home, May 18, from pulmonary tuberculosis.

John A. Read, Tecumseh, Kan.; Bennett Medical College, Chicago, 1871; aged 83; died at his home, May 16.

Harry J. Bandom, Hettick, Ill.; (license, Illinois, years of practice, 1877); aged 86; died at his home, May 5.

John F. McCarty, Briggs, Tex.; Louisville, Ky., Medical College, 1883; aged 82; died at his home, May 14.

Seymour E. Ball, Eagle Rock, Calif.; St. Louis University, 1903; died about May 9, from cardiac asthma.

Michael J. McTurnan, Rigdon, Ind.; (license, Indiana, 1897); aged 77; died at his home, May 20.

Correspondence

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—May I point out some fallacies in Dr. Noguchi's answer to my criticism of his proposed new method of performing the Wassermann test in Army and Navy laboratories?

It is true that the presence of native antishoop amboceptors in human serum may cause errors in the Wassermann test when performed with a sheep hemolytic system. His statement, however, that this factor is uncontrollable is not correct. As a matter of fact I am quite certain that most careful workers who use the sheep hemolytic system remove the native antishoop amboceptors from serum before testing it.

Dr. Noguchi frankly admits that with his method a moderately positive serum containing an excess of native complement may give a weaker reaction than would a serum with an average amount of complement. Then by what process of reasoning can he reach the conclusion that a weakly positive serum may not give a negative reaction under the same conditions?

Dr. Noguchi claims that there is no great variation in the complement content of human serums. This is certainly not in accord with the teachings of most authorities on this subject, and is not in accord with my own experiences. During the past two years I have made a large number of native complement determinations on serums which were to be tested in the raw state, and have found the variations quite considerable. A detailed report of this work is now in the course of preparation and will soon be published. It will be sufficient here to point out the fact that some of the procedures advised by Dr. Noguchi for his new test themselves betray a recognition of the existence of this wide complement variation. After the addition of corpuscles and amboceptor to his tests he incubates for one-half hour. At the end of this time some of his controls are completely, and some only partially, hemolyzed; as a matter of fact, a few may have been hemolyzed for from ten to fifteen minutes. Those serums which do not show complete hemolysis in the controls at the end of the half hour period receive another unit of amboceptor and are incubated for another half hour. Those serums which even then do not show a completed reaction are retested with negative human serum as complement. We here recognize variations in complement content ranging all the way from an amount sufficient to bring about complete hemolysis in fifteen minutes with one unit of amboceptor to an amount that will not complete hemolysis in one hour with two units of amboceptor. That these differences represent considerable variations in complement quantities will be readily appreciated by any one who has ever done a complement titration.

As an example of the importance that authorities place on the need of uniformity in complement strength, I may quote C. F. Craig (Observations on the Noguchi Modification of the Wassermann Complement Fixation Test in the Diagnosis of Lues in the Military Service, *Jour. Exper. Med.*, **12**, 726. This refers, of course, to the old Noguchi test). Craig adopted the Noguchi test but used inactivated serum, because he feared that with noninactivated serums a certain percentage of false positives would be obtained. He insists on the careful titration of complement and says, "A whole series of tests may be rendered valueless by a slight loss of strength in the complement."

Dr. Noguchi surely deserves the thanks of all laboratory workers for having devised the technic for preparing acetone-insoluble lipoids for antigenic purposes. I am ready to admit that a good antigen of this kind is usually more highly antigenic and less anticomplementary than one obtained by any other method. That it is anticomplementary, however, is evidenced by the fact that we make anticomplementary titrations on it. No matter what fraction of the anticomplementary unit we accept as our antigen dose, it always carries with it a corresponding fraction of anticomplementary qualities. As I have pointed out in my previous communication, the anticomplementary activity of antigens varies for different serums. Now then, given a serum with the minimum com-

plement content, or one that in Dr. Noguchi's method requires twice the amboceptor dose and from two to four times the hemolyzing time that a maximum complement serum would, and which is unduly sensitive to the anticomplementary qualities of the antigen, it is readily conceivable that a false positive reaction would result.

Dr. Noguchi fails to see any objection to his procedure of adding a second dose of amboceptor to serums whose control tubes are not hemolyzed at the end of the half hour period. I would again refer him to the paper by Ottenberg mentioned in my previous communication, where he will find discussed the fallacy of the assumption that complement deficiency can be safely compensated for by amboceptor excess, and which, I am sure, will convince him that such a procedure is not a safe one.

After all has been said, the fact remains that Dr. Noguchi's proposed new test ignores a complement variation the maximum of which is represented by a hemolyzing time of fifteen minutes, or possibly less, with one unit of amboceptor and the minimum by a hemolyzing time of one hour with two units of amboceptor. If this is permissible, then all our conceptions of complement fixation tests must be revised. Then can a chemist also properly make determinations with sodium hydroxid solutions ranging all the way from a tenth normal to a fiftieth normal, and make all his calculations as though he had been working with a twentieth normal.

Dr. Noguchi's old test is a model of scientific accuracy compared with his present method. And yet Kolmer says, "A positive Wassermann reaction, however, is better evidence of the presence of syphilis than a positive Noguchi reaction, because of the possibility of false complement fixation occurring in the latter when active serums are used." With a good acetone-insoluble lipoid antigen he finds these false reactions to be about 2 per cent. McFarland says, "Unfortunately, it [the Noguchi test] seems to have the demerit of occasionally finding the reaction in negative cases, which is a serious defect." Kaplan says, "All things being equal, the method is fairly reliable, and in my hands gave a positive error of 2.5 per cent." These quotations represent the general opinion of authorities. If Noguchi's old method has a positive error of about 2 per cent., his new method surely has a much larger positive error and also, in addition, a negative error.

What a reflection it would be on science if considerably over 2 per cent. of all those of our Army and Navy who will be subjected to complement fixation tests were to be falsely stigmatized with syphilis. Surely these men now face enough hazards without adding this one. I am still firmly convinced that to use the test proposed by Dr. Noguchi in Army and Navy laboratories for diagnostic purposes would be a great injustice to our soldiers and sailors.

J. J. SEELMAN, M.D., Milwaukee.

BÁRÁNY CHAIR TESTS AND FLYING ABILITY

To the Editor:—In an article on "Bárány Chair Tests and Flying Ability" (*THE JOURNAL*, April 13, 1918, p. 1064), we presented certain data concerning the Bárány chair tests of 100 naval aviators, and found an absence of correlation between the tests and the flying ability of the men. While, of course, the Bárány tests have in no way been intended to predict the flying ability of applicants for aviation, nevertheless, men who have failed to respond normally to these tests have in most instances, it is understood, been rejected, and rejected solely because of that failure. In other words, the tests have been used to predict inability to fly. If abnormal reactions constitute sufficient grounds for rejecting applicants, then perhaps it may be well to see what actually successful fliers do in a Bárány chair, and what, if any influence flying has on their reactions.

Table 1 shows the results of the nystagmus times of fifty aviators, all of whom were examined twice by the same examiner. The first examination was given before the man's flight instruction began, and the second after he had qualified. The interval between these two examinations varied from

forty-six to eighty-eight days. The tables were compiled and submitted by Asst. Surg. C. J. Brown, U. S. Navy, at the Naval Air Station, Pensacola, Fla.

TABLE 1.—NYSTAGMUS TIMES OF FIFTY AVIATORS

Name	Nystagmus Time
1. J. E.	20 25
After 60 days	25 25
2. F. B.	19 19
After 47 days	8 2
3. E. E. B.	23 21
After 81 days	19 19
4. W. A. B.	26 21
After 51 days	21 18
5. J. S. B.	27 25
After 84 days	15 12
6. J. S. B.	20 11
After 71 days	10 5
7. K. H. C.	22 19
After 60 days	20 17
8. D. D.	21 21
After 67 days	22 24
9. S. S. H.	24 27
After 47 days	11 13
10. A. L. H.	19 17
After 46 days	28 22
11. L. B. H.	20 19
After 55 days	22 19
12. S. C. K.	22 19
After 67 days	14 20
13. K. B. K.	12 11
After 51 days	14 14
14. A. J. L.	24 25
After 66 days	25 27
15. R. L. F. T.	20 19
After 63 days	10 13
16. S. P. W.	30 26
After 84 days	18 21
17. H. M. W.	20 14
After 62 days	17 17
18. W. M. W.	18 17
After 69 days	18 17
19. S. A.	21 20
After 65 days	13 15
20. R. L. A.	18 22
After 70 days	15 16
21. G. T. B.	19 20
After 68 days	15 15
22. T. M. B.	12 13
After 65 days	13 14
23. E. D. B.	16 21
After 82 days	15 19
24. J. F. B.	28 24
After 85 days	12 15
25. E. J. B.	25 26
After 72 days	23 20
26. S. T. C.	19 17
After 58 days	20 20
27. H. R. D.	28 30
After 85 days	38 30
28. J. A. E.	22 20
After 79 days	24 21
29. L. A. H.	27 22
After 56 days	21 19
30. R. H.	8 11
After 61 days	10 12
31. G. S. H.	24 22
After 84 days	12 14
32. C. F. K.	19 24
After 67 days	19 17
33. L. H. L.	17 15
After 66 days	14 10
34. R. R. L.	25 22
After 67 days	20 18
35. T. N. M.	28 24
After 71 days	20 21
36. F. R. M.	24 20
.....	10 13
37. J. C. N.	14 13
After 51 days	18 22
38. G. T. O.	32 30
After 85 days	17 22
39. W. L. P.	19 33
After 47 days	22 23
40. H. M. P.	22 18
After 84 days	20 22
41. G. L. R.	18 17
After 86 days	21 20
42. W. T. S.	23 17
After 52 days	16 18
43. C. M. S.	22 25
After 69 days	16 20
44. J. F. S.	24 21
After 88 days	13 15
45. W. W. T.	11 10
After 52 days	12 8
46. J. H. T.	25 24
After 69 days	22 19
47. I. B. T.	10 19
After 78 days	10 19
48. V. F. V.	17 19
After 85 days	13 15
49. A. K. W.	20 22
After 51 days	17 18
50. C. H. W.	17 15
After 67 days	0 7
Summary	
Total days	3,383
Number of aviators	50
Average Number	67.6
Least Number of days.....	46
Greatest number of days ..	88
Nystagmus	
Normal in both examinations	26
Normal first, abnormal second	13
Abnormal first, normal second	2
Abnormal both examinations.	9
Abnormal in one or both.....	24

From this table it will be seen that at the first examination thirty-nine of the fifty had normal reactions, eleven abnormal reactions, if we consider twenty-six seconds as the average duration of nystagmus in normal individuals and sixteen seconds and thirty-two seconds the lower and upper limits of normal nystagmus time At the second examination twenty-eight were normal and twenty-two abnormal, thirteen aviators dropping into the abnormal class after flying, and nine giving abnormal reactions in both examinations. The abnormal reaction in all but one instance consisted of a nystagmus time of less than sixteen seconds. In 56 per cent. of the men, nystagmus time was very positively and definitely decreased following a period of flying. In THE JOURNAL, May 25, 1918, Lewis and Pike deny the actuality of the decrease in nystagmus time after numerous flights. They refer to mumps and syphilis as the probable causes in any cases coming to our knowledge in which nystagmus time has been diminished. We have been unable to substantiate either disease as the cause in any of the cases reported.

We are further informed by Assistant Surgeon Brown in his paper read before the Medical Society at Pensacola that in an examination of 250 qualified aviators, while their falling tests were normal in all instances, in 66 per cent. of the cases an abnormal past-pointing test was obtained. In an examination of 402 men who have qualified as fliers or are likely to qualify in the near future, Dr. Brown found but ninety-seven men with normal Bárány reactions.

Much the same sort of results are obtained in examining individuals whom we know have excellent senses of balance and equilibrium, such as whirling dancers and trapeze performers. This fact is also denied by Lewis and Pike in their article referred to above. We have examined only a very small number of these individuals, six in all, but in all of the six cases obtained abnormal reactions. They are given in Table 2.

TABLE 2.

	Nystagmus		Past-Pointing				Falling	
	R-LN	L-RN	To R.	To L.	RA	LA	R.	L.
E. H., whirling dancer	18	17	6	1	1	1	None	None
Mrs. E. H., whirling dancer	12	13	1	1	1	1	None	None
C. M., circus trapeze performer	19	19	3	2	1	2	None	None
E. S., circus trapeze performer	19	21	1	1	1	1	To right	To left
F. M., circus trapeze performer	12	17	2	1	1	2	None	None
O. J. S., circus trapeze performer	38	10	1	1	1	1	None	None

It is interesting to note that in five of these individuals there was no falling after whirling, in five the past-pointing was markedly abnormal, and in three, the nystagmus times were below normal, in two normal, although both below twenty-six seconds, and in one "mixed," that is, left nystagmus above normal and right nystagmus below.

We believe, therefore, that not only are we justified in our conclusion that abnormal Bárány reactions do not indicate inability to fly, but also that there is no correlation whatever between equilibrium tests as established in the Bárány chair and actual flying ability, and that flying and other practices requiring an acute sense of balance, if indulged in over a considerable period of time, have a very definite effect on the Bárány reactions. To what this effect is due, we are unable to say.

Prof. Raymond Dodge, of Wesleyan University, who has for the past year been doing elaborate experimental work along these lines, says:

"The grounds of my scientific conviction that the nystagmus test does not indicate fitness to fly are both practical and theoretical. It seems incomprehensible to a psychologist that these fallacious sensory data, which are really worse than useless to a flier, should have been selected as a test of his ability to fly. It almost seems like a joke of the enemy physiologists to hinder our air service. I believe that it should be abolished as a test, since, while the results are scientifically interesting, they have no practical value in indicating fitness to fly."

ROBERT P. PARSONS, M.D.,
LOUIS H. SEGAR, M.D.,
Cambridge, Mass.

"PROTECTION AGAINST LICE"

To the Editor:—Objection from an influential source—medical, military and editorial—has been made to the use of fats for the inunction of troops in the trenches as a protection against body lice, as suggested by me in *THE JOURNAL*, May 11, 1918, p. 1395, and space therefore is asked for reply.

The proposal is held to be unworkable if applied to immense bodies of men as there are required, say, 50 tons of grease for an army of a million men; but this objection hardly meets the point made in my former note.

It is assumed that troops on leaving training camps, etc., are free from external parasites. The infectious peril from lice lurks at the front wherever fatalities or casualties with every shock among infested men occur, be they friend or foe. If a body of relieving troops should be thoroughly pointed just before quitting camp, and this performance repeated at the front as opportunity offered, the extremities specially being treated, it could be said with reasonable confidence—taking no account whatever of the two forms of dangerous infection for which such lice are responsible—that relief of the American soldier from the moral repugnance, the physical nuisance and the nagging caused by these pests would add perhaps 10 per cent. to his effective fighting power. Such anointing would also tend to reduce the ill effects of exposure to cold and wet in the trenches, would conserve body heat, and otherwise would strengthen resistance.

The use of fats and oils by natives of both arctic and tropical regions seems natural and instinctive, the aim in part being defense against parasitic vermin, together with conservation of body heat in the cold regions, and the tempering of atmospheric heat in the tropics.

In a paper by me, read at the Third Pan-American Medical Congress in 1901, discussing insect parasites and their agency in the spread of disease, the following sentence occurs: "The prompt decamping of lice from the bodies of the dying or dead is a fact well known to those familiar with the personnel of numbers of those unfortunates who seek or are brought to large public hospitals, and that such mobile parasites may not carry with them . . . the active elements of recognized infections would seem impossible when the capacity of other parasites is considered in this connection." The assumed fact of general knowledge among physicians of the migratory range of body lice seems to have been overstated in the foregoing quotation; for, to many medical men, it appears to be a novel proposition.

I am indebted to Major Garrison, of the Army Medical Museum and Library, for a reference that bears somewhat on the point mentioned. It is found in the poem, "The Death of Philip II," by Paul Verlaine. The pertinent lines, as translated, read:

A gaunt old man, on the bed stretched supine,
His throat sends forth a shrill and hollow wail,
And his foul lips a fearful stench exhale.
In his beard, as with blighted amaranth tinged,
Through his white hair, streaked with ruddier glow,
Beneath his yellowing lawn, with rich lace fringed,
Quick, cruel, hungry, swarming to and fro
To suck their sallow victim's blood unclean
The lice, in serried squadrons come and go.
This is the King, writhing in pangs obscene.
And from a thousand holes sprung in a trice
Like clammy serpents from their foul abode,
On the cold corpse worms mingled with the lice.
King Philip was . . .

Realistic as is this rendering, it is said that it lacks something of the morbid Frenchman's biting flair. The poet naturally missed the point that the vermin were in exodus—deserting the sinking human bark—but the sources of his information no doubt were also ignorant of this fact. The worms mentioned presumably were maggots escaping from fly-blown, gangrenous ulcers. Rats having plague pneumonia come out of their holes to die, bearing infected fleas which soon decamp to other hosts; and such an appearance of rats unfailingly foreruns pandemic plague—bubonic or pneumonic—among oriental peoples.

It would be a fair test of the value of the suggestion made as to lice if two companies or battalions of the same regiment, doing similar duty in camp and trench, were selected—one to use the inunction method, the other to take chances as they come. A month's experience of thorough application in trench conditions would probably demonstrate whatever value fat may have in preventive hygiene; and, if found effective, such personal use by the soldier of this means should become as obligatory as is the proper care of his weapons and equipment.

GEORGE HOMAN, M.D., St. Louis.

[COMMENT.—Any result produced by fats will no doubt be obtained equally well with the cheap and abundant liquid petrolatum.—Ed.]

SCHOOLS OF PHYSICAL EDUCATION FOR RECONSTRUCTION AIDES AND THE MEDICAL PROFESSION

To the Editor:—The tendency in medicine is toward more activities for prophylaxis and hygiene. When one talks to members of the exemption boards he finds that they believe many of the rejections for heart disease and frequently for tuberculosis would have been avoided if the men had received proper hygienic attention, particularly of the mouth, in childhood. Hygiene, however, concerns not only the mouth, but also the whole body and is an important feature in the physical education of children. The war has brought to our attention more strongly the importance of good physical development of the men of draft age. We cannot have strong young men, however, unless they are properly developed during childhood and youth. The serious consideration of this question is of such national importance, and concerns the work of the medical profession so closely, that the American Medical Association should assert itself in its solution.

There is no doubt that, in certain portions of the country, particularly in the East, some members of the profession take an active interest in this question; but the whole country, the whole profession, needs to be aroused.

The legislators of certain states (New York, New Jersey and California) have realized the importance of the matter by passing laws to the effect that all children during their school age must have a certain amount of physical exercise during the day as a counterbalance against the effect of the confinement in the schoolroom. Recognizing the importance of exercise for children, one naturally asks, Who will conduct this part of their education? How are we to get good gymnasium teachers? Have we proper normal schools for the training of teachers and playground directors? Perhaps few physicians are aware that there are today more than twenty schools of physical education with more than 3,000 pupils in this country. As several of their studies are medical in character, it would be proper that the American Medical Association give more attention to their work, assuring for instance, that their standards are high, and that their graduates will do scientific and hygienic work.

In this connection there is an important question that demands immediate solution with reference to the war. When the reconstruction hospitals begin their activities, massage and reeducative exercises will be an important feature in their work. Where will we get operators to fill these places? The Surgeon-General's Office, no doubt, feels that all the nurses we have will be needed for other work, and has thought that the normal schools of physical education could help provide what they call "orthopedic aides" and has advised some of them to give suitable courses.

[COMMENT.—The Surgeon-General has announced regulations for the examination of applicants for these positions, who must be graduates of training schools for nurses and furnish one letter of recommendation from an orthopedic surgeon and another from the principal of a school who knows the applicant personally. The Surgeon-General refers women who wish to take this training to the following certified schools: American School of Physical Education, 44 Botolph Street, Boston; Boston School of Physical Education, 105 South Huntington Avenue, Boston; Posse Normal School of Gymnastics, 779 Beacon Street, Boston; New Haven Normal School of Gymnastics, 1446 Chapel Street, New Haven,

Conn.; Normal School of Physical Education, Battle Creek, Mich., and Reed College, Portland, Ore. The course of training comprises instruction in anatomy, physiology, personal hygiene, the theory of massage and remedial exercises, theory of bandaging, and practice in the last three subjects.—Ed.]

These aides to the surgeons in the reconstruction hospitals might be made really useful if their training was made as practical as possible. They ought to know the large features of kinesiology, the normal movements in the various joints, and the normal action of the various muscles so as to be able to apply their activities in massage and exercises in a fairly intelligent manner. While these things can be learned in a fashion on a skeleton and from books and lectures, it would be much better for them if they had had an opportunity to see and work on actual patients. If the profession took up this question through the medical schools and hospitals, working in conjunction with the existing normal schools of physical education in the large cities, we should at least be able to develop this class of help for the restoration of injured soldiers better than has been done in Canada.

The whole subject naturally requires serious consideration and a good deal of active cooperation between elements that are perhaps more or less strange to each other now; but such cooperation ought easily to come within the range of possibilities. When the "aides" are once at work, a certain amount of time should be arranged for their future instruction by means of lectures from members of the hospital staff, who will explain the important features of operations made on patients they are treating and what the aim and possibilities are for the work that they are to perform.

HUGO AD. OLDENBORG, Chicago.

CARELESS METHODS IN FITTING ARTIFICIAL EYES

To the Editor:—It may not have occurred to the readers of THE JOURNAL, as it had not to me until recently, how insatiable are the methods employed by the dealers in artificial eyes. Many surgeons in order to avoid the commercial element of selling something to a patient have been in the habit of referring those requiring ocular prostheses to opticians who keep artificial eyes in large quantities. This has seemed the more reasonable, moreover, because almost invariably after the first eye is fitted our patients go directly to these dealers to have them replaced.

In a case recently referred to one of the best of these, an acute purulent conjunctivitis was developed within twenty-four hours. An examination of the discharge revealed the presence of streptococci, staphylococci and pus cells. While the condition was rapidly controlled, it emphasized the careless methods employed. The shells, having been tried in many eyes, are frequently returned to the case without even being washed, to say nothing of being cleansed in a sterilizing solution. They are then indiscriminately placed in the orbit. When one recalls the numerous conditions for which eyes are removed, including syphilis and gonorrhea, it is apparent that our boards of health should institute protective measures requiring the thorough cleansing in a sterilizing solution of each artificial eye before it is inserted in the orbit. It is rather remarkable that more frequent infections have not been reported.

F. PARK LEWIS, Buffalo.

NEED OF CAMPAIGN TO AROUSE INTEREST IN TRAINED NURSING

To the Editor:—An editorial in THE JOURNAL (June 8, 1918, p. 1768) under the title, "Nurses Needed by the Red Cross," calls attention to the campaign now under way for the enrolment of 25,000 nurses for the Army and Navy, in addition to those already in service, between 10,000 and 12,000.

In this locality the earlier responses have been prompt and the enrolment so heavy that it is difficult to see where our proportion is to come from. Hospital service has been seriously impaired, and there are but few nurses available for work in private homes. The "practical" nurse to whom the

editor refers has been so displaced in recent years by the trained nurse that she cannot be counted on for much help in the present emergency.

A most serious aspect of the situation is the shortage of pupil nurses in the training schools. Young women are going to work in greater numbers than ever before, and are entering lines that have heretofore been closed to them; but now, when the demand for their services is greatest, there is a most deplorable lack of pupil nurses in the training schools.

To arouse interest in trained nursing among the qualified young women throughout the country, would it not be practical for the Red Cross to put on a campaign, nation wide in its scope, to stir up interest in trained nursing as a profession?

Such a campaign would direct the minds of many young women to this great need, and the depleted ranks of the training schools would be filled, to the end that, when future demands are made for nurses, a supply would be available.

J. M. MASON, M.D., Birmingham, Ala.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DICHLORAMIN-T

To the Editor:—I am interested in the use of Dakin's dichloramin-T solution in ocular infections as considered in the article by Drs. A. S. and L. D. Green (THE JOURNAL, April 27, 1918, p. 1212). Will you kindly inform me how to make the solution correctly? 1. What kind of oil must be used—plain or modified? 2. Does not the substance sold by druggists as dichloramin-T change in its composition? 3. Is it weighed or measured? 4. Does it last a long time if well preserved?

C. VIESCA Y LOBATON, M.D., San Antonio, Texas.

ANSWER.—1. See THE JOURNAL, June 8, 1918, p. 1788.

2. Dichloramin-T is stable when protected from moisture and light.

3. The term "per cent." is commonly used to signify per cent. by weight, though in the United States it is sometimes used with the intention that solids be weighed and liquids measured. In the present case it would make little difference whether both the dichloramin-T and the solvent were weighed or the first weighed and the second measured.

4. No; solutions should be as freshly made as possible.

"THE HONOR ROLL"

To the Editor:—I note the "Military Medical Honor Roll" in THE JOURNAL of June 1, and it is very commendable. It does seem, however, as though those of us who responded to the call for medical men for the Army and Navy, offered our services and were refused on account of physical disability, should have some suitable recognition, also. As it is now, we are classed among the goats.

V. A. C., M.D., Milwaukee.

To the Editor:—In looking over your "Honor Roll" in the current issue it appears to me that you do an injustice to the men who have volunteered and been discharged since you do not include their names. Turn to Wilkin County, Minn.: I was the first one to accept a commission. I was discharged in order to have a complete mastoid operation performed followed by a complete ophthalmoplegia with divergent strabismus. There are many more like myself, and I think we deserve some notice. Please omit my name.

X. Y. Z.

To the Editor:—In the issue of THE JOURNAL for June 1, 1918, you publish a list of physicians who have volunteered or have gone into service in the Army or Navy. What about the men over draft age who have volunteered and have been honorably discharged on account of physical disability, which is always stated to have existed prior to entering service? I am one of that class, and was discharged, Feb. 5, 1918. I was reexamined, May 24, 1918, at Camp Pike, Ark., and am now waiting for a report from the Surgeon-General. It was through no fault of mine—the spirit was all right, but the flesh was weak.

A. E. HARRIS, M.D., Little Rock, Ark.

ANSWER.—As was announced in THE JOURNAL, the "Honor Roll" was limited entirely to those who hold commissions. The primary object in publishing it was to show whether or not each county, district, state, etc., has furnished its quota.

or this reason it does not include the names of those who have volunteered but who, for one reason or another, did not hold a commission at the time our statistics were closed. For example: A county has 100 physicians. Twenty per cent.—that is, twenty physicians—volunteered. Five of the twenty were rejected or discharged for physical or other causes. This county, therefore, at the time of the publication of the Honor Roll still had to furnish five physicians for the M. R. C. in order to meet its quota. The fact that five had volunteered is immaterial; that particular county was still very short of its quota. As stated in the introduction to the survey, a supplementary survey is in preparation for the use of the county and state societies. This, in addition to indicating those who have accepted commissions, will also give the names of those who have applied for commissions and whose applications are pending and those who have been rejected or discharged.

COTARNIN HYDROCHLORID

To the Editor:—The description of the actions and uses of cotarnin, as given in New and Nonofficial Remedies, was quoted in THE JOURNAL, May 11, 1918, p. 1396, in answer to a query. This description tentatively accepts certain current statements, in the absence of definite published data. I have now done some work with the object of supplying this evidence:

In a recent publication of mine (*Jour. Pharmacol. and Exper. Therap.*, 1918, 10, 523) on this subject it was shown that perfusion of both guinea-pig and frog's vessels (hind extremities) caused relaxation. When the drug was injected around the vessels of the rabbit's ears no change in the vascularity of the organ was noted. Direct application of cotarnin in solution and powder form to different kinds of superficial wounds invariably increased the bleeding. These effects have been confirmed recently by a quantitative method for estimating local bleeding.

Under the same conditions, epinephrin invariably produced vasoconstriction, and diminished or arrested local bleeding. From this and other evidences in the literature it can be safely stated that cotarnin is entirely worthless as a local hemostatic. Its pharmacologic actions, and, hence, its hemostatic inactivity, are in harmony with its close chemical relation to the isoquinolin group of opium constituents, such as narcotin, from which it is derived.

PAUL J. HANZLIK, M.D., Cleveland.

INSTRUCTION BOOKS FOR MEDICAL OFFICERS— TRAINING CAMPS

To the Editor:—I would appreciate information in regard to the following: 1. The names of books used for instruction of medical officers; where they can be obtained and the price. 2. Are there any other medical training camps besides Fort Riley and Fort Oglethorpe?

WILLIAM E. CODY, M.D., Merrill, Iowa.

ANSWER.—1.

Manual for the Medical Department, 1916, Superintendent of Documents, Government Printing Office, Washington, D. C., 60 cents.
Field Service Regulations, 1914, *ibid.*, 60 cents.
Army Regulations, 1913, *ibid.*, 60 cents.
Drill Regulations and Service Manual for Sanitary Troops, 1914, *ibid.*, 50 cents.
Straub: Medical Service in Campaign, P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, \$1.50.
Havard: Military Hygiene, William Wood & Co., 51 Fifth Avenue, New York, \$5.
Ashburn: Military Hygiene, Houghton, Mifflin Company, Cambridge, Mass., \$1.50.
Ford: Medical Military Administration, P. Blakiston's Son & Co., Philadelphia, \$5.

2. No.

ELIGIBILITY FOR SERVICE IN THE MEDICAL RESERVE CORPS

To the Editor:—Kindly inform me whether I am eligible for a commission in the Medical Reserve Corps of the United States Army. I was born in Hungary and came to this country eleven years ago. I am a citizen of the United States; received my naturalization papers in the year 1915; received my medical education in this country in a well recognized medical college. Please omit my name and address.

X. Y. Z.

ANSWER.—Physicians born in enemy countries are not eligible for commission in the Medical Reserve Corps.

WHEN TO WEAR UNIFORMS

To the Editor:—Is an officer who has been commissioned in the Officers' Reserve Corps of the United States Army permitted to wear his uniform before actually receiving word to report for active duty?

V. EVERIT MACY, M.D., East View, N. Y.

ANSWER.—Reserve Corps officers should not wear uniforms until ordered on active duty.

SERVICE AT BASE HOSPITALS

To the Editor:—I am classifying the diseases that have been noted in this hospital since its inception, and am interested to know what makes up the medical service in the war zone in the hope of making a comparison and study for our men who are in the base hospital here preparing for overseas duty. I shall be interested in any literature you may be able to furnish on the commoner diseases with which a base hospital overseas has to deal.

WILLARD C. STONER, Major, M. R. C., Base Hospital No. 52, Camp Gordon, Ga.

ANSWER.—The following articles on the work in a military hospital may aid you:

Summons, W.: Medical Work Seen in Australian Military Hospitals, *Med. Jour. Australia*, Sept. 22, 1917.
Mandel, Milton: Medical Impressions in a Base Hospital, *THE JOURNAL A. M. A.*, Aug. 25, 1917, p. 637.
Hinds, R. W.: Medico-Military Notes, *Mil. Surgeon*, 1918, 42, 25, 169.
Smith, L. L.: Diseases of War, Their Prevention, Control and Treatment, and Handling of Infectious Diseases in the Field, *California State Jour. Med.*, December, 1917.
Finley, F. G.: Medical Work at a Base Hospital in France, *Canad. Med. Assn. Jour.*, 1916, 6, 692.
Thomas, J. J.: Neurological Cases Seen at a Base Hospital, *Jour. Nerv. and Ment. Dis.*, 1916, 44, 495.

Book Notices

Ambulance de "L'Océan" la Panne. Travaux publiés sous la Direction du Dr. A. Depage. Secrétaires de la Rédaction: Dr. A.-P. Dustin et Dr. G. Debaisieux. Paper. Volume 1, numbers 1 and 2. Price, annual subscription, 30 francs. Paris: Masson et Cie, 1917.

This publication comprises a description of the foundation, the evolution and the organization of the hospital at la Panne. The hospital was hastily constructed on the seashore in the last remaining corner of Belgium after that country had been devastated by the Germans. The method of construction, the internal arrangement, and the subdivisions of the medical service are described in detail, including a description of the American Pavilion and of the Institute Marie Depage. All will remember the visit to this country of Mme. Depage, her efforts to raise funds for this hospital, and her tragic death at sea on her return trip. It is interesting to learn the purpose to which the funds raised here were put, and to know the great good which this hospital is accomplishing in the present crisis.

Following the description of the hospital in general are several chapters devoted to surgical subjects connected with the war, such as general considerations of the treatment of war wounds; secondary suture of war wounds treated by the Carrel method; intravenous injections of peptone in septicemias of traumatic origin and in grave infections; researches on blood pressure in gas intoxications; the prophylactic treatment of tetanus, and a number of other interesting subjects. These are all by members of the hospital staff, and indicate the high class of work that is being done in the institution.

Progressive Methods of Handling the Insane.—At the conference of civic organizers held at the Cincinnati Academy of Medicine, March 18, resolutions were adopted calling on the governor and the state board of administration to establish an institute of psychiatric research. It is asked that this institute be empowered to appoint directors who shall be of recognized authority in psychiatry and neurology, who shall supervise all institutions for the care of insane, criminal and epileptic, and who shall be empowered to devise a program from the improvement of the medical and scientific achievement of the wards of the state; to establish uniform methods and improve systems of care-taking and study; to establish clinical conferences both at the central laboratory and at the various state institutions; to conduct a central laboratory for the examination of pathologic material submitted by the physicians in the several state institutions; to take steps to bring the family physician in close touch with the progress and treatment of his patients in the state hospitals; to inquire into the state's facilities for establishing a visiting staff of specialists to supplement the work of the resident hospital staffs; to encourage work in psychiatry, and allied works in the state institutions; and to institute methods of encouraging therapeutic enthusiasm, and breadth of the social point of view in the members of the staffs of the various institutions.

Medicolegal

Right to Recover Money Extorted to Protect Reputation

(Bertschinger v. Campbell (Wash.), 168 Pac. R. 977)

The Supreme Court of Washington reverses a judgment of dismissal and remands for a new trial this case, wherein the plaintiff sought to recover \$1,025 alleged to have been unlawfully extorted from him by the defendant, and \$125 as special damages incidental thereto. The court says that both parties were physicians, the plaintiff having lived thirty-three years in the city, where he practiced his profession and had built up a good practice. In December, 1912, a young man and a young woman called at his office and requested him to examine her with a view of determining certainly whether or not she was pregnant, they believing that she was then probably in that condition. The plaintiff was given to understand that, should he find the young woman pregnant, they desired that he perform an abortion on her. He consented to examine the young woman, but positively refused to perform any abortion on her. His examination convinced him that she was pregnant, and he so advised them. He then charged her \$5 for making the examination. No abortion was performed on her by the plaintiff, and nothing further was ever done by him for her. But eleven days after the visit the plaintiff received from the defendant this letter:

"Dear Dr.: A young lady lays dying from septic condition and incomplete abortion. She has made a full confession, you are charged with the crime. The confession is in my possession. In event of her death it will be turned over to the police. Confession is witnessed. I do not think she can last more than a day or so, judging by her present condition. I am very truly," etc.

The plaintiff immediately talked the matter over with his wife, then called up the defendant on the telephone, and went twice to see him, the latter time accompanied by his wife, who carried the money, which had been specially procured, to pay the defendant. After the defendant had the money, he patted the plaintiff and his wife on the back and said the danger was all over; the girl wasn't in a very serious condition at all; he thought everything would come out right, and in the event of her death he would protect them.

The trial court, on the defendant's motion, at the close of the plaintiff's evidence, dismissed the case on the ground that the evidence introduced in the plaintiff's behalf was not sufficient to support any recovery against the defendant, in that it conclusively showed that he voluntarily paid the money to the defendant, or on the theory that it must be determined, as a matter of law, from the facts shown in the case, that the plaintiff could not recover because the money was not paid under such legal duress as the law requires to be proved to avoid a contract, in that the plaintiff was not charged with the commission of a crime in any proceeding instituted in court, nor was he threatened with immediate arrest or imprisonment. But the supreme court does not agree with that view. Nor does it think it likely that, on a new trial, the defendant would care to invoke the defense, suggested in oral argument, that the payment of this money, under the circumstances shown by the plaintiff's evidence, was, in effect, the compounding of a felony, and that the agreement was so tainted with wrong and illegality that the courts would not lend their aid to the enforcement of the right claimed by the plaintiff, since that would imply that the defendant was himself equally guilty of compounding the crime with which he charged the plaintiff, and would seem to be an admission on his part that the money was received, as well as paid, for that purpose. But even that theory would still leave open the question of the plaintiff's having paid the money under duress; and clearly it would have been erroneous for the trial court to have dismissed the action on the ground that the payment of the money was for the compounding of a felony, in view of the evidence produced in the plaintiff's behalf. If the contract or settlement was void because of duress, it was not a binding one under which the defendant could retain the fruits thereof, even though it was also a

contract which, but for the duress, would have been against public policy and as such could not be the foundation of any right to be asserted in the courts.

Itemizing of Account and Application of Payments

(Duffy v. Kilroe (Miss.), 76 So. R. 681)

The Supreme Court of Mississippi, Division A, in rendering a decree in favor of plaintiff Kilroe for the amount for which he sued defendant Duffy, administrator, for professional medical services rendered to a Mrs. Botto, holds that the plaintiff's account was sufficiently itemized, and that, properly applying in the payments which had been made on it, no part of it was barred by the three-year statute of limitation of Mississippi. The court says that Mrs. Botto was a woman of wealth whose home was in Mississippi, but who spent several of the latter years of her life in the city of New York, during which time she was suffering from a disease because of which she demanded and received the daily professional services of the plaintiff. The services rendered by him continued over a period of several years, and Mrs. Botto would make him payments thereon at intervals, which payments were credited by him on his books to Mrs. Botto generally, neither she nor he applying them to any particular items of the account due him by her. Mrs. Botto died, May 15, 1914. On the 19th of that month the defendant was appointed administrator of her estate. Jan. 16, 1915, the plaintiff's account for the professional services rendered by him to Mrs. Botto was duly probated, registered and allowed; but the administrator declined to pay it, and this suit was instituted, June 16, 1915. The lower court erroneously held that the plaintiff was entitled to recover only about half of the sum sued for, on the ground that the remainder was barred by the three-year statute of limitation. The account probated was of this form:

Mrs. Frances M. Botto to Dr. Edward P. Kilroe, Dr.			
To professional medical services rendered to said Frances			
M. Botto by Dr. Edward P. Kilroe at her special instance			
and request			
Credits			\$31,684.00
Balance due			20,085.00
Itemized Statement of Account.			
1908.	Day Visits, \$5.00.	Night Visits,	\$10.00
April	63 visits at \$ 5.00.....		\$315.00
	4 visits at \$10.00.....		40.00
			\$355.00

The account was not filed with the chancery clerk at the time the bill of complaint was, but during the progress of the trial it was filed with and so indorsed by him. On objection being made that the account had not been made an exhibit to the bill, the court below permitted an amendment to be made thereto. Conceding, for the sake of the argument, that a copy of the account sued on should have been filed with and as an exhibit to the bill, there was no error in allowing the bill to be so amended as to refer to the account which was then on file, as exhibit thereto.

The objection was made that the account was not sufficiently itemized to comply with Section 2106, Code of 1906, Hemmingway's Code, Section 1774, as the dates of the plaintiff's visits to Mrs. Botto were not set forth. It was not necessary for the account to be so minutely itemized in order for the plaintiff to recover, but because of his failure to so itemize it, construing, as the court must, the account most strongly against him, the due date of each item thereof must be held to be the first day of the month in which it was charged, and the statute of limitation applied accordingly.

The payments made to the plaintiff by Mrs. Botto should have been applied to the oldest items of the account, and had this been done the plaintiff would have been entitled to a decree for the full amount claimed by him; for, under the facts presented, the statute of limitation ceased to run against the account at, and did not again commence so to do after, Mrs. Botto's death, and the payments made by her covered all of the plaintiff's charges for services rendered three or more years prior thereto. Under Section 3113, Code of 1906 (Hemmingway's Code, Section 2477), a debt not barred by limitation at the death of the debtor remains alive, in any event, for at least one year after the death of the debtor. If probated and registered within such year, the general statutes of limitation do not afterward run against it.

Society Proceedings

COMING MEETINGS

American Ophthalmological Society, New London, Conn., July 9-10.
Idaho State Medical Association, Seattle, July 17-19.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
New Jersey Medical Society, Spring Lake, June 25-26.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Portland, June 27-29.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.
Western Roentgen Society, Colorado Springs, June 27-28.

THE AMERICAN GYNECOLOGICAL SOCIETY

Forty-Third Annual Meeting, held at Philadelphia, May 16-18, 1918

The President, DR. JOHN G. CLARK, Philadelphia, in the Chair

Medical Teaching and Research After the War

DR. JOHN G. CLARK, Philadelphia: An adequate endowment or an annual budget of not less than \$25,000 a year for salaries would render it feasible to combine the departments of obstetrics and gynecology. Some of the advantages of this plan are: (a) There will be less duplication of teaching in embryology and in the anatomy and physiology of the female reproductive organs. (b) The pathologic aspects of the two subjects could be correlated, making only one laboratory necessary. (c) As many of the diseases are referable to the child-bearing process, they may well be grouped under one head. (d) The opportunity is afforded of studying, in the obstetric department, the results of various operations and the remedial measures employed for the relief of gynecologic diseases.

When an endowment is not sufficiently large to equip fully and maintain a combined department in the most comprehensive way, or when special endowments for the maintenance of an obstetric and gynecologic department can be secured but are not large enough to allow the chief assistants and director to retire from private practice, such departments may be conducted more successfully as separate units, for the following reasons: (a) In a university medical school, special departments are likely to turn out a more refined product and to offer better instruction if the field to be covered is not too extensive. (b) When properly endowed, the department of gynecology may expand and enter the domain of general surgery. The chief function of the head of such a department is that of instructor in diseases of women and, in a minor rôle, of clinical teacher of abdominal surgery. (c) With separate chairs, more time can be given in the obstetric department to the teaching of the very important subject of diseases of nursing infants, a subject that is now receiving inadequate attention for the reason that the obstetrician has not time to devote to this branch.

Escape of Foreign Material from the Uterine Cavity into the Uterine Veins

DR. JOHN A. SAMPSON, Albany, N. Y.: A study of uteri in which the venous system has been injected with bismuth through the uterine and ovarian veins shows a rich venous plexus in the endometrium and also one in the myometrium, consisting of a peripheral and radial plexus. Arcuate veins between the two zones convey the venous blood to the uterine plexus between the layers of the broad ligament. Relatively large sinuses (receiving) radiate from the base of the endometrium into the myometrium, and convey the blood from the endometrial plexus into the deeper portion of the radial. If these receiving sinuses are exposed by removing the overlying endometrium, and the uterus is relaxed, thus holding the lumina of the receiving sinuses open, fluid and small solid material could easily escape from the uterine cavity into them and thence into the venous circulation outside the uterus. I believe that uterine contraction following relaxation, when there is obstruction in the cervical canal, and intra-uterine irrigation, may bring about increased pressure and force fluid, sterile or containing bacteria in suspension or

placental cells, into the venous circulation, and that this is one way, and probably a frequent one, by which puerperal infection arises and placental cells reach the lungs.

DISCUSSION

DR. GEORGE W. KOSMAK, New York: The work of Dr. Sampson is a striking demonstration that we ought to stay out of the uterus as much as possible, because the invasion of this organ, particularly in the puerperal state and at other times, is attended with a great deal of danger. Observations that I made some years ago with reference to the extrusion of irrigating fluid through the fallopian tubes demonstrated this to me in a dramatic manner.

DR. JOHN O. POLAK, Brooklyn: The demonstration of the protection of the endometrium against invasion from curetting the uterus is particularly impressive. Years ago we were taught not to operate during the menstrual period; yet, in the hurry of hospital work, we have violated that rule. Dr. Sampson has given us a clear idea of why in some cases we get infection.

DR. THOMAS J. WATKINS, Chicago: This paper is of great value in bringing before us positive evidence against curettage of the puerperal uterus, and this society should put itself on record against any such procedure. It is surprising and shocking that many men continue to curet and wash out the puerperal uterus. Dr. Sampson has presented an excellent argument against it. He emphasizes the danger of increasing infection by curettage, and especially increasing the dangers of doing hysterectomy a few days after the preliminary curettage.

DR. J. WESLEY BOVÉE, Washington, D. C.: The work of Dr. Sampson confirms what I have been doing in the last few years, namely, discarding frequent curettage, but, still clinging to the necessity of having to invade the uterine cavity, injecting iodine into it. In two specimens in which I injected iodine previous to removing the body of the uterus within ten days for gonorrheal infection, I found iodine in the blood channels in the uterine body, so that caused me to discard injections of iodine.

Effect of Hysterectomy on Ovarian Function

DR. EDWARD H. RICHARDSON, Baltimore: The uterus is not essential to a continuation of ovarian function, except as regards menstruation and reproduction. The disturbances of ovarian function attributed to hysterectomy are partly those associated with normal menstruation and partly those arising from damage to the ovary through operative trauma or disease. The weight of evidence furnished by anatomic, experimental and clinical investigations is overwhelmingly in favor of retention of sound ovaries both before and after the menopause age.

DISCUSSION

DR. HOWARD A. KELLY, Baltimore: It is best to conserve the ovaries or as much of healthy structures as may be retained in women who are under 40. In women of 40 or 42 it is best not to be so conservative. In the past we have decidedly overdone conservatism. If we can conserve either ovary and a portion of the uterus and keep up menstruation, if only for a year or two, it is a great advantage.

DR. WALTER W. CHIPMAN, Montreal: Every effort should be made to care for the circulation of the ovary that is left behind. I plead guilty of not in the past having been sufficiently careful in this respect. I certainly am conservative in the matter of the ovary. If we can tell a woman after an operation that her sexual organs are preserved, it is a great psychologic comfort to her. It goes without saying that when the ovaries are diseased they should be removed. I have given up the resection of diseased ovaries.

DR. HENRY T. BYFORD, Chicago: It is important not to pay so much attention to the symptoms of the menopause. It is well not to enumerate these symptoms to patients, but to give them ovarian substance or extract; when they know they are getting it, the psychologic condition will be kept up, which is so necessary in these cases, and there will be less operating. With a little treatment and good advice, I do not think we shall have to do quite so much surgery.

(To be continued)

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Third Annual Meeting, Held at Atlantic City, N. J.,
May 7-8, 1918

(Concluded from page 1791)

Bacteria of the Intestinal Tract

DR. W. W. FORD, Baltimore: The gram-positive bacteria found in dejecta were found to be aerobic forms due to ingestion of milk, water, etc., and occurred in foods on which children are usually nourished. Gram-positive spore-bearing bacteria were normal to the intestinal tract. Anaerobic cultures were always negative. No encapsulated forms were present above the ileocecal valve. Below this valve there were present encapsulated gram-positive organisms of the morphology of the gas bacillus. In Baltimore milk there were present spore-forming gas bacilli. In the neutralized whey were found hemolytic substances due to bacteria. These were toxic for rabbits and guinea-pigs in subcutaneous inoculation. If the whey was filtered, the filtrate was also toxic. Milk cultures of the gas bacillus were always poisonous to animals. Work is now being done to determine whether this organism is vegetative in the intestinal tract and whether it bears any relation to the production of scurvy by the feeding of children with pasteurized milk.

DISCUSSION

COL. W. H. WELCH, Baltimore: Has toxin been demonstrated in the milk, and, if so, was the carbohydrate content of the milk reduced? The reason the toxin is often overlooked is that if the carbohydrate is not changed the acid formed is destructive to the toxin. Search for the toxin must be made after the reduction of lactose.

MAJOR SIMON FLEXNER, New York: The factor influencing the degree of toxicity of the cultures that Dr. Ford has described is the control of the carbohydrate. There are differences at present unknown in the toxin-producing powers of the various strains of the Welch bacillus. Dr. Bull found one strain which was very superior to the others in antitoxin-producing power. In regard to milk cultures, the toxin-producing power must be determined not only in milk but also in other mediums.

DR. W. W. FORD, Baltimore: I have tried two methods of increasing the toxicity of the milk cultures, to get milk whey in which lactose was taken away, but the gas bacillus did not multiply well in milk of that character; and to neutralize the acidity of the milk by the addition of powdered chalk. I found that the filtrate from such milk cultures was more marked in toxicity. In the study of pasteurized milk we were forced to limit observations to study of such organisms as might be obtained from this source. The gas bacillus obtained from soil and other sources would be more poisonous than that from milk. The variation of toxicity in strains was marked. It is premature as yet to attempt to answer the question as to whether pasteurized milk ever develops poisonous properties. In the majority of cases the gas bacillus exists in the intestinal tract in spore form, but observations so far do not indicate that there is any vegetation there. Probably the same thing holds good for the tetanus bacillus.

Practical Value of Diphtheria Toxin-Antitoxin Injections in Immunization after Three Years

DR. WILLIAM H. PARK, New York: No death has occurred in 10,000 cases of immunization; four cases of collapse happened. Within the last six months no untoward results have been seen. Twenty per cent of children have shown a slight rise of temperature. From one to three units are given with perfect safety. In regard to the duration of immunity, it would seem as if artificial immunity in 80 per cent. of cases will be as perfect as natural immunity. Immunity has not dropped off more than 2 per cent. in two years. If it should be lost the child can be immunized again with equal effectiveness.

Studies of Chronic Myocarditis

DR. H. A. CHRISTIAN, Boston: In the recent studies of the heart by means of the electrocardiograph, there has been a tendency to emphasize the importance of the valve lesion

rather than myocardial function. Most cases of myocardial insufficiency are called "mitral" insufficiency. The thickened valve is not differentiated from that with the orifice enlarged. The pathologist terms such cases myocarditis as have lesions demonstrable at necropsy, whereas the physician uses the word to mean myocardial insufficiency. Cabot some years ago found that only 22 per cent. of the diagnoses of chronic myocarditis, made during life, were correct at necropsy. My experience is that fewer mistakes are made in this diagnosis than in others. In analyzing the cases we found that there was a great frequency in incidence above 41 years. In 407 cases, 112 gave a history of rheumatism; 35 had a positive Wassermann; 110 were chronic users of alcohol; 178 had high blood pressure; one half the cases had chronic nephritis. Overeating as a factor was difficult to estimate, but 188 persons were overweight. The condition is evidently a very common one; the change is primarily in the heart muscle. The cause has not been determined. At necropsy a large percentage showed no changes in the coronary valves and no enlargement.

DISCUSSION

DR. H. S. PLUMMER, Rochester, Minn.: We must consider if there is damage to the heart by overloading, either by high blood pressure or hyperthyroidism. The latter is a very common cause of myocardial insufficiency. I have recognized that one third of the cases are due to adenomas of the thyroid. These probably originated in fetal rests. These patients run a metabolism from 30 to 50 per cent. above normal, and this drops to normal with the removal of the adenoma. Blood pressure in these cases is due to increased minute volume flow through the right heart.

DR. E. LIBMAN, New York: One should try to find a cause for the myocardial insufficiency. If a history of rheumatism is present there may be a true myocardial lesion, but with syphilis the disease would be arterial. With diffuse atherosclerosis of the coronary system there must be muscular lesions to get myocardial insufficiency. One must see if the patient was anemic. Transfusion has often removed the cause of myocardial insufficiency. Bleeding fibromas, thyroid disease, etc., may be the underlying cause of myocardial insufficiency.

DR. A. STENGEL, Philadelphia: Myocardial insufficiency and myocarditis are two different things. In hyperthyroidism the patient is suffering from myocardial poisoning, but not necessarily from myocardial disease. The diagnosis of acute myocardial disease is exceedingly difficult to make. In the absence of evidence of valvular disease one is justified in saying myocardial disease, but many of these cases clear up when some focus of infection is removed, proving that the myocardial symptoms were but a manifestation of the toxemia.

A Study of the Empyemas at Camp Upton

MAJOR H. BROOKS, M. R. C., and MAJOR R. L. CECIL, M. R. C.: We had a very virulent type of empyema. The cases were all associated with pneumonia. The disease was also associated with measles, but not with mumps. The causative germ was the streptococcus in 50 per cent. of cases, and in the other 50 per cent. the pneumococcus. Patients with pneumococcus empyema recovered after operative treatment. There were 49 cases of streptococcus empyema, with a mortality of 61 per cent. Of the four *Streptococcus viridans* cases, three patients died; four were mixed infections with streptococcus and pneumococcus, with no deaths. Of 35 hemolytic streptococcus cases, 22 patients died. The empyema seemed in each case to be a concomitant infection of the pleural sac. With the entrance into camp of a large contingent of colored troops the percentage of hemolytic streptococcus infections increased. With very careful isolation of cases there was found to be no diminution of occurrence. In the bronchial type of infection there was very little cough, very little sputum was raised, and very little pleuritic pain. The chief symptom throughout was prostration. The diagnosis was made by aspiration, confirmed by the roentgen-ray findings, and the changes in percussion were an important sign. The exudate in these cases had the appearance of alkaline urine and generally contained streptococci. Pericarditis usually developed early in these

cases and was progressive, but there was lack of metastases elsewhere. Of 27 cases that came to necropsy, 23 were streptococcus cases. The pulmonary lesion showed interstitial bronchopneumonia, of the type described by Cole. Pneumothorax was also present. As regards treatment we found that early operations were fatal. It seems essential to wait till the pus becomes cellular in character, when operation can be performed safely.

DISCUSSION

DR. H. A. CHRISTIAN, Boston: In civil practice we had practically the same experience as has been reported in Army cases. Very frequently the streptococcus was the etiologic factor. The cases were the interstitial type of bronchopneumonia. Experience shows that fatalities occurred from too early operative interference. Some patients got well with repeated tapings of the fluid. The pneumonias had a tendency to shift in type and at first we were much disturbed with atypical forms, until we found that frequently we had to deal with the streptococcus.

COL. W. H. WELCH, M. R. C., Baltimore: In civil practice streptococcus infections are most important. There existed at first a period of great confusion in regard to these cases. Investigations were then made by Drs. Zinsser and Dochez which brought out clearly that the streptococcus was the most important cause. At one camp the cases seemed to be due to the *Streptococcus viridans* and it was a question as to what had imparted to this streptococcus these unusual properties. What reasons have played a part in enhancing the virulence of the streptococcus? This is the most important problem today in dealing with infections of soldiers. In life the pulmonary lesion is frequently so mild as not to be recognized. In the infection through the respiratory tract the streptococci make way rapidly to the pleural passages, but no doubt they leave one or more small foci of the disease which can be detected on careful examination.

MAJOR R. L. CECIL: In regard to the pneumococcus, cases were found with Type II in the sputum and Type IV in the pleural fluid. Of the streptococcus group four cases had shown nonhemolyzing streptococci. These were recognized as *S. viridans*. In the types of cases with mixed infection there was a mortality of 60 per cent. Often there were streptococci in the pleural field and pneumococci in the sputum. Empyema patients have plus cells in the fluid. Many cases showed localization between the left lung and pericardium and this probably explained the frequency of pericarditis.

MAJOR E. P. JOCELIN: Of fifty-five patients operated on, seven died. Operations were by simple drainage and no ostectomies were done. Twenty patients died without operation. In many cases several cavities were involved.

Hemosiderin Granules in Cells of the Urine: An Aid to the Diagnosis of Pernicious Anemia and Hemochromatosis

DR. PEYTON ROUS, New York: In a soldier 46 years of age, with lesions of hemochromatosis, the diagnosis between this disease and syphilis was doubtful. There was enlargement of the liver and spleen and a peculiar gray pigmentation of the skin. The urine was found to contain considerable hemosiderin granules. The patient died within six months with characteristic signs of hemochromatosis. Fresh urine should be used for this test.

Thrombosis of the Coronary Artery

DR. J. B. HERRICK, Chicago: Death need not immediately follow obstruction of the coronary artery. Cases may be divided arbitrarily into four groups: (1) those with instantaneous death; (2) those in which death soon follows; (3) those in which death occurs weeks or months later; (4) a hypothetical group in which symptoms are very slight, being merely an obstruction of the twigs of the artery. The third group is important. In such cases patients frequently have had angina pectoris and they describe the occurrence of the coronary obstruction as the most acute and prolonged attack they ever had. The pain usually is referred to the epigastrium. Occasionally it simulates an acute abdominal syndrome, and careful

differentiation is necessary as unnecessary operations are sometimes performed. In regard to experimental work on this subject, the ligation of the coronary artery in dogs has been done and the electrocardiogram studied. Dogs can live weeks and months after the ligation and may finally recover. In the experimental ligations the lesions were produced in the myocardium. They were most marked in the endocardial or subendocardial locality, or conductive region of the heart. Such phenomena as auricular or ventricular fibrillation were produced with changes in the electrocardiogram in the T-wave.

DISCUSSION

DR. GEORGE DOCK, St. Louis: I had a patient, a man, aged 61, who had never had occasion to consult a doctor for any illness and had been doing active work for forty years. He was a big eater but took little exercise. He was apparently vigorous, but medical men would look on him as arteriosclerotic. He denied syphilis and had no scar, but the Wassermann was + + + +, and it was found that he had a marked arteriosclerosis. After a Christmas dinner he was returning to his house and while climbing a small hill he felt a very severe pain radiating down the left arm; he was obliged to stop. The physician who attended him said it was angina pectoris with high blood pressure, and gave him nitroglycerin. The man went to work until January 6, when he had another attack and was brought to the hospital. He had air hunger to a marked degree and the larynx worked with extreme violence. Morphine and atropine relieved his symptoms. He never got over the orthopnea. Later he developed hydrothorax. Dr. Robinson took the electrocardiogram and without knowing that a diagnosis of coronary thrombosis had been made, he stated that the absence of the T-wave would suggest coronary obstruction. The patient died of double hydrothorax twenty-three days after the first angina pectoris attack. Postmortem examination showed very marked syphilitic arteriosclerosis. There was thrombosis of the descending coronary with an infarct three weeks old.

DR. S. J. MELTZER, New York: It should be kept in mind that human cases are not identical with experimental ligation cases. One cannot be sure that the ligation was thorough enough or permanent enough. Ligation is not the same as thrombosis. It would be well to repeat the old experiments from a new light—to occlude the coronary artery with ligation.

DR. H. A. CHRISTIAN, Boston: In cases with symptoms below the diaphragm, which simulate abdominal conditions, a diagnostic point is the remarkable fall in systolic blood pressure. The diastolic pressure is little altered. The pulse pressure is strikingly small. In cases in which thrombosis takes place with very few symptoms, the patient, while sick, does not present a characteristic picture and his sudden death causes surprise.

Myrtol and Eucalyptol Poisoning

DR. LEWELLYS F. PARKER, Baltimore: In view of the fact that myrtol (a preparation closely allied to eucalyptol) is being used in the treatment of putrid bronchitis, it is worth while to mention that symptoms of poisoning have been recorded from these preparations. Myrtol and eucalyptol are both derivatives of myrtaceous plants. Eucalyptol poisoning has followed both overdoses and small doses of the drug, and it appears that some persons may have an idiosyncrasy to it. Two different syndromes have been noted in the after-effects—first, nervous system involvement with collapse; second, dermatitis. In the nervous type the patient becomes seriously ill shortly after the dose. Vomiting, diarrhea and coma may follow. Vomiting must be induced to prevent further absorption of the poison. Skin lesions are often associated with the nervous lesions. Several fatalities have been reported from time to time. A greatly increased use of eucalyptol has resulted from its employment as a solvent for the neutral hypochlorite solution, dichloramin-T.

Comparative Food Value of Protein, Fat and Alcohol in Diabetes Mellitus as Measured by the Nitrogen Equilibrium

DR. H. O. MOSENTHAL, Baltimore: In our experiments we desired to maintain the protein tissue in spite of using a carbohydrate free diet. The patient was put on 1,000

calories with a constant proportion of protein and fat. Then 500 calories of protein, fat or alcohol were added. Three periods were used—fat period, alcohol period, protein period. Finally there was a control period. On 1,000 calory diet there was a constant loss of nitrogen. With an additional 500 calories of fat there was no great improvement in the nitrogen balance. The fat was assimilated, but did not spare the protein. The same held true with alcohol. The alcohol possibly saved the body fat but not the nitrogen. The results with protein addition were strikingly different. The positive nitrogen balance was very marked indeed with 1,500 calories. Two patients who did not take the alcohol did not get the results. The fat and alcohol had been used to conserve the fat of the body, while the protein preserved the protein even on the protein and fat diet.

Relation of War Wounds to Acute Endocarditis

DR. H. T. KARSNER, Cleveland: I performed eighty-eight necropsies in a military hospital. Fourteen cases showed lesions of acute endocarditis following septicemia and pyemia. The organisms responsible were mostly streptococci. Three showed the *Staphylococcus aureus*. In one case the *B. perfringans* was found in the blood stream at death. These infections followed multiple extensive wounds, not of any particular type, but in cases in which an attempt was made to save the injured parts and the wound was allowed to drain pus for weeks and weeks. In the effort to save the joint, extensive damage was done to the heart and kidneys. In the later months of the war, an effort was made to determine whether the age of the soldier and the length of his term of service had any influence on these conditions. It was found that if the man was less than 27 years of age and had less than twenty-two months' service, the kidney weight and the heart weight were normal. The principal factor seemed to be the length of service, prolonged service leading to a great increase in the weight of the heart.

Trench Fever

DR. EUGENE L. OPIE, St. Louis: This paper is the result of studies by Drs. Strong, Swift, MacNeal and Pappenheimer and myself. Two problems were studied: (1) infectivity of the blood: Of sixteen men inoculated with infected whole blood, fifteen developed trench fever. Of five inoculated with clear plasma, all contracted the disease. The corpuscles of the blood, then, does not carry the infection. Inoculations of plasma passed through a Berkefeld filter does not cause infection. Filtered virus, then, does not produce the disease. The inoculation period was from five to twenty days. The second problem was to determine whether lice transmitted the disease. Of twenty-two volunteers, bitten by infected lice, fourteen developed the disease. Eight volunteers, not bitten, did not develop the fever. Lice from trench fever patients were put on the volunteers and kept there thirty days till the fever developed. After forty-eight hours lice were removed from half of the volunteers and put on other volunteers, to exclude the possibility of mechanical transmission, directly from patient to individual. It was proved that the virus carried the infection. The lice were put on the arm in a piece of old undershirt, so that eggs and larvae were reproduced normally, and these were strapped on; the men were allowed to scratch so that normal skin irritation was produced. The inoculation period after biting was from nineteen to twenty-five days as compared with from five to six days with the plasma infection. The conclusions from these experiments were that (1) direct transmission is not essential; (2) if lice carry the disease, measures should be taken to combat it by eradication of lice; (3) the eradication of lice and by this means, eradication of the disease, is not impracticable.

DISCUSSION

DR. FUTCHER, Philadelphia: I had an opportunity to see cases of trench fever in an English base hospital. Distressing nocturnal pain was a symptom of the disease. Sir David Bruce conducted some experiments in the Hampstead hospital. He found that if 500 lice that had bitten trench fever patients were allowed to bite volunteers, the results were negative as far as transmission of the disease was con-

cerned. It was not stated how long the lice had fed on trench fever patients. In discussing these experiments it was asked if the patients had been allowed to scratch and it was found that they were prevented from scratching. Another series of experiments were then started. The arms of the volunteers were scarified. The lice were allowed to bite and the bodies of the lice were rubbed into the abraded surface. In seven days the volunteers developed trench fever. The experiments, however, as far as the biting was concerned, were not so conclusive as are those of Dr. Opie. It seems possible that there may be two modes of transmission—by the bite and by the excrement of the lice getting rubbed into the abraded surface. It is found in the trenches that lice leave the body of a trench fever patient and go to a healthy person. It is also necessary to determine whether the disease is transmitted from one to another by lice or whether it is a disease of the louse itself.

DR. E. L. OPIE, St. Louis: I have tried scarification experiments. It seems to add little to the knowledge obtained by injecting whole blood; but there is obviously a possibility of introducing the virus directly through the skin. The incubation period of seven days corresponds to that when whole blood is injected into the circulation.

MISSOURI STATE MEDICAL ASSOCIATION

Annual Meeting, held at Jefferson City, May 6-8, 1918

DR. ROBERT E. SCHLUETER, St. Louis, in the Chair

Sterility Due to Retrodisplacement of the Uterus: Treatment

DR. E. LEE DORSETT, St. Louis: The following have an important bearing: 1. Careful history taking and repeated examinations of both husband and wife to eliminate all other causes of the existing sterility. 2. The use of nonoperative measures before resorting to operative procedures. The use of both methods is oftentimes more successful than one alone. 3. The fallacy of the benefit of a curettement in cases of sterility; the injury to the endometrium caused by a curettement; care in the use of sounds and pessaries. 4. Selection of the operation to correct the condition of the cervix and the uterine displacement. 5. Importance of the after-treatment of all cases and reexamination after the patients leave the hospital.

Vaginal Drainage in Pelvic Cases

DR. FRANK HINCHEY, St. Louis: Vaginal drainage, by the use of a tube through the culdesac, is not resorted to as frequently as it should be. The measure is absolutely safe and efficient and, perhaps, saves lives when the operator is in doubt as to whether or not he should drain. The indications for its use are: (1) When a suprapubic drain seems to be indicated; (2) when the intestine, a ureter or the bladder has been injured; (3) when a piece of suspicious tissue must be left in the pelvis, or infectious product has escaped; (4) when there has been much loss of blood—much traumatism, as in severe pus cases of ruptured ectopic pregnancies.

Though Yates has shown the futility of drains placed in the general peritoneal cavity, because of the formation of adhesions around the drain, the vaginal route possesses the advantage of being favored by gravity, and as the drain projects only a small distance into the peritoneal cavity the adhesions which nullify the usefulness of a suprapubic drain do not form. While, perhaps, it is not good surgery to use the vaginal route to attack abscess formations in the culdesac, because of the doubt of removing all of the trouble, cases occasionally arise in which this seems the only safe measure. But I disapprove of the opening of the vagina to evacuate abscesses, and immediately follow this with an abdominal section. Pelvic infections following pregnancy should, as a rule, be opened through an incision above Poupart's ligament because of danger of invasion of the general cavity. A split rubber tube, with gauze insert, is sewed with catgut at the opening in the culdesac and permitted to remain a week, or until the suture is absorbed. No douches are given.

Can We Disregard the Calendar in Setting the Date for Labor?

DR. F. T. VAN EMAN, Kansas City: I have believed for years that one great source of trouble is the unfavorable proportion existing between the mother's pelvis and the child's head. Finally, taking advantage of the McDonald and Ahlfeld plans of estimating the maturity of the fetus, I began to induce labor at or near term, when the rights of the fetus seemed surely conserved, with results that seem very promising.

Passing of the Curet, or the Conservative Treatment of Abortion

DR. GEORGE C. MOSHER, Kansas City: In 1914 I became convinced that gynecologists had led the profession astray in regard to curettage. In my service all these patients are put in a modified Fowler position, given a large dose of magnesium sulphate, and an ice bag is applied to the abdomen. In the beginning the cases were differentiated as to streptococcus, staphylococcus or colon bacillus, but after a short experience no attempt has been made to discriminate.

The results of this conservative plan are remarkable. Taking 100 cases from the records of 1910 to 1914 when the curet was employed almost as a routine practice, the number of days in the hospital was 22.3. Now, in our new series the average is 8.5 days, a saving to the taxpayers of two weeks' expense on each patient, not to mention the benefit to the patient herself. The percentage of complications under the old régime was 70, including cellulitis, inflammation of the adnexa, abscess, and other forms of localized or general infection; under the new operative method complications are reduced to 5 per cent. The only indication for interference is hemorrhage, and the degree is to be weighed by the obstetrician. Packing under aseptic conditions is the treatment. Pituitary solution has not seemed to exert much influence in these cases, but it is not contraindicated. When used it should be given in dose of from $\frac{1}{5}$ to $\frac{1}{3}$ c.c. hypodermically. Morphin may be allowed, but only as necessary to relieve pain.

The Hodgen Splint in the Treatment of Fractures of the Femur

DR. C. F. SHERWIN, St. Louis: The Hodgen splint has proved highly efficient in the treatment of all fractures of the femur, at least above the lower third, and when properly applied and adjusted gives results vastly superior to most other appliances for such fractures. It is simple in construction and practically painless in application; requires no anesthetic or other procedure for "setting" the fracture, as the bone fragments are automatically pulled into place by the gentle traction, and the limb is kept at a constant length, easily verified and controlled by occasional measurements. It affords maximum comfort to the patient, permitting him to move about the bed, or even to another bed, lift his hips or even his body, and recline on the back rest or even sit up, if desired. It permits of observation and massage of the limb at all times, and of having any wounds dressed, all without the least pain to the patient or danger of injury to the limb.

The Hodgen Extension Suspension Splint

DR. F. G. NIFONG, Columbia: The Hodgen splint was never popularized as it should have been. All types of simple fracture of the femur, and likewise fractures with lacerated and septic wounds are successfully treated with the Hodgen splint. Modifications are easily made to meet various requirements. Simplicity characterizes the Hodgen splint. It immobilizes the site of fracture; it produces the necessary extension, which is the most important of all factors in treating long bones; it secures suspension, which is a factor of great value in wound treatment and of much comfort to the patient; it prevents muscle injury and paralysis by putting the limb at perfect rest in physiologic flexion; it mobilizes the limb as well as the patient, a very important consideration, especially in the aged; it is applicable to every form of fracture from the neck of the femur to the foot, simple and compound. As an emergency and transport splint the modification of the Hodgen splint cannot be excelled.

Painful Feet

DR. ROBERT McE. SCHAUFFLER, Kansas City: Shoe manufacturers have in recent years put on the market a number of styles of shoes, or appliances to put in shoes, supposed to be designed on orthopedic principles, and many retail shoe shops have a clerk who is styled an orthopedic specialist to prescribe for foot ills. These devices are not entirely devoid of merit, but in view of the effort made to create the impression that an orthopedic clerk is sufficient for almost all foot problems, I have thought it would be of interest to study a series of consecutive cases of painful feet. Omitting all cases in which the foot trouble was only a part of the general disability of infantile paralysis or spastic paralysis, or of a multiple arthritis, and omitting congenital clubfoot, there remain eighty cases. These fall under thirty-nine heads. The three largest divisions are: Weak feet, eight; simple flatfoot, eight; flattened metatarsal arch, ten. This seems to demonstrate the need of scientific diagnosis and special treatment.

The Small Hospital in Rural Places

DR. N. I. STEBBINS, Clinton: Small hospitals may be made as efficient as large ones. Physicians associated with such institutions may be able to specialize along certain lines. They may have the privilege of roentgen-ray and laboratory work to assist in making a diagnosis, thus enabling them to do better work and obtain better results. The people should be educated to make more use of hospitals throughout the rural districts. The size of a hospital should not be a feature in the consideration of classification, but equipment, efficiency of the staff, and the records should be a basis for criticism.

Treatment of Cavernous and Plexiform Angioma

FRANCIS REDER, St. Louis: A cavernous angioma is a soft, nonpulsating swelling, of variable size, with a thin covering of skin, usually bluish. Its great differential factor is that the entire tumor can be caused to disappear on pressure, with a prompt return to its original size as soon as the pressure is removed. Not so with a plexiform angioma. Pressure on the mass will not cause it to be evacuated completely. Well marked pulsation and bruit give it its differential characteristics from a cavernous angioma. In my series of 104 cases which have been treated by injection of boiling water, there were no failures. In most instances the results have been very gratifying. In the majority of the cases the lesion was on the face and scalp. Four patients presented angiomas on the tongue, ranging from the size of a filbert to that of an English walnut. One patient presented a lesion as large as a coconut on the left gluteal region.

Prostatic Enucleation

DR. LEON ROSENWALD, Kansas City: By enucleating the growth from the prostate there is very little hemorrhage, and the ejaculatory ducts are not injured. The two-step operation should be a routine measure. Cystotomy should be done under local and enucleation under spinal anesthesia. The latter is safer, gives more relaxation than general anesthesia, and avoids the suppression that follows ether. Furthermore, the ability of the patient to take large quantities of water immediately following the operation encourages kidney action.

Myositis Ossificans Traumatica

DR. T. G. ORR, Kansas City: The symptoms of the type due to a single severe trauma are marked pain, rapid swelling and disability, followed in three or four weeks by a firm mass in the swollen area. The diagnosis is not usually difficult but must be distinguished from periosteal sarcoma. The prognosis is ordinarily good. After a few months of disability the bone formation ceases to increase in size, and there is usually some resorption of bone. The treatment should be conservative if there is not serious interference with function. After early operation there is very frequently a recurrence of the growth. I have had three cases, one a typical "rider's bone," one an ossification in the Achilles tendon following an open wound in childhood, and the third a typical example of intramuscular ossification in the quadriceps following a single severe injury while playing football.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

May, 1918, 24, No. 1

- 1 Cell Potentialities and Differential Factors, Considered in Relation to Erythropoiesis. V. Danchakoff, St. Louis.—p. 1.
- 2 Development of Idiosome in Germ Cells of Male Guinea-Pig. G. N. Papanicolaou and C. R. Stockard, New York.—p. 37.
- 3 Weight of Epididymis, Pancreas, Stomach and Submaxillary Glands of Albino Rat (*Mus Norvegicus Albinus*) According to Body Weight. S. Hatai, Philadelphia.—p. 71.
- 4 Megacytes in Lymphatic Tissues. A. W. Meyer.—p. 91.
- 5 Studies on Hemal Nodes. Absence of Hemal Nodes in Domestic Fowl. A. W. Meyer.—p. 109.

American Review of Tuberculosis, Baltimore

May, 1918, 2, No. 3

- 6 Nerves and Ganglia of Lung in Case of Pulmonary Tuberculosis. W. S. Miller, Madison, Wis.—p. 123.
- 7 Manifest Pulmonary Tuberculosis. G. E. Bushnell.—p. 140.

Annals of Surgery, Philadelphia

May, 1918, 67, No. 5

- 8 *Operative Treatment of Fracture of Spine Uncomplicated by Cord Injury. E. G. Brackett, W. J. Mixter, Boston, and J. C. Wilson, Los Angeles, Calif.—p. 513.
- 9 *Surgery of Spastic Paralysis. A. B. Gill, Philadelphia.—p. 529.
- 10 Case of Contracture of Bladder (*Hypertonia Vesicae*) Due to Spinal Injury. M. W. Ware, New York.—p. 533.
- 11 Loose Cartilage in Temporomaxillary Joint. R. J. Behan, Pittsburgh.—p. 536.
- 12 Prevention of Permanent Bronchial Fistula Following Lung Resection. H. Lilienthal, New York.—p. 538.
- 13 *Effect of Splenectomy on Normal Individual and in Certain Pathologic Conditions. J. M. Hitzrot, New York.—p. 540.
- 14 *Value of Pyloric Exclusion in Treatment of Pyloric and Duodenal Ulcers. R. Lewisohn, New York.—p. 560.
- 15 *Immediate Jejunal Feeding After Gastro-Enterostomy. A. F. R. Andresen, Brooklyn.—p. 565.
- 16 *Developmental Reconstruction of Colon. J. W. Draper, New York.—p. 567.
- 17 Case of Omphalomesenteric Duct; Intestinal Obstruction. M. T. Sudler, Rosedale, Kan.—p. 575.
- 18 Closure of Abdominal Incision with Silver Wire. C. G. Child, Jr., New York.—p. 578.
- 19 *Composite Study of Hypogastric Artery and Its Branches. B. Lipshutz, Philadelphia.—p. 584.
- 20 Case of Fracture of Great Toe Sesamoid Bones. T. G. Orr, Kansas City, Mo.—p. 609.

8. **Treatment of Fracture of Spine.**—A study of twenty-five cases made by Brackett, Mixter and Wilson is strongly in favor of early operative action in cases of fractures of the spine. A large percentage of the cases which could be followed showed partial and even complete disability for years after the injury, many of which had prolonged mechanical treatment by fixation and support. It would seem, also, that the continuance of the mechanical support after a few months does not materially influence the result, but was of value in giving added comfort while wearing such support. This fact alone, namely, the failure of mechanical treatment, would seem to warrant active radical measures, provided the operative methods give reasonable assurance of benefit, and provided the indications for operation could be formulated. On the other hand, the results of early operative treatment, in the cases which have been watched would seem to indicate definitely that early operation is a measure to be advocated in a very large number of cases. The writers suggest operation in the cases which show the following conditions: 1. Fresh fracture: (a) Crushed fracture of the bodies of one or more vertebrae associated with disalignment of fragments, particularly with involvement of any part of the lamina; (b) fracture of the fifth lumbar, of any part, but particularly with involvement of the lamina; (c) fracture of body showing increasing knuckle, abnormal mobility at point of fracture, or complicated with rupture of the supraspinous or interspinous ligaments. 2. Old fracture cases which show the persistent disability, as evidenced by inability to work, accompanied by continuance of pain, local or referred, and with general back weakness, operation is advo-

cated. Operation in the decade between fifty and sixty does not seem to be contraindicated. The social position may at times have influence in directing for or against operation, for when the most rigid early care can be given, much more might be expected from early fixation treatment. Freedom from pain, however, in the early weeks of recumbent and fixation treatment, may be misleading, for it is possible, that even with the relief of all symptoms during the period of recumbency, the pain may return and cause disability when the patient becomes ambulatory and begins to use the spinal column. A very severe injury and perhaps extensive crush may result in a quicker and more complete recovery than in some of the apparently lesser ones.

9. **Surgery of Spastic Paralysis.**—Gill has performed thirty-five Stoeffel operations on the popliteal, the sciatic, the obturator, and the median nerves. The results have been so satisfactory that the operations have been done routinely. In several instances a second operation was performed, when it was found that too little of the nerve supply had been resected at the first operation. It is better to resect too little than too much. In operations on the lower extremity the results have appeared to be almost uniformly successful and satisfactory. In resections of the median nerve of the arm the results are not functionally so good, although the cosmetic results are satisfactory. Following operation the after-treatment should be thorough and persistent in educating the weakened muscles and in securing coordination.

13. **Effects of Splenectomy.**—Hitzrot summarizes what is known about the anatomy, the physiology, and the clinical features of splenic disease, with special reference to the effect of splenectomy both in the normal and in the pathologic animals as gained by observations in seventeen cases of splenectomy (sixteen personal cases; one case reported by Conner and Downes). The series contains seven cases of splenomegaly of varying types (splenic anemia [Banti's], three; splenomegaly of unknown type with anemia, one; hemogenous jaundice, two; von Jaksch's anemia, one), two cases of pernicious anemia and one case of splenomyelogenous leukemia. Of the three cases of Banti's disease, one patient was markedly improved for nine months and then, due to the increasing cirrhosis of the liver, developed ascites, and in the fourteenth month a mesenteric thrombosis from which he died. The second splenectomy for Banti's disease is now six months past the operation, and is in splendid health and without symptoms. The third patient is serving in the army. As for the case of splenomegaly with anemia the patient has shown no change in weight since the operation. Her general health has improved, and three years after operation she reports that she is well but has a small baby and could not appear for examination. Both cases of hemogenous jaundice have recovered from the symptoms which existed before the operation performed three and one half and eight years ago.

Following the splenectomy done for von Jaksch's anemia there was a rapid rise in the hemoglobin and in the red cells, which has remained permanent. The white cells showed no definite change following the splenectomy, and such changes as did occur took place in the polymorphonuclears, which rose in two weeks to approximately the normal polynuclear percentage (before operation they were only 25 per cent. of the white cells). One month after operation, hemolysis began at 0.50 and was complete at 0.38. Nine months after operation hemolysis began at 0.44 and was complete at 0.28, showing a marked increase in the resistance of the cell. The most striking feature of this particular case was the shower of nucleated red cells which was noted twelve hours after the operation. At one time (five days after operation) the nucleated red cells represented 85 per cent. of the nucleated cells in the smear. The child rapidly improved both in weight and height on exactly the same diet she had had before the operation, and in this case the effect of the splenectomy was even more striking than that procedure in the acholuric jaundice cases. The anemias in which there is a disturbance of blood formation cannot be benefited by splenectomy, inasmuch as the trouble does not lie in the spleen, but in the blood forming organs.

14. **Value of Pyloric Exclusion in Ulcers.**—Experiments performed by Lewisohn demonstrated *ad oculos* the efficient way in which pyloric exclusion sidetracks food. The changes produced in the chemistry of the stomach after gastro-enterostomy were not considered in these experiments. It is a well known fact that, following a gastro-enterostomy, bile and pancreatic juice are regurgitated through the stoma into the stomach, thus diminishing the hyperacidity considerably. This change of the chemism of the stomach is of the utmost importance. Lewisohn believes that improvements in the clinical condition after gastro-enterostomy without pyloric exclusion are based solely on the changes of the chemistry of the stomach. Gastro-enterostomy plus pyloric exclusion is however far superior to simple gastro-enterostomy. It gives the patient the benefit of the chemical changes just mentioned and, in addition to that, it safeguards the ulcers against mechanical insults, thus hastening the healing of the ulcer-bearing area.

15. **Immediate Jejunal Feeding After Gastro-Enterostomy.**—Andresen has found that it is practicable, at the time of operation, to insert a previously swallowed Rehfuß gastro-duodenal tube well into the jejunum and to commence at once, on the operating table, the feeding of peptonized milk, dextrose and alcohol mixtures, thus making sure that the nourishment administered actually is made use of by the body. Andresen considers that immediate jejunal feeding after gastro-enterostomy is not only a safe, but an extremely valuable, procedure and is to be recommended not only in the operations performed for stenosis but should be tried in all types of cases, as being a more certain, and, in most cases, a less uncomfortable method of postoperative administration of fluid and nourishment than the methods ordinarily employed.

16. **Developmental Reconstruction of Colon.**—In twenty-nine human cases of developmental reconstruction of the colon five have died, a mortality rate of 17 per cent. Four deaths occurred in the first eight cases. One death in the last twenty. Draper and his co-workers resected the terminal 10 cm. of the ileum and the cecocolon in block to the neighborhood of the right colic artery. This corresponds to a point on the transverse colon near to the right margin of the omentum. Indications for developmental reconstruction: 1. Segmental infection of the cecocolon. 2. In Lynch's elbow deformity of the mid-ascending colon when the peritoneum cannot be repaired after reduction. 3. In exaggerated non-fusion of mesentery, allowing such freedom of motion as occasionally to result in volvulus. Developmental reconstruction has superseded in their clinic all the earlier forms of operative procedure such as ileocolostomy, cecosigmoidostomy, etc., because it is no more dangerous operatively and gives better results because it removes the biologically decadent and diseased organ and restores the individual to the carnivorous type of colon undoubtedly best suited to man.

19. **Study of Hypogastric Artery.**—This paper, the third of the blood vascular tree studies, presents a composite study of the hypogastric (internal iliac) artery, and is based on records and observations made from dissections of ninety-three cadavers. There were ninety-one dissections of the hypogastric artery on the right side of the body and ninety dissections on the left side, making 181 dissections in all. Section A of this paper presents observations on the point of bifurcation of the aorta, and the length and point of bifurcation of the common iliac and hypogastric (internal iliac) arteries. Section B contains a description of the types of hypogastric artery. Section C embraces a description of the individual branches of the hypogastric artery. Section D summarizes and discusses the results of the study.

Archives of Internal Medicine, Chicago

May, 1918, 21, No. 5

- 21 *Experiments on Vasoconstrictor Action of Blood Serum. T. C. Janeway, H. B. Richardson and E. A. Park, Baltimore.—p. 565.
22 *Relation Between Platelet Count of Human Blood and Its Vasoconstrictor Action After Clotting. K. Hirose, Okayama, Japan.—p. 604.

- 23 *Clinical Calorimetry: Effect of Small Breakfast on Heat Production. G. F. Soderstrom, D. P. Barr and E. F. Du Bois, New York.—p. 613.
24 Id.: Metabolism of Boys Twelve and Fourteen Years Old. W. H. Olmstead, D. P. Barr and E. F. Du Bois, New York.—p. 621.
25 *Id.: Metabolism in Malarial Fever. D. P. Barr and E. F. Du Bois, New York.—p. 627.
26 *Study of Ethylhydrocuprein (Optochin) in Treatment of Acute Lobar Pneumonia. H. F. Moore and A. M. Chesney, New York.—p. 659.
27 *Circulatory Reactions to Exercise During Convalescence from Infectious Disease. H. Mann, New York.—p. 682.
28 *Occurrence of Mitochondria in Red Blood Corpuscles During Experimental Anemias. C. O. Sappington, San Francisco.—p. 695.

21. **Blood Serum as Vasoconstrictor.**—The power of blood after clotting or defibrination to constrict blood vessels, as evidenced by its action on perfused organs or on the excised arterial strip, has been frequently observed and to some extent studied as to its nature and origin. The study made by Janeway, Richardson and Park consisted of the vasoconstrictor substance in relation, first, to unclotted blood; second, to the cellular and noncellular elements of the blood; third, to certain biologic, physical and chemical reactions; and lastly, to the process of coagulation. The results of this investigation may be summarized as follows: Uncoagulated blood of the ox or calf has no constrictor action on the excised strip of the ox carotid. Blood platelets of ox, dog or pig yield an extract which has a powerful vasoconstrictor action. Erythrocytes yield no vasoconstrictor substance. Leukocytes, as represented by the cells of the pleural exudate of the dog, yield none. Plasma can be obtained free of vasoconstrictor substance. Its constrictor action, when present, is probably due to changes occurring after it leaves the blood vessels. The circulating plasma of normal animals has probably no such vasoconstrictor action. The vasoconstrictor substance (or substances) is neither protein nor epinephrin. It is a crystalloid more readily extracted by water or alcohol than by ether or chloroform, and is probably not related to cholesterol. The vasoconstrictor substance, though present in coagulated blood, is not dependent on the actual formation of the blood clot, nor is it related to any of the factors concerned in coagulation, with the possible exception of thromboplastin.

22. **Platelet Count and Vasoconstriction.**—Fourteen experiments were performed by Hirose in which blood from twenty-eight patients was examined. These experiments were performed by bringing the defibrinated blood into contact with the surviving carotid of the ox suspended according to Meyer's method and registering its degree of constriction on a revolving drum by means of a magnifying lever. In these experiments bloods of about equal platelet counts produced approximately the same degree of vasoconstriction. With one exception, bloods of higher platelet count produced more marked constriction than bloods of much lower platelet count. This one exception was the blood from a case of polycythemia with a count of 314,000, compared with blood from a case of chronic nephritis with a count of 189,000. The difference in platelet content here is relatively slight. Of nine specimens of blood with a platelet count less than 100,000 only three produced any constriction of the artery when diluted with two volumes of Locke's solution, and only four when diluted with equal parts of Locke's solution. Two of these were from cases of pernicious anemia, one from a case of cirrhosis of the liver, and the fourth from a case of myeloid leukemia.

23. **Effect of Small Breakfast on Heat Production.**—Ten experiments were made by Soderstrom and his associates on five subjects to determine the extent of the rise in metabolism following a small meal. The standard breakfast used in all observations consisted of 30 gm. bread, 8 gm. butter, 10 gm. sugar, and 60 c.c. milk, amounting to 4.7 gm. protein, 9.0 gm. fat, and 28.9 gm. carbohydrate, or 222 calories. In the first hour following the ingestion of this the heat production increased on an average 7 per cent.; in the second hour, 2 per cent.; in the third hour, 2 per cent. In the sixth, seventh and eighth hours the metabolism was slightly lower than before the breakfast. It is evident that when this small

amount of food is taken for breakfast it is only during the first hour that the absorption of food could have been in sufficient quantity to produce the condition of a "metabolism of plethora."

25. Metabolism in Malarial Fever.—Seven observations were made by Barr and Du Bois on five patients when they were without fever. Four of these were in the intervals between the paroxysms; three after treatment. In all cases the methods of direct and indirect calorimetry were used. For the total series of experiments the calories, as measured by these two independent methods, agree within 0.08 per cent. of each other. The rectal temperature, which was measured every four minutes, showed typical malarial curves. Rectal temperature falls much more gradually than it rises. The surface temperature at first may continue to rise, then to fall gradually for a period, and later to fall at about the same rate as the rectal temperature. The heat production increases 100 to 200 per cent. during the chill; immediately after the chill it falls to within 20 to 38 per cent. of the average basal level; with the falling temperature the heat production drops to normal. During the period before the chill with constant temperature the heat elimination equals the heat production. During the chill, in spite of the enormous increase in heat production, the heat elimination is the same as in the preliminary period. Almost all of the extra heat produced is stored in the body tissues. In the fourth period of rising temperature after the chill there is a slight increase in heat elimination. In the fifth period of continuous temperature heat elimination begins to equal heat production. In the sixth period of falling temperature the heat elimination is greatly increased, chiefly by means of a large increase in the vaporization of water from the skin. Of the total calories produced in this period the patient loses a much larger percentage than normal through vaporization. On the other hand, the percentage of calories lost through vaporization is not greatly increased in its relationship to the total heat elimination. The respiratory quotients during the chill are higher than before or after the chill, suggesting the rapid combustion of glycogen stores during the violent muscular exercise of shivering.

26. Ethylhydrocuprein in Treatment of Pneumonia.—Moore and Chesney present the data accumulated in an extension of their former work and give the final results of two years' experience in the treatment of lobar pneumonia with ethylhydrocuprein. The experimental results obtained during the first year have been, for the most part, confirmed by the study of cases treated during the second year, and, in addition, some new facts have been ascertained. Of the forty-three patients treated with ethylhydrocuprein during the season 1916-1917, two received the base (optochin base) by mouth. Forty received the hydrochlorid by mouth and one patient received the hydrochlorid intramuscularly at first, and later by mouth. The serum of the two patients who received the base by mouth failed to show either bactericidal activity or power temporarily to inhibit the growth of pneumococci, although the amount of the drug given should have been sufficient to produce such a result if the base were as readily absorbable as the hydrochlorid. The authors suggest that the difficulty of absorption from the gastro-intestinal tract is undoubtedly dependent on the fact that the drug in this form is very slightly soluble. During treatment with ethylhydrocuprein pneumococci in the human body can gradually become "fast" or resistant to its action. The pericardial fluid obtained postmortem from patients treated with ethylhydrocuprein hydrochlorid showed pneumococidal power. The serum of one patient who received a very large dose of ethylhydrocuprein hydrochlorid intramuscularly showed pneumococidal power.

Among seventy-five patients treated with ethylhydrocuprein there were nine who showed some degree of amblyopia (12 per cent.); this was mild in three cases and more severe in six. In all those who recovered from the pneumonia, the eye symptoms disappeared completely after the administration of the drug had been discontinued. The systematic use of ethylhydrocuprein (optochin) in the treatment of seventy-five cases of acute lobar pneumonia due to pneumococci did

not lead to any noteworthy therapeutic benefit. The authors suggest that the failure of the ethylhydrocuprein treatment to influence favorably the course of the disease is probably due to the following: (a) It is impossible to administer a sufficient amount of the drug to produce an effective concentration in the blood stream without at the same time exposing the patient to the danger of toxic action. (b) The rate of the pneumococidal action of ethylhydrocuprein is too slow in the concentrations which may be attained in the blood stream of the patient with any degree of safety; pneumococci, therefore, may gain access to the circulating blood at a greater rate than they are destroyed therein, even though the serum show pneumococidal action. (c) In the concentrations which are safely attained in the body fluids the drug probably penetrates but poorly into the alveolar exudate. The routine use of ethylhydrocuprein in the treatment of acute lobar pneumonia cannot be recommended.

27. Circulation During Convalescence.—The circulatory reactions of ten patients convalescing from acute infectious disease were studied objectively by Mann. The pulse reactions did not give any information of value. The blood pressure reactions, however, showed a progressive increase in the amount of work necessary to produce a "delayed summit."

28. Mitochondria in Red Cells in Anemia.—Increased formation in the number of mitochondria containing red cells was produced experimentally by Sappington by the removal of blood or by the injection of phenylhydrazin hydrochlorid. The degree of this increase was in the individual case roughly proportional, and on the average exactly proportional, to the need for red cells as measured by the degree of anemia produced. These experiments, therefore, support the suggestion that the number of red cells containing mitochondria may prove to be a useful indication of the rate of red blood cell formation in clinical and experimental conditions.

Boston Medical and Surgical Journal

May 23, 1918, 178, No. 21

- 29 Relation of Physician to Workmen's Compensation. F. D. Donoghue, Boston.—p. 693.
- 30 Application of Anaphylactic Skin Tests to General Medicine. S. Ayres, Jr., Boston.—p. 697.
- 31 Differential Diagnosis in Psychiatry; Comparison of Symptoms in Various Disease States. L. G. Lowrey, Boston.—p. 703.
- 32 Structural Deformities vs. Functional Efficiencies as Objects of Treatments. H. W. Marshall, Boston.—p. 708.
- 33 Beginning of Dispensaries. M. M. Davis, Jr., Boston, and A. R. Warner, Cleveland.—p. 712.
- 34 Relation of Ductless Glands to Gynecology; Physiologic and Therapeutic. A. H. Bigelow, Boston.—p. 715.

Colorado Medicine, Denver

May, 1918, 15, No. 5

- 35 Surgical Treatment of Anemias. F. C. Buchtel, Denver.—p. 114.
- 36 Bronchoscopy and Esophagoscopy. T. E. Carmody, Denver.—p. 119.
- 37 Achylia Gastrica. J. L. Mortimer, Denver.—p. 123.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, 1918, 11, No. 3

- 38 *Circulation in Man in Head Down Position, and Method for Measuring Venous Return to Heart. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 189.
- 39 *Influence of Forced Breathing on Circulation. Y. Henderson, A. L. Prince and H. W. Haggard, New Haven, Conn.—p. 203.
- 40 *New Method for Biologic Standardization of Pituitary Extract and Other Drugs. R. A. Spaeth, New Haven, Conn.—p. 209.
- 41 *Effect of Lactic Acid on Respiratory Center. S. J. Cohen, Chicago.—p. 221.
- 42 *Cutaneous Irritation by Mustard Oil as Influenced by Various Solvents. T. Sollmann, Cleveland.—p. 229.
- 43 *Investigations on Composition of Oil of Chenopodium and Anthelmintic Value of Some of Its Components. M. C. Hall and H. C. Hamilton, Detroit.—p. 231.
- 44 *Pharmacologic and Therapeutic Study of Benzyl Alcohol as Local Anesthetic. D. I. Macht, Baltimore.—p. 263.

38. Circulation in Man in Head Down Position.—The author's object was to determine whether in the normal man an increase of the venous pressure and the venous supply to the heart can be produced by means of the inverted positions and if so whether they will increase the diastolic filling and

the systolic discharge of the ventricles, and the volume of the blood in circulation. In the inverted or head down position (30 to 45 degrees) the heart rate in ten men was slower than in the flat position by an average of 9.5 beats a minute (maximum 23, minimum 4.5), and slower than in the erect position of 17 (maximum 34, minimum 10). The diastolic distending force of venous pressure was increased but arterial pulse pressure was not augmented. This fact the authors interpret in support of the view that normally in the erect position the distending force of venous pressure is above the critical value, and the heart works therefore at maximum efficiency for the rate of beat. No third heart sound was audible in the inverted position. The necessity of recognizing some sort of venopressor mechanism regulating the venous return to the heart is pointed out. A method estimating the efficiency of the venous return is described. By this method it is found that a very distinct decrease in the volume of the venous return is generally induced in man by anesthesia and operation, and occurs also in acute disease.

39. Influence of Forced Breathing on Circulation.—The results obtained on six healthy men who had had some practice in the performance of voluntarily forced breathing were very clear and decisive. 1. Venous pressure in the inverted position after forced breathing underwent in every case a very marked and strikingly long continued fall, amounting to 8 to 11 c.mm. blood. Recovery did not occur in any case until many minutes after apnea had terminated. 2. The arterial pressures, systolic, diastolic and pulse, were not greatly affected. 3. The tachycardia which forced breathing usually induces was suppressed by the inverted position. 4. Evidently the disturbance of the circulation induced in man by acapnia consists chiefly and fundamentally in a decrease of the venous return to the heart. The evidence seems to be well rounded out that this type of circulatory depression is a very common occurrence under anesthesia and operation and in some other conditions.

40. Standardization of Pituitary Extract.—This test consists of a study of the action of the drug on the melanophores of *Fundulus* which, Spaeth says, must be considered functionally modified smooth muscle cells, thus opening a new approach to various pharmacologic problems, including that of biologic drug standardization.

41. Effect of Lactic Acid on Respiratory Center.—In a series of forty-four determinations on ten dogs, Cohen noted that intravenous injections of 0.5 c.c. of normal lactic acid per body kilogram weight produce a marked increase in respiration, both in amplitude and in rate. The action was almost immediate, with a latent period of fifteen to thirty seconds and with a duration of two to four minutes. This response is not specific for lactic acid, but may be produced by practically any organic or inorganic acid. Cohn suggests that the mechanism of this hyperpnea probably involves three factors: (a) the acid may liberate carbon dioxid from the blood carbonates, and the excess carbon dioxid may play some part in the excessive movement; (b) the acid may act as a direct respiratory stimulant; (c) probably the most important factor, the acid sensitizes the respiratory center. The reaction is most probably due to a synergistic action of the acid and carbon dioxid on the respiratory center.

42. Cutaneous Irritation by Mustard Oil as Influenced by Various Solvents.—Sollmann says that olive oil and other good solvents for mustard oil hinder its penetration into the skin. The greatest irritation is obtained by watery suspensions, for instance, in mucilage. Olive oil and turpentine produce practically no hyperemia; ether and absolute alcohol produce very little hyperemia; 95 per cent. alcohol causes a distinct hyperemia, whereas 50 per cent. alcohol causes marked and lasting hyperemia; mucilage of acacia and simple syrup cause the most intense and persistent hyperemia.

43. Composition of Oil of Chenopodium.—The experiments made by Hall and Hamilton appear to warrant the conclusion that oil of chenopodium as ordinarily marketed is a very potent and valuable anthelmintic, but that it not infrequently acts as a gastro-intestinal irritant, a fact that seems to have been commonly overlooked, disregarded or allowed to go

unstated. The gastro-intestinal irritation seems to be due to constituents making up a fourth, or less, of the volume of the oil. The use of the lighter fraction as an anthelmintic in preference to the entire oil, in order to protect the patient from gastro-intestinal irritation, is apparently indicated.

44. Pharmacologic Study of Benzyl Alcohol.—Experimental data and clinical cases show that benzyl alcohol is an efficient local anesthetic when administered in aqueous solution. This alcohol is soluble up to 4 per cent. in water in physiologic saline. These concentrations appear to be entirely efficient for practical purposes. The interesting features in connection with this drug which should be especially emphasized are in the first place its low toxicity as compared with that of the commonly employed local anesthetic alkaloids of which cocain is the standard representative. The next interesting and important feature in connection with benzyl alcohol as an anesthetic is the ability of the organism to metabolize it and excrete it in an innocuous form. Third, an important feature of this local anesthetic is its high boiling point and the consequent ease of sterilization. Last, the comparatively low price of the drug and its ease of production.

Maine Medical Association Journal, Portland

May, 1918, 8, No. 10

- 45 Orthopedic Treatment of Infantile Paralysis. A. T. Legg, Boston.—p. 275.

Medical Record, New York

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- 46 Method and Organization of Reeducation for War Cripples in Germany. D. C. McMurtrie, New York.—p. 881.
47 Direct Examination of Duodenal Contents in Affections of Gall-bladder and Allied Organs. M. Einhorn, New York.—p. 885.
48 Adiposis Tuberosa Simplex; Report of Three Cases. J. M. Anders, Philadelphia.—p. 888.
49 Health School Child; Schenectady's System of Keeping Him Healthy. W. J. Brooks, Schenectady.—p. 890.
50 Waste Caused by Preventable Disease of Intestinal Origin. V. G. Heiser, New York.—p. 897.

Medicine and Surgery, St. Louis

March, 1918, 2, No. 3

- 51 Psychopathology and Criminology. W. J. Hickson, Chicago.—p. 245.
52 Shell Shock Analogues; Neuroses in Civil Life Having Sudden or Critical Origin. M. C. Jarrett, Boston.—p. 266.
53 Analysis of Accuracy of Early Psychiatric Diagnoses. L. G. Lowrey, Boston.—p. 281.
54 Diagnosis of Acute Psychotic Conditions. D. Gregg, Wellesley, Mass.—p. 290.
55 Neurosis of Housewife. A. Myerson, Boston.—p. 294.
56 Mental Health of Our Future Citizens. E. B. McCready, Philadelphia.—p. 304.
57 Sensory Aphasia, Associated with Right Lateral Homonymous Hemianopsia. J. H. Lloyd, Philadelphia.—p. 312.
58 Fractures of Skull; Resulting Intracranial Pathology and Treatment. W. Sharpe, New York.—p. 319.
59 Case of Syringomyelia with Bulbar Symptoms. E. F. Leonard, Chicago.—p. 334.
60 Obsessive Hallucinations in Child and Psychanalysis. A. Gordon, Philadelphia.—p. 344.
61 Symptomatic Psychoses. C. L. Allen, Los Angeles.—p. 350.
62 How Far Can the Mind Really Influence the Body? M. Solomon, Chicago.—p. 357.
63 Limitations of Psychiatrist. J. Taft, New York.—p. 365.
64 Posttyphoid Headache. E. H. Cary, Dallas.—p. 370.
65 Case of Homicidal Dementia Praecox. G. H. Hill, Des Moines, Iowa.—p. 374.

Mental Hygiene, Concord, N. H.

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- 66 Concerning Prisoners. B. Glueck, New York.—p. 177.
67 Adjustment of Jew to American Environment. A. A. Brill, New York.—p. 219.
68 City School District and Its Subnormal Children; Some Social Problems Involved and Suggestions for Constructive Work. C. M. Campbell, Baltimore.—p. 232.
69 Returned Disabled Soldiers of Canada. W. L. Russell, White Plains, N. Y.—p. 245.
70 Barriers to Treatment of Mental Patients. O. Copp, Philadelphia.—p. 254.
71 Vocational Rehabilitation of Soldiers Suffering from Nervous Diseases. F. H. Sexton.—p. 265.
72 Economic Loss to State of New York on Account of Syphilitic Mental Diseases During Fiscal Year Ending June 30, 1917. H. M. Pollock, New York.—p. 277.
73 Psychiatric Social Work. M. C. Jarrett, Boston.—p. 283.

New York Medical Journal

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- 74 Hyperacidity of Gastric Secretion as Prime Factor in Attacks of Angina Pectoris. H. Illoway, New York.—p. 961.
- 75 Standard Methods in Diagnosis and Treatment of Venereal Diseases in Public Dispensaries. H. Emerson, New York.—p. 968.
- 76 Vaccine Therapy in Chronic Intestinal Toxemia. G. R. Satterlee New York.—p. 971.
- 77 Some Aspects of Symptomatic Treatment. E. E. Cornwall, New York.—p. 974.
- 78 Relation of Fresh Air and Housing to Health. F. F. D. Reckord, Harrisburg, Pa.—p. 976.
- 79 Treatment of Flatfoot. F. R. Newman, Wheeling, W. Va.—p. 978.
- 80 Choosing the Anesthetist. I. Josephson, New York.—p. 979.
- 81 Gallstones. S. Weiss, New York.—p. 980. To be continued.
- 82 Ascending Osteomyelitis in Amputation Stumps with Particular Reference to Thigh. A. Marchand, Lyons, France.—p. 985.
- 83 Rehabilitation of Disabled Soldiers in New Zealand. D. C. McMurtrie, New York.—p. 986.
- 84 Some Problems of Nutrition in Army. J. R. Murlin.—p. 987.

New York State Journal of Medicine

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- 85 Value of Routine Examination of Labyrinth. I. H. Jones, Philadelphia.—p. 169.
- 86 Direct Laryngoscopy in Treatment of Chronic Postdiphtheritic Laryngotracheal Stenosis. H. L. Lynah, New York.—p. 170.
- 87 Diphtheria in New York State. F. M. Meader, New York.—p. 177.
- 88 *Floating Kidney, Nephropexy. S. Lloyd, New York.—p. 181.
- 89 Some Complications and Incorrect Diagnoses in Urologic Surgery. O. S. Lowsley, New York.—p. 184.
- 90 Common Problems in Diabetes Mellitus. J. R. Williams, Rochester.—p. 191.
- 91 *Study of Urine in Diabetes Mellitus with Special Reference to Relation of Urinary Acetone Bodies to Ammonia Excretion. J. H. Richards, New York.—p. 193.
- 92 Abortion and Its Treatment. A. J. Rongy, New York.—p. 196.

88. Abstracted in THE JOURNAL, June 9, 1917, p. 1779.

91. **Urine in Diabetes Mellitus.**—The total number of cases studied by Richards is fourteen. The total number of urine examinations is ninety-one. The diet in this series of cases was the von Noorden test diet or, in a few cases a mixed diet such as is known as "regular diet" in Bellevue Hospital. Twenty-eight observations showed urinary acetone bodies with high ammonia and normal rest nitrogen. Four observations showed urinary acetone bodies with normal ammonia and high rest nitrogen. Fourteen observations showed urinary acetone bodies with high ammonia and high rest nitrogen. Eight observations showed no urinary acetone bodies with high ammonia and normal rest nitrogen. Two observations showed no urinary acetone bodies with high ammonia and high rest nitrogen. Fifteen observations showed no urinary acetone bodies with normal ammonia and high rest nitrogen. Eight observations showed urinary acetone bodies with normal ammonia and normal rest nitrogen. Twelve observations showed no urinary acetone bodies with normal ammonia and normal rest nitrogen. Hence it is apparent that there may be an increased excretion of ammonia in the absence of urinary acetone bodies; and there may be a normal excretion of ammonia with urinary acetone bodies. The quantity of sugar excretion has no relation to the ratio of the nitrogen content of urine. In many cases of diabetes there is a disturbance of the ratio of the nitrogen content of the urine which may be corrected by regulating the nitrogen intake, but no correction of the urinary sugar nor of the urinary acetone bodies will correct this nitrogen disturbance.

Social Hygiene, Baltimore

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- 93 Venereal Diseases and War. W. C. Gorgas, Washington, D. C.—p. 3.
- 94 Campaign Against Commercialized Prostitution Near Military Camps. B. Johnson.—p. 9.
- 95 California Program for Prevention of Venereal Diseases. W. A. Sawyer, San Francisco.—p. 25.
- 96 Venereal Diseases and War. W. C. Gorgas, Washington.—p. 39.
- 97 Venereal Diseases in Civil and Military Life. F. F. Russell.—p. 43.
- 98 Have We Devised an Effective Medical Propaganda of Venereal Prophylaxis? R. C. Holcomb.—p. 47.
- 99 Program of Commission on Training Camp Activities with Relation to Problem of Venereal Disease. R. B. Fosdick.—p. 71.
- 100 Community Control of Venereal Diseases. J. W. Kerr, Washington.—p. 77.
- 101 Venereal Disease in Civil Community. W. H. Frost.—p. 81.
- 102 Social Hygiene and War. P. B. Johnson, Washington, D. C.—p. 91.

Southern Medical Journal, Birmingham, Ala.

May, 1918, 11, No. 5

- 103 *Usefulness of Blood Chemical Methods in Differential Diagnosis of Cardiac and Renal Disease. R. B. H. Gradwohl and C. Powell, St. Louis.—p. 335.
- 104 Pollinosis or Hay-Fever; Its Specific Treatment. S. R. Miller and W. A. Baetjer, Baltimore.—p. 341.
- 105 Trichocephalus Dispar. S. B. Strong, Preston, Cuba.—p. 345.
- 106 Râles After Expiration and Cough as Means to Early Diagnosis in Tuberculosis. B. L. Taliaferro, Catawba Sanatorium, Va.—p. 347.
- 107 *Physical Status of Juvenile Delinquents Based on Physical and Clinical Examinations of Children in Reformatories of City of New Orleans. E. Bass and M. Loeber, New Orleans.—p. 349.
- 108 Advantages of Sanitarian to Railroad. A. E. Campbell, Chicago.—p. 355.
- 109 Surgical Work at Casualty Clearing Station. T. H. Goodwin, London.—p. 363.
- 110 Importance of Recognizing Weakness or Obliteration of Conjoined Tendon in Operations for Inguinal Hernia. J. C. Bloodgood, Baltimore.—p. 366.
- 111 *Rôle of Syphilis in Surgery. G. Gellhorn, St. Louis.—p. 369.
- 112 Large Multiple Intravescical Adenoma of Prostate. G. F. Lydston, Chicago.—p. 372.
- 113 Spondylitis Chronica Ankylopoietica. W. Allan and J. W. Squires, Charlotte, N. C.—p. 373.
- 114 New Tonsil Guillotine. G. Sluder, St. Louis.—p. 380.
- 115 Some Rare Complications of Acute Mastoiditis with Unusual Symptoms. W. T. Patton, New Orleans.—p. 381.
- 116 Removal of Foreign Bodies from Eyeball and Orbital Cavity; Report of Cases. D. Roy, Atlanta, Ga.—p. 386.
- 117 Value of Classics as Part of Studies Preparatory to Medicine. L. F. Barker, Baltimore.—p. 391.

103. **Usefulness of Blood Chemical Methods in Diagnosis of Cardiac and Renal Disease.**—After a rather extended experience with the blood chemical findings in both primary cardiac and renal conditions in their earlier manifestations, and after having been able to check the clinical diagnosis by the so-called retention tests, Gradwohl and Powell tried out these methods in actual practice in a class of severe cases. The blood was taken in the morning before breakfast whenever possible, received into oxalate of potassium, defibrinated, and examinations were made at once. The following methods were used: Marshall for urea nitrogen; Folin modified by Benedict for uric acid; Folin for creatinin, and the Benedict and Lewis for sugar. The necropsy records, when obtainable, corroborated in each instance the blood chemical findings on which the differential diagnosis was made. In the cardiac cases there was practically no increase in the nonprotein nitrogenous constituents, though the urine in each case showed albumin and casts. The renal cases all showed a marked increase in these blood constituents, particularly in respect to one case which had 108 mg. urea nitrogen, 9.8 uric acid, 4.48 creatinin, and 0.148 per cent. sugar. All of the cases showed marked increase in uric acid. The urine showed albumin and casts, just as it did in the cardiac cases. By these tabulated figures alone the authors are able to differentiate with exactitude the difference between the cardiac case and that primarily renal. In other words, laboratory data in this mixed group of cases were sufficient to point the way to the correct diagnosis, and the institution of the proper treatment.

107. Abstracted in THE JOURNAL, Dec. 22, 1917, p. 2143.

111. Abstracted in THE JOURNAL, Dec. 15, 1917, p. 2066.

United States Naval Medical Bulletin, Washington, D. C.

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- 118 Search for Nonphysical Standards for Naval Aviators. R. P. Parsons.—p. 155.
- 119 Organization and Equipment of Navy Hospital Units. T. W. Richards.—p. 184.
- 120 Examination of Eight Thousand Five Hundred and Eighteen Men for Meningococcus Carriers, at U. S. Naval Training Stations, San Francisco. P. S. Rossiter and A. J. Minaker.—p. 195.
- 121 Laboratory Detection of Carriers of Meningococci at U. S. Naval Training Stations, Great Lakes, Ill. C. W. Barrier and R. M. Choisser.—p. 205.
- 122 Control of Diphtheria Carriers and Suspects, City Park Barracks, Brooklyn. G. B. Whitmore and P. B. Welch.—p. 212.
- 123 Commissary Work at U. S. Naval Hospital, Mare Island, Calif. R. E. Weaver.—p. 217.
- 124 Preparation of Colloidal Gold. F. G. Speidel and J. W. Smith.—p. 220.
- 125 Substitute for Sailor's Hammock. C. P. Kindleberger.—p. 251.
- 126 Automatic Drinking Cup Sterilizer. W. L. Mann.—p. 253.
- 127 Handling of Fracture Case at Sea. C. C. Kress.—p. 257.

- 128 Case of Death Following Injection of Salvarsan. R. A. Bachmann.—p. 262.
- 129 Case of Syphilis of Lung. A. B. Davidson and E. Callaway.—p. 266.
- 130 Case of Fracture of Os Calcis. G. S. Whiteside.—p. 267.
- 131 Extraction of Supernumerary Tooth. W. A. Cauch.—p. 270.
Supplement
- 132 Field Sanitation: for Members of Hospital Corps Serving with Marines. W. L. Mann.—p. 7.
- 133 Local Treatment of Burns and Scalds. L. C. Sims.—p. 21.
- 134 Operating Room. G. F. Cottle.—p. 32.
- 135 Contagious Case. J. S. Taylor.—p. 37.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

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- 1 Therapeutic Influence of Roentgen Rays on Female Pelvic Disease. J. Phillips.—p. 333.
- 2 Pharyngeal Pouches. N. S. Finzi.—p. 342.
- 3 Intensifying Screen; Its Properties and Uses. T. T. Baker.—p. 352.

Brain, London

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- 4 Symptoms of Acute Cerebellar Injuries Due to Gunshot Injuries. G. Holmes.—p. 461.
- 5 Changes in Electrical State of Body and Their Relation to Nervous System. W. M. Bayliss.—p. 536.

British Journal of Children's Diseases, London

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- 6 Intermittent Fever from Meningococcal Septicemia. A. Netter.—p. 1.
- 7 Juvenile Consumption and School Attendance. W. C. Rivers.—p. 6.
- 8 Hemangiectatic Hypertrophy of Limbs—Congenital Phlebarteriectasis and So-Called Congenital Varicose Veins. F. P. Weber.—p. 13.
- 9 Two Cases of Pneumococcal Meningitis. G. Panayotabon.—p. 18.
- 10 Clinical Notes on Megacolon. C. G. Cumston.—p. 21.
- 11 Conditions Simulating Disease Which May Be Produced by Teething. J. Burnet.—p. 26.
- 12 Primary Sarcoma of Lung. J. P. Parkinson.—p. 28.
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- 26 Case of Prompt Recovery After Nerve Suture. J. W. Heekes.—p. 507.
- 27 Special Crutch for Men Who Have Lost Both an Arm and Leg. R. L. Joynt.—p. 508.

20. **Destruction of Nits of Clothes Louse.**—Bacot and Lloyd found that the compound solution of cresol (crude phenol and soft soap emulsion) solutions are decidedly more effective than the cresol soap emulsion solution at the higher temperature but less so at 32 F. The difference in the latter case is not great, and may possibly be largely, if not entirely, a matter of chance, dependent on uncertainty of action at low temperatures. An interesting feature of the series is the regular rise in the percentage of lice which die while hatching as the action of the solutions become less fatal up to a midpoint, when it again declines to a minimum in proportion as the hatching ceases to be checked owing to the weakness of the solutions. It is a matter of question whether death during escape from the egg is due to the action of the fluids on the eggshell, or to a want of robustness in the larvae. The

evidence as a whole seems to establish the fact that steeping for twenty minutes in a 2 per cent. solution, either compound solution of cresol or the cresol soap, is quite effective provided the temperature is not below 50 F.

24. **Prognosis in War Nephritis.**—With the aid of the Medical Research Committee the subsequent history has been investigated by Abercrombie in an unselected series of 171 cases of war nephritis. During their initial stage the cases had been under his care in a base hospital in France, to which they were admitted between April, 1915, and February, 1916, inclusive. Their after-histories have been traced until November, 1917—that is, for periods varying from twenty-one to thirty-two months. Their initial stage was an acute illness, exhibiting albuminuria with edema. Six deaths occurred. Thirty-two men were invalided as permanently unfit on account of nephritis, thirty-one were discharged to some form of duty. Of these 131 cases, twenty-two subsequently either relapsed or showed chronic renal symptoms, and were ultimately invalided for nephritis; the remaining 109 showed no further history of the disease.

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- 29 Anesthesia in General Practice. J. P. Boyd.—p. 201.
- 30 *Case of Partial Hereditary Anonychia. F. Charteris.—p. 207.

30. **Partial Hereditary Anonychia.**—Charteris' patient was a man, aged 34 years, who was admitted to the infirmary suffering from trench fever. It was noted that the nails of the thumbs, forefingers and second fingers of both hands were entirely absent, and those of the ring fingers only developed as regards the ulnar half. The little fingers had complete normal nails. A similar condition was present in the toes, the three inner toes lacked nails, the fourth toe had a rudimentary nail, while the little toe was furnished with a normal nail. While the fingers show absolutely no indication of any attempt at nail formation, in the toes there are distinct grooves indicating the nail beds. In the fingers the area normally covered by the nails showed concentric markings, similar to the markings normally present on the palmar aspects of the terminal phalanx. The congenital absence of the nails was a hereditary defect in the patient's family. It could be traced back to his great grandmother; and of his own four children, two show the exactly similar abnormality, while the other two have normal nails. In the preceding generation only this patient showed the family defects, his brothers and sisters having normal nails. The absence of the nails seems to cause little or no inconvenience. Previous to joining the army the patient had been a miner.

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- 31 Susruta Samhita. W. D. Sutherland.—p. 81.
- 32 Hospital Building in India. R. Bryson.—p. 92.
- 33 Intramuscular Injections of Sodium Gynocardate in Leprosy. P. M. C. Peacock.—p. 95.
- 34 Natural Painless Childbirth. R. F. E. Austin.—p. 99.

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- 35 *Agglutination Method of Diagnosis in Triple Inoculated Individuals. H. M. Perry.—p. 593.
- 36 *Septic Phlebitis Due to Gunshot Wounds. H. Burrows.—p. 601.
- 37 *Cerebrospinal Fever: Notes on Ninety-Two Consecutive Cases. W. H. W. Attlee.—p. 602.
- 38 Trench Fever; Condition of Spleen and Leukocytes. D. L. Tate and J. W. McLeod.—p. 603.
- 39 Eyestrain. A. S. Cobbledick.—p. 604.
- 40 Restricted Diet of Sedentary Worker. A. D. Waller.—p. 611.
- 41 War Bread. E. I. Spriggs.—p. 613.

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- 42 General Arteriosclerosis. O. K. Williamson.—p. 627.
- 43 Some Important Principles Which Determine the Reliability of Wassermann Reaction. J. McIntosh.—p. 630.
- 44 Wassermann Reaction; Its Use and Abuse. H. W. Bayly.—p. 632.
- 45 *Acriflavine and Proflavine: Their Use in Infected Gunshot Wounds. R. B. Carslaw and W. Templeton.—p. 634.
- 46 *Treatment by Brilliant Green of Recently Inflicted Gunshot Wounds. R. Massie.—p. 635.
- 47 Epidemic Stupor in Children. F. E. Batten and G. F. Still.—p. 636.

35. Agglutination Method of Diagnosis.—A large experience of the agglutination test in enteric fevers has made it evident to Perry that the method must be accorded a very prominent position in the laboratory diagnosis of this group of diseases. This is more especially the case since the introduction of preventive inoculation with the triple vaccine, as the isolation of the infecting organism from the blood, feces and urine has become more difficult. An attempt at making a diagnosis on agglutination results by any method other than a repeated and accurate titration of the agglutinin content of the serum, Perry says, does not appear feasible, and the use of standardized agglutinable cultures in this connection is obvious. Regarding the value of the test in all cases, Perry's opinion may be summarized as follows: 1. Positive results: Presuming that the technic is carried out by a skilled and careful worker, a change in titer of 100 or 200 per cent., manifesting itself in a regular curve and reaching its maximum between the sixteenth to the twenty-fourth day (in exceptional cases as late as the thirtieth day) justifies a diagnosis of active enteric infection. 2. Negative results: Cases which are clinically classified as belonging to the enteric group at present occur in which not only do repeated bacteriologic examinations fail to isolate an organism, but in which agglutination readings are so absolutely level or exhibit such slight variation that they afford no help in confirming the clinical diagnosis. Presuming that such are true cases of enteric infection, the failure to confirm the clinical opinion by agglutination findings may be due to one of the following causes: (a) Possibly, but not necessarily as a result of inoculation, the character of the infection may be so mild that agglutinins are produced to such slight extent as to cause a variation in titer which is not diagnostic. (b) The organism responsible for the infection may be a feeble producer of agglutinins. This particularly applies to paratyphoid A infections. (c) The fact that many of these cases have, in addition to receiving a typhoid vaccine, also been inoculated with 4 doses of T. A. B. (typhoid paratyphoid A paratyphoid B) vaccine, may in some way influence agglutinin production.

36. Septic Phlebitis Due to Gunshot Wounds.—In connection with the frequency of septic phlebitis consequent on gunshot wounds, Burrows says, one cannot help being struck by the large percentage of cases in which evidence of bronchopneumonia or pleurisy is found postmortem. Among 100 consecutive cases were 25 in which death had followed gunshot wounds of the limbs. Among 24 cases of leg wounds, 10 (41.6 per cent.) had phlebitis, 9 (37.5 per cent.) had bronchopneumonia. Pulmonary infarcts were found in four of the cases in which phlebitis was not observed, although the presence of the infarcts indicates that it was present. This observation bears out the main theme of this paper, that septic infection of veins is, so far as the base hospitals in France are concerned, the chief cause of mortality after gunshot wounds of the extremities. The proper treatment consists in tying the vein at some point above the level of the clot, dividing it below the ligature, and either removing a length of the vein with its infected contents or, if this be not possible, opening the vein freely to afford drainage. Spontaneous recovery may take place, especially if small veins alone are involved.

37. Cerebrospinal Fever.—In all but six of the 92 cases analyzed by Attlee was the meningococcus seen in the cerebrospinal fluid and in most cases it was cultivated. In these six the cerebrospinal fluid was turbid and contained many polymorphonuclear leukocytes, and one of the patients died with the usual postmortem appearances in the meninges of cerebrospinal fever. Three of the six were in the Lister series and three in the Pasteur. Thirty-three patients were treated with Lister serum. Of this number 18 recovered and 15 died. Of the recoveries two were completely deaf when evacuated and one was completely deaf in one ear. In none of the others was there any sign of permanent disability. Fifty-two patients were treated with Pasteur serum. Of this number 33 recovered and 19 died. None who recovered had any sign of permanent disability. Seven patients were treated with Lister and Pasteur serums com-

bined. Of this number 3 recovered and 4 died. Of these patients, 4 began with Lister and were given Pasteur afterward, rather as a forlorn hope, and all died, the other 3 began with Pasteur and afterward had Lister owing to a temporary shortage of supply, and all recovered. Of the 54 patients who recovered, 21 were unconscious or delirious on admission and 33 sensible. Of the 38 who died, 23 were unconscious or delirious and 15 sensible. In every case the neck was definitely stiff, and in every patient who was not comatose or moribund on admission Kernig's sign was present at some time or other in the course of the illness. Twelve had rashes, 6 of these recovering and 6 dying. Twenty-two had one or more cranial nerves affected, strabismus being definitely noted in 18. Nystagmus has been quite common. Serum arthritis has been common, most often of the wrists and knees, once of the temporomaxillary joints. It has never needed any active surgical treatment. Urticarial and erythematous rashes have been frequently noted. Two had orchitis during convalescence. One had cyclitis beginning some time before admission on the fifth day of the disease. Only one symptom has been at all constant—headache, generally acute and of sudden onset. Only one sign has been of real help in diagnosis—stiffness of the neck. The greatest number of punctures in any one of the recoveries was 26, of those who died 25. The greatest total amount of fluid drawn off among the recoveries was 1,909 c.c., among those who died 2,127 c.c. The average amount of fluid per puncture in a recovery was 61 c.c., and in those who died, 54 c.c. The average total quantity of serum given each man who recovered was 180 c.c.

45. Acriflavine and Proflavine.—An investigation was undertaken by Carslaw and Templeton with the object of ascertaining whether the action of proflavine differed in any way from that of acriflavine. Since October, 1917, a large proportion of the infected gunshot wounds admitted to one hospital have been treated with acriflavine, and the clinical results have been observed in over sixty cases. Proflavine followed by eusol, was used in thirty cases (thirty-two wounds being treated). In all cases 1:2,000 solution in normal saline was used. The rapid improvement in the general condition of patients as shown by subsidence of temperature, pulse rate, etc., and rapid disappearance of pain and of inflammatory edema in the vicinity of wounds were very evident. Although the action of acriflavine and proflavine is very similar there can be no doubt that proflavine is slower. The improvement in the general condition of patients is not so rapid. The formation of the fibrinous membrane is not usually complete until the fifth, sixth, or seventh day in contrast with its presence on the third, fourth, or fifth day when acriflavine is used. Further, separation of membrane and attainment of a "clean" wound are also slightly delayed. The application of flavine to infected wounds does not render them bacteriologically sterile. Flavine is clearly antiseptic, not disinfectant, in action. There is a complete absence of evidence of damage to tissues when these salts are used in solution not stronger than 1:1,000. There is no necrosis of any of the exposed tissues. These salts are of undoubted value in controlling and preventing the spread of sepsis, as is shown by the rapid improvement in local and general conditions. This object having been gained, there is no advantage in continuing their use, as a condition is reached in which reparative changes are slow, although not by any means absent. Following on the substitution, after a few days, of a more stimulating antiseptic, for instance, eusol, a "clean" wound is obtained sooner than by any other form of treatment known to the authors. There is no evidence of any general toxic effect.

46. Brilliant Green and Gunshot Wounds.—Of a large number of cases treated with brilliant green information regarding their subsequent progress was obtained in only forty-six cases. The wounds had, without exception, been received from two to eight hours previous to treatment, and were all severe, with considerable tissue damage. No special type of case was selected, but it was not used in cases involving the peritoneal or pleural cavities, though there seems to be no reason why it should not be so used. The

solutions used were: (1) 1:1,000 brilliant green in normal saline; (2) 1:500 in normal saline; (3) 1:500 in 0.5 per cent. chlorotone. Of the solutions No. 3 was preferred. It appeared to have a definitely analgesic effect, rendering dressing less painful. Wounds appeared to clean more quickly under the stronger solutions. No toxic symptoms were observed in any case. Results were recorded by independent observers and reported, for the most part, by means of Form M. R. C. 1, since it was necessary to evacuate early. When possible a complete excision of damaged tissue was carried out and foreign bodies were removed. In cases of compound fracture all fragments of bone having no periosteal attachment were removed. Damaged tissue is more deeply stained by brilliant green than is healthy tissue. It is useful in this respect when excising the tracks of missiles. All tissue, except skin, which holds the stain of 1:500 solution, should be excised. Brilliant green produces exuberant, but very vascular, bright red granulation. Noticeable features in cases treated with it are the absence of edema and inflammation round the wound and the rapidity with which sloughs and sequestra separate. It is painless in application and does not appear to interfere with the growth of epithelium. For these reasons it may be considered a useful antiseptic, and though it can by no means atone for an incomplete or faulty primary excision it may be used with advantage where anatomic conditions render complete primary excision impossible.

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- 48 Toxic Element in Goiter; Report of Cases. S. Pern.—p. 276.
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- 49 Operative Technic and After-Treatment of Senile Cataract Extraction. W. W. Hoare.—p. 297.
- 50 Prevention of Postanesthetic Vomiting. S. J. Cantor.—p. 299.
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- 51 Mycosis Fungoides. J. C. Verco.—p. 319.

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- 52 Skin Grafting. J. W. H. Chun.—p. 10.
- 53 Use of Disinfection and Isolation in Epidemics. S. M. Woo.—p. 16.
- 54 An Inquiry into Some Chinese Sexual Diseases. K. C. Wong.—p. 26.

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- 55 Carbohydrate Metabolism in Brooding Hen's Egg. Formation of Sugar Out of Fat in Animal Body. K. Sakuragi.—p. 13.
- 56 Poisonousness of Immune Serum. T. Yamada.—p. 15.

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- 57 *Cancer of the Lung. L. Galliard.—p. 201.
- 58 Secondary Infection of Bile Passages in Spirochete Jaundice. M. Garnier and J. Reilly.—p. 205.
- 59 *Malarial Hemiplegia. A. Léri.—p. 210.
- 60 *Rachitis in Soldiers. A. Léri and Beck.—p. 215.
- 61 Isolated Lumbar Rheumatism. A. Léri.—p. 220.
- 62 Sulphur and Oil in Joint Disease. L. Bory.—p. 221.
- 63 Nature of Wassermann Reaction. L. Bory.—p. 223.
- 64 Joint Complications of Meningitis. H. Roger.—p. 225.
- 65 Acute Nephritis from Mercury. S. Livierato.—p. 229.

57. **Cancer of Lung.**—In Galliard's case the emaciation was explained by the roentgen rays as due to an extensive primary cancer in the lung. There was also partial pneumothorax. Netter has had a case in which the diagnosis was made from small cancerous masses in the sputum. An operation was done for purulent pleurisy and the man survived for a year, confirming the slow evolution of cancers of the lung.

59. **Malarial Hemiplegia.**—Léri reports five cases of hemiplegia developing early in malaria or several years after infection. The hemiplegia was slight and incomplete, and three of the five patients had aortitis. In the other two the hemiplegia had developed slowly and insidiously. The symptoms indicated that the gray matter had been touched. This hemiplegia and the aortitis should be sought for as the fitness for service is impaired by them.

60. **Rachitis in Soldiers.**—Léri and Beck state that in the last few months they have encountered no less than thirty *petits rachitiques* among the men in their service. They

describe the various manifestations of this "minor rachitis" which is liable to be overlooked in examining men for the service. Most of such men have outgrown their disturbances from their rachitis, but some still feel the effects, and most of those they have seen had been sent for treatment on account of persisting pains. These pains were never violent, but the dull ache along segments of the limbs hindered or rendered impossible any long march or heavy work. Their whole attitude of body and mind is that of asthenia. Physically and mentally hypotrophic during childhood, they have never thrown this off completely. One man simply refused to get up, saying his bones ached, but no signs of sickness could be found. He did not seem to realize the gravity of his refusal; the idea of the guard-house did not occur to him. His only preoccupation was to be left in repose. These *petits rachitiques* must be regarded as fit for light duty only; they should be transferred to the auxiliary service.

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- 66 War Wounds of Pleura and Lung. J. L. Roux-Berger.—p. 1.
- 67 *Primary Suture for War Wounds. R. Lemaitre.—p. 65.
- 68 *War Wounds of the Bladder. F. Cathelin.—p. 109.
- 69 *Repair of War Wounds of Deep Urethra. V. Rochet.—p. 137.
- 70 *Transfusion of Citrated Blood. J. Murard.—p. 147.
- 71 *Infusion of Locke's Fluid with Acacia. H. Delaunay.—p. 211.
- 72 So-Called Botryomycosis of War Wounds. P. Masson.—p. 230.
- 73 Actinomycosis and Botryomycosis in Morocco. M. Tussau.—p. 241.

67. **Primary Suture of War Wounds.**—Lemaitre reviews the experience of twenty-nine months of primary suture in 2,537 cases of war wounds in the various surgical units of the Ve Armée. He insists that there is no need to cut out more of the tissues in preparation for primary suture than with any other method. What is necessary is to get rid of all devitalized tissues and no more. Curved scissors are far superior to the bistoury, cutting not from the point but at a tangent from their convexity, thus avoiding the reflex contraction of fibrils before the advance of a bistoury. Muscle tissue does not regenerate and hence, he says, it should be economically excised, and never cut across unless absolutely necessary, as otherwise this severs, along with the muscle, the nerve and vessels. The hemostasis must be perfect, not only to prevent hematoma at any price, but to ensure the fixation of the germs under the action of the tincture of iodine. The wound is dried with gauze, tamponing it. As this is rapidly removed, the tissues are swabbed freely with tincture of iodine. Any excess is wiped up with another gauze sponge. When the drying has been properly done, the tissues look as if varnished. The iodine is not needed for small wounds with healthy tissues which do not require excision; and it is not required when the devitalized tissues are removed *en bloc*. He uses a 5 per cent. tincture of iodine in all his work, but would prefer some fluid for the fixation with which there was no fixation of the superficial cells of the wound. This entails a slight oozing, along the filiform drains, of a yellowish serous fluid, evident by the third or fourth day. It retards the healing of the wound by four or five days so that the threads cannot be safely removed until the twelfth or thirteenth day. On the other hand, it offers the advantages that the delayed primary suture can be postponed till the eighth or ninth day or even to the tenth or twelfth. With this iodine fixation we render harmless the germs that have been sown on the surface of the wounds during the operation. This put an end to suppuration in his service.

The only absolute contraindications to a primary suture are infection too far advanced for primary reunion, and so much disturbance in the circulation of blood and oxygen, general or local, as to favor the proliferation of anaerobes in case of suture. In his last series of 1,891 wounds, primary suture was applied in 79 per cent. and in his total cases the method proved successful in all but 0.84 per cent. Only four deaths occurred later, three from injury of the brain and one of the thorax. In the complete failures the streptococcus was always found and usually in those requiring the cutting of one or two stitches. He therefore accepts Tissier's dictum that the streptococcus is responsible for the failures, other things being equal, but the insignificant number of his

failures proves that the primary infection with the streptococcus does not inevitably doom the suture to failure. He relies on the clinical findings alone in deciding whether to open up again the sutured wound.

68. War Wounds of the Bladder.—Cathelin reports a series of twenty-nine war wounds of the bladder. Such injuries are grave but surgery and the retention catheter generally bring the men through. All his patients recovered except three, two succumbing to their extensive wounds and one dying later from tetanus. Immediate suprapubic cystostomy is necessary when the wound has involved the peritoneum or rectum or both, and when the anterior wall has been perforated. With a wound in the lower part of the bladder, draining perfectly, there is no need for immediate cystostomy unless fever and retention call for it. Under other conditions he prefers cystotomy; he deprecates further any attempt to suture the bladder wall at once unless the wound is intraperitoneal. He emphasizes the importance of having the men empty their bladders before making an assault and during heavy firing. The empty bladder is comparatively well protected by bones.

69. Surgical Repair of Posterior Urethra.—Rochet has successfully applied in four more cases of war wounds of the deeper urethra his method of mobilizing the prostate and bladder end of the urethra, and bringing it out by detaching the median perineal aponeurosis from its attachment to the ischium and pubis.

70. Transfusion of Venous Blood.—Murard gives an illustrated description of the technic for transfusion of citrated blood with the details of sixty cases, including several from his personal experience.

71. Saline Infusion with Gum Acacia in Treatment of Shock.—Delaunay has been using for some time Locke's solution plus 3 per cent. gum acacia in treatment of low blood pressure from hemorrhage and shock. He relates here confirmatory experiences on two rabbits and in three clinical cases. If the vasomotor nervous system has entirely collapsed, nothing seems to do any good, even although the loss of blood may have been comparatively insignificant. The gum acacia seems to act like the lacking proteins in the blood, raising and maintaining the blood pressure by its viscosity and osmotic pressure. But if there has been great loss of blood, it is necessary to precede the Locke by an infusion of physiologic saline or sugar solution to give the heart fluid to pump on, as the mucilaginous Locke solution is not administered in an amount over 150 c.c.

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74 *Elimination by the Kidneys. L. Ambard.—p. 217.

75 *Sensitized Autovaccines. L. Bazy and L. Cuvillier.—p. 219.

76 *Treatment of Scars on the Face. A. Poulard.—p. 221.

74. Elimination by the Kidneys in Health and Disease.—Ambard defines elimination by the kidneys as (1) elimination by effraction, as when a capillary vessel in the parenchyma ruptures; (2) elimination by diffusion, the kidney behaving like an inert membrane to certain substances, eliminating them by diffusion—the proportion in the urine being never higher than in the blood, and (3) elimination by secretion. The latter is of course the most important type of elimination, and it is a process governed by the laws of the secretory constants. (These laws were well explained by McLean in THE JOURNAL, Feb. 5, 1916, p. 415.) The most characteristic feature of secretion is concentration, that is, the presence of a substance in the secretion in larger amounts than in the blood from which the substance was taken. Certain substances in the blood have a threshold, while those not needed for the vital processes of the cells, such as urea, ammonia, iodine, salicylic acid and methylene blue have no threshold. Glucose and sodium chlorid, being substances needed by the cells, have a threshold, and the element acting on the kidney is the excess of the substance above its threshold. With a chlorid content in the blood of 6 per thousand, we need consider only, as affecting the kidneys, the excess of 0.20 per thousand above the threshold, if it happens to be 5.80 per thousand. In hemoglobinuria, the hemoglobin content of

the urine is often much higher than in the blood, testifying to the fact that the secretion, and hence the hemoglobinuria, has to be studied as a secretion. Chabanier's recent research has established that the secretory constant for substances without a threshold is the same for each substance in the same person. For example, if the secretory constant for urea is 0.09 it will also be 0.09 for iodine, methylene blue and the other substances without a threshold. The substances in this group seem to be all solvents of fats, and they all share the same secretory constant for a given person. Hence functional tests of the kidneys with any of these substances will always elicit the identical response, and they can be used interchangeably for the functional tests.

On the other hand, the secretory constant of substances with a threshold is identical with those of substances without a threshold. The thresholds are higher and lower at different times, and this movement of the threshold can be studied with phlorizin, which lowers the threshold of glucose, as is evident by the ensuing glycosuria, and with theobromin, which lowers the threshold of chlorids, and the diuresis of chlorids increases in consequence. The matter of the threshold is thus a very important one in investigation of kidney functioning. The constants may be satisfactory, but if the threshold for chlorids is high, the man will excrete very little chlorids while he will excrete practically all his iodine.

In determining the urea content of the blood, the xanthidol technic is accurate but it requires such precision in scales, etc., that it is not practicable outside of a laboratory. The hypobromite technic is inexact, but the errors in the blood findings and in the urine balance each other, so that the outcome is dependable if as much as 25 or 30 c.c. of blood is taken for the test, and if the fluids in the ureometer are thoroughly blended. A rubber cot on the finger plugging the tube renders much more convenient this thorough stirring up which has to be done ten or twelve times in the course of fifteen minutes to complete the chemical reaction. The day of the test nothing but a small cup of coffee or tea and one small slice of bread should be taken for breakfast, and the urine for the test tube should be taken between 9 and noon. The bladder should be emptied completely and then again after an interval of an hour or hour and a half if the urine is drawn with a catheter; if not, after two hours.

Among the practical deductions from the ureosecretory constant is that the identity of the secretory constant may afford indications for administration of certain drugs. For example, if the constant with iodine proves to be 0.21, then we know that this person will retain in his blood three times as much iodine as normal. The varying constant may show wide variations in the quantity of sugar excreted in the urine in the glycosuria of diabetes.

Another practical point is the close correlation between the constant and the maximal concentrations. Good concentrating power goes with a good constant. Legueu regards the light thus thrown on the maximal concentration as the most instructive feature of the secretory constants. With a poor concentrating capacity, the slightest oliguria may entail such retention of nitrogen as to prove fatal in a few days. Another practical deduction from the ureosecretory constant is in respect to the evolution of uremia-inducing nephritis. With azotemia of less than 0.50 gm., the deficit in functioning kidney tissue may range from 0 to 80 per cent.; with azotemia of 0.50 to 1 gm., the functional deficit is between 40 and 90 per cent.; with azotemia of from 1 to 2 gm., the deficit is from 80 to 98 per cent. and it is useless in this case to waste time on determining the ureosecretory constant, as prolonged azotemia of 2 gm. dooms the subject to a more or less speedy death. The ureosecretory constant is thus most instructive with azotemia between 0.60 and 0.70, and these form the great majority of cases of nephritis; at this stage the disease is still more or less curable.

75. Sensitized Autovaccines.—Bazy and Cuvillier combine the advantages of serotherapy with those of vaccine therapy by sensitizing the vaccine with a polyvalent serum. The immunity conferred develops early, as with typical serotherapy, while it is durable, as with typical vaccine therapy. Their method is to add an emulsion of forty-eight hours'

cultures on gelose to the tube containing the polyvalent prepared serum. The tube is incubated at 37 C. The microbes float on top of the serum until they become agglutinated, when the clumps drop down through the serum and finally lie on the bottom of the tube in a compact mass. The physiologic solution used for the emulsion then clears up and becomes limpid. The fluid is then decanted and the clot of microbes is rinsed carefully to remove all excess of the polyvalent serum. The small viscid mass formed by the microbes thus sensitized by the serum is emulsified in a little physiologic solution so that the emulsion looks like a twenty-four hours' bouillon culture of typhoid bacilli. This opalescent appearance corresponds to about sixty or eighty millions microbes per cubic centimeter. The vaccine is heated three times for an hour to 56 C. The dose is 1 c.c., injected subcutaneously in the thigh, usually repeated at intervals of five days up to three, four or five inoculations. These sensitized vaccines seem to be borne admirably well. Their action has been certain, rapid, harmless and durable. Among the typical cases related to show the efficacy of these sensitized autovaccines is the case of a nurse who had had eighty-three furuncles in the course of four months rebellious to all other measures. After the first injection of the vaccine three large furuncles faded away in less than two days and others starting were aborted. Great improvement in the much depressed general health followed the second inoculation, and the furunculosis subsided completely. Six inoculations were given in this case in the course of three weeks. The microbes in this case were a staphylococcus and a pseudodiphtheria bacillus which has been found so common in war wounds that it is used in producing the polyvalent serum. Three months to a day after the last injection, two furuncles made their appearance, suggesting that this is the limit of the immunity. As there was some of her autovaccine still on hand, four injections were made, and the recurring furunculosis was aborted. Their success suggests a possible new era for serotherapy made without the heterogenous albumins of horse serum as the carriers of the antibodies.

76. Treatment of Scars on the Face.—Poulard makes a deep elliptical incision around the disfiguring scar and then strips off the epidermis over the scar but otherwise does not molest it. The skin is then mobilized around and drawn together across the scar tissue. It is then sutured in a straight line, leaving merely a linear scar. There is no depression or sagging as the cicatricial tissue below acts as a support, while there is no chance for rousing old infection as when the scar tissue is excised.

Revue de Chirurgie, Paris

May-June, 1917, **36**, No. 5-6. Published December, 1917

77 *Projectiles Left in the Mediastinum. R. Le Fort.—p. 495. To be continued.

78 *Functional Value of Stumps. J. Amar.—p. 613.

79 *Projectiles in Neck and Head. M. Patel and M. Arcelin.—p. 640.

80 *Laws of Healing of Wounds in the Skin. A. Lumière.—p. 656.

81 *War Wounds of the Spleen. J. Fiolle.—p. 679.

77. Fate of Projectiles Left in the Mediastinum.—This instalment of Le Fort's article fills 117 pages. It is based on thirty-seven cases of foreign bodies in the mediastinum, with healed point of entry, thirty cases of operations on regions contiguous to the mediastinum, and on a number of operations on the mediastinum for reasons other than the presence of a projectile. Most of the wounded with a projectile left in the tissues experience annoying symptoms from its presence, mostly dyspnea on effort, which debars them from work. By observing a number of minor points, which he describes, the foreign bodies can be sought and removed with ease and without harm. No operation on the mediastinum should be considered without roentgen study of the case with all the mechanical aids possible. The access to the mediastinum should be large and ample, and as direct as possible, with integral repair of the wound.

78. Functional Value of Stumps.—Amar is director of the physiology of work of the National Conservatory of Arts and Trades, and he emphasizes that the physiologist should be called on to work with the surgeon and the orthopedist, as

the aim after an amputation is not so much to restore anatomic conditions as to restore a partially or totally abolished function. The prosthesis should realize the movement with the minimum of fatigue, and the modern methods of physiologic experimentation permit exact valuation of this. The functional capacity of the stump can be thus estimated and classified. We thus appreciate that there are twenty-two different types of mutilations, and the compensating forces aid in restoration of function. The uncompensated functional incapacity is the base on which the pension for disability should be calculated, and the physiologic tests will reveal and evaluate it. They will also reveal the defects of the artificial limb: lack of proper proportions and principles in the making of prosthesis, hence inertia and fatigue; lack of stability and solid anatomic, plastic fitting of the prosthesis, hence awkward use and a feeling of insecurity. Most prostheses break at the end of the stump or near the joints. The whole question of artificial limbs needs to be gone over again, working out the chart for each wounded man by the physiologic tests, analyzing the movements by means of moving pictures to calculate the minimal weight of the segments of the artificial limb, the angles of flexion, and the physiologic center of the joint. He has devised dynamographic apparatus for testing the stump of arm and leg, and gives an illustrated description of their application and analysis of the findings.

79. Prevertebral Projectiles.—Patel and Arcelin describe the important lessons learned from their experience in extracting projectiles in front of the spine in neck and head in six cases. They had only one mishap; the multiple adhesions in this case led to injury of the internal jugular vein in trying to detach the vessel. The hemorrhage was arrested at once by tamponing the lateral sinus. All the patients healed by primary intention.

80. The Laws of the Healing of Wounds.—Lumière's experimental and clinical research has apparently demonstrated that large noninfected skin wounds heal according to certain mathematical laws. The healing proceeds at the same rate at the end as at the beginning. The time required is proportional to the size of the area that is to be healed. These laws and the rate of repair seem to apply indiscriminately to different animals of the same species of about the same age and state of health. By heeding these laws we get a standard for comparison of the effects of different methods of treatment, different antiseptics, dressings, etc.

81. War Wounds of the Spleen.—Fiolle remarks that the proper treatment of war wounds of the spleen is still open to question. He has found records of forty-four cases, and comments on the usual lack of symptoms at first, or there may be symptoms suggesting peritonitis from perforation. There may be nothing to suggest internal hemorrhage at first, strange to say. It does not become apparent until a few hours or days later, and then usually proves fatal. The hemorrhage occurs early but no symptoms develop from it for a long time. He knows of only one case of spontaneous healing of a bullet wound in the spleen. When symptoms become manifest, then conditions are so grave they generally prove fatal, with a peculiarly rapid and malignant course. Splenectomy is the preferable treatment; five recovered of the seven men treated with splenectomy, and other causes were responsible for the two fatalities. An illustrated discussion of the best mode of access is supplemented by the details of the forty-four cases mentioned.

Policlinico, Rome

April 28, 1918, **25**, No. 17

82 *Divulsion in Treatment of Fistula. B. Masci.—p. 389.

83 *Cystic Point as Sign of Typhoid. G. Genoe.—p. 391.

84 Rhabditis Pellio in Nephritis Urine. M. C. Francaviglia.—p. 394.

85 Freaks of Projectiles. E. Bussa-Lay.—p. 397.

82. Divulsion in Treatment of Anal Fistula.—Masci dilated the anus in treatment of fissures and found that this cured not only the fissures but also coexistent anal fistula in his three cases of this kind. The fistula is maintained by the septic environment, the movements to which it is subjected, and the inability of voiding its contents. Divulsion of the anus does away with all three of these factors. He gave first

a purge, then cleansed the region thoroughly, and the division of the anal sphincter with the fingers was followed by introduction of a large tube wrapped in gauze. Opium was given for five days to leave the anus at rest. Then an oil purge was given, and then opium for three days. By the tenth day clinically normal conditions had been restored. Of course tuberculous fistulas would not be amenable to this treatment, nor when there are complications or extensive destructive lesions, but the cure was prompt and complete in his three cases, including one in which the fistula had developed in a suppurating hemorrhoid. They were all in the sphincter and involved the mucosa and the subcutaneous tissue.

83. The Painful Cystic Point in Typhoid in Children.—Genoese found the cystic point painful in all his 30 typhoid cases in children while no pain could be elicited at this point in 24 cases of lobar pneumonia, 40 of bronchopneumonia, 18 of measles, 6 of malaria, 16 each of tuberculous meningitis and peritonitis, 27 of gastroenteritis, 32 of rachitis and 18 of acute articular rheumatism. The pain at the cystic duct was found during the first week of the typhoid in 18, and in the others from the eighth to the eleventh day. The painfulness was not proportional to the gravity of the typhoid, and it gradually subsided as the disease approached convalescence, but kept high to the end in the fatal cases. The liver was enlarged in all and the spleen was palpable. The infection of the liver and bile passages does not seem to be due to ascending infection but to the elimination through the vessels in the liver of the microbes contained in the blood. The liver and the biliary passages hypertrophy under the strain of this task of destroying the toxins and bacteria brought to the liver in the blood. There is probably slight cholecystitis, and this explains the lively pain on pressure of the cystic duct. He gave hexamethylenamin to ten of the children; it did not seem to modify the general symptoms, but it had a pronounced effect on the cystic point, rendering it much less sensitive. In one child, under 2 gm. a day, no further pain at this point could be elicited although it had been marked before. This modification of the cystic point pain confirms the assumption that it is the result of inflammation in the gallbladder. As this inflammation subsides under the drug, the cystic duct ceases to be sensitive. The cystic point is sought with the patient seated. It is located on a line joining the nipple and the tenth costal cartilage.

Riforma Medica, Naples

April 13, 1918, **34**, No. 15

- 86 *Roentgen Rays and Formation of Callus. F. P. Sgobbo.—p. 282.
87 Prophylaxis of Tuberculosis in Children. Cicconardi.—p. 288.

86. Influence of Roentgen Rays on Callus Production.—Sgobbo states that several Italian surgeons had noticed that callus did not form as usual in certain knee joint and other fractures that had been examined repeatedly with the roentgen rays. Sgobbo then undertook a series of experiments on dogs, as he describes in detail. The findings confirmed his suspicion that the roentgen rays have a depressing influence on the development of bone callus. With a dose of 15 H units, especially if repeated, the production of callus may be inhibited or it may assume merely a rudimentary form. Even with 5 H units, the injurious action on the callus was pronounced.

Revista de Medicina y Cirugia Practicas, Madrid

March 21, 1918, **118**, No. 1499

- 88 *Cancer on Bird's Claw. F. M. Urra.—p. 321.
March 28, 1918, **118**, No. 1500
89 Case of Rat-Bite Fever in Mexico. A. Matienzo.—p. 353.

88. Cancer on Bird's Claw.—The cancer seemed to resemble in every microscopic respect the epithelioma of man, but it had developed on the thumb claw of a lark. The claw had enlarged to a pear-shaped tumor nearly ten times the natural diameter.

Semana Medica, Buenos Aires

Feb. 14, 1918, **25**, No. 7

- 90 *Vacuum Extraction of Cataract. A. J. Manes.—p. 173.
91 Technic for Artificial Pneumothorax. E. Debenedetti.—p. 175.

- 92 *Treatment of Rabies at Buenos Aires. C. R. Mejia.—p. 177.
93 Increase in Tuberculosis Mortality. E. R. Coni.—p. 181.
94 Antityphoid Vaccine. A. Salvat y Navarro.—p. 182.
95 Errors in Nutrition and Reproduction. Austregesilo.—p. 185.

Feb. 21, 1918, **25**, No. 8

- 96 *North American Surgery in 1917. R. Finochietto.—p. 201.
97 Hygiene of the Eyes. P. B. Ferro.—p. 207.
98 *Welfare Work at Buenos Aires. E. R. Coni.—p. 211.
99 Crystal Theory of Cell Life; Plasmogenesis. V. Delfino.—p. 217.
100 Color Reactions with Cryogenin. J. A. Sanchez.—p. 219.

90. Vacuum Cataract Extraction.—Barraquer's method of extraction of the cataract by vacuum suction has been described in THE JOURNAL, June 9, 1917, p. 1789.

92. Rabies at Buenos Aires.—Summarized in Buenos Aires Letter, page 1246.

96. Impressions of Surgery in the United States.—Finochietto remarks that the general surgeon on a trip to North America is most impressed by the surgery of nerves and of goiters, the anesthesia, and the nursing, and he pays a graceful tribute to the extreme *amabilidad de los cirujanos Yankees* to the visitor. He describes in detail his impressions of the work at various clinics, specifying the outcome in the different cases.

98. Athletics and Social Insurance at Buenos Aires.—This is the twenty-ninth chapter of Coni's serial work, "Buenos Aires caritativo y previsor."

Hygiea, Stockholm

April 15, 1918, **80**, No. 7

- 101 *Agglutination in the Blood. R. Fåhræus.—p. 369.

101. Agglutination of the Blood Corpuscles as Sign of Pregnancy.—Fåhræus remarks that the dictum in recent textbooks to the effect that the blood in pregnancy shows no specific modifications from normal will have to be amended, as his research has shown a marked change in the agglutinating properties of the red corpuscles. Citrated blood from pregnant women showed a much more pronounced and more rapid sedimentation of the red corpuscles than the citrated blood from nonpregnant women. Sedimentation proceeds abnormally fast in the blood of the pregnant and in the blood of women in general compared to men. He records the height of the sediment thrown down in one hour in 103 persons. In the thirty-seven nonpregnant women it never reached above the 11 mm. mark; in the fifteen men tested, it never reached even 5 mm. but in all but two of the pregnant women it reached a height of from 15 to over 80 mm. the sedimentation growing more and more rapid with the progress of the pregnancy. He found further that this accelerated sedimentation occurs as a constant symptom of certain pathologic conditions; and hence, with the possibility of these, its significance as a sign of pregnancy must be carefully weighed. As he expresses the phenomenon, the stability of the suspension of blood corpuscles in the blood is more pronounced in men than in women, and the stability is materially reduced in pregnancy. This seems to be a kind of defensive reaction, and the strength of the reaction can be measured by the amount of sediment thrown down in a given period of time.

He gives an illustration of a fine glass graduated tube, inside a large glass tube filled with water at body temperature, in which the sedimentation can be watched. He also describes a means to apply the sedimentation test to the living subject. A vein in the forearm is selected that does not show branches and a rubber tube is fastened around the arm above and below a stretch of about 10 cm. of the vein, thus shutting off the circulation, and the arm is held vertical for fifteen minutes. At the end of this time, the vein is punctured just below the upper constricting tube. In a pregnant woman, nothing but plasma will be found in the vein at this point, the corpuscles having settled to the bottom of the vein segment. In other women and in men, the puncture shows whole blood, as usual. The settling down of the corpuscles, leaving only plasma at the top, is evident even without the puncture by the change in the tint of the vein at the upper end of the segment. His findings seem to parallel the Abderhalden defensive reactions, and sustain Abderhalden's theory concerning them.

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INVESTIGATIONS ON SWIMMING POOLS AT THE UNIVERSITY OF MINNESOTA

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This investigation was undertaken for the purpose of improving the sanitary condition of the swimming pools at this institution. The first experiments were conducted on the pool located at the men's armory and gymnasium, and later comparative studies were made on a pool that had been recently installed at the women's gymnasium.

SWIMMING POOL AT MEN'S ARMORY AND GYMNASIUM

This pool is located on the ground floor of the building (Figs. 1 and 2). It is 59 feet, 6 inches in length, 25 feet in width, and has a water depth of 7½ feet at one end and 3½ feet at the other. The capacity of the pool, when filled to the normal water line, is about 60,000 gallons. The walls of the pool are constructed of reinforced concrete which is covered with white tile. Life rails are provided at the sides and the ends of the pool, and troughs at the sides. As originally designed, the water was admitted to and drained from the pool through a pipe near the floor at the deep end. After the installation of the pressure filters, a separate inlet pipe was constructed to conduct filtered water to the opposite end of the pool, leaving the outlet pipe to serve as an intake to the filters. This outlet pipe is provided with a connection to the sewer. An overflow pipe near the water surface is connected with this outlet pipe, leading to the sewer. The water in the pool is heated by means of a steam pipe which has one connection at the bottom and another near the surface at the deep end.

The water used in the pool is obtained from the public water supply of the city of Minneapolis. This supply is taken from the Mississippi River and is subjected to sedimentation, coagulation, filtration, and liquid chlorin treatment before distribution. Bathers are required to take a shower before entering the pool, and no bathing suits are worn. The bathers are not subjected to a medical examination before entering the pool, but the attendants are instructed to report any suspected or known cases of disease.

FILL AND DRAW METHOD AND HYPOCHLORITE TREATMENT

The first experiments were conducted on the pool while the fill and draw method and hypochlorite treat-

ment were still in use. The water in the pool was changed twice a week. During the process of filling and until the temperature had reached from 78 to 80 F., steam was applied in the manner previously described. Two pounds of calcium hypochlorite were added each evening when the pool was closed for the day. The hypochlorite was administered by means of a hollow brass cylinder with a hose connection at one end and a nozzle at the other. A one pound can of hypochlorite was placed in the brass cylinder after several holes had been perforated in each end of the can. This apparatus was attached to a hose and the water pressure turned on, which scattered the hypochlorite over the surface of the pool. This method did not break up the lumps of chemical, and many could be seen floating on the surface of the water until broken up by the bathers.

TABLE 1.—RESULTS WITH FILL AND DRAW METHOD AND
HYPOCHLORITE TREATMENT

	Number of Tests Averaged	Average Number of Bathers	Pool in Use Since Filling (Hrs.)	Time Between Tests (Hrs.)	Available Chlorin Added to Water (Parts per Mil.)	Bacteria per C.c. (Average)	B. Coli Found in C.c. Amounts
City water	3	0	0	0	0	14	0*
City water first day after one day's bathing with- out treatment	3	65	24	10	0	1,400	1
City water second day after one day's bathing and treated with hypo- chlorite	4	0	24	24	0.64	3,900	100
City water third day after two days' bathing and hypochlorite treat- ment twenty-four hours previous	4	65	72	24	0	1,900	1

* B. coli 0 = absent in 100 c.c.

Table 1 includes the results obtained by this method of treating the water in the pool. The laboratory methods used during the experiments recorded in this report are those recommended by the Laboratory Section of the American Public Health Association. The bacterial counts were made on agar at 37 C. (98.6 F.), and the examinations for the *B. coli* group were carried through the "completed test." The pool water was examined for *B. coli* in 0.001 c.c., 0.01 c.c., 0.1 c.c., 1 c.c., 10 c.c., and 100 c.c. amounts. The results show that the sixty-five bathers who used the pool during the first day after it was filled with fresh city water contributed a marked amount of pollution as indicated by the increase in bacteria, and the presence of the *B. coli* group in 1 c.c. amounts. The calcium hypochlorite that was added to the water at the end of the day's bathing reduced the *B. coli* content of the water,

but did not permanently reduce the bacterial count. This increase in the bacterial count is not unusual under such conditions, for the samples were collected at the beginning of the second day, or twelve hours after the hypochlorite was applied. The hypochlorite probably removed many of the vegetative forms of bacteria and left the spore forming organisms. It has previously been demonstrated¹ in the treatment of Mississippi River water that spore formers develop very rapidly after the removal of the vegetative forms and the hypochlorite has ceased to be active. In view of these facts, the action of the hypochlorite treatment in removing indications of dangerous contamination under the conditions described in the experiment should be interpreted on the *B. coli* results rather than on the bacterial count. The results obtained at the end of the bathing period on the third day, or the day following the hypochlorite treatment, show a marked increase in the *B. coli* content of the water. The reduction in bacterial count may have been caused in part by a retarded action of the hypochlorite on the spore formers. The results of these experiments show that this method of operating the pool does not pro-

changed during each ten hour day. The plant is located and connected to the pool as shown in Figure 2. Experiments were conducted with the filter plant in operation without any other treatment to determine its effect on the quality of the water in the pool. Table 2 shows the bacteriologic results obtained during four

TABLE 2.—RESULTS WITH PRESSURE FILTERS

Number of Test	Pool in Operation Since Filling (Days)	Number of Bathers on Date of Test	Bacteria per C.e.	B. Coli Found in C.e. Amounts
1	1	110	9,200	1
2	2	70	9,000	10
3	16	65	32,000	0
4	23	85	2,300	10

separate tests covering a period of twenty-three days, the plant being operated ten hours each day. It is apparent from the findings that filtration alone gives very irregular bacteriologic results, and that further treatment is required to keep the pool in a satisfactory sanitary condition.

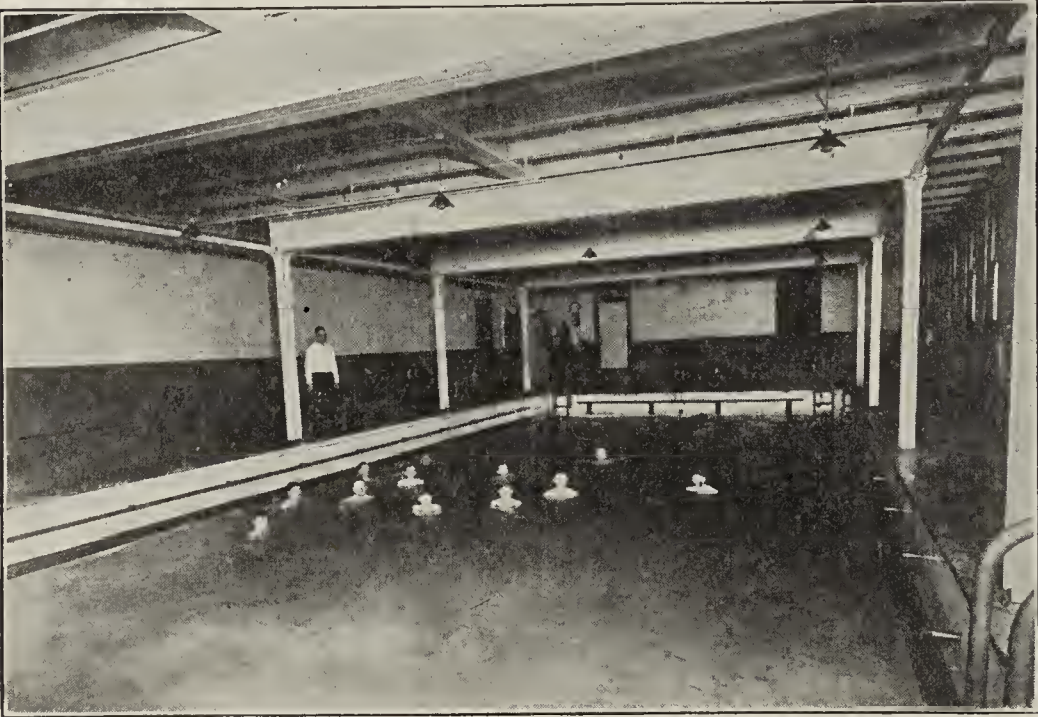


Fig. 1.—Swimming pool at men's armory and gymnasium.

duce uniformly satisfactory results so far as the sanitary quality of the water is concerned. The method is costly as it necessitates refilling the pool twice a week, and the heating of 120,000 gallons of water to 79 F.

PRESSURE FILTERS

On account of the unsatisfactory physical and sanitary condition of the pool, which resulted from the method previously discussed, pressure filters were installed so that the water could be recirculated through the pool. The filter equipment consisted of a centrifugal pump with a capacity of 100 gallons a minute, two coagulant tanks, and two cylindric pressure filters (Scaife & Sons). Alum and soda ash were used as coagulants. The maximum capacity of the plant was 144,000 gallons a day, or 60,000 gallons for ten hours, which is the average length of time the pool is in use each day. The capacity of the pool is 60,000 gallons; therefore, theoretically, the water would be

RECIRCULATION, FILTRATION AND LIQUID CHLORIN TREATMENT

A liquid chlorin plant (Wallace & Tierman Company) was installed as an adjunct to the pressure filters to remove the contamination which persisted after filtration. Experiments were conducted with various amounts of chlorin, as indicated in Table 3. During these tests the pool was cleaned once a week by means of a mechanical cleaning device which consists of a small centrifugal pump driven by an electric motor. To this pump is attached a hose armed at the end with a metallic head. This head is constructed with a narrow slot through which the water and dirt are drawn to the pump and discharged into the sewer. The large particles that may accidentally fall into the pool are removed with hoe-shaped utensils attached to a pole. All bathers took shower baths before entering the pool, and no bathing suits were worn. These results demon-

strate that this 60,000 gallon pool can be kept in excellent sanitary condition throughout a ten hour bathing period, during which time 100 bathers may use the pool, provided the water is recir-

TABLE 3.—RESULTS WITH RECIRCULATION, FILTRATION, AND VARIOUS AMOUNTS OF CHLORIN ON SWIMMING POOL AT MEN'S GYMNASIUM

Number of Test	Number of Bathers on Date of Test	Available Chlorin (Parts per Million)	Baeteriologic Results		
			Number Samples	Baeteria per C.e.	B. Coli Found in C.e. Amounts
1	101	0.30	3	2,100	100
2	60	0.30	2	2,100	10
3	60	0.30	2	4,000	10
4	66	0.45	2	60	10
5	114	1.00	2	38	100
6	75	1.00	2	2	0
7	105	1.00	2	27	0

culated through the pool and the filters at the rate of 100 gallons per minute, and 1 part per million of available chlorin is added to the water. Physical and chemical examinations, made on the pool water after three

1. Wasbrook, F. F., Whittaker, H. A., and Mohler, B. M.: The Resistance of Certain Bacteria to Calcium Hypochlorite, Jour. Am. Pub. Health Assn., 1911, 1, 123-124.

days' use without filtration, and after six months' use with filtration and liquid chlorin treatment, are shown in Table 4. On comparing the physical results

bathing suits are worn. The bathing suits are of the trunk type with a short skirt and are made of cotton material.

When the pool was first put in operation, the treated water was admitted at one end of the pool. This was found to be very unsatisfactory, as the water at the opposite end of the pool was not replaced as rapidly

TABLE 4.—EFFECT OF BATHING AND TREATMENT ON WATER IN POOL

Number of Bathers	Treatment at Pool	Time in Use	Physical Exam.			Chemical Examination								
			Turbidity	Color	Odor	Total Hard	Alk.	Inc.	Alb. NH ₃	Free NH ₃	NO ₂	NO ₃	Cl.	Iron
0	None	0	0	15	v-1	200	180	20	0.190	0.238	0	0.32	1.5	0
178	None Filtration and liquid chlorin	3 da.	4	30	s-2	200	180	20	0.330	0.332	0	0.48	2.0	0
10,000		6 mo.	0	7	m-1	200	88	112	0.364	0.108	7	0.16	38.0	0

of the unfiltered and filtered water with fresh city water, it will be seen that filtered water, after three months' use, is in better condition than the unfiltered water after three days' use. The chemical results show an appreciable decrease in the alkalinity and an increase in the amount of incrustants and nitrites at the end of the six month period.

TABLE 5.—RESULTS SHOWING IMPERFECT CIRCULATION OF WATER IN POOL

Sample Collected	Number of Samples	Average Bacteria per C.e.	B. Coli Found in C.e. Amounts
South end near inlet.....	4	300	100
Center at outlet.....	4	900	10
North end, 43 feet from outlet..	4	1,000	10

as necessary. Bacteriologic results on samples of water collected at both ends of the pool and at the outlet near the center, while this condition existed, are shown in Table 5.

A number of tests were made to determine the proper quantity of chlorin to add to the filtered water

SWIMMING POOL AT WOMEN'S GYMNASIUM

This pool is located in a semi-basement room of the gymnasium building (Figs. 3 and 4). It is 53 feet, 9 inches in length and 24 feet, 6 inches in width. The water depth varies from 3 feet, 6 inches to 7 feet, 6 inches. Its capacity, when filled to the normal water line, is approximately 55,000 gallons. The walls of the pool are constructed of reinforced concrete, and their inside surfaces are faced with mosaic stone. Skimming troughs are provided at the sides of the pool. The pool water is purified by recirculation, a pressure filter, and a liquid chlorin plant. The water purification equipment consists of a centrifugal pump with a capacity of 100 gallons a minute, two coagulation tanks, one cylindrical pressure filter (Scaife & Sons), and one liquid chlorin plant (Wallace & Tiernan Company). The location of this equipment and its connections with the pool are shown in Figure 4. It will be noted that the treated water enters at each end of the pool at the surface of the water, and is removed at a point 10 feet from one end at the bottom of the pool. The water is heated by means of a steam pipe attached to one of the water intake pipes and another pipe used exclusively as a steam inlet. The water used in the pool is obtained from the city supply of Minneapolis.

With the above described equipment in use, the pool is filled once a season, unless it is necessary to drain for repairs, and any water lost through leakage or evaporation is replaced. The bottom of the pool is cleaned once a week with the same apparatus used at the men's swimming pool. The bathers are required to take a shower bath before entering the pool, and

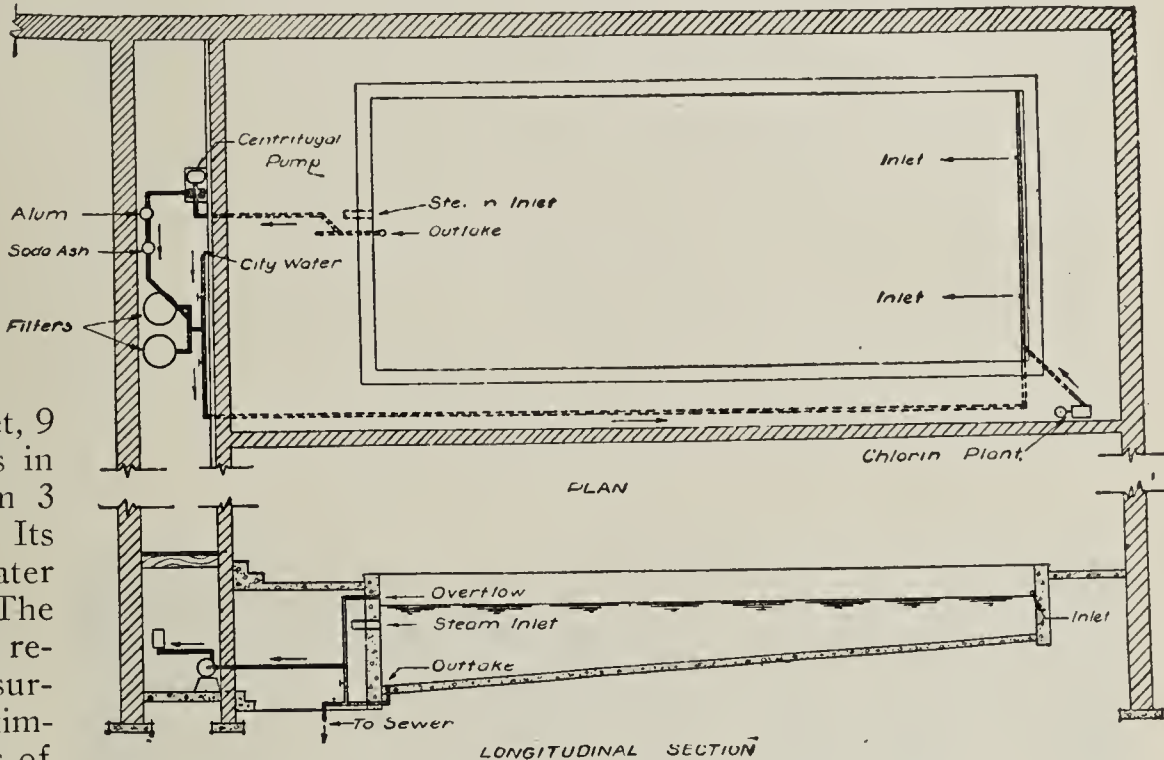


Fig. 2.—Water circulation system of men's swimming pool.

as admitted to the pool under normal operating conditions. The results of these tests, which are recorded in Table 6, show that one part per million of available

TABLE 6.—RESULTS WITH RECIRCULATION, FILTRATION, AND VARIOUS AMOUNTS OF CHLORIN ON SWIMMING POOL AT WOMEN'S GYMNASIUM

Number of Test	Number of Bathers on Date of Test	Available Chlorin (Parts per Million)	Bacteriologic Results		
			Number Samples	Bacteria per C.e.	B. Coli Found in C.e. Amounts
1	71	0.15	3	600	100
2	35	0.15	2	2,200	0
3	78	0.15	2	3,400	10
4	70	0.39	3	140	100
5	43	1.00	3	4	0
6	110	1.00	2	55	0
7	125	1.00	3	3	0

chlorin is sufficient to keep the pool water in good sanitary condition for 100 bathers during a ten hour bathing period. The largest number of persons in the pool at any given time during these tests was thirty-five.

These results are comparable with those found for the men's pool, and again show that recirculation, filtration and chlorin treatment, when properly carried out, provide a satisfactory means of keeping the water in a swimming pool in a safe condition for bathing purposes.

GENERAL CONCLUSIONS

The results of these experiments show that the fill and draw method, with the daily addition of hypochlorite in the quantities used, did not keep the pool

TABLE 7.—RESULTS ON METHODS OF OPERATING SWIMMING POOLS

Method of Purifying Water	Average Number of Tests	Pool Emptied	Available Chlorin Added to Water (Parts per Mil.)	Time Between Tests (Hours)	Average Bacteria per C.c.	B. Coli Found in C.c. Amounts
Fill and draw.....	3	Daily	....	24	1,400	1
Fill and draw and hypochlorite	4	Weekly	0.65	24	1,900	1
Pressure filters	4	Yearly	....	24	13,100	1
Pressure filters and liquid chlorin	6	Yearly	1.00	24	20	0

in a satisfactory condition from either a sanitary or an esthetic point of view. Recirculation and filtration improved the physical properties of the water, but did not materially improve its sanitary quality. Recirculation, filtration and chlorin treatment provide a satisfactory method of keeping the water in these swimming pools in a sanitary condition, provided the detail rules for operation are carried out. The experimental results show that this method will keep the water in a 60,000 gallon swimming pool in a satisfactory sanitary condition for use by 100 persons dur-

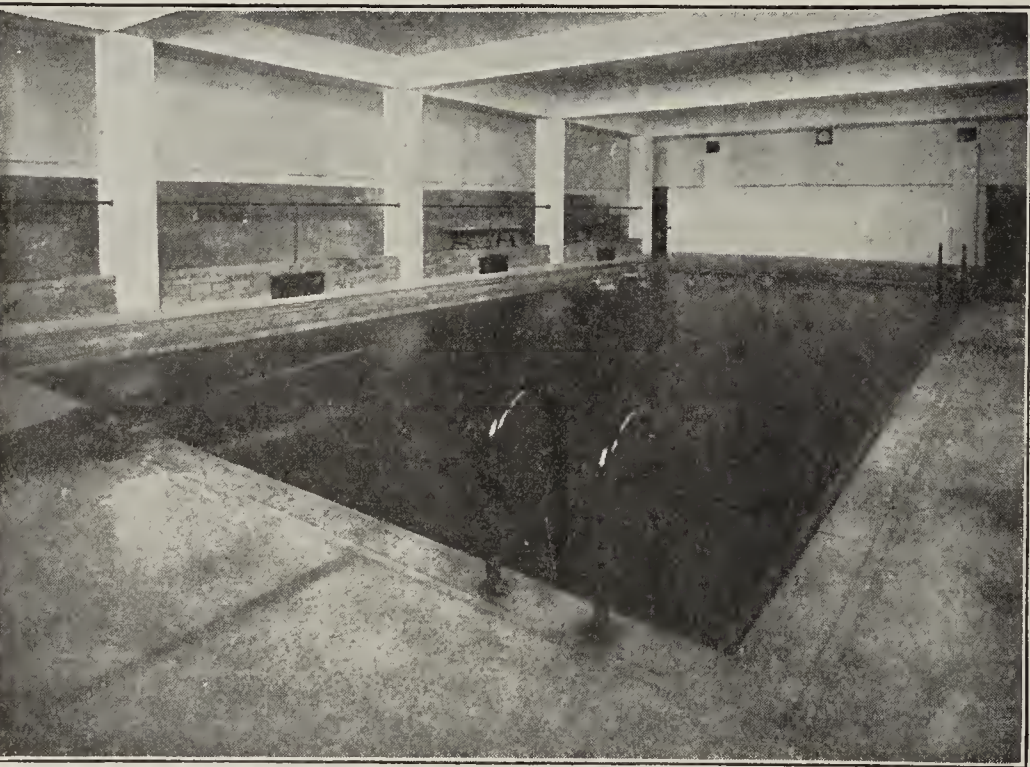


Fig. 3.—Swimming pool at women's gymnasium.

ing a ten hour bathing period, the number of bathers not to exceed thirty-five persons at any one time, provided the water is recirculated through the pool at the rate of 100 gallons per minute, and one part per million of available chlorin is added to the water. Comparative results on the methods covered by these experiments are shown in Table 7.

RULES TO CONTROL THE OPERATION OF SWIMMING POOLS

1. The general supervision of the swimming pools and their equipment must be assigned to a person who thoroughly understands their operation, and who is provided with the

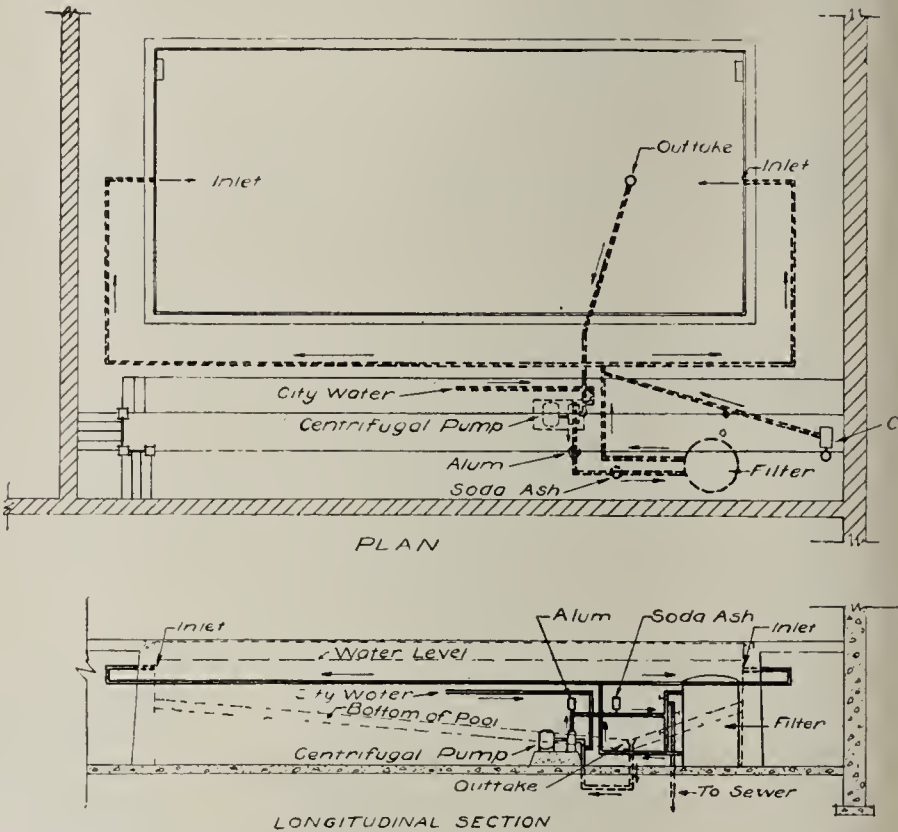


Fig. 4.—Water circulation system of women's swimming pool.

- necessary assistance and laboratory facilities for carrying on this work.
2. The routine operation of the pools must be in the hands of a person especially trained to carry out the detail rules laid down for this purpose and who can keep a daily record of the operating data. (See appended rules for operation and record sheet.)
3. The quality of the water in the pool must meet the following bacteriologic requirements: The bacterial count must not exceed 100 bacteria per cubic centimeter, and organisms of the *B. coli* group must be absent in 10 c.c. amounts.
4. The bathers must be under medical supervision, and all persons suspected of or suffering from communicable diseases must be excluded from the pool. (See appended rules governing persons using pools.)

RULES FOR OPERATION OF SWIMMING POOLS

Pool.—The pool must be cleansed whenever suspended material is present to the extent that it is visible to the naked eye. The bottom of the pool should be examined frequently, and any large material left in the pool by the bathers should be removed.

Filters and Chlorin Plant.—The filters and chlorin plant should be operated whenever the pool is in use and for at least one hour following, in order to remove as much suspended material as possible before it settles to the bottom of the pool.

The filters should be washed whenever the pressure gages indicate that cleaning is necessary. It is preferable to wash the filters following a period of rest.

Chlorin should be added to the water in amounts corresponding to one part per million of available chlorin. This amount of chlorin is based on the assumption that the number of persons using the pool during the bathing period shall not exceed 125.

RECORD SHEET

The data for a month may be kept on a blank with thirty-one lines (one for each day) under the captions:

Year, month, day, hours.	Chemicals:
Plant:	Alum, pounds.
Time operated:	Soda ash, pounds.
Start.	Chlorin, parts per million.
Stop.	Pool:
Total.	Filled.
Filters:	Appearance.
Pressure gage reading:	Cleaned.
Before.	Temperature.
After.	Number of bathers.
Difference.	
Washed.	

RULES GOVERNING PERSONS USING SWIMMING POOLS

1. Any person who has been exposed to or is suffering from a communicable disease (typhoid fever, diphtheria, scarlet fever, measles, etc.) should report the facts concerning the exposure to the person in charge of the pool and should not use the pool until permission is obtained from the proper authorities.

2. Every person must take a thorough shower bath with the use of soap before entering the pool.

3. Persons found polluting the water with their body discharges will be excluded from the pool. The trough along the side of the pool is provided as a place to expectorate. Do not expectorate in the water.

4. The water in the pool is purified and is safe for bathing purposes, but is not a drinking water; therefore, bathers are warned against swallowing any pool water taken into the mouth.

REMOVAL OF BRAIN TUMOR

REPORT OF A CASE IN WHICH THE PATIENT SURVIVED FOR MORE THAN THIRTY YEARS

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AND

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PHILADELPHIA

HISTORY OF THE CASE

BY DR. KEEN

I shall give a summary of the case,¹ and at greater length than I would otherwise do, because it was my first modern brain case; because it shows our technic at that time; because it was one of the earliest operations on such tumors, following by only two years Godlee's in 1885, the very first ever done for a tumor of the brain; and because of the great length of time between the operation and the death of the patient.

History.—T. D., a man, aged 26, first consulted me in May, 1887, at the request of Dr. M. L. Davis of Lancaster, Pa., who furnished me with the following history: When 3 years old the patient fell out of a window, his head striking on some bricks several feet below. The skull on the left side was indented, and (as was disclosed by operation) there was a small fragment of bone detached from the inner table without fracture of the outer table. Evidently the child had struck on the pointed corner of a brick. A scar in the scalp, one-quarter inch long, marks the site of the injury.

He lay motionless for quite a long time as if dead. His recovery was slow, but apparently complete. At intervals, ever since he was 5 years of age, he had had a discharge from the right ear. In 1886 he became partially deaf in the left ear. He had long suffered from frontal headache. In February, 1885, when 24 years old and twenty-one years after

the fall, violent epileptic attacks set in. They were followed by intense pain in the head. The attacks took place once or twice a week. By the end of April, 1885, the right arm, leg and face, in succession and in the order named, became paralyzed.

Dr. Davis first visited the patient at the hospital in Lancaster, June 8, 1885. As he approached the hospital he heard him screaming with pain, which was located on the left side of the head. The pain was increased by pressure. The right pupil was dilated and not responsive to light. The left was normal and responsive. Vision in the left eye was good, but

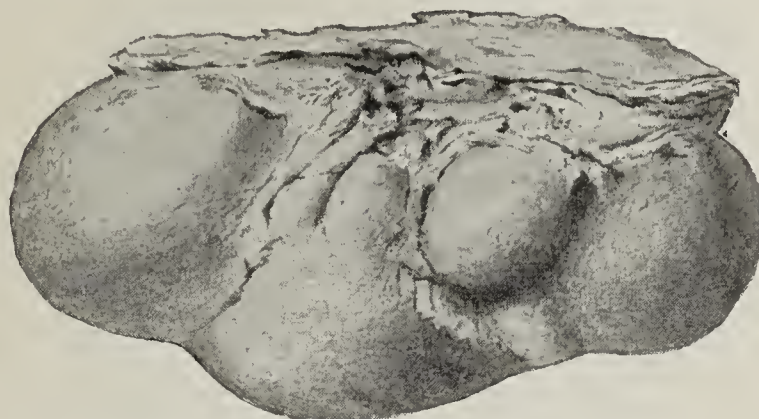


Fig. 1.—Lateral surface of brain tumor, natural size.

in the right eye was imperfect. Aphasia was marked so that he could not converse. The pulse was 60 and irregular; the respirations were 16; there was obstinate constipation and coated tongue, but no fever. Syphilis was eventually excluded. The diagnosis was "pressure on the anterior lobe of the left hemisphere involving the third convolution and extending backward, due to exostosis, tumor or possibly only thickening of the dura." Later and before operation, the diagnosis was more definitely limited to a tumor. The treatment was potassium iodid with arsenic and laxatives.

The patient's eyesight rapidly failed, and by August, 1885, he had become totally blind, first on the right side and then on the left. In two months his left eye improved sufficiently so that he was able to walk on the street alone. The right eye remained blind for several months, when sight suddenly returned, but vanished in a few hours. This intermittence of vision continued in both eyes. The urine was normal. His mentality was much impaired.

When I first saw the patient, May 30, 1887, in St. Mary's Hospital, Philadelphia, his paralysis had improved so that he could use his arm and walk, though halting very slightly.

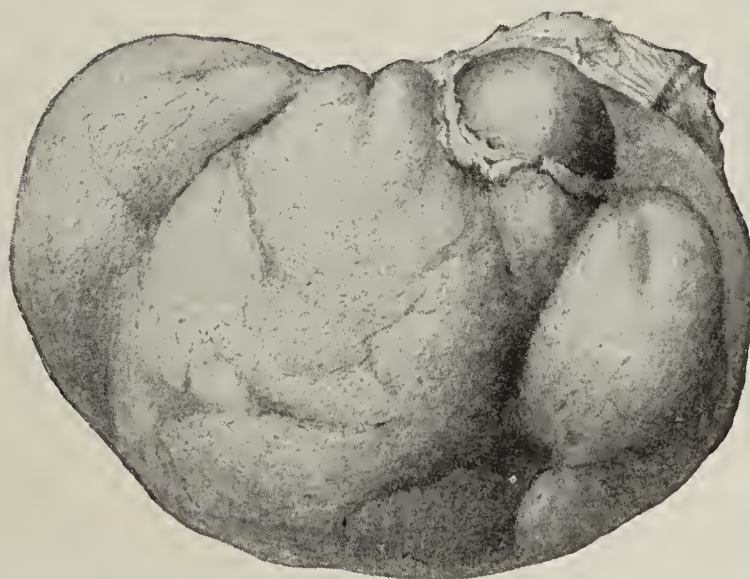


Fig. 2.—Inferior surface of brain tumor, natural size.

He was slow of thought and speech, peevish, fretful, and seemed at times dazed. His gait was not spastic. There was moderate deafness, the right pupil was slightly the larger, and the right eye deviated slightly outward and upward. The small scar was $3\frac{3}{4}$ inches above the midzygoma and $1\frac{5}{8}$ inches in front of the interauricular line.

June 7, 1887. He had six epileptic attacks while in the hospital, the first since November, 1885. Other attacks

1. The full report of the case is given in the Transactions of the American Surgical Association, 1888, and the American Journal of the Medical Sciences, October, 1888.

occurred at intervals of a few days. Dr. Oliver saw some of them and made careful ophthalmoscopic records. He was seen in consultation also by Drs. S. Weir Mitchell, Morris J. Lewis and George C. Harlan. The conclusion reached was that though the evidence was probably in favor of tumor, it would be wiser to continue for a time a course of potassium iodid. If he was not better in the autumn and he still desired operation, I told him I would operate.

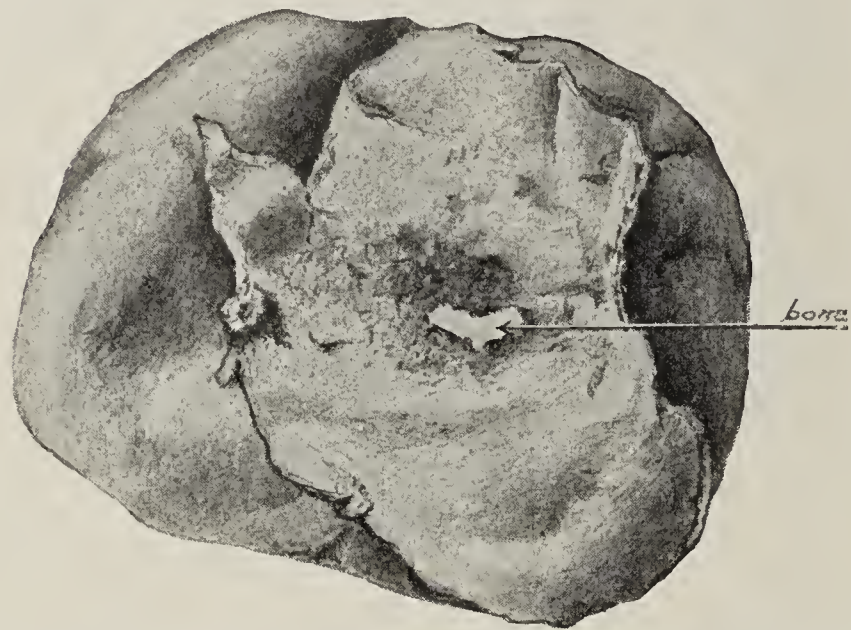


Fig. 3.—Superior surface of brain tumor. This shows the removed portion of the dura and the small fragment of bone which at operation was found detached from the inner table of the skull, natural size.

Operation.—No improvement having taken place, the patient returned to the hospital for operation in the late autumn. The operation was fixed for Dec. 15, 1887. The hospital had formerly been a dwelling house, and was still quite primitive. Before the operation the carpet was taken up, and the walls, ceiling and floor were thoroughly scrubbed with phenol (carbolic acid). New, clean, marine sponges had been kept in phenol, but were used in 1:1,000 mercuric chlorid solution. The instruments were boiled in an open vessel for two hours before the operation; at later dressings they were only soaked in phenol, 1:20, for half an hour, and then transferred to boiled water suitably cooled. The phenol spray was used all the morning of the operation, but not during the operation itself or at any of the redressings. The hands were disinfected with soap and water, alcohol and mercuric chlorid.

For the operation a 1½ inch trephine was used. This was considered an enormous size, for the largest I had ever used before was only ½ inch in diameter. Removal of the first button exposed the tumor, but it was much larger than the opening. A second button was removed, and this opening at that time considered large, was still further enlarged by the rongeur until it measured 3 by 2½ inches. The upper margin was ¾ inch from the midline. The tumor dipped behind the squamous portion of the temporal bone for half an inch. The dura was adherent to the brain except at the margin of this large opening.

I have quoted this rather fully so as to give an idea of the startling size of this growth and to justify the trepidation which I felt in entering on this *terra incognita*, for this was my very first modern brain operation. My heart "sank down into my boots." But dangerous as the procedure might be I *had* to go ahead. I incised the dura one-quarter inch from the margin of the opening in the bone, and with my little finger, to my surprise and relief, enucleated the tumor with as little difficulty as one scoops an egg out of its shell. The hemorrhage was free but not alarming.

It is worthy of note that during the time occupied by controlling the hemorrhage the large cavity left by the removal of the tumor was half filled up by the resilient brain tissue.

The bottom of this deep cavity consisted of softened and in parts shreddy brain tissue. Evidently the roof of the lateral ventricle was intact. The tumor was practically a foreign body starting at the dura as a result of the constant irritation from the little loose fragment of the inner table broken off at the time of the accident and never consolidated with the skull. As the elastic skull recoiled from the blow, evidently the fragment did not resume its original position, but was in contact with the normal inner table and so could not unite with the bone. Every inspiration and especially every impulse from the throbbing heart produced a slight movement of the fragment. The tumor, a fibroma, slowly but constantly growing, pushed the brain tissue downward.

At the conclusion of the operation, two rubber drainage tubes were inserted and an abundant gauze dressing applied. The bone could not be replaced, as the dura was gone.

The tumor weighed 3 ounces, 49 grains, almost a quarter of a pound. It displaced 2½ ounces of water. Its size was 2⅞ by 2½ by 1¾ inches. Its circumference was 7¼ by 6 inches. Its posterior border reached backward nearly to the rolandic fissure. Pathologically it proved to be a pure fibroma (Figs. 1, 2 and 3).

Eight days after the operation the floor of the cavity which was also the roof of the ventricle evidently gave way, thus opening the ventricle. From the eighth day until the end of the fifth week the cerebrospinal fluid continued to escape very freely.

Postoperative Course.—No motor symptoms followed. The temperature was $100 \pm$ for a week. Considerable disintegrated clot and shreddy cerebral tissue escaped, estimated at 4 ounces. All but two of the sutures had been removed by the eighth day. On the eighth day the patient's aphasia was greatly worse, the flap bulged more and more, the right arm became paretic, and the dressings—this is to be especially noted—were "saturated with a watery discharge but no pus." On the tenth day the temperature rose to 104.2°F , the face and arm were paralyzed, and by the next day the right leg was paralyzed. The patient had also a sharp diarrhea with fetid stools. Alarmed by these threatening indications of intracranial pressure and fearing also infection, I reopened the wound to nearly half of its original size—an error of judgment. But as I had no experience in such operations—and for that matter I might almost say that no one else had—I may be pardoned.

By the fourteenth day a moderate crescentic hernia cerebri had appeared (Fig. 4). The paralysis and aphasia gradually



Fig. 4.—Hernia cerebri soon after operation. (From An American Textbook of Surgery, Ed. 4, p. 586.)

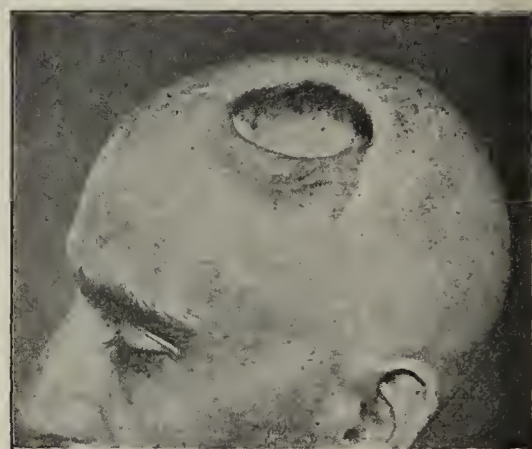


Fig. 5.—Depression in the head, sixteen years after operation. (From An American Textbook of Surgery, Ed. 4, p. 586.)

bettered, and the temperature became normal. The hernia cerebri at first increased, and by two small pin-holes at its middle a large amount of clear fluid escaped, evidently the cerebrospinal fluid. This fluid continued to escape until the end of the fifth week. The patient was sitting up out of bed at the end of four weeks. I had stained the nails of both hands with nitric acid and found that the nails on the right hand had grown "decidedly less than the left."

The hernia cerebri after a short time slowly subsided till on the seventy-first day it was nearly on a level with the skull. The next dressing was four days later on the

seventy-fifth day, when, to our surprise, instead of an elevation, as it had always been, it had changed to a deep hollow. (In 1908, twenty-one years after the operation, I noted that the depth of this depression was 5.5 cm. This had been its usual depth [Fig. 5]. The patient went home on the eighty-fourth day. The nails of the right hand were still half stained; on the left hand a barely perceptible line of discoloration was visible.

I noted then, what was for years, and up to the last time I saw the patient a few years ago, an always striking phenomenon. When he sat upright, any muscular effort—for example, using the dynamometer, and forcibly resisted expiratory effort—and a change of posture, as in leaning forward, caused the usually deep hollow noted above immediately to bulge nearly an inch beyond the level of the skull. To protect his brain against injury I bent a piece of tin to fit the surface of his head, covered it with black silk, and sewed this to the inside of a skull-cap which he always wore.

Only three cerebral fibromas appear in Bernhardt and Hale White's table of 580 intracranial tumors. I gave an "entirely favorable prognosis" at the time of the operation, and thirty years have fully justified it.

The patient's later history is at first of a stationary condition and then of a slow deterioration. The epilepsy was markedly bettered. In 1902 he wrote me that he had not had an epileptic attack for two years, and from 1902 to 1908 he passed six years more without a convulsion, but his eyesight was gradually failing. He was, however, able to come to my office from Lancaster alone up to about two or three years ago. He died, Jan. 29, 1918, thirty years and forty-five days after the operation.

Dr. M. L. Davis at once advised me of his death, and the next morning Dr. Aller G. Ellis went up to Lancaster and procured the brain, which the patient had promised to me many years before.

NECROPSY REPORT

BY DR. ELLIS

The body was that of a well developed adult white man. Rigor mortis was present. There was a slightly oval, cup-shaped depression in the scalp on the left side of the head, just back of the hair line, that measured 5 by 6 cm. The center of this was 4 cm. deep in the recumbent position. The scalp was adherent to the margin of this depressed area, and its separation revealed a nearly circular opening in the skull. The longest diameter of this opening, taken from a point at the median line posteriorly to the most lateral point anteriorly, was 8 cm.; at right angles to this line the diameter was 7 cm. The depression in the scalp was smaller than this because of a crescentic ledge of very firm periosteum and dura 2 cm. wide that extended inward from the lateral margin of the bone and on a level with it.

Reflection of the scalp revealed it adherent at the margin of the opening in the bone, but fairly easily separated from the underlying tissue over the remainder of the opening. This underlying tissue was a gray, quite thick membrane that in many respects resembled the dura, but which was somewhat thinner than was the dura elsewhere. That this was not dura was clear because the dura was removed with the tumor. It must, therefore, have been a newly formed fibrous membrane. It was not adherent to the brain.

Turning back this membrane exposed a crater-like cavity in the brain having as its deepest part the floor of the left lateral ventricle (Fig. 6). The floor of the ventricle was exposed for a length of 5 cm., the foramen of Monro being plainly visible 2 cm. from the posterior point of exposure. The

corpus striatum formed a part of the sloping floor and lateral boundary of the cavity, as the internal portion of the groove was deeper than the ganglion itself. The surface of the corpus had a number of tiny elevations. The thalamus was also visible at the posterior portion of the ventricle.

The wall of the cavity in general was of cerebral tissue that projected in rounded masses of varied sizes; these were firm and white, and looked like recently exposed brain tissue; in short, they presented the appearance of cerebral convolutions that evidently were displaced downward by the very slowly growing tumor. The falx cerebri formed a small part of the inner boundary where the cavity reached the midline superficially.

The base of the brain was unaffected, except that the optic commissure was decidedly smaller in size than is usual. The optic nerves also were small. Microscopically, sections of the left optic nerve showed decided atrophy, dense bands of fibrous tissue extending through it. In areas near the

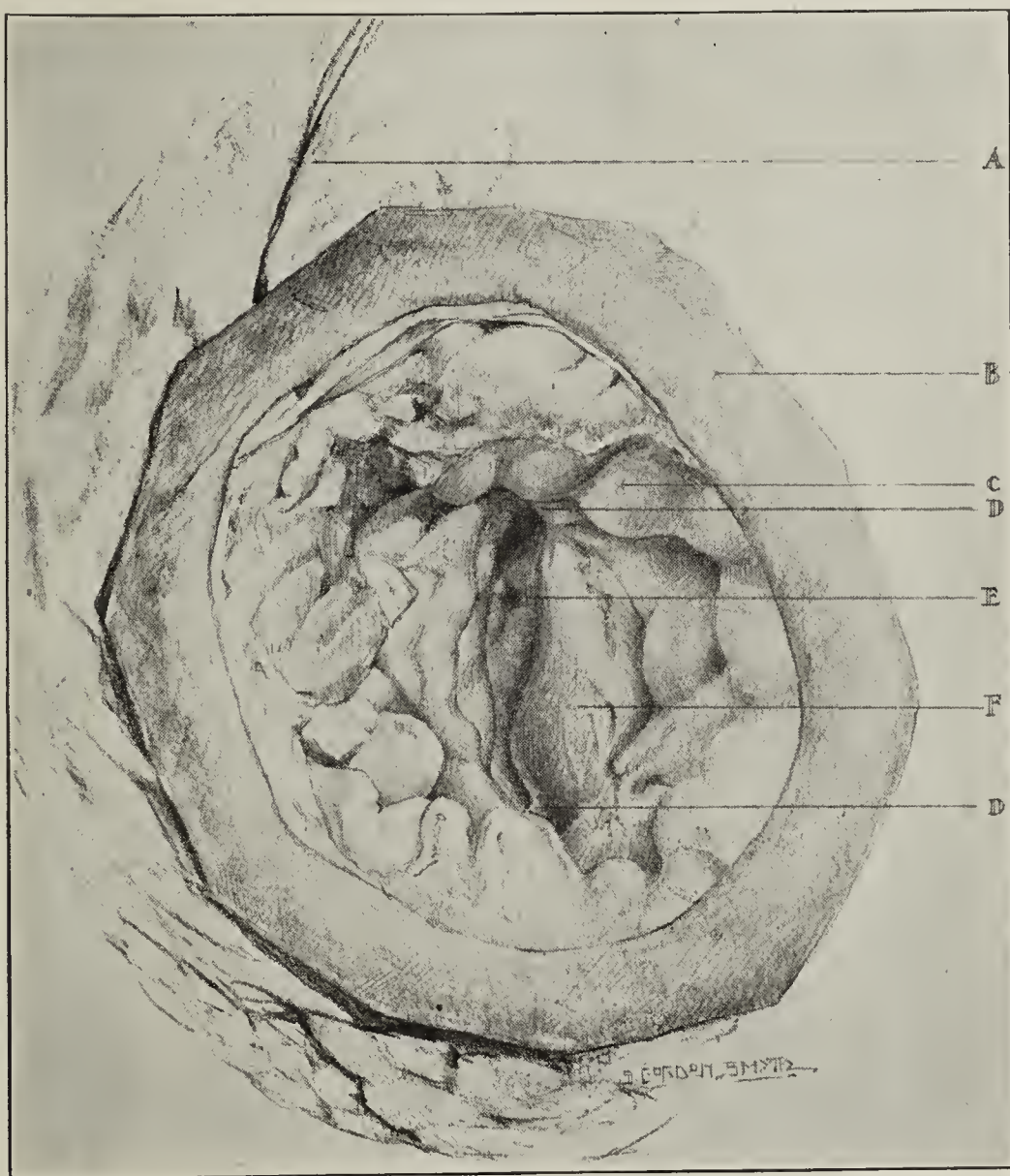


Fig. 6.—A, longitudinal fissure of brain; B, narrow zone of skull removed to preserve contour of operative opening; C, one of the cerebral convolutions forming wall of cavity; D, D, anterior and posterior boundaries of wide open left lateral ventricle; these points are 5 cm. apart; E, foramen of Monro; F, left corpus striatum.

capsule, the fibrous tissue occupied much more space than did the nerve tissue itself.

Sections of the corpus striatum showed a covering of ependyma in an essentially normal condition. The tiny elevations on the surface were composed of neuroglia that underlay the ependyma.

Sections of one of the protuberances forming the boundary of the cavity were of cerebral tissue in which there were almost no pyramidal cells immediately under the surface and but few farther inward. Even those that were present were atrophied. There were a few more mononuclear cells along the course of the vessels than are commonly found. The surface next the cavity was of compressed neuroglia with no evidence of the formation of ependyma.

The tissue from which these sections were taken was somewhat distorted because of its position in the wall of

the cavity; conclusions, therefore, must be guarded. It would seem, however, that the layer of small pyramidal cells was thinned and the large cells atrophied.

The pathologic diagnosis was extensive wound of skull and brain exposing almost the whole of the left lateral ventricle; atrophy of the optic commissure and nerves with extensive fibrosis of the latter, and atrophy of pyramidal cells of the cortex.

The point of special pathologic interest in this case is the extensive exposure of the interior of the left lateral ventricle for a period of over thirty years.

The ventricular area of the central nervous system was greatly increased. So far as the clinical history indicates, there was no symptomatology of changed intracranial pressure, either increase or decrease. The fact that the covering of the wound was depressed when the patient was in the erect posture is anatomic evidence that the pressure was increased to no appreciable extent, if at all. When the patient stooped and the scalp protruded, the spinal fluid must have accumulated principally in the left lateral ventricular area. This fluid probably even came from around the spinal cord, but apparently without causing any clinical symptoms.

At necropsy there appeared to be no increased amount of fluid, and the depression of the scalp during life was proof that the wound cavity was not filled by that fluid. The case is unique from the standpoint of duration, and to the best of my knowledge of extent of involvement of the lateral ventricle, and we therefore have none with which it may be compared.

The question arose as to whether the inner surface of the wound became covered by ependyma extending from the ventricle. This proved microscopically not to be the case. According to Weed, however, the ependyma plays a negligible rôle in the production of cerebrospinal fluid, and this would not be important from that standpoint. If, as is generally believed, the fluid is very largely the product of the choroid plexus, the condition obtaining here would be of more importance from the standpoint of pressure than from production of fluid. The case, therefore, was one of long-standing extensive increase of ventricular area of the brain without demonstrable clinical effect.

COMMENT

BY DR. KEEN

In the length of life after the operation and the wide open ventricle, this case seems probably to be unique. The only roof to the ventricle was the thin fibrous membrane formed after operation. This was not adherent to the surface of the brain. Therefore, the cerebrospinal fluid had free access to the space between the dura and the pia-arachnoid, as well as to the subarachnoid space.

The cause of the formation of the fibroma, its very gradual displacement downward of the cerebral convolutions with disappearance of the pyramidal cells near the surface and their atrophy deeper down, and the great improvement in the epilepsy have been noted

in the history. In spite of his early hemiplegia, the patient was able to walk about for years without a cane and with almost no evidence of any paralysis of leg, arm or face, unless possibly the slight deviation of the right eyeball was a result of the tumor. For one or two years before his death he was confined to his bed because of his increasing general weakness.

The hernia cerebri, and the cuplike depression at the site of the operation when the patient was erect, are shown in Figures 4 and 5. The changed condition from a cup over 2 inches deep to a rounded swelling nearly 1 inch in elevation brought about by muscular compression of the trunk and by the change from the erect to the horizontal position was evidently due partly to the almost instantaneous rush of the cerebrospinal fluid from the other ventricles and from around the spinal cord, and partly to the increase in the blood content of the cerebral veins. This ebb and flow of the cerebrospinal fluid was a most striking phenomenon, the like of which I have never seen in a large experience in cerebral surgery. Even the halting of the breath accompanying the use of the dynamometer, by coughing, etc., would either almost fill up the deep cup by the elevation of its floor, or if continued and with considerable force, would convert the cup into a

hill. As in the erect posture the deep cavity was constantly present, it is evident that the total amount of cerebrospinal fluid was less than the normal, yet no cerebral symptoms ever resulted during more than thirty years of postoperative life.

Fortunately, fifteen years ago (Nov. 30, 1903), midway between the operation and the patient's death, Dr. de Schweinitz examined his eyes and gave me the subjoined brief report:

Ophthalmic Diagnosis: Postpapillitic atrophy of optic nerves.

Vision: Right eye, hand movements, eccentric; left eye, $\frac{1}{30}$.

Pupils: Right, 8 mm.; left, 7 mm.; imperfect light reaction.

Muscle Balance: Vertical nystagmus.

Eyegrounds: Right eye, nerve head atrophic; both sets of retinal vessels smaller than normal, and perivascular lymph sheaths distended; numerous yellowish white (colloid?) spots in macular regions. Left eye, similar; less marked shrinking of retinal vessels.

Remarks: The appearances are those of postneuritic atrophy of the optic nerves, in the corresponding loss of direct peripheral vision.

The surgery of the lateral ventricles from this time on interested me very deeply.

Nov. 7, 1888, I read a paper² in which I proposed a formal operation to tap and drain the lateral ventricles, an operation which is now almost commonplace, but which then had not been reduced to the exact surgical technic which I formulated.

Jan. 11, 1889, on a boy, aged 4, with a tumor of the cerebellum, I first carried this operation into effect on one side.³ For certain reasons there stated,⁴ February 8, I tapped the opposite ventricle. On the thirty-second and thirty-fourth days after the first operation,

2. Keen, W. W.: Med. News, Philadelphia, Dec. 1, 1888.

3. Keen, W. W.: Proc. Philadelphia County Med. Soc., 1889, p. 50.

4. Keen, W. W.: Proc. Philadelphia County Med. Soc., 1889, p. 85.

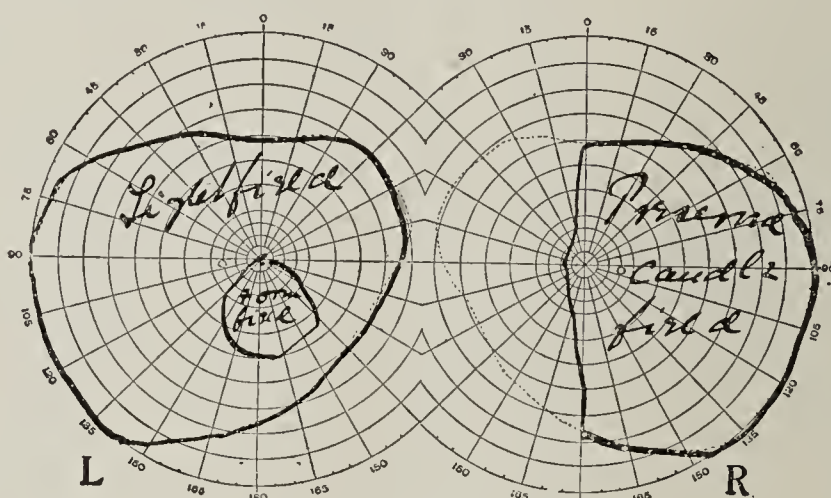


Fig. 7.—Visual fields.

I irrigated the two lateral ventricles from side to side, using 8 ounces of a warm 4 per cent. solution of boric acid. As soon as the warm solution began to flow freely through the brain, the child, who had been a little restless, quieted down, saying "it felt good." The choked disk had measured 2.3 mm. in each eye before the first operation; it subsided six days later to 1.09 mm. on both sides. He died on the fifty-second day.

In the same paper³ I reported two other cases of tapping the ventricles.

At the International Medical Congress in Berlin, in 1890, I presented a complete paper on the surgery of the lateral ventricles, which was a study of ventricular surgery from the time of Paré to that date. Unfortunately, only an abstract has been published,³ since the original paper was lost by the secretary of the Surgical Section.

I corrected seven instances of deliberate puncture of the ventricles, with two recoveries.

In fourteen cases of rupture of the ventricles from fracture and secondary opening of them (one of which was the present case), nine patients recovered.

I concluded, therefore, that such involvement of the ventricles was in no wise so dangerous as had been supposed, except when an abscess burst into a ventricle or a large hemorrhage into it took place. Instances of both of these conditions were cited. Every one was fatal.

Among all these and many other cases I did not find any one at all resembling the present one, nor have I ever seen any similar case reported since my paper in 1890.

1729 Chestnut Street.

CHRONIC MYOCARDITIS

A CLINICAL STUDY *

HENRY A. CHRISTIAN, M.D.

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Notwithstanding the insistence of many internists and the great interest in functional disturbances of the cardiac mechanism aroused by the information obtained from the use of the polygraph and electrocardiograph, there is still a marked tendency among physicians to stress unduly the importance of valve lesions of the heart. If one glances through the systems and textbooks of medicine, one gains the idea that various forms of valve lesions originating from chronic endocarditis form the chief cause of cardiac disease. The diagnosis and treatment of valve lesions bulk large in the chapters devoted to heart disease.

Scattered through the pages there is ample evidence that in the last analysis, muscle function determines cardiac efficiency or inefficiency, and various forms of chronic degeneration and interstitial inflammation of heart muscle are described. There rarely appears, however, a clear description of a common type of chronic cardiac disorder in which the fault is primarily in the heart muscle, and the valves themselves are normal.

In just the same way, textbooks of pathology fail to give any definite satisfactory description of this common type of cardiac lesion, probably because very often, as we shall see later, the heart muscle and the coronary system present no lesion that the pathologist can describe in objective terms.

A possible reason for this condition lies in the fact that usually the type of case I have in mind is merged with cases of organic mitral lesion under the heading "mitral insufficiency." This results from the fact that with myocardial disturbance, there is in most cases a mitral regurgitation from stretching of the mitral orifice, and such cases usually, though not always, have a systolic murmur at the mitral area.

I do not mean to imply that this type of case is not recognized, for it is, but its frequency and importance are not emphasized adequately. It is not likely that I shall add any new data to the clinician's store of information. What I wish to do is to emphasize the relative importance of a group of cases in which primarily the heart muscle fails and in which the valves are intact in the sense of showing no organic lesion. In describing my own experience with them, I may be able to change the usual views on the relative importance of different types of cardiac disease, and to bring out a somewhat clearer conception of what in my experience is a very frequent type of cardiac disease.

Such cases will be spoken of as cases of chronic myocarditis. This is the term commonly used; but it is a poor term, for it implies inflammation, whereas degeneration in the heart muscle is often found. Still worse for the term, the pathologist can frequently find no signs of inflammation or degeneration. If, however, we understand what is meant by the term, it does not make much difference after all, if it is a poor term in an etymological sense. Had I a satisfactory term to suggest, it is not probable that it would be adopted for general use, for new terms are accepted very grudgingly.

As I understand the present day clinical usage of the term "chronic myocarditis," it means a group of cases in which the heart has failed to function properly and the patient has the symptoms and signs of cardiac insufficiency or decompensation. The disturbance is muscular, for the valves show no organic change. Sometimes at death, an increase in interstitial connective tissue is found. At other times, the heart muscle shows degeneration of varying types. Not infrequently the pathologist is unable to find any lesion in the heart muscle, either in gross or after microscopic study. In some cases, the coronaries are sclerosed; in others they are normal. Not infrequently the pathologist finds no cause for the cardiac failure.

It will be recalled that Cabot, in correlation of clinical and pathologic diagnoses, said that in 52 per cent. of the cases diagnosed during life as chronic myocarditis no such lesion was found at necropsy, and in only 22 per cent. of the cases did the clinical and the pathologic diagnosis agree. To my mind this merely means that the clinician and the pathologist talk a different language and their terms cannot be compared. The patient dies because the heart muscle fails to do its work. The clinician calls such a condition myocarditis, not meaning necessarily inflammation of the myocardium. That the pathologist cannot find any lesion in the heart muscle does not prove the soundness of the muscle but merely the inadequacy of the methods of pathology as far as they fail to show cause for a functional defect.

According to Cabot, many mistakes are made in the clinical diagnosis of chronic myocarditis when the clinical work is checked by the pathologist. In my own experience from a clinical study of the patient, there are few conditions in which we make mistakes

* From the Medical Clinic of the Peter Bent Brigham Hospital.

so seldom as in this group of cases. Before necropsy I can say of any of them, "This is a case of chronic myocarditis," meaning thereby, cardiac failure due to myocardial insufficiency without organic valve lesion; and I can prophesy that the pathologist will find an enlarged heart with valves showing little or no chronic endocarditis, that is no thickening or distortion, and the various viscera will show changes subordinate to or secondary to the cardiac failure. Sometimes the heart muscle will show lesions; at other times, not even microscopic study will reveal any. Sometimes the coronary arteries will be markedly sclerosed; at other times, they will seem normal. The lesions found in the heart are not at all constant. I was once a pathologist myself, and so the pathologists may pardon my saying that they can offer no satisfactory explanation in an objective sense of what has been observed at the bedside, namely, cardiac failure. Thirteen years ago as a pathologist, I could not satisfy the curiosity of the clinician. Today the pathologist and the pathologic literature are unable to answer my query, "Why has the heart failed?"

CLINICAL OBSERVATIONS

As to the frequency of such cases, in 1917 in my wards at the Peter Bent Brigham Hospital I studied 230 cases of chronic cardiac disease. Of these, 120 were positively diagnosed as chronic myocarditis and five questionably so, while 105 were regarded as cases of chronic valvular disease. Of course among the 105 patients with chronic valvular disease, many had myocardial insufficiency; but this is included in the diagnosis, chronic cardiac valvular disease, and the term "chronic myocarditis" is used only for the patients with cardiac insufficiency, in whom we believe that there is no organic valve lesion. In 1916 the figures were proportionately the same, 156 cases being positively diagnosed as chronic myocarditis and 141 as chronic cardiac valvular disease. In 1915, the figures were 91 and 113, respectively, a total of 367 chronic cardiac cases without organic valve lesion and 359 with organic valve lesion in three years. The diagnosis of simple or uncomplicated mitral insufficiency of organic origin is made relatively infrequently: thus, in 1917, there were ten cases, including three doubtful ones out of a total of 105 with organic valve lesion; in 1916, there were twenty-four cases with seven doubtful ones out of a total of 141, and in 1915 there was a total of twenty-eight out of 113. These figures show an increasing conservatism with regard to diagnosing organic mitral insufficiency. So, looking on chronic cardiac disease from the point of view that I have expressed, in a general adult medical clinic among patients with the symptoms of chronic cardiac disease who are suffering from chronic myocardial disturbance, we see more patients without than with signs of organic valve lesion.

Perhaps our clinic may be unduly conservative in regard to making the diagnosis mitral insufficiency unaccompanied by stenosis. As I have already stated, postmortem examination usually has agreed with the bedside diagnosis in this respect. In forty-two necropsies clinically of this group, the pathologist described very slight thickening of the mitral valve in five and considerable thickening in five, while in thirty-two the valve flaps were not thickened, and the valves seemed in every way normal. Moreover, a study of all our postmortem material, without any reference to antemortem diagnosis, confirms the view that or-

ganic mitral disease in older people is relatively infrequent, and when it does occur, stenosis as well as insufficiency is usually present. Dr. Levine, a former assistant,¹ analyzed from our records 247 consecutive postmortem examinations with reference to organic mitral lesions. One hundred and seven, or 41 per cent. of these patients, were over 50 years of age, and of these only two had definite chronic mitral endocarditis, while of 154 under the age of 50, twenty-one had definite chronic mitral endocarditis. This is further justification for conservatism in diagnosing pure mitral insufficiency of organic origin, particularly in older people, in whom we shall see later chronic myocarditis occurs oftenest.

Since the opening of the Peter Bent Brigham Hospital in the spring of 1913, up to Jan. 1, 1918, we have had for study 407 patients, in whom we considered that a cardiac insufficiency was of myocardial origin without organic valve lesion—in the sense of our definition, cases of chronic myocarditis. Of these, 240 were males and 167 females. One hundred and fifteen of these were in the hospital more than once, and many remained in the wards for long periods of time. In all but relatively few there was ample opportunity for careful study of the cases. According to age incidence, the largest number, 143, came in the decade from 51 to 60. In the preceding and succeeding decades, the number was smaller, but about the same number occurred in each of these decades, as shown in the accompanying table. All but forty-one occurred in patients over 40 years of age.

AGE INCIDENCE OF MYOCARDIAL PATIENTS			
Age at admission	Male	Female	Total
Below 30	5	4	9
From 31 to 40	17	15	32
From 41 to 50	53	40	93
From 51 to 60	84	59	143
From 61 to 70	52	34	86
Over 71	29	15	44
	240	167	407

ETIOLOGY

The relation of rheumatism and of syphilis to myocarditis is of interest. Of the total of 407 patients, 112 (seventy-four males and thirty-eight females) gave a history of an antecedent rheumatism. Among these, the time relation of the rheumatism to the onset of symptoms showed that fifty-nine had rheumatism within 10 years of their admission for cardiac disease, while thirty had it 25 or more years beforehand. The age of the patients when they had had rheumatism was as follows: from 1 to 10 years, three cases; 11 to 20, ten cases; 21 to 30, sixteen cases; 31 to 40, twenty-two cases; 41 to 50, twenty-one cases; 51 to 60, twenty-three cases; 61 to 70, ten cases; 71 or more, six cases. It is to be noted that sixty out of 112 patients who gave a history of rheumatism were over 40 years of age when they had rheumatism. This makes it improbable that many of these were patients with acute rheumatic fever. Rather it indicates that of those giving a history of rheumatism, more than half in all probability had the arthralgia or chronic arthritis so common in adult ages. This view is further borne out by the fact that of those admitted to the hospital on account of the cardiac decompensation of chronic myocarditis over the age of 50, twenty-nine out of thirty-nine had their rheumatic symptoms within five years of their admission, and many of these a short time before. Few, if any, of these could

1. Levine, S. A.: Am. Jour. Med. Sc., 1917, 154, 43.

have had acute rheumatic fever. When these deductions are made, it seems probable that only relatively few of our 407 patients with chronic myocarditis could have had acute rheumatic fever, and so rheumatism in this sense played but a small part in the etiology of this group of cases of chronic myocarditis.

As to syphilis, in order to have constant criteria, the Wassermann reaction has been taken rather than a history of syphilis. The possibility of failure to include those who have had syphilis as judged by history, and the possibility of error of observation in the technic of the Wassermann reaction, are fully recognized; but on the whole, the Wassermann reaction would seem to offer the best grounds for estimating the importance of syphilis as an etiologic factor in these cases. Among a total of 369 patients in whom the reaction was tested, the Wassermann reaction was positive in thirty-five and negative in 334. In only thirty-eight patients was it not tested. The small number of patients with positive reaction is very striking when it is recalled that these were in large part public ward patients, among whom the incidence of syphilis as measured by a positive Wassermann reaction is large. In fact as this percentage of our chronic myocarditis patients is a little less than the average incidence of syphilis for all admissions to our wards, this incidence of syphilis might be regarded as a coincidence. Certainly the figures indicate that syphilis has played a very small rôle in the etiology of this group of cardiac cases, a fact that seems surprising when it is recalled how extensive a part vascular lesions play in the syphilitic process.

Alcohol has been suggested as a cause of myocardial insufficiency. Of our patients, 239, or slightly more than half, admitted the use of alcohol; and in 111 of these, there appears to have been a tolerably chronic use of alcohol. In those admitting the use of alcohol over long periods, directly or indirectly, the alcohol may have been a causative factor. Of this there is no definite proof. If a causative factor, it explains slightly more than one third of the cases. As to its real significance in the group, I feel doubtful.

Disturbances in thyroid activity most certainly lead to myocardial disturbance. Goiter or history of hyperthyroidism, however, was extremely infrequent in our cases and could have been a cause in extremely few of them.

Another factor in producing this condition that should be considered is hypertension. Out of 398 patients in whom satisfactory blood pressure observations were recorded, we found the systolic pressure 150 or lower in 148 patients, from 150 to 170 in seventy-two, and over 170 in 178. As far as etiology of the cardiac failure is concerned, hypertension can play a part in considerably less than one half, for it is not likely that a pressure under 170 would be of any great significance in producing myocardial insufficiency and myocardial lesions from overwork. Even in some of these patients, hypertension is probably a coincident, not a causative factor in the cardiac breakdown. Anyhow, hypertension cannot be regarded at most as a very common cause of chronic myocarditis, though it may be expected in a considerable proportion of the cases.

Chronic nephritis has been looked on as a causative factor in chronic myocarditis. Undoubtedly in some cases of hypertension the primary cause of the high blood pressure lies in a chronic renal lesion, and in such the renal lesion may be considered as a causative

factor in the myocarditis. As our functional studies of the kidney have shown, however, very often the hypertension is primarily of vascular origin and the renal lesion is secondary to the high blood pressure and underlying vascular lesion. Then in other cases, renal and myocardial disturbance may have a common cause. Again it is not easy to say whether or not nephritis exists in a given patient with myocardial insufficiency. Very often casts and albumin will be found, but their origin may be in large part in the chronic passive congestion of the kidney. In our experience, very often these patients with decreased urinary output, albuminuria and cylindruria show a marked degree of renal efficiency, as indicated by the phenolsulphonephthalein excretion and by a diuretic response to stimulation. That such a kidney shows enough nephritis to have been a factor in the etiology of the chronic myocarditis seems improbable. Examination of our records shows that, in 202 of the total of 407 patients with chronic myocarditis, there seemed enough renal disturbance to justify the diagnosis of chronic nephritis. My opinion is, however, that in many of these the renal lesion was secondary to or coincident with the cardiac rather than causative. Our postmortem examinations usually have revealed a type and extent of renal lesion that is in accord with this view. In seventeen out of forty-one necropsies, the kidneys were free from chronic nephritis, though showing chronic passive congestion. In nine out of the forty-one, the kidneys were of the arteriosclerotic type, while in only fifteen was there definite chronic nephritis. In only the last group would it seem likely that the renal lesion could have had any causal relation to the cardiac; and even in these, the two processes well might have been coincident.

The incidence of arteriosclerosis in the group is more difficult to judge. For its determination we have available routine observations of peripheral arteries, often only the radial. It is recognized, however, that arteriosclerosis is of irregular distribution and may be present in one group of vessels and not in another. Unless it is accompanied by hypertension it would not seem probable that sclerosis elsewhere than in the coronary arteries could have much influence on the heart muscle, and its presence in peripheral vessels is too unsatisfactory an indication of coronary sclerosis to help in forming a judgment as to the condition of the coronaries. So it hardly seems of value to tabulate clinical observations on peripheral arteries as evidence of the condition of the coronaries. Of these cases, however, forty-three came to necropsy, and twenty-one of the forty-three showed quite definite coronary sclerosis, which was moderate in nine and marked in twelve, while in twenty-two the coronary vessels were relatively normal, that is, they showed no sclerosis or only a few patches of moderate change.

Overeating with resultant overweight or a pathologic obesity is usually considered a possible causative factor in this type of heart disturbance. In our group of cases, 188 out of 393 patients appear to have been overweight, and of those a considerable number were obese. From these figures it appears that a little more than one half the patients were not fat in any sense of the word, and quite frequently these patients were of the thin type. My impression is that obesity was not marked enough to have been a possible causative factor in more than one third of the cases studied at the Brigham Hospital, and in these, of course, it may have been only coincident.

The rôle played by focal infection in causing myocardial disturbances is uncertain. Many, in fact very many, of these patients had had bad teeth with marked pyorrhea alveolaris; decayed root stumps and undoubtedly alveolar abscesses were common. We are only too familiar with the rotten mouth conditions of our ward patients, whatever their disease. Bad teeth are common enough in the myocarditis patients to be an important causative factor, but they are so common in all hospital patients that I feel skeptical as to their etiologic relation to the myocardial group.

In the heart muscle the pathologist found an increase of interstitial connective tissue in twenty-seven out of forty hearts carefully described. Here examination was not exhaustive enough to exclude smaller foci of connective tissue increase, and in the twenty-seven in which it was found the connective tissue very often was only moderately abundant, or the definite patches occupied only a small part of the myocardium. Very often, too, as much or more connective tissue is found in the hearts of older people who, during life, gave no sign of cardiac insufficiency. So, after all, these foci of connective tissue may have no causative relation to the insufficiency. In eight hearts the muscle seemed normal, while in four only moderate fatty degeneration was seen. In one case amyloid degeneration was present.

Electrocardiography is an important method of determining cardiac disturbances which indicate myocardial lesions either functional or organic. In the 407 cases of this group, electrocardiograms were made on 328 patients, with the following results: Thirty patients showed normal curves. Simple left-sided preponderance occurred in eighty-three patients, and right-sided in ten. Thirty-eight patients showed left-sided preponderance with premature or ectopic contractions oftenest having origin in the ventricles, while only one showed right-sided preponderance with ectopic beats. This is as might be expected, 121 with left-sided hypertrophy in contrast with eleven showing right-sided hypertrophy. Sixteen patients had ectopic beats without showing the complex of either left or right-sided muscle preponderance.

Auricular fibrillation occurred in ninety-six, and auricular flutter in nine patients. In these, with very few exceptions, left-sided muscle preponderance occurred. In many, ectopic beats were also present. In forty-one cases the electrocardiogram showed the widened or distorted ventricular complex, indicating disturbance in the conduction mechanism, either block in the right or left main stem or more probably degeneration changes involving smaller subdivisions of the conduction system. Here only, more marked changes in the ventricular complex were counted. Slighter degrees of widening or distortion of ventricular complexes occurred in other patients. These are undoubtedly of considerable significance, and will be discussed in a paper by Dr. Howard F. West.

Paroxysmal auricular tachycardia occurred once, paroxysmal ventricular tachycardia once, and sinoauricular block once. In two cases, complete auriculoventricular block was the chief disturbance noted. The patients with auricular fibrillation, auricular flutter and distortion of the ventricular complex, 146 in all, represent from an electrocardiographic point of view the patients with the most serious muscle disturbance, and they form a considerable proportion of the total of 328 studied electrocardiographically. The finding of these changes in the electrocardiogram helps in the

diagnosis of this type of case, but it is evident from our figures that often the electrocardiogram shows no change indicative of serious myocardial disturbance, even in patients with badly decompensated hearts; for almost every one of our patients was of the type requiring hospital bed treatment and so represented advanced steps of the disease. Unfortunately our records do not contain enough polygraphic tracings to justify any opinion as to the frequency of pulsus alternans in this group of cardiac disturbances.

Physical signs in these patients are quite characteristic, though there are no pathognomonic signs. The heart is usually enlarged, often markedly so. Hypertrophy occurs by far the most frequently in the left ventricle. Cardiac sounds are not characteristic. Gallop rhythm and tic tac quality are found, but frequently they do not occur. A systolic murmur is frequent, usually loudest at the apex. It varies all the way from a soft blowing murmur to a loud and harsh, or a musical one. In some cases no murmur is heard. In my opinion, the quality or intensity of the murmur is no criterion as to whether there is an organic valve lesion or merely a dilated valve orifice. In the same way transmission of the murmur is of no significance. Given an enlarged heart and any sort of a systolic murmur at the apex in a patient over 40 with decompensated heart, the probability of there being an organic mitral insufficiency is very small. In my opinion, the systolic murmur is the least significant physical sign in this group of cases. The apex impulse usually is diffuse, often not forcible. Very often there is a marked discrepancy between visible pulsation and the palpable heave of the apex region. It is surprising sometimes to feel so weak a thrust from a heart markedly enlarged and to the eye beating forcibly. With the heart condition goes the sign of decomposition—chronic passive congestion of the viscera and edema.

Roentgen-ray silhouette of the heart is not characteristic. Most often it shows well the left-sided enlargement. A number of times, I have seen the heart shadow of a globular form. These hearts are sometimes diagnosed by the roentgenologist as pericardial effusion.

With rest in bed and digitalis, the patients can make most surprising improvement. It is a group in which digitalis is very efficient, whether auricular fibrillation is present or not. Diuretics here have their most efficient action. A waterlogged patient of this group may lose 20, 30, 40 or even 60 pounds of fluid in a week's time and have most of his symptoms disappear. Of course there is a marked tendency for them to recur, especially after return to work; and with recurrence, cardiac response to digitalis becomes less, until the stage is reached when under digitalis the heart progressively deteriorates and no therapy will stay the progress of the disease.

As to what really produces this type of cardiac insufficiency we are ignorant. Various theories have been advanced to explain how minor lesions by position might lead to serious cardiac disturbance. After critical examination these theories, however, seem unsatisfactory. Our clinical studies fail to show any constant cause, and in some cases even after careful pathologic study, the condition of the heart remains inexplicable. Further study of these patients during life and after death is certainly needed before we can have any adequate understanding of the mechanism and the causes of the condition.

SUMMARY

There is a common chronic cardiac condition, in a general hospital for adults equal in frequency of occurrence to chronic valvular disease of the heart, which, for want of a better term, may be called chronic myocarditis. By this term is meant cardiac insufficiency from myocardial disturbance without organic lesion of the heart valves. A very large proportion (366 out of 407) of these patients on admission to the hospital, are over 40 years of age, and somewhat more are men than women. The heart is nearly always enlarged, and usually there is a systolic murmur at the apex; but whatever its intensity or transmission, it is very rare to find any thickening or distortion of the valve flaps or chorda tendineae. Acute rheumatic fever and syphilis are both relatively uncommon in these cases, and neither plays any considerable part in the etiology. Chronic use of alcohol occurs in about one third of the cases. High blood pressure is often found, but is absent in more than half of the cases. Chronic nephritis is often present, as is hypertension; but in seventeen out of forty-one cases at necropsy, the kidneys showed no chronic nephritis. Coronary sclerosis is an important factor in only about half of the cases. Increase of interstitial connective tissue is the lesion most found in the heart muscle, but in numerous cases the heart muscle seems practically normal except for hypertrophy of the fibers. Electrocardiography often gives evidence of disturbed muscle function. About half the cases show auricular fibrillation or flutter or the distortion of the ventricular complex, indicating some disturbance in the conduction system; but in even advanced cases the electrocardiogram often shows no significant disturbance. Digitalis in the earlier breaks in compensation is a very efficient drug, and diuretics produce marked diuresis.

HYPERTROPHIC PYLORIC STENOSIS IN
A TWO YEAR OLD CHILD

REPORT OF A CASE *

ALFRED J. SCOTT, JR., M.D.

LOS ANGELES

In a survey of the literature for cases of hypertrophic pyloric stenosis, we find very little mention of cases after the second or third month. The first reported case is the famous one of Beardsley,¹ in which a boy showed symptoms shortly after birth, and up to his death at the age of 5 years.

Shaw and Elting² in 1904 reported a case in which the patient showed symptoms from the seventh or eighth month but was not operated on until the age of 16 months. The child lived.

Arreger, quoted by Osler,³ reported a case in a child of 5 years, and Rosenheim, quoted by Holt,⁴ reported a case in which the patient had had no symptoms until he was 3 years old, and at the age of 5 years had had the first marked symptoms. He had not been operated on, however, until he was 6½ years old.

All the references mention cases occurring at the usual age, or in young adults. Therefore, I thought my case would be of interest, because of its rarity, but I offer no hypotheses or theories.

REPORT OF CASE

J. B., a boy, aged 22½ months, Jewish, was brought to the observation cottage of the county hospital, July 22, 1917, with a complaint of vomiting, loss in weight, and extreme restlessness.

He was the youngest of five children, the first of whom had died when 3 days old, the mother having convulsions. The second child, who was 8 years old, was well, but not strong. The third had died "of abscess in the head" at the age of 21 months. The fourth, who had been bottle fed, had died at the age of 5 months. The mother had died from tuberculosis three months previous to consultation, aged 26. The father was living and well.

The first three months at home, the child had been fed oatmeal water and cow's milk. There had been no history of vomiting. The child had had some colic, but had seemed healthy and strong, and had gained in weight. There had been a good deal of constipation, but milk of magnesia had corrected this. Then the child had been put out to board with two or three different women. When 10 months old, he was very skinny, and had a good deal of gas. He was teething at the time, and vomiting a little, but gained rapidly in weight under careful diet. No further trouble had occurred until he was about 15 months old, when he was given a banana, which he had vomited. During these months he had whooping cough. He had been in the Jewish Orphans' Home for a time, but there had been no history of vomiting there. About a month before I saw the child, he had become nauseated one evening after supper. A physician from the neighborhood was called, who gave him a hypodermic injection to produce vomiting. The next day the child was taken to the Children's Hospital, where he was kept for three days. He vomited occasionally, but developed no serious symptoms, and no diagnosis was made. After going home, he was well for two days, when he started to vomit again. Another physician saw him a few times, and advised that he be taken to the county hospital. No diagnosis was made on this occasion. At the hospital it was learned that three weeks previously, the child had been seen chewing firecrackers, but whether or not some of them had been swallowed was not known.

Physical examination was negative except in the abdomen, which was scaphoid with visible peristaltic waves, but with no palpable tumor. While in the observation cottage at the county hospital, a fluoroscopic examination was made, but nothing was seen to pass through the pylorus.

Tincture of belladonna, 4 drops every four hours, was ordered, and 4 ounces of undiluted milk once in from three to six hours. Sometimes this was retained and other times vomited. Nutritive enemas were given, some being retained and some not. The temperature varied from 101 F. on entrance, to normal.

When the child was transferred to the children's ward, July 25, three days after entrance, the same findings as in the observation cottage were noted.

Stomach washings of soda followed by gavage of barley water and egg albumin every six hours gave relief, and the food was retained. The first washing brought up a greenish brown fluid with a foul odor. After some of the washings, only half as much water was returned as was used in the washing, at the other times nearly twice as much. The gavages at first seemed to satisfy and quiet the child, but later they did not. The enemas brought forth small, brown, liquid stools. The child kept getting weaker, and on the twenty-eighth day, three days after entrance to the children's ward, and six days after entrance to the hospital, it was deemed advisable to operate. Dr. Henry Dietrich saw the patient in consultation, and concurred in pronouncing the case operable, but reserved his diagnosis.

The operation, performed at 7:30 o'clock p. m., July 28, by Dr. W. L. Huggins, revealed a typical hypertrophied pylorus such as is seen in congenital pyloric stenosis. Expos-

* Read before a clinical staff meeting, at the Los Angeles County Hospital, May 6, 1918.

1. Beardsley, H.: Arch. Pediat., 1903, 20, 355.

2. Shaw, H. L. K., and Elting, A. W.: Arch. Pediat., 1904, 21, 892.

3. Arreger, quoted by Osler, William: Modern Medicine, 1908, 5, 304.

4. Rosenheim, quoted by Holt, L. E.: Hypertrophic Stenosis in Infants, THE JOURNAL A. M. A., May 26, 1917, p. 1517.

ing the pylorus, the incision was made longitudinally down to the mucosa (Rammstedt), and revealed the same cartilaginous texture seen in typical hypertrophic pyloric stenosis. The mucosa was accidentally nicked at the stomach end, so a pair of forceps were inserted in the pylorus, but nothing was found to account for the obstruction other than the thickened tissue. The closure was a modified pyloroplasty and the usual abdominal tier closure.

The child was returned to bed in a fair condition, but with a very weak pulse. The rectal drip of glucose and sodium bicarbonate was started. The child vomited some greenish yellow fluid and was very restless. The drip was repeated during the night. The restlessness increased.

At 5 a. m. the following day, the temperature was 101.6; the pulse 106, and respiration, 78. At 8 a. m. the temperature was 106.2, the pulse 180, and respiration 84. At 11 a. m., the pulse was very weak. The temperature was 104.6, the pulse 180, and respiration 80.

Five hundred c.c. of physiologic sodium chlorid solution were given by hypodermoclysis. The child died at 1 p. m. No postmortem was held.

COMMENT

The operative findings were very much of a surprise, as clear symptoms of pyloric stenosis are very uncommon in children the age of this one. Children are difficult subjects on whom to do a fluoroscopy, as they are usually very restless and easily frightened.

I feel that if the operation had been done sooner, before such a marked state of exhaustion had taken place, we might have saved the child; but we delayed too long. On the other hand, he seemed somewhat improved with the washings and gavages, and we thought we were dealing with a pylorospasm.

Medical history records cases in which pyloric stenosis has been found by the operator on opening the abdomen for other conditions. The fact that there have been a number of cases reported in young adults shows that the condition may obtain for months or years with very mild symptoms, or none at all.

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REPORT OF A CASE OF PSEUDOLEUKEMIA INFANTUM (VON JAKSCH'S DISEASE)

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PANAMA, R. P.

Since von Jaksch first called attention to the association of splenomegaly with anemia in children, a number of similar cases have been studied under the name of von Jaksch's disease. But as most of the cases reported differ in their clinical features and pathologic findings, the existence of the condition as a distinct disease of the blood is still a matter of dispute. Pseudoleukemia infantum is now defined as a rare disease of childhood, characterized by a severe anemia, marked enlargement of the spleen, some enlargement of the liver, and a chronic course with one or more relapses. The anemia is the most constant feature of the disease. It presents the combined blood picture of pernicious anemia and leukocytosis or lymphocytosis. While splenic enlargement is said to be an important diagnostic finding, it cannot be so considered in this country, where chronic malarial spleens are common among the children. The more common children's diseases, notably rickets, gastro-enteritis, and to a lesser extent hereditary syphilis, are found in asso-

ciation with von Jaksch's disease. This has caused some observers to attach etiologic importance to these diseases; but the matter has yet to be proved.

REPORT OF CASE

History.—W. B., boy, aged 2 years, born in Panama, of Martiniquan parents, admitted to Hospital Santo Tomas, Jan. 4, 1917, with a history of diarrhea, drowsiness, vomiting, loss of appetite, general weakness and a gradual change in color, which the mother described as "turning yellow," had been ill for an indefinite period, probably several months, but the condition became aggravated, a few days prior to admission, with cough and fever. The past medical and family histories were negative. The temperature on admission was 40.2 C. (104.3 F.); pulse, 130, and respiration, 36.

Physical Examination.—The patient was well developed. He appeared to be comfortable but was somewhat dull and unresponsive. Slight scleral jaundice was present. All superficial lymph nodes were enlarged. The head was square with the anterior fontanel open. The mucous membrane of the lips and mouth was of a peculiar yellowish pallor. There were but five upper teeth, no lower teeth being present. Nodular projections were found on both sides of the costochondral junction. There were some scattered, moist râles over both lungs. The heart was negative. The upper limit of splenic dulness extended to the sixth interspace in the midaxillary line. The lower border of the spleen extended 1 inch below the left costal border in the anterior axillary line. The lower edge of the liver was palpable half an inch below the right costal border. The lower extremities showed a moderate degree of bow-leggedness. The knee jerks were increased.

Laboratory Reports.—The urine was negative. The stools showed a few pus cells; otherwise they were negative. Blood examination, Jan. 6, 1917, for which deep puncture and some pressure were necessary to obtain a fair sized drop, revealed: erythrocytes, 1,440,000; leukocytes, 22,000; hemoglobin, 25 per cent.; color index, —1; differential count: polymorphonuclears, 42 per cent.; small lymphocytes, 37 per cent.; large lymphocytes, 8 per cent.; large mononuclears, 8 per cent.; transitionals, 4 per cent.; mast cells, 1 per cent. Poikilocytes, nucleated reds, both large and small, stippling, etc., were present in large numbers. No malarial organisms were found. Repeated blood examinations showed the average number of erythrocytes to be about 1,600,000, with many nucleated cells and other pathologic elements. The leukocytes varied in number from 22,000 to 25,000, of which about 50 per cent. were lymphocytes. The fever was at no time affected by quinin.

Clinical Course.—There was no change in the patient's general condition for the following ten days. During that time, the temperature was of a septic type, at times, reaching as high as 40 C. (104 F.) in the evening with a daily variation of from 2 to 2.5 degrees C.

January 14, slight improvement was noted. During the following twelve days the temperature remained approximately normal. The general nutrition was improved and the jaundice practically disappeared.

January 18, the erythrocytes numbered 3,200,000, the leukocytes 8,000. Nucleated reds were rare, but stippling and poikilocytosis persisted to some extent.

January 25, a relapse to the original condition occurred.

February 16, the child was in a semiconscious state, scleral jaundice being deeper than at any time during the disease. Respiration was rapid, with numerous, moist râles on both sides of the chest. The abdomen was distended with easily detectable flank dulness. Blood examination at this time revealed nothing unusual, except that the leukocytic count reached the high mark of 42,000.

Throughout the course of the disease it was observed that any improvement in the child's condition was accompanied by an increase in the number of erythrocytes and a diminution in the pathologic elements of the blood and in the number of leukocytes, whereas a relapse was followed by an increase in the number of leukocytes and a decrease in the number of erythrocytes. This would indicate that both the

anemia and the leukocytosis were due to the same pathogenic agent.

Feb. 18, 1917, the child died.
Necropsy Report (2584).—The body was that of a well nourished child about 3 years of age. A mucopurulent fluid was running from both nostrils; the tonsils were not enlarged; five upper teeth, and no lower teeth were present; the sclera of both eyes was jaundiced; the muscles were well developed.

Abdomen: A small quantity of a straw colored fluid was present in the abdominal cavity. The appendix was normal. The urinary bladder was distended. The stomach was small and contracted. The mucous membrane was covered with a whitish mucoid material. The rugae were prominent and obliterated with difficulty. The gall-bladder was distended, but emptied easily. There was no evidence of any peritonitis.

Thorax: When the sternum was removed, the lungs collapsed. The right lung had four lobes and the left three. Both lungs crepitated throughout and contained no tubercles. The lower lobe of the left lung was congested. On section it was edematous, and the bronchioles contained a yellow purulent fluid. This lobe appeared to be jaundiced. The middle lobe was deeply congested and appeared to be pneumonic. The cut sections sank in water. The lower lobe had the appearance of bronchial pneumonia.

Heart: This was enlarged, and the right side was dilated and filled with a goose fat clot. The musculature was flabby. The pericardium was edematous.

Spleen: This was enlarged, firm and deep blue. The capsule could not be stripped easily. The pulp was very dark red and not very friable. The normal markings were absent.

Kidneys: These were slightly enlarged, and pink. The capsule stripped easily, leaving a smooth surface. On section the organ was yellowish pink. The cortex was about normal in size. Around the papillae there was a zone of yellowish discoloration.

Liver: This was normal in size, and brownish. On section the tissue was markedly bile stained. The hepatic vessels were engorged with blood.

Head: The anterior fontanel was open. When the calvarium was removed, fluid ran out. The cortex was markedly edematous, very soft, flabby and anemic. The ventricles were filled with a clear fluid.

Anatomic Diagnosis.—The diagnosis was: marked anemia of the brain; bronchitis; left sided bronchopneumonia; congestion of the liver; splenic tumor, and general anemia.

The pathologic report of the Board of Health Laboratory, Ancon Hospital, was as follows: There was an extreme fatty metamorphosis of liver, kidney and heart. The blood sinuses of the liver, spleen and kidney contained an abundance of micro-organisms that were, perhaps, postmortem invaders. There was passive congestion of the liver and spleen. No spirochetes were found in any of the tissue. Nothing was found to indicate the etiology of the disease present.

Treatment.—In addition to the general hygienic measures, quinin, solution of potassium arsenite (Fowler's solution) and syrup of ferrous iodid were given a fair trial but proved useless.

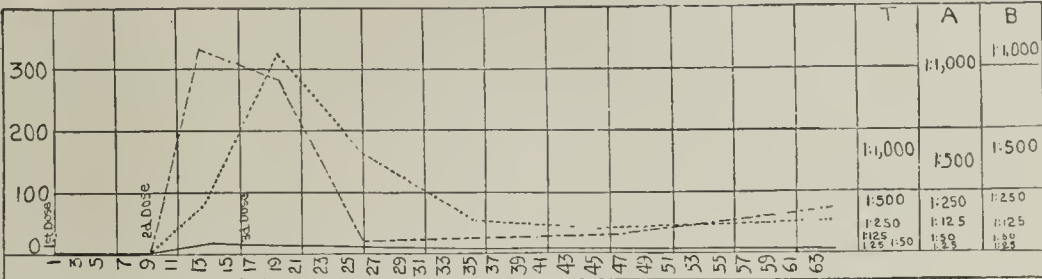
Balance Between Food Fuel and Work.—A British scientific commission has reported that if the workman be undernourished he may, by grit and pluck, continue his labor for a certain time, but in the end his work is sure to fail. It makes no difference what the nutritive condition of the person is, if a certain job involving muscular effort is to be done, it always requires a definite amount of extra food-fuel to do it.—Lusk, Food in War Time.

Military Medicine and Surgery

AGGLUTININ RESPONSE AFTER ARMY TRIPLE TYPHOID VACCINATION *

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The efficiency of typhoid vaccination in the United States Army, as developed by Colonel Russell, is now



This work, then, demonstrates that agglutinins are produced, not only for typhoid, but for paratyphoid A and paratyphoid B as well; it offers an opportunity to see the relationship between local and general reactions, and the antibodies produced; it offers an opportunity to study the bearing a previous inoculation has on the production of agglutinins.

The accompanying charts are almost self-explanatory. They are the more typical and instructive of a group of thirty, and represent graphically the variations of the typhoid and paratyphoid agglutinins under the influence of antityphoid vaccination, as formerly and at present administered by the Army. The continuous line represents the typhoid, the line of dots and dashes the paratyphoid A, and the line of short dashes the paratyphoid B.

The varying altitudes to which these curves rise on successive days is expressed, not directly by dilutions, but by the number of agglutinin units per cubic centimeter of serum, determined by the Dreyer method. These charts are therefore not only comparable within

The method of administering bacterial vaccines in use by the Army at the time these studies were begun was as follows: The first dose consisted of 500 million typhoid. The second dose on the fourth day following consisted of 375 million paratyphoid A, plus an equal number of paratyphoid B. On the fourth day following, 1,000 million typhoid were given. On the fourth day following this, 750 million each of paratyphoid A and B, were given. Four days later the final typhoid dose of 1,000 million was given and again in four days the final paratyphoid A and B dose of 750 million was given.

During the course of these studies the method was changed so that the first dose contained, combined, 500 million typhoid and 375 million each of paratyphoid A and B. The second dose of double the amounts was given seven days later. The third dose, identical with the second, was given seven days later. Some of the accompanying charts represent some of the first routine cases under the new method at the Army Medical School.

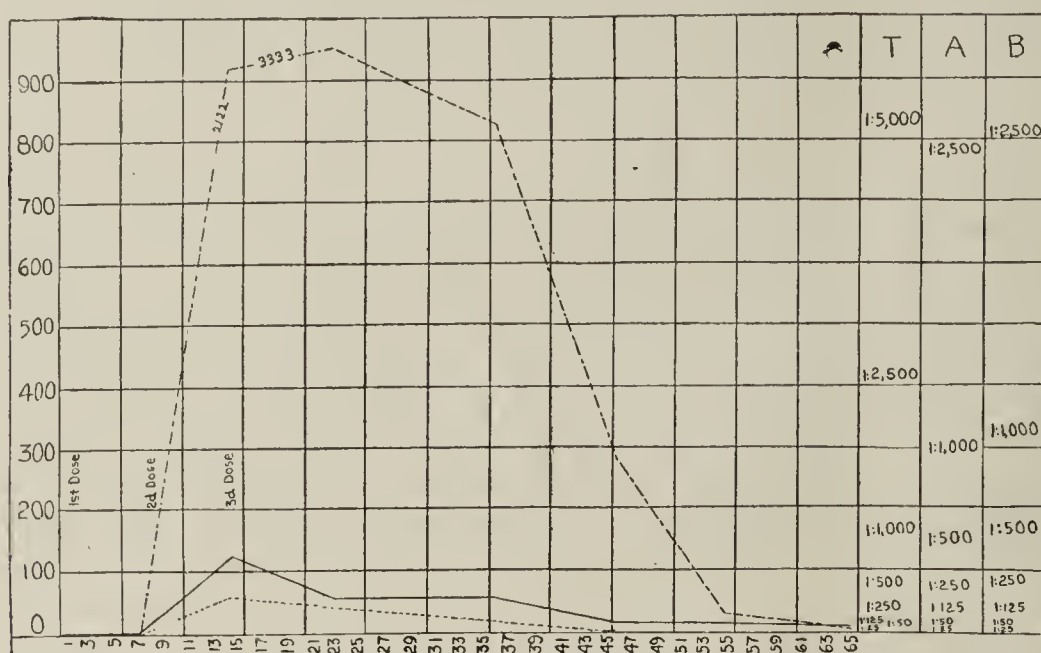


Chart 3.—No previous vaccination. Army vaccine, September, 1917. First injection, slight systemic and local reaction; highest temperature, 99.8. Second injection, slight systemic and local reaction; highest temperature 99.8. Third injection, moderate systemic and slight local reactions; highest temperature, 100.0.

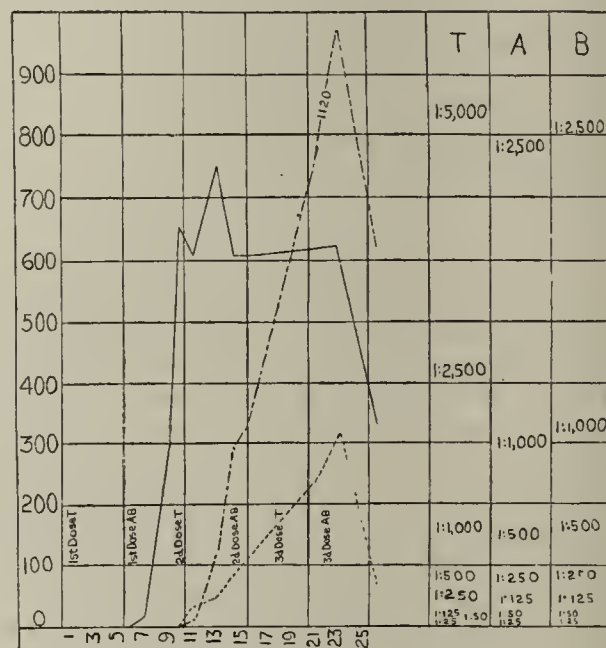


Chart 4.—No previous vaccination. Army vaccine, July, 1917. Severe local and general reaction after second paratyphoid A and B. Moderately severe general reaction after the second typhoid. Otherwise the reactions were negligible.

themselves from day to day, but comparable with each other and comparable with the results obtained by other workers using the same technic.

METHOD

Briefly stated, the method employed is as follows: Standard agglutinable cultures were obtained from the Department of Pathology, University of Oxford, for typhoid, paratyphoid A and paratyphoid B. Each one of these cultures represented one of standard opacity, with a given and noted factor of agglutinability. These cultures were formaldehyd killed and of recent manufacture. The serums to be tested were set up in macroscopic agglutination tubes, in dilutions with physiologic sodium chlorid solution ranging from 1:25 to 1:5,000. To each of the tubes was added a constant quantity of the standard culture. The tubes were then placed in a water-bath at 55 C. for two hours, allowed to cool for fifteen minutes, and read for the highest dilution in which agglutination, visible to the naked eye, occurred without sedimentation. The dilution of the serum in this tube was then divided by the known factor of the culture used, resulting in the units of agglutinins per cubic centimeter of serum. These units were then charted.

When I was ordered to my station at the Army Medical School, I continued the observations in a series of six cases, begun by Dr. W. C. Davison, who was unable to continue them through his change of station. At the same time I added several new cases to the group. These studies were at that time interesting, not only in that they gave some idea of the height to which the typhoid agglutinins were developed, but also in that they gave positive information that very definite quantities of agglutinins for paratyphoid A and particularly for paratyphoid B were being produced. The relative celerity with which individuals responded by the production of specific agglutinins was a somewhat variable but interesting demonstration. The persistence and gradual reduction of the quantity of agglutinin units in this first group of men could not, unfortunately, be observed over any extended time, since the men whose serums were being tested were all lieutenants in the Medical Reserve Corps, temporarily stationed at the Army Medical School and leaving for distant stations on the completion of their vaccination.

I therefore began a study of fifteen of my classmates, student candidates for the Medical Corps of the Army. This series of cases I could keep under

observation a greater length of time, though the existing emergency has made it shorter than it might have been; however, the time has been long enough to yield some interesting data.

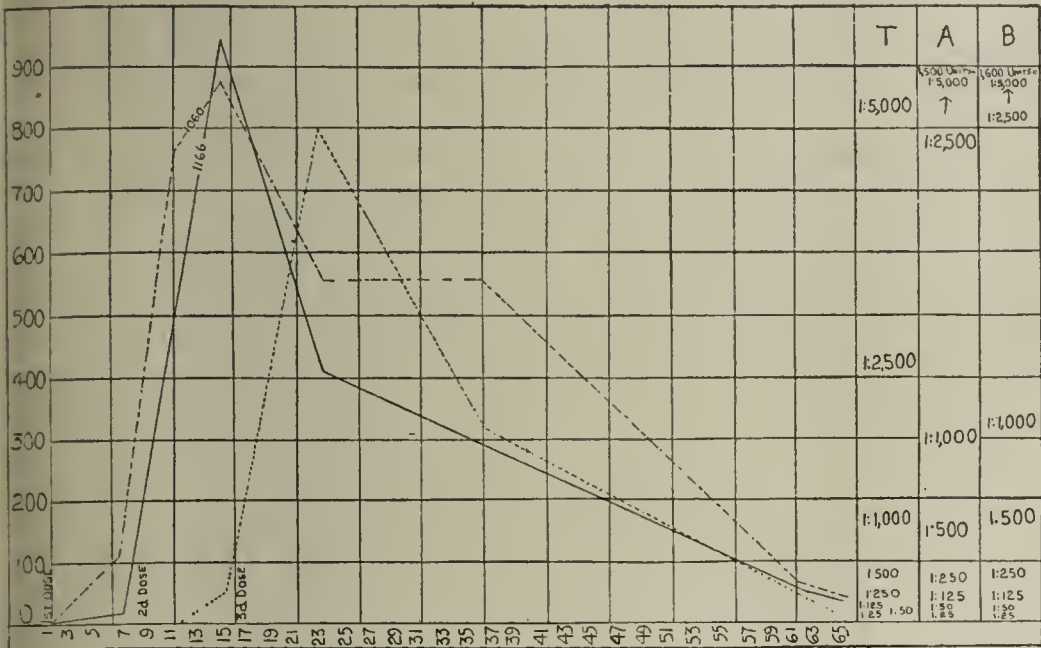


Chart 6.—No previous vaccination. Army vaccination, September, 1917. First injection, slight headache, slight local reaction; highest temperature, 99. Second injection, moderately severe local and general reactions; highest temperature, 100.4; duration of fever, two days. Third injection, no general, very slight local reaction; highest temperature, 99.

The method of titration and the method of preparing new quantities of the standardized agglutinable cultures, as practiced at the Army Medical School, have been described previously.¹

FACTS BROUGHT OUT

Though, as mentioned before, the charts speak for themselves, it might be worth while to draw attention to certain points: Previous typhoid vaccination (and the same is true of paratyphoid A and B as well) has the effect of repressing the formation of a high unit content, though some change is noticed. It does not altogether inhibit the production of specific agglutinins, but serves rather to retard it, and restrain it after production begins. In some cases it seems to have very little effect on the production of agglutinins, and they rise in a curve similar to previously uninoculated cases. In no case did previous inoculation seem to augment agglutinin production. In one case (Chart 10) in which the patient gave a history of having had typhoid fever at the age 4, and of having been inocu-

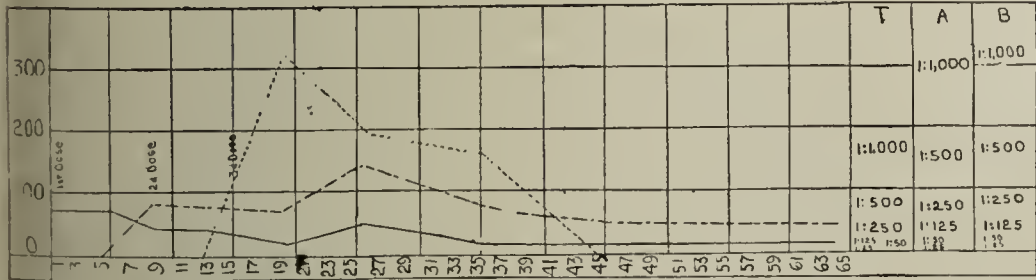


Chart 7.—Typhoid vaccination, 1915. Army vaccine, September, 1917. First injection, moderate general and local reactions; highest temperature, 99.5. Second injection, general reaction very severe; severe chill one hour after injection, lasting a half hour; patient went to bed; one hour after inoculation, temperature had gone to 105 and two hours later to 106, accompanied by delirium and profuse sweating; following day, temperature varied from 102 to 103, and approximated normal on succeeding day; axillary tenderness followed for several days. Third injection, mild local and general reactions, highest temperature, 99.

lated one and two years previously, there was a definite reduction of the agglutinin units, never returning

to the original number, and approximating it only after twenty-five days.

This feature is of importance and is to be kept in mind in the diagnosis of typhoid or paratyphoid A or B fever, by the Widal reaction.

Hamilton² is of the opinion that the Widal reaction is of no value in the diagnosis of typhoid fever, in previously inoculated individuals. Dreyer, Walker and Gibson³ and Davison⁴ present arguments in support of their opinion that macroscopic Widal's, with a standardized agglutinable culture, done at intervals, to demonstrate fluctuations upward or downward, in agglutinin content, have a definite diagnostic value. However, the fluctuations that appear in some of these charts, after the titer has neared the base line, occur in the cases of quite normal men, with no physical findings to suggest their cause. In a later series of cases, which was not only continued over a greater length of time, but in which the titrations were done much more frequently, these fluctuations without apparent cause are much accentuated. In view of this fluctuation for some months after vaccination, it seems ill advised to draw any diag-

nostic conclusions from such fluctuations, in a case of fever. While such fluctuations may be pointingly suggestive, they are not at all to replace, diagnostically, an early blood culture or the isolation of the organism from the stool.

In only one case was a total absence of agglutinin production observed (Chart 8). This case showed a normal production of paratyphoid A agglutinins, a production of typhoid agglutinins consistent with a previous typhoid inoculation (interesting because the previous vaccination took place four years ago), and no agglutinins for paratyphoid B.

In another case, typhoid and paratyphoid A agglutinins responded normally, while paratyphoid B agglutinins failed to make their appearance until the twenty-first day after inoculation, after which they persisted in a normal manner. This chart (Chart 9) is interesting in that it shows a secondary rise of all three types of agglutinins, following shortly after the assumption of the patient's duties in the vaccine room, where he was constantly exposed to infection. During this time he presented an illness with malaise, rise in temperature, etc., sufficiently simulat-

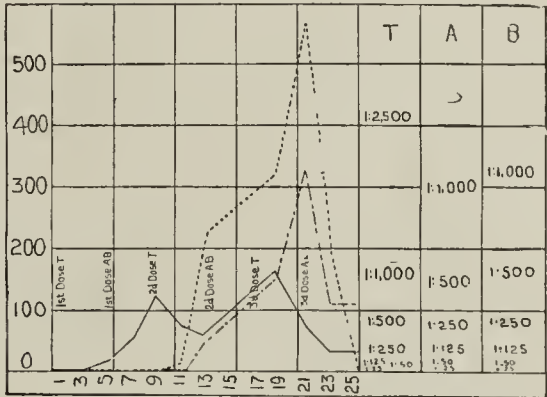


Chart 5.—Army vaccine, July, 1917. No history obtained.

2. Hamilton, C. D.: The Effect of Typhoid Vaccination on the Widal Reaction, THE JOURNAL A. M. A., Nov. 27, 1915, p. 1873.
3. Dreyer, G.; Walker, E. W. A., and Gibson, A. G.: Lancet, London, 1915, 1, 324.
4. Davison, W. C.: The Diagnosis of Enteric Fever (Typhoid and Paratyphoid A and B) by Agglutination Tests, THE JOURNAL A. M. A., April 22, 1916, p. 1297.

1. Fennel, E. A.: The Dreyer Method of Agglutination as Used at the Army Medical School, THE JOURNAL A. M. A., March 2, 1918, p. 590.

ing in a clinical way, an ambulatory case of typhoid fever, to make a blood culture advisable. Blood cultures revealed no growth, and complete recovery followed in a week or ten days. Reliance on the symptoms and the fluctuations in the agglutinin content, in this case, might have led to a diagnostic error.

To indicate that the repression not only of typhoid, but also of paratyphoid A and paratyphoid B agglutinins must be considered in previously inoculated patients when the triple vaccine has been used, Chart 1 presents the repression of typhoid agglutinins, Chart 2 that of paratyphoid A, and Chart 3 that of paratyphoid B. The probability of cross-agglutination in each of these cases must be considered, as well as the history of previous vaccinations.

While cross-agglutination may take place, the units within which this may take place have been quite definitely determined, and need not be considered in those charts in which all three agglutinins rise to a fair height. In a typhoid monovalent serum of 800 agglutinin unit content, the cross-agglutinin unit content for paratyphoid A is 65 and that for paratyphoid B is 80. In a paratyphoid A monovalent serum of 3,000 unit content, the cross-agglutinin content for paratyphoid B is 160 and that for typhoid is 65. In

the agglutinins produced is in substantiation of the work of Craig⁵, who showed not only that the general and local reactions after the triple vaccine did not exceed those after the unmixed or paratyphoid, but also that there was no direct relationship between these reactions and the amount of antibodies produced.

Craig's observations, not in agreement with the results of some English observers, that the agglutinin

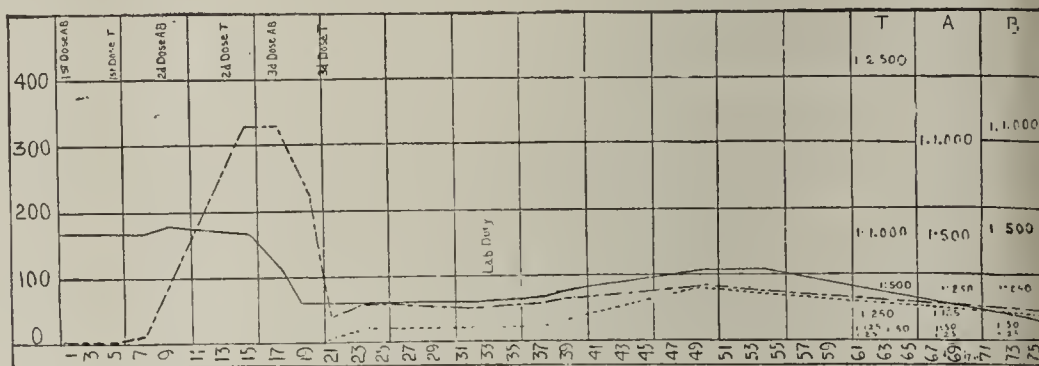


Chart 9.—Typhoid vaccination six weeks before Army vaccine. Army vaccine, July, 1917. Moderate reaction after second paratyphoid dose, and after second typhoid dose. Otherwise the reactions were negligible.

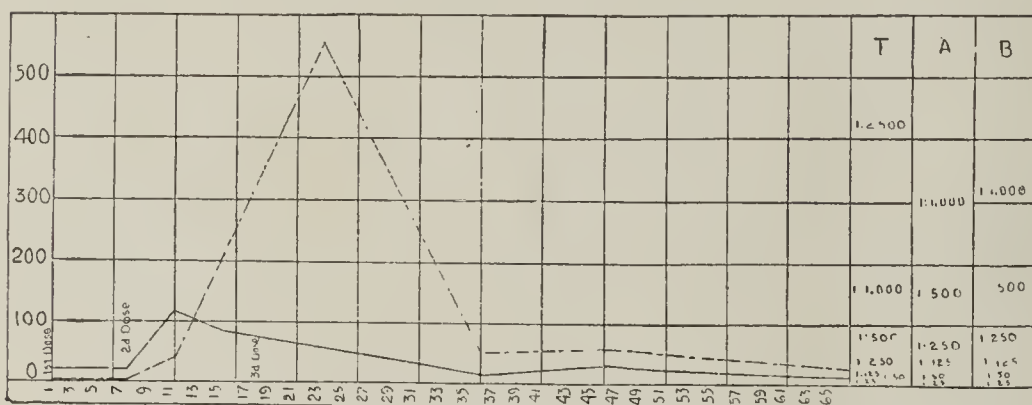


Chart 8.—Typhoid vaccine, November, 1913. Army vaccine, September, 1917. First injection, no general, slight local reaction. Second injection, malaise and chills, considerable local reaction; highest temperature, 100. Third injection, no general, very slight local reaction.

a paratyphoid B monovalent serum of 3,750 unit content, the cross-agglutinin content for paratyphoid A is 130, and that for typhoid is 65.

The very generous development of all three types of agglutinins in the case of Chart 6 might be explained by the patient's rather wonderful physique and his previous freedom from infection or vaccine.

There seems to be no logical relationship between the systemic or local reaction and the number of units of agglutinins produced. These reactions are almost always of a negligible character, and in spite of the fact that medical men are notoriously introspective, only one of the subjects of this series complained with reason (Chart 7). In this case the very severe reaction was probably due to the puncture of a small vein in the administration of the vaccine. It is a rather constant observation, however, that one of the three inoculations is followed by some reaction while the other two give rise only to a slight local reaction. In by far the greater proportion of cases it is the second dose that gives rise to this systemic reaction. This lack of correlation between the reactions and

titer for paratyphoid B was lower than those for the two other organisms, are borne out in the majority of the cases of this series, if they read in dilutions direct. However, if the readings are made in agglutinin units, the differences are so slight that a much larger number of cases must be considered before any conclusions may be reached. Besides, the repression caused by previous vaccination must always be considered, and it is possible that prolonged previous exposure to minimal doses of organisms, with a production of a low-grade "natural" immunity might explain some of the wide variations in individuals, or the variations of the three agglutinins in the same, previously unvaccinated individual.

The pro-agglutinoïd zone ran a rather consistent course. It was, naturally, not noticed, when agglutination took place in dilutions only so low as 1:25 or 1:50. It made its appearance, however, when agglutination took place in dilutions of 1:125 or 1:250. When this failure to agglutinate in lower dilutions, with very positive agglutination in the higher dilutions, once made its appearance, it ran a course consistently dependent on the dilutions, and not on any discover-

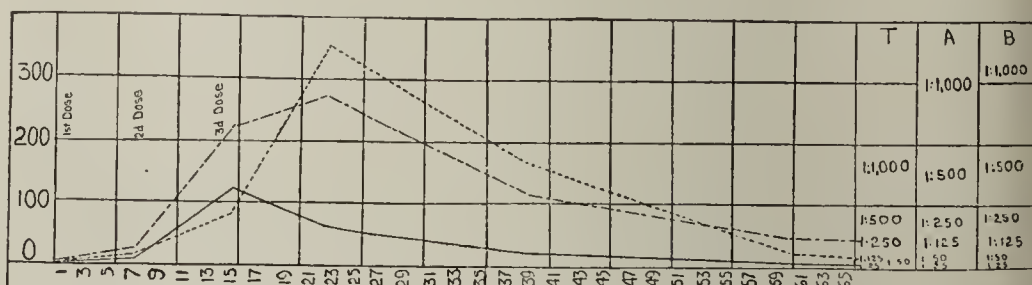


Chart 10.—Typhoid fever in 1896. Typhoid vaccine, 1915. Mixed commercial vaccine, 1916. First injection, headache, slight local reaction, highest temperature, 99.6. Second injection, headache and slight abdominal pain; highest temperature, 99. Third injection, slight headache, slight local reaction; highest temperature, 99.

able extraneous factor. A pro-agglutinoïd zone ranging from dilutions of 1:25 to as high as 1:1,000 was frequently noticed during the time the agglutinins

5. Craig, C. F.: Triple Typhoid Vaccine (Bacillus Typhosus, B. Paratyphosus A, and B. Paratyphosus B), THE JOURNAL A. M. A., Sept. 22, 1917, p. 1000.

were at their height. It is important to keep the pro-agglutinoid zone in mind, lest through an insufficiently high dilution a tube in the pro-agglutinoid zone should be read as a wholly negative result.

While Zinsser, basing his opinion on the work of Bechtold⁶ and that of Neisser and Friedman,⁷ considers the assumption of pro-agglutinoids unnecessary, their existence would serve to make clearer some of the phenomena noticed. That the pro-agglutinoids not only completely inhibit the agglutination in the lower dilutions but partially inhibit it in the higher dilutions is possible. This supposition is borne out by the fact that when the titer of a serum comes down, the pro-agglutinoid zone precedes it, and with the total disappearance of this zone, a secondary rise on the agglutinin titer appears, which is difficult to account for in any other fashion.

CONCLUSIONS

1. Definite agglutinins for all three organisms are developed after the use of Army vaccine. They are equal after alternating doses and triple vaccine, the methods are equally effective, and the time-saving element in the latter is obvious.
2. Previous vaccination has the effect of repressing agglutinins for the specific organism.
3. Fluctuations in agglutinin content occur after vaccination, in normal cases, and are of little diagnostic value in cases of fever.
4. There is no relation between the systemic and the local reaction, after vaccination, and the units of agglutinins produced.

THE PSYCHONEUROTIC FACTOR IN THE IRRITABLE HEART OF SOLDIERS *

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AND

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In 1871, Da Costa published his observations "On the Irritable Heart" as seen among soldiers invalided for this malady during the Civil War. During the present war this condition has again become prominent and names such as "disordered action of the heart" (D. A. H.), "effort syndrome," "debility" and "neuro-circulatory asthenia" are employed to describe the affection. The group includes all cases which present a well defined syndrome in which certain nervous and circulatory symptoms are associated with increased susceptibility to fatigue and in which no definite pathologic condition can be found to which to ascribe the clinical symptoms. The underlying pathogenic process is still unknown; and when we speak of the psychoneurotic factor in the "irritable heart" of soldiers, we do not imply an immediate causal relationship between the two, or that the

symptoms of the two originate in the same way, but rather that possibly both groups may result from some common but as yet unknown cause.

It is probable that at present under the term "irritable heart" are included types of cases which are fundamentally quite different. The prominence of the nervous system in many instances is so striking that one naturally considers the relationship to the psychoneuroses, just as the circulatory phenomena among certain cases of war psychoneurosis must have led neurologists to wonder where the dividing line is to be drawn; in truth, there is a borderline where the two dominions overlap. Some even believe the irritable heart represents merely the cardiac difficulties of soldiers suffering from war neuroses. Again, it was evident that a certain number of patients with irritable heart had suffered from symptoms of the condition long before enlisting, some dating the onset to the formative period or even to childhood. The question whether some cases were not congenital or even hereditary in character also occurred, particularly when dealing with soldiers who belonged to the group called constitutionally asthenic. Then there is the serious and, in the American Army, immediate problem of dealing with recruits with such histories who break down in training.

With these matters in mind we decided to analyze the detailed histories of 100 unselected cases to see whether such an analysis would throw any light on these questions or give definite confirmation to certain impressions which had been gained in the course of daily routine observations. Our study was based on the clinical material in the large Military Heart Hospital at Colchester, which admits almost exclusively soldiers invalided from the British Expeditionary Force.

For purposes of comparison the same characteristics selected by Capt. Julian M. Wolfsohn¹ in his paper on "The Predisposing Factors of War Psychoneuroses" were utilized, and also the statistics on 100 wounded soldiers used by him as controls. We have taken the liberty of reprinting two of his tables, but have incorporated our observations in cases of irritable heart in a column between those he has published for the psychoneuroses and those for control soldiers. In both tables (1 and 2) it will be seen that the percentage of the various characteristics named are in general highest in the psychoneurotic group, intermediate in the irritable heart group, and lowest in the control group of cases.

FAMILY HISTORY

It must be made perfectly clear that we were investigating the family history of cases of irritable heart for factors considered causal for psychoneuroses. The patients were invalided for irritable heart only, and the statistics obtained from these are placed in the middle column in both Tables 1 and 2.

A positive family history of one or several of the characteristics selected was obtained in 56 per cent of cases of irritable heart and in 38 per cent. of the controls; but the contrast between the two classes becomes far more striking when certain of the individual items are compared. Thus with reference to nervousness in the family history, there are 45 per cent. among the irritable heart group and only 15 per

6. Bechtold: Ztschr. f. phys. Chem., 1904, p. 48.

7. Neisser and Friedman: München. med. Wchnschr., 1914, 51, 465.

* From the Military Heart Hospital, Colchester, England.

* This paper is abbreviated for publication in THE JOURNAL by the omission of Table 6, which is a long table of "Character of Service and Cause of Invaliding," arranged in groups, of each individual, with his age, civil occupation, period of total military service and of foreign service. Reprints of the complete paper may be obtained by writing to either of the authors.

1. Wolfsohn, J. M.: The Predisposing Factors of War Psychoneuroses, THE JOURNAL A. M. A., Feb. 2, 1918, p. 303; Lancet, London, 1918, 1, 177.

cent. among the controls; in regard to insanity and epilepsy there are 23 and 15 per cent. respectively, in the families of cases of irritable heart and none among the controls.

PERSONAL HISTORY

In Table 2, the contrast between cases of irritable heart and the controls is still greater. The total number or percentage of cases with a positive personal

TABLE 1.—PERCENTAGE OF CHARACTERISTICS NAMED IN FAMILY HISTORY OF PATIENTS SUFFERING FROM (1) NEUROSIS, (2) "IRRITABLE HEART" OF SOLDIERS, AND (3) CONTROLS

	Neurosis Per Cent.	Irritable Heart Per Cent.	Controls (Wounded) Per Cent.
Nervousness	64	45	15
Alcoholism (parents and grandparents) ..	50	15	24
Teetotalers (parents and grandparents) ..	30	15*	16
Irritability of temper	36	27	12
Insanity	34	23	0
Epilepsy	30	15	0
Tuberculosis (immediate family)	12	13	4
Tuberculosis (relatives)	6	15	4
Stigmata	10	17	0
Positive history for one or several of foregoing	74	56	38

* Figure incomplete.

history is fifty-one among cases of irritable heart, twelve among the controls, and of those with positive family *and* personal history there are 46 per cent. among the former group and only 6 per cent. among the latter. As to the individual items, the predominance of certain characteristics among cases of irritable heart as contrasted with the controls should be especially noted, namely, presence of stigmata, prevalence of previous nervousness, a history of epilepsy or fits, of previous breakdowns, of moodiness, and of enuresis. It is well known that sufferers from irritable heart are apt to be teetotalers and are sexually not very active; the latter fact may account for the low percentage (18) of married men in this group as com-

TABLE 2.—PERCENTAGES OF CHARACTERISTICS NAMED IN THE PERSONAL HISTORY IN CASES OF (1) NEUROSIS, OF (2) "IRRITABLE HEART" OF SOLDIERS AND OF (3) CONTROLS (I. E., WOUNDED)

	Neurosis Per Cent.	Irritable Heart Per Cent.	Controls (Wounded) Per Cent.
Stigmata	34	12	4
Previous nervousness	66	46	12
Fears	50	31	8
Head injury	38	5	12
Epilepsy and "fits"	8*	5	0
Tobacco (excessive)	8	1	4
Alcohol (excessive)	6	0	16
Alcohol (teetotaler)	48	36	20
Married	42	18	28
Moody	55	27	8
Previous breakdown	2	21	0
Enuresis	12	14	4
Frights in childhood	4	19	0
Excessive religion	6	6	0
Positive personal history	76	51	12
Positive family and personal history.....	70	46	6

* As stated in the text, the data in the neuroses and the controls are reprinted from Captain Wolfsohn's paper; in his figures, however, only epilepsy was considered, whereas we have also included "fits" which may, or may not, have been true epilepsy.

pared with 28 per cent among the controls and 42 per cent. among the psychoneurotics.

Of the 100 cases analyzed, sixty-one gave a positive family *or* personal history for psychoneurotic factors. Of these, forty-six gave a positive family *and* personal history, a group which we will call Group 1 to distinguish it from Group 2, which consists of thirty-nine cases with a negative family and personal history (Table 3). A comparison of other facts in

these two large groups, 1 and 2, of cases of irritable heart is shown in Tables 4 and 5. As regards previous occupations in civil life, it is noteworthy that patients in Group 1 followed largely sedentary and light occupations, whereas of those in Group 2 some did light but more did heavy work. In Table 5 it is shown that the average duration of foreign service is six months less among Group 1 than in Group 2; but the real difference between the two types is seen in a comparison of the *character* of the military service rendered; only four out of forty-six in Group 1 did

TABLE 3.—PERCENTAGES OF CASES OF IRRITABLE HEART OF SOLDIERS SHOWING POSITIVE FACTORS IN THE FAMILY OR PERSONAL HISTORY, PREDISPOSING TO PSYCHONEUROSIS

	Neurologic Family	History Personal	Percentage
Group 1	+	+	46
Group 2	—	—	39
Group 1A	+	—	10
Group 1B	—	+	5

full duty, as contrasted with thirty-three out of thirty-nine in Group 2.

CHARACTER OF SERVICE

The character of service of each of the 100 men is also given in abstract in Table 6, and it is very evident that the patients in Group 1 from a military point of view gave such a poor account of themselves as a whole as to make one doubt whether it was worth the time and expense devoted to them. On the other hand, those in Group 2 certainly did at least the mil-

TABLE 4.—OCCUPATION

	Sedentary	Light	Heavy
Personal and family history positive (Group 1) ..	10	27	9
Personal and family history negative (Group 2) ..	2	17	20

itary duty of an average soldier, and many of them gave most valuable and prolonged service. In such patients, invalided for irritable heart, as have neuropsychic factors in their family and personal anamnesis, the value of the military service rendered has been found to be negligible (Table 6).

THE CAUSES OF INVALIDING

The cause of invaliding is given for each of the 100 cases in Table 6, and it is worthy of note that among the cases in Group 1 there is frequently, in

TABLE 5.—AVERAGE AGE AND DURATION AND CHARACTER OF SERVICE

	Group 1 (46 cases)	Group 2 (39 cases)
Average age	27 years	25 years
Duration of foreign service.....	13 months	19 months
Number of patients that did full duty.....	4	33
Number of patients that had no foreign service	9	2

fact, in twenty out of forty-six cases, nothing definite; on the other hand, in Group 2 there is more frequently a definite precipitating cause, such as an infection like trench fever or dysentery, prolonged service, gassing or shell explosion.

CONSTITUTIONAL PHYSICAL ASTHENIA

The sharp contrast between the two groups goes further than differences in their family and personal histories as regards neuropsychic factors, occupations in civil life, or duration and character of foreign service. A history of constitutional asthenia was obtained in almost 70 per cent. of Group 1 cases and in only 12.8 per cent. of Group 2.

By the rather vague term "constitutional asthenia,"² is meant a relative inferiority or an anomaly in the assemblage of inherent characteristics, both functional and morphologic, which go to make up the organism. Among the constitutionally asthenic we include those who have always been short of breath, have been unable to play the most strenuous games or keep up physically with the average of their fellows, have fainted or become dizzy easily, have blushed readily, perspired too profusely, and have suffered from cold extremities. There appear to be two types of such individuals, first, those who are weak and poorly built, or may have a "habitus," and second, those who to all appearances are muscular, strong and robust, and yet for some unknown cause have had symptoms such as dyspnea on exertion from youth up.

One may also include under this term patients who have a habitus, such as the narrow chested or splanchnoptotic, those who have given evidence of a diathesis such as the hemorrhagic, the exudative, the lymphatic or the spasmophilic, and those having a dyscrasia, or belonging to certain types such as the vagotonic, angiospastic, erethic, feminine, eunuchoid, etc.; or those showing definite evidence of disturbance of the endocrine organs. Attention has been directed for many years to this whole question of constitution by F. Kraus, and it is impossible to enter into the subject here; but it must be emphasized that apart from neuropsychic factors, there is a constitutional tendency in certain individuals which predisposes them to the development of the irritable heart syndrome. Moreover, such a history of constitutional asthenia was present in 70 per cent. of Group 1 cases and in only 12.8 per cent. of Group 2. And it is this condition which is meant when the cause of invaliding in Table 6 is indicated as "nothing definite."

JUVENILE OR DEVELOPMENTAL VASONEUROTICS

From a study of the personal histories, it is believed that many patients with irritable heart of soldiers are the mature individuals who during their developmental period presented vasoneurotic symptoms. Of the forty-six patients in Group 1, thirty-two or 70 per cent. showed symptoms of constitutional physical asthenia before the age of 17. Of these, thirteen had symptoms as long as they could remember. Of the remaining nineteen, the age at which symptoms of constitutional weakness first manifested themselves ranged from 8 to 16, and averaged 11.8 years for those who could recall approximately their age when the symptom or symptoms appeared. (Two other patients date the appearance of their symptoms to their twenty-second and twenty-third year, respectively; but as the symptoms appeared so late, it is not certain they belong to the same group.)

Apparently hitherto no attention has been paid to a very important fact, that a syndrome identical with that of irritable heart occurs not infrequently in children,³ especially associated with orthostatic albuminuria.⁴ These symptoms usually arise in children at the school age, from 8 to 14, and are "chiefly those

referable to the cardiovascular system, namely, dyspnea on exertion, palpitation, precordial pain, headache, fainting, hypersusceptibility to cold." To quote Bass and Wessler again:

In spite of the absence of any demonstrable increase in the size of the heart, all of these children nevertheless had definite symptoms. . . . Twelve of the fifteen had definite signs of abnormal function, five had booming first sound, three had apical systolic murmurs; four had marked accentuation of the second pulmonic sound; four showed apical signs of marked overaction, and four showed increased heart dulness to the left.

In the illustrative case history that follows this description, they note "hands cold and cyanotic, marked dermatographia, Chvostek's sign positive." Moreover, orthodiagraphic study of these cases showed that although the hearts do not dilate after exercise, a considerable number of them fail to become smaller under these conditions. In all these particulars, then, these cases formerly called "dilative weakness,"⁵ resemble the irritable heart.⁵ In fact, the juvenile cases are identical in symptomatology with the syndrome as seen in soldiers. It seems highly probable to us, therefore, that the adult patients with irritable heart who give a previous history of similar symptoms at the prepuberty age, or as far back as they can recall, have been children who are recognized as suffering from "vasoneurosis," "dilative weakness," etc. Indeed, we have been able to follow in civil practice one boy with a positive family history, whose symptoms began with cyclic vomiting in infancy and childhood, who had dyspnea, palpitation and occasionally pain on walking up-hill in his teens, and at 18 years of age presented the characteristic clinical picture of neurocirculatory asthenia with overacting heart, very diffuse apex beat, loud systolic murmur, etc.

DIFFERENCE IN SYMPTOMATOLOGY OF THE TWO GROUPS

In comparing the symptoms in the two groups of cases, that is, those with and those without psychoneurotic factors in their family and personal histories, it is noteworthy that in general, soldiers in Group 1 complain almost invariably of chest pain among other symptoms; (indeed, the men are apt to "stick it" until pain develops; then they become alarmed and report sick). Patients of Group 2 rarely complain of chest pain, but suffer more from exhaustion and weakness; they are "done up," to use their own expression. One case may be cited belonging to Group 2 which illustrates that an acute infection may be the cause of the irritable heart, that these symptoms may then disappear and leave simply exhaustion. The patient referred to broke down after prolonged service and trench fever with breathlessness which disappeared after a fortnight, leaving him with weakness, exhaustion and nervousness, but no dyspnea or pain. The post-infectious cases of "irritable heart" are more apt to prevent exhaustion symptoms and only exceptionally pectoral pain.

There is perhaps a certain parallelism between these two groups of "irritable heart," and cases of war neuroses. If we understood Captain Rivers correctly, certain cases of shell shock result in repression neurosis, the *anxiety* neurosis, while those resulting

2. In the British Army "constitutional" means merely "pre-enlistment"; a condition is termed constitutional if it existed before enlistment.

3. Martius: Kong. f. Inn. Med., 1899, 3, 41.

4. Bass, M. H., and Wessler, H.: Heart Size and Heart Function in Children Showing Orthostatic Albuminuria: An Orthodiagraphic Study, Arch. Int. Med., April, 1913, pp. 403-417. This paper gives the references to the literature on the subject.

5. We examined thirty unselected cases of "irritable heart" and found one with orthostatic albuminuria. Orthostatic albuminuria usually disappears at puberty, but may remain in adult life. We have observed Chvostek's sign repeatedly among soldiers suffering from irritable heart.

from exhaustion or infection manifest themselves as *exhaustion* neurosis (neurasthenia). Similarly in a general way, among patients with irritable heart there are those belonging to the constitutional group, who suffer from chest pain, etc., and those who belong to the exhaustion or the postinfectious group who have fatigue symptoms, but rarely much pain.

SUMMARY

As stated at the outset, we do not know the fundamental pathology of the syndrome known as the "irritable heart" of soldiers. It is almost certainly not a clinical entity. In general, there are two large groups of cases whether investigated from the standpoint of neuropsychic factors in the family and previous history, or from that of preenlistment and constitutional symptoms. In half the cases one observes, there is a positive family and previous history of factors considered predisposing to psychoneuroses, and in almost 70 per cent. of these there is a history of constitutional asthenia. It is this particular group (1) that inclines one to the view that an irritable weakness of the whole nervous system, including the innervation of the entire circulatory system, may account for the varying neuropsychosomatic symptoms.

There are all the remaining cases to be considered, however. It may well be that the resistance of individuals in Group 2 was perfectly normal, but that they were subjected to a strain or infection, sufficiently prolonged or intense to exhaust their reserve. The normal individuals, when they do break down, seem to present symptoms of exhaustion; the relatively inferior individuals show both excitation and exhaustion.

The burden to the Army of cases of irritable heart may be lightened by the early recognition of cases belonging to Group 1. As yet we do not know how many individuals having similar family and previous histories for neuropsychic factors (with or without preenlistment symptoms) give valuable military service and are not invalidated. Until such statistics are available, it is practicable to recommend that only special boards be guided in the disposition of recruits by such anamnestic data.

In a type case of Group 1, the patient has a positive family and personal history for neuropsychic factors: in civil life followed a sedentary or light employment, tolerated about one year of foreign service, but that usually at light duty. He is apt to break down finally, not from a definite precipitating cause, but because he is fundamentally relatively inferior. He almost invariably complains of chest pain among his other symptoms.

In a type case of Group 2, the patient has a negative family and personal history, in civil life followed some occupation involving hard labor, stood about one and one-half years of foreign service, and that usually at full duty. He is more apt to give a history of a definite precipitating cause, such as prolonged service or acute infection, which invalidated him. He complains more of exhaustion and weakness, and only rarely of chest pain.

Individuals of Group 1 who were invalidated gave a history indicating that the value of their military service was almost negligible, while before breaking down many of those in Group 2 gave unquestionably valuable service.

509 West One Hundred and Twenty-Second Street—930 Park Avenue.

PROPHYLACTIC TREATMENT IN THE
PREVENTION OF VENEREAL
DISEASE

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CAMP DIX, WRIGHTSTOWN, N. J.

During the past couple of decades, the trend of medicine has been steadily and progressively toward preventive rather than curative medicine. In no domain of medical science has this principle been more strongly exemplified than in the sanitary measures that are being utilized to protect the health of the soldier in the United States Army. For a long time the great bane of all armies has been the venereal problem, and the same applies to navies. The United States government, realizing the great necessity of curbing this evil, has adopted certain regulations which have been of the greatest service. These regulations are four in number:

1. General orders concerning venereal diseases, requiring men who expose themselves to the danger of contracting venereal diseases to report at once for prophylactic treatment on return to the camp; with trial by court martial for neglect of duty, for any soldier who fails to comply with such instructions, and loss of pay while absent on account of sickness.

2. Thorough physical inspection of all the enlisted men of each organization, twice in each month, by a medical officer accompanied by the company or detachment commander.

3. Abolition of alcohol from the Army.

4. Establishment of "vice zones" around military camps, forts and cantonments.

APPLICATION OF THE REGULATIONS

The object of this article is to show what can be obtained by the judicious application of the foregoing regulations in the individual regiment or smaller organization, which is the working unit in the Army. I know of no better way to illustrate the efficiency of these procedures than to cite my experiences as regimental surgeon in the Three Hundred and Fiftieth Field Artillery, Ninety-Second Division, National Army, located at Camp Dix, N. J.

The Ninety-Second Division is composed entirely of colored troops, and our regiment is made up of drafted men from the state of New Jersey. From the formation of this regiment, Nov. 8, 1917, to April 19, 1918, only nineteen cases of venereal disease have developed which did not exist prior to draft. Of these, twelve men did not apply for or receive prophylactic treatment. These men were all tried by Summary Court under General Order 45, and appropriately punished under military regulations. During this time 1,561 prophylactic treatments were given, and only seven men thus treated contracted venereal disease. Of the seven who contracted venereal disease notwithstanding prophylactic treatment, all were cases of over twenty-four hours' duration. Five were gonorrhea, one chancroid, and one syphilis. This shows the efficiency of prophylactic treatment; it also demonstrates the value of early treatment whenever possible, as four out of the seven cases developed during the Christmas and New Year's vacations, when the men had four and one-half days' leave, and all four of these admitted relations on the first day of leave,

making an interval of four days before receiving prophylactic treatment. This leaves only three cases that developed after prophylactic treatment when the interval was between twenty-four and forty-eight hours, and not a single case in which prophylactic treatment had been administered within twenty-four hours after exposure. Remembering that 1,561 prophylactic treatments had been given during this time, we can only wonder how many cases would have resulted without this treatment. The number of prophylactic treatments, it may be explained, would have been far greater had not the camp been under quarantine over five weeks of this period, and during this time no leave was granted. This represents an average of over 100 treatments each week-end, since receiving the great bulk of our troops. We have had as high as 150 treatments between Sunday night at 10 p. m. and reveille the following morning.

THE TYPE OF SOLDIER

These men were all raw recruits drafted into the National Army, and the majority had held such positions as butlers, chauffeurs, farm helpers, cooks, waiters, bell-boys, and a large number as laborers in mills, shops and factories.

About 20 per cent. had only a limited knowledge of reading and writing; a few, about 3 per cent., were completely illiterate. About 5 per cent. had completed a grammar school or higher education, leaving about 72 per cent. who had an equivalent of from two to six grades in a grammar school course. It was surprising to note how rapidly these men accepted and carried out disciplinary measures. They are in every way equal to their white brethren. The venereal report given above and the weekly health report will certainly confirm this fact.

Quoting from the weekly telegraphic report for the past four weeks, we note that:

Three weeks ago, the percentage of sick was 0.8.
Two weeks ago, the percentage of sick was 0.9.
One week ago, the percentage of sick was 0.6.
April 19, 1918, the percentage of sick was 0.53.

Quoting from the report of the division sanitary inspector to the division surgeon, under date of April 17, 1918, we note that:

Three Hundred and Fiftieth Field Artillery, the noneffective rate per thousand was 15.7.

Camp Dix, N. J., the noneffective rate per thousand was 43.0.

Thus it will be seen that our sick rate is one-third the average camp rate; and in addition this is the lowest rate of any regiment in the camp.

This also shows that the colored soldier obeys orders, as no such results could be obtained if sanitary regulations were not obeyed. The comparison with other groups is just, since the various organizations live and train under the same conditions.

Sixteen per cent. of the enlisted men had venereal disease on admission, divided thus: 83 per cent., gonorrhea; 7 per cent., chancroid; 10 per cent., syphilis.

METHOD OF OBTAINING RESULTS

The official reports have quite regularly employed the designation, *Very Satisfactory*. Now, how have these results been obtained?

1. By harmonious cooperation and concerted action between the line and the medical officers on all important subjects pertaining to sanitation and the general

health of the men. This can be accomplished only when proper *esprit* exists between officers working together for a common cause.

2. By frequent lectures to the men, in which the medical or line officer explains in plain, understandable English the reason for every order or request bearing on this subject, at the time it is made; and at the same time convincing the men that that particular order or request is solely for their own benefit or protection, the disobeying of which would mean physical suffering as well as military punishment.

3. By encouraging the men in all forms of athletics, music and entertainments of various kinds, and in the reading of useful books on military or other interesting subjects.

4. By securing the implicit confidence of the men in their officers as their leaders to such a degree that when an order is given, it is instantly and willingly obeyed at all times and under all conditions.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ANTIPNEUMOCOCCUS SERUM.—See THE JOURNAL, June 1, 1918, p. 1599.

Cutter Laboratory, Berkeley, Calif.

Anti-Pneumococcic Serum, Type I.—Marketed in vials containing 50 Cc.

H. K. Mulford Co., Philadelphia.

Antipneumococcic Serum, Type I.—Marketed in double ended vials containing 50 Cc.

Antipneumococcic Serum, Polyvalent.—Prepared by immunizing horses with dead and living pneumococci of the three fixed types (Types I, II, III).

Marketed in double ended vials containing 50 Cc. each, with sterile needle and tubing for intravenous injection.

Dried Milk in Infant Feeding.—In Great Britain the local government board has issued a report on dried milk in infant feeding as the result of an inquiry carried out by Dr. F. J. H. Coutts, medical inspector of the board, and by Dr. George Winfield, who was commissioned to investigate the nutritive value of dried milk in infant feeding and its bearing on certain disturbances of nutrition. Two methods of preparing dried milk are the process of passing the milk over heated cylinders and scraping off the film thus formed, and the process of spraying a previously concentrated milk into a hot air chamber where the dried milk falls in the form of a cream colored powder. If kept dry, this powder will remain fresh for weeks or months, and when mixed with water in the proportion of 1 dram to 1 ounce, it corresponds in composition to ordinary milk. Its disadvantages are that it has a somewhat boiled taste, the fat rises quickly to the surface and there is generally some undissolved residue. It has proved, however, to be a good substitute for cow's milk, being much better than the proprietary foods, which contain much starch. The dried milk is said to contain far fewer germs than ordinary town milk and is less likely to transmit infectious diseases. Germs do not multiply in dried milk. It should be prepared only as needed for feeding, since it does not keep well.

RECONSTRUCTION AND REHABILITATION OF DISABLED SOLDIERS

REPORT OF THE FIRST MEETING OF THE SECTION ON MISCELLANEOUS TOPICS HELD IN THE AUDITORIUM THEATER, THURSDAY, JUNE 13*

The meeting was called to order by the chairman, Col. Frank Billings, Chicago, at about 9 o'clock.

The chairman said: You are here this morning because you are interested in our soldiers, the flower of American manhood, who have gone overseas to bear their breasts for you and me against the monsters on the other side; and you feel, as the whole country feels, that we must do something for those boys who are giving their all to the country should they become disabled in this war and do something for the—we call it the physical reconstruction of the men who are disabled; but that is not a very sympathetic word. What we mean is, that we want to make them well again, we want to cure them if we can, and we want to restore them to civil life that they may take their places in economic life again as capable of earning a living wage or salary as they were before, and to also enjoy life as we want them to enjoy it, because they certainly have earned it.

We have a man at the head of the Medical Department of the Army whom you all know. You know him because of his eminence in medicine, and particularly in sanitation. It is not necessary for me to repeat to you what he has done, because the world knows it. But you of the world at large do not know him as some of the rest of us do, because big as he is mentally, much as he has done for the world in sanitation, his heart is just as big as his scientific attainments; and he has conceived this idea of the restoration of our boys. When I tell you of the policy that he has announced, how he struggled to have that approved by the Secretary of War, and finally succeeded, you will understand that that policy is that no soldiers disabled in the line of duty shall be discharged from the Army until cured, or as nearly cured as their disabilities permit. We are fortunate in having the Surgeon-General with us to tell you at the beginning his opinion of physical reconstruction—General Gorgas.

Opening Address by Surgeon-General William C. Gorgas.

SURGEON-GENERAL GORGAS said: The question of reconstruction of the phase that you hear outlined here today is entirely new to our Army; it is a new phase of military life particularly in this war. Originally in all armies the whole question was that of defeating the enemy; everything that tended in that direction was fostered, and those things that had no direct bearing on that were left uncared for. Three hundred years ago, for instance, the wounded man was of no particular use with regard to the defeat of the enemy. He was a drag on the Army, and no attention was given to him. Gradually there has been evolved more humanitarian motives, and the Army authorities have been able to care for the wounded not with the idea so much of increasing their military efficiency but with the humanitarian idea of looking after the wounded man.

I have no doubt that if it were necessary for the defeat of the enemy our soldiers and people would still be willing to do what our ancestors of two or three hundred years ago had to do, that is, to sacrifice the wounded. That has been the case both in the European armies and in the more savage armies, like the Zulu army, which were as efficient military machines as any we have ever known.

The great function of the Medical Department so far as the wounded is concerned is in getting them back to the Army. This department will have in the reconstruction nothing to do with the men that are to be discharged. By examining the statistics of the Canadian army we get a pretty good idea of what we are going to have to do. They have sent over some 350,000 men; they have been at war now about four years. Of the men sent across they brought back about 10 per cent. for this reconstruction work. We calculate that our proportion will be about the same.

This reconstruction work is a greater departure from the military objective of the Army than has occurred in the past with regard to medical activities. We are not taking care of these men for the actual efficiency of the Army in the field; we are doing it from a humanitarian principle of making the men more useful, more happy, and achieving a

better result both for the men themselves and for the community in making them useful and happy members of that community when they have returned to civil life. Heretofore most of the activities of the Medical Department of the Army have tended toward the direct efficiency of the Army.

Chairman's Address—The National Program for the Reconstruction and Rehabilitation of Disabled Soldiers

I shall attempt to tell you as briefly as possible of the national program for the physical reconstruction of our disabled soldiers. The national program would not be complete if it did not consider the soldier from the time he receives his disability in the field or through illness in hospital, until he is placed back in civil life. Recently Congress has enacted a law which places the disabled soldier after his discharge from the Army within the authority and jurisdiction of the federal Board for Vocational Education. The federal Board for Vocational Education has representatives on it of three cabinets. It is composed of men qualified to carry on their part of the work. Congress has given them power and jurisdiction over the man and money to do their work. They are enabled to cooperate with those federal departments which may best help them. They have the power to go out in the country and to secure the employment of men and women who are best qualified, unrestricted as to salary, in their work; therefore, that part of the work of the care and reeducation of the man after he shall have left the hands of the Surgeon-General until he is placed back in his employment in civil life is complete. I have no doubt that the qualification of that board will make that part of the work efficient. That is the smaller problem of the whole program. To the Surgeon-General is left the harder task, because he has jurisdiction over the man when injured or ill and has the care of him while he remains in the Army until he shall have been cured. He has the jurisdiction over him, the responsibility overseas and in our cantonments or training camps everywhere, in our hospitals generally after he reaches them until he is discharged; and his program, while understood, has not yet been granted all of the machinery to carry it out; but we do not doubt that with the morale back of us in this country represented by you and by the forces that he can command of the best in medicine and surgery in this country, he will be able to do his part quite as efficiently as the federal Board for Vocational Education.

Let me tell you a word of what the physical reconstruction under the Surgeon-General must mean. First of all, it means organization overseas and in our camps, that the men who have been disabled through illness or injury shall receive early and prompt attention looking toward their physical reconstruction; that the man who has lost a member, or his eyesight, or his hearing, or who is tuberculous, or whose heart has given out, should not be allowed to remain neglected and unattended to until he feels discouraged because of his disabilities. He must be dealt with promptly. He must be brought back to this country if abroad and he must receive early attention in order that his disability may be efficiently treated.

That part of the program has been taken up and is already organized, although not as completely as it will be. The man is treated in the general military hospitals; the soldier is under military care. The Surgeon-General has no power to treat him excepting in military hospitals. He is cared for by military forces, and not by civilians. The Surgeon-General may bring into the service civilians, and he will welcome civilian help; but those who deal directly with disabled soldiers are officers in the military service. The hospitals are general hospitals. The general hospital in the Army is much like our general hospital in civil life. It is a compound special hospital where all departments of medicine and surgery are recognized. So far the hospitals in this country utilized have been existing general hospitals. You hear of "reconstruction hospitals." Military hospitals general in character may carry on reconstruction.

The general hospitals so far used are not new; most of them have been in existence a long time. A few hotels were

* Report of special meetings held as a part of the scientific assembly at the Sixty-Ninth Annual Session of the American Medical Association.

taken over at the beginning of the war, because of the need of buildings, and are rented institutions. There is one at Lakewood and one at Cape May. There is one new hospital at Colonia, near Trenton, N. J., which will function chiefly as a reconstruction hospital. As the work goes on and the number of soldiers to be reconstructed increases, other hospitals will be built which will probably function as reconstruction hospitals. These hospitals will be so located as to bring the soldier nearest to his home. The question is asked frequently, Will these be state institutions? That cannot be answered. If we could have ideal conditions, each state would have a general hospital that would function in the physical reconstruction of soldiers; but it is too early to speak of that. Possibly the states could cooperate with the government to secure hospitals that could be used for physical reconstruction during the war, and if the states would cooperate in helping the government to finance them, these could be made permanent structures. But in all probability general hospitals that will be used for physical reconstruction will be constructed hereafter and will be located in the military districts of the country, of which there are sixteen.

Hospitals for physical reconstruction will differ in some degree from the hospitals that are used in civil life or for general purposes, in that not only will they provide the necessary personnel, medical and surgical, with the necessary operating rooms, laboratories and all that goes to the makeup of the modern hospital, but also they will have physiotherapeutic departments. By physiotherapeutic I mean measures physical in character used in the treatment of the sick, such as hydrotherapy, electrotherapy, active exercise in the form of drills, Swedish movements, outdoor games and massage or passive exercise. These will be employed and standardized to apply to disabled soldiers, no matter under what department of medicine or surgery they may fall. In addition to these physical agencies in modern medicine, we recognize another curative measure in the form of work—curative employment, if you please. This has been utilized in the civil hospitals to a degree dependent on the character of the community in which the hospital was situated, and has usually been called ward work. It has consisted frequently of work not so purposeful in its character, but rather as diversional in character, in the form of knitting, in the form of basket weaving, etc. But work which the Surgeon-General utilizes as curative in character in the general hospital for these soldiers is more purposeful than knitting, basket weaving and the like. In other words, it is of the kind and character of curative work that will look toward the training of the soldier for employment after his discharge from the Army. Or, in other words, it will be prevocational or even vocational in character. The discharged soldier will fall within the jurisdiction of the federal Advisory Board for Vocational Education, whose work is well cut out and is not entirely separate from that of the War Department; for this board, under the law, may act in an advisory capacity with the Surgeons-General of the Army and of the Navy in this work. In the same way the War Department and the Navy Department may act in an advisory capacity with the federal board after the soldier's discharge. In the event that he becomes ill after his discharge he may probably be brought back into the Army for further treatment. In choosing the curative work for the soldier, the advisory board can be of great use to the War Department in selecting the character of prevocational curative work which will be assigned to the soldier in the ward and in the workshop. To do this work under the Surgeon-General there is no difficulty in securing the personnel, medical and surgical, that he has at his command. He has choice of the best qualified medical men and women of the country to do the work, not only in camp and field, but also in the physical reconstruction of these soldiers. We know that they will do their work well. There is a misconception on the part of some physicians about what their duty will be with respect to physical reconstruction. I have had many interviews and have received many applications from them saying, "I want to come in and do physical reconstruction because I am interested in it, and have worked at it some in civil life." The medical man and the surgeon will function exactly in the physical reconstruction of the soldier as he does in the treatment of the man that does not need physical reconstruction. In some respects he will have to acquire some new lines of thought looking toward the restoration of function, but in which he has the cooperative influence of others, namely, the physiotherapists and the educational officers. Dr. Tate MacKenzie, a Canadian, has been invited by the Surgeon-General to take charge of the

department of physiotherapy to standardize the work and to secure the proper personnel in physiotherapy that will enable us to do that work well.

The Surgeon-General has secured as the head of the Educational Department for Physical Reconstruction Mr. James E. Russell, dean of the Teachers College of Columbia University, New York, a man well known as an educator. He will organize a personnel of general and technical educators to work in the hospitals to advise with the doctors, the representatives of the federal Board for Vocational Education, and with the man himself as to the character of his prevocational or curative work.

We have already done a lot of work in spite of the fact that the government has not until now supported this program by the necessary legislation. The Surgeon-General has started the work in eleven hospitals, and in seven of them has the complete organization that I have named. The men from overseas, the men from our camps, are under treatment for physical reconstruction. Some of them have already been discharged, placed back in civil life and employed in new and gainful occupations for which they were trained while patients in the Army hospitals.

[Lantern slides illustrative of the work were presented and described by Colonel Billings.]

Reconstruction and Rehabilitation Problems as Solved in Foreign Countries

LIEUT.-COL. CASEY A. WOOD, M. C., N. A., said:

During the first year of the great conflict practically all the warring nations began to do something for their disabled men in the way of rehabilitation. At first, these efforts were confined to combatants who had lost an arm or a leg, to those whose disablement was most evident; but gradually the tuberculous, the blind, the rheumatic, the nervous cases, and others who were unable for various reasons to return to the fighting line also were included. At present we find successful schemes, especially in Belgium, France, Great Britain, and Italy, as well as in the Teutonic countries, for the care of all these types of military incapacity through disablement. It is, however, to Canada that we must look for those experiences that are most likely to help us when we are confronted with problems of detail respecting the physical and vocational restoration of the disabled soldier and sailor. For example, the Canadian authorities were the first of all the belligerents to consider the responsibility to the disabled soldier a national one. They were the first to announce that it is the duty of the state to reeducate at the expense of the state those who had been crippled in their country's service.

From the standpoint of the experiences of all the belligerent countries, as Colonel Billings has pointed out, it was early recognized, although for a long time little was done to relieve the situation, that almost from the hour of a serious injury, especially one involving the probable loss of a member or an organ essential to the soldier's happiness and civil vocation, the crippled one began to regard himself as a hopeless invalid. Continued brooding over this belief at length induced a state of mind fatal to rehabilitation. It was no uncommon thing for the soldier to pass through even half a dozen hospitals before he reached what may be termed a reconstruction center—made it almost impossible of eradication. Such a mental attitude, born of the feeling that everybody avoids and will avoid a cripple, was eventually combated in most foreign countries—we have not yet thought of doing it in our own—by what is known as a "cheer-up" program. Not only were the medical officials and nurses attached to base and other hospitals instructed to encourage the disabled soldier on all proper occasions by telling him the good news of the rehabilitation program, but judicious, sane members of officially appointed "care committees," and other social service activities were appointed to visit the bedridden patient, as soon as that could properly be done, and kindly but firmly—a good deal of emphasis in some countries is placed on the "firmly"—preach the gospel of civil reestablishment. Now in most hospitals abroad the good work done by "cheer-up" officials is supplemented by motion pictures, by books on the subject of reconstruction, and even by short talks in hospitals telling what the disabled man may accomplish by the exercise of a little patience and perseverance. As soon as the disabled can profit by them, appeals are made to his patriotism, to his self-interest, to his domestic relations as a means of preparation for his subsequent return to the duties and pleasures of citizenship. From this time on preaching the doctrine "there are no more cripples" has been found by

all foreign countries engaged in this work of salvation to be helpful—indeed, essential—to the successful establishment of the disabled in their former civil life surroundings.

It is the consensus of reconstruction opinion abroad, also, that the ideal rehabilitation program demands the continuous, and as far as possible, uninterrupted care and education of the disabled soldier. From the first days of his disablement until his placement once more in private life as a contented, wage-earning citizen, education and reeducation should go on. The task is much easier for doctors, for nurses, for vocational trainers, for placement agencies and the so-called advisory and follow-up services—not to mention the effect on the man himself—when he is surrounded by what may be termed a reconstruction atmosphere. Hence it follows that furloughs and leaves of absence should be as short as possible, and interruptions in his studies as limited as may be. Moreover, the training of these returned heroes is an intensive one. Most of the courses must possibly be limited to six months.

If the attempt on our part to salvage disabled soldiers and sailors is to be successful, it is necessary that at least three classes in the community should be carefully taught the principles of physical and vocational reconstruction. I do not say the details, I say the principles. The first class comprises medical officers, nurses, vocational teachers, and other officials whose duty brings them into close contact with the sufferer. The second class is composed of the soldiers themselves, and the third class is made up of the great mass of the public. Of the third class it may be said that every foreign nation has discovered that the labor of both physical and vocational reconstruction of the invalided soldier is greatly lessened when the soldier's own people—his parents, his wife, his sister, his brother and associates generally—possess a full knowledge of the purposes and processes of rehabilitation. When this is accomplished the returned soldier soon discovers that, although he is a hero, he is expected, for his own sake, for the sake of his country, for the sake of his family, to reestablish himself as a normal, independent, self-respecting citizen, capable of earning a living and asking favors from no man.

In England, in France, in Canada and in the United States, magazines are published on this subject, and all the usual forms of public instruction are invoked to carry forth this message of hope and salvation to every family in the land. When the time comes, as unhappily it must, that some loved one requires the offices of physical, mental or vocational reconstruction, it will surely be a consolation to all concerned to know just how and when this great work will be done. As one having, under the Surgeon-General, this particular duty of publicity, it is not improper for me to say that there will be distributed to this audience, after each meeting, copies of our new magazine, *Carry On*, together with literature for further distribution that presents briefly the main features of reconstruction.

The Surgeon-General's Plans for the Receiving, Transporting and Distributing of the Disabled From Overseas

BRIG.-GEN. ROBERT E. NOBLE, M. C., N. A., Staff of the Surgeon-General, said:

The question of returning soldiers from overseas to the hospitals in the United States is largely a question of transportation. Being a medical man, I of course have no hesitancy in attacking that problem. The transportation means not only the return but the proper distribution and segregation of these patients after they arrive in the United States. We have devised plans by which the men will be classified according to wounds, sickness or disability, in France. They will be returned to the United States by hospital ships or other transportation provided, and on that ship all papers in connection with those men will be absolutely complete. We shall have traveling medical officers go from this country to Europe and return in order that these papers will be in such shape that when the men arrive in the United States we can handle them very much as they would a boatload of emigrants returning. The men will be tagged according to their injuries, so that we can separate them at once on arrival here, and can then send them by train to the hospital that has been selected for them. The commanding officer at the port of importation will be furnished with a list of the hospitals and the number of beds at each and the character of cases to be sent to each particular hospital. We shall have at these places an officer who is especially trained in matters of transportation, who will arrange a schedule for the trains and special coaches for the various passenger

trains. On the hospital trains in this country there will be every comfort and convenience for the care of the sick and disabled. We shall have several types of coaches, we shall have kitchen cars, dining cars, ward cars, and what we call unit cars, for the staff. The unit cars will contain not only the staff but one or two medical officers, two or three nurses, or such number as may be necessary. That can be attached to a train and carried to any part of the country distinct from an entire hospital train. These unit cars will be so that we can send half a dozen or a dozen sick from any one place in the country, or send a trainload. Then these cars will be returned to the port of importation and used again.

The hospitals to which we shall send them will be scattered throughout the United States. We intend to follow a zone hospital system plan, that is, we shall return to the various draft zones the men from each zone. We shall have in this country enough beds to take care of any sick or wounded that may be returned from abroad.

It is not the purpose of the War Department to return to the United States men who will in a short time be again returned to the firing line. I think that that period has arbitrarily been fixed at six months. If, however, we find that a man is in such condition that he cannot be returned to the firing line, he will be brought back to the United States at the earliest possible moment.

The hospitals are of the pavilion type; they will be reconstruction hospitals in one sense of the word and in another sense they will be general hospitals. We shall at first send any class of cases to the hospitals until the reconstruction work of the hospital predominates; then we shall send a constantly diminishing number of general cases to that hospital until it becomes purely and simply a reconstruction hospital.

Acute Surgery as Related to Reconstruction

LIEUT.-COL. M. G. SEELIG, M. C., N. A., said:

In discussing the relationship between acute surgery and reconstruction, we shall consider only that phase of reconstruction which concerns itself with physical rehabilitation. In defining the phrase "acute surgery," one must at the outset guard against the assumption that acute surgery applies only to the exigencies dependent on war traumas. Such reasoning would cripple our Army by false logic. The Army surgeon must regard acute surgery as embracing those surgical diseases of an acute nature, and those traumas occurring in the general, cantonment, post, base and other military hospitals at home, as well as projectile wounds and acute surgical diseases occurring "over there."

The Army surgeon who assumes the responsibility of operative procedure on a patient also necessarily assumes the responsibility of returning that patient to duty status or to civil life, so completely cured that he can have no valid claim as a pensioner. Our responsibility is keenly emphasized, almost beyond the power of any man ever to be unmindful of it, by the recent ruling of the Judge Advocate-General which very properly makes it obligatory on the soldier either to submit to surgical therapy, if a properly constituted medical board decides that such therapy is necessary to enable the soldier to perform his military duties, or to face a court martial.

This type of responsibility carries with it, in addition to an intensified zeal to save life, a markedly heightened effort to restore the sick soldier to his status quo ante. He must be made fit for soldiering again at the earliest possible opportunity, or happily, as we look forward to victory, he must be rendered fit to reenter civil life fully able to carry on and do his bit without claiming any of the government aid that a grateful country stands ready to grant her incapacitated soldiers.

In essence, then, the Army surgeon practicing acute surgery finds himself face to face with the problem of reconstruction in such fashion that his set task is to do away as far as possible with the necessity of later so-called reconstructive work. This task, one which the civil surgeon is trained to meet, is fairly simple as applied to surgery performed on home territory. In the zone of advance, and also, though possibly to a less degree, in the lines of communication, the problem is seriously difficult and gravely pressing. The haste of battle, the exigencies of terrain and transport, the necessary improvisations of warfare, and other factors too numerous to detail, all exercise their influence on the mind and judgment of the surgeon.

And yet if his work is to carry the hall mark of "well done," it must always be done with the thought in mind of restoring the patient at the earliest possible moment with the

least possible requirement of secondary so-called reconstructive surgery.

Naturally it is not necessary to emphasize that in acute war surgery, just as in acute civil surgery, our first and foremost duty is the conservation of life; nor should it be necessary to emphasize the fact that even the press of battle does not mitigate by jot or tittle the baneful effects of unnecessary operation.

It seems beyond question or doubt that late epilepsy and apoplexy, the aphasias, psychoses and other mental disturbances, bear a definite relationship to the type of front line surgery performed for cranial injuries; the early surgery done for the relief of spinal injuries is of itself one factor in the course of later paralyses, spasticities, bed sores and disturbed bladder and rectal functions. On the quality of judgment displayed in the first line to base hospital treatment of nerve wounds depends in no small measure the amount of later surgical effort necessary to correct over-stretched muscles, contractures, ankyloses, and loss or disturbance of sensation and motion. Wounds of the lung may result in comparatively trivial bronchitides and chronic pleurisy or in permanent disabling lung collapse and distressing fistulas, dependent on the type of early surgical treatment. Acute surgery is related to reconstructive surgery. The relationship is maintained solely through efforts directed toward minimizing the quantity of reconstructive surgical effort necessary.

Reconstruction in her turn owes certain duties to surgery. Reconstructive surgery resolves itself finally into the fundamental idea of complete surgery directed toward the restoration of complete function. The antithesis to complete surgery is interrupted surgery. Let us recognize at the very outset the two horns of the dilemma from which later we may be prepared to see both surgery and reconstruction suspended; surgery transfixed by the idea of incompleteness and reconstruction pierced by the fatal idea of beginning only where surgery leaves off. For myself I know but one type of my own specialty of general surgery, I know but one type of orthopedic surgery, or of neurologic, otologic or ophthalmologic surgery. They are all reconstructive.

DISCUSSION

SIR ARBUTHNOT LANE, London, England, said:

When this war commenced we were fortunate enough to be able to call to our help perhaps the greatest medical organizer that we ever had—Lieut.-Gen. Sir Alfred Keogh. He had already dealt with our medical problems and had solved them in a most remarkable degree. He had been almost all over the world. Criticism could not freeze him, he was met by an outcry because they said he called for too many men, they said he was employing men unnecessarily, but he was obliged to do so. There was at that time a great threatened uprising in India; the public did not know about it, it was kept secret, nobody knew of it at the time. Our medical men rushed in to the help of the country, they gave up everything without a thought of their future. The only qualification that Sir Alfred Keogh insisted on in those men was youth. It was no use to send men past middle age. As time went on, he realized there were two main factors that we had to consider in dealing with men. One was efficiency and the other personnel. In other words, the application of those two principles, specialized function and fixed tenure with the minimum personnel. Finally, under the lead of Sir Alfred Keogh, things began to take shape and we made two great subdivisions, one purely medical and the other surgical. In that way we were able to specialize and establish some fixity of tenure and accomplish the most with the minimum of personnel. We began by collecting these poor fellows who came back from the front with their faces burned and defaced by shot and shell or by flaming fire thrown on them, poor fellows hideously disfigured. The difficulties that we experienced in handling those men in the hospitals arose from the fact that they were unlike ordinarily wounded men. The wounded man of former times who had lost an arm or a leg was received by his family with sympathy and affection and his children hung around him; but these men were so deformed and disfigured that they were disagreeable to contemplate. A man that comes to you with no mouth, no jaw, no eyes, and a cavity where his nose ought to be, is regarded by his wife and children with ill concealed aversion and horror. His loved ones cannot identify him as the object of their affection and regard; they can see no trace of his original features. It was such patients that we had to deal with, and we had to deal with them in

enormous numbers. We found men who were willing to devote themselves to this particular labor of love, and the work called for the very best of their skill and attention. They gradually improved those patients in a most remarkable way. But we found that it was a difficult thing to do this in a large hospital, they were a source of distress not only to themselves but to the people about them; so with the assistance of the British Red Cross, which has done invaluable work in this way, we got a large and beautiful domain in Kent, in the very heart of the country, and there we cared for the men where they were secluded from the public gaze. They are only 12½ miles from the great center, London, and are under the care of the greatest plastic and dental surgeons that we possess. Very soon we had there in that particular hospital British, Australians, New Zealanders, Canadians, both officers and men, all working together in the most friendly manner, competing and vying with each other to produce the best possible results for those poor unfortunate creatures.

Surgeon-General Bradley in France has been good enough to send us twelve American surgeons. I need not tell you how delighted our men were to receive them; and they were as greatly delighted to come as our men were to have them come. Two days before I left to come over here they wanted to write and tell you through me how happy and pleased they were to have the advantages of the experience of those men who had been in this work for three or four years and had obtained such magnificent results. Unfortunately the rules would not permit of my carrying that letter, so I give that message to you verbally. As I say, they are all as happy as possible, they are doing splendid work, and they are doing work that will be of enormous advantage to your men. Moreover, they have the advantage of working with men who have been at it now for four years. That work is perfectly new work. We knew nothing about it before this war. It has had to be developed with extraordinary rapidity. These men are taken in hand first by the dental surgeon, who fastens their jaws together and then by the surgeon, who sees to their faces and tries to improve their appearance as much as possible. Probably he takes a piece of bone out of their body, out of the crest of the ilium, for instance, or out of their ribs, and makes new noses for them, using cartilages perhaps to make a framework. In a very little time it is marvelous the things that are done there. There is one enormous advantage that we have got there, and that is the extraordinary interest that our women are taking in the treatment of these patients, as in the treatment of soldiers generally. Perhaps one of the most beautiful sights I have ever seen in the world was to see that old queen mother, who is I suppose the most beloved woman in England, as she went around talking with and consoling the wounded. I am glad to see you smiling with approval, and your smiles are worth a million dollars, and they do not cost a cent! You women of America I think can smile more sweetly than any other women on earth!

We intend to keep before us always that principle of efficiency and economy of personnel as well as specialization of function and fixity of tenure.

DR. DAVID SILVER, Pittsburgh, said:

In a recent lecture Sir Robert Jones said, "The pathetic side of orthopedic surgery is the collection of physical disabilities which should never have been." This is a strong, indeed a startling, statement, yet it implies no criticism of the splendid medical men who are at the front. We all recognize the terrible difficulties under which they are working, and we know that it is and will continue to be impossible to do away entirely with those conditions; but we are impressed with the importance of such an organization that the number of cases which will require subsequent corrective measures shall be reduced to the minimum.

A large part of the orthopedic work to be done will be due to adhesions in and around joints, and to the results of the sequelae of infection. In proportion as the surgeon is able to perform primary or delayed primary suture of wounds, the damage of infection and its danger will be eliminated, and the number of cases of this type will be diminished. This alone furnishes the means of eliminating a very considerable amount of the subsequent reconstructive effort together with necessarily long retention in hospital, not to mention the needless pain and discomfort which the men must suffer.

Among the conditions which the Surgeon-General has assigned to the orthopedic surgeon are malunion and non-union of fractures. In at least a large number of cases these

imply failure in effective focalization or inefficiency in the continuity of mechanical control. In the early days of the war it was recognized that a great deal of the trouble from malunion and nonunion resulted from frequent inspections of the patient at the different dressing stations and from the frequent changes in the type of treatment that was instituted. It becomes, therefore, of the greatest importance that we organize this treatment effectively and decide on that plan of treatment which will be applicable throughout the entire management of the case. It is fortunate that this has already been begun. As you probably know, among the expeditionary force a committee was organized, and it was decided to limit the number of splints used to seven, so that the men who are now in Europe are using an exactly similar method of treatment. A further step in advance, I believe, has been the appointment of seven orthopedic surgeons to supervise the control of splints and the management of nonoperative treatment whenever the injuries are of a somewhat similar character. It cannot be denied that neglect of proper mechanical control in this class of cases has resulted disastrously. Before any operation for the repair of a nerve injury will be undertaken, it is now recognized that the parts supplied by the injured nerve must have their full range of motion. Where proper mechanical control has been instituted from the first, many maltreatments are thereby avoided; and that is being made necessary in order to overcome fractures which have been needlessly allowed to take place. This again implies a uniform plan for the nonoperative treatment of these cases.

Recognizing the conditions which have just been mentioned, the Surgeon-General has planned to place in each reconstructive unit one man who has been trained in the application of the proper mechanical principles and who can grade the cases in which acute surgery plays the most important part in relation to later reconstructive work, not only in shortening the reconstructive period but also in obtaining a much better result.

In the early period of the war, circular amputation was often rendered necessary on account of the prevalence of infection. This naturally called for a later reamputation, with resulting loss of considerable portions of the bone, and in marked contraction of tissues which necessarily took place. This objectionable feature was later overcome by the introduction of stump extension, preventing retraction and conserving a considerable portion of the bone. It is reasonable to hope that in the future it will be possible to discard that necessarily unsatisfactory method of amputation and return to the more ideal amputation methods of civil practice. It is most important that the surgeon produce those results which will be the most satisfactory from the standpoint of the artificial limb. Great attention must be paid to the requirement that there be on the stump the best opportunity for future artificial appliances to be attached. Furthermore, that there be proper attention paid to the care of the stump to prepare it for the application of a temporary appliance. It is now customary to apply such an appliance within several weeks after the healing of the amputation, instead of waiting after the operation for several months for the stump to attain its final form. This not only shortens the period of incapacity but is of distinct value in the mental rehabilitation of the patient.

The Reconstruction Problem as it Relates to Nervous and Mental Diseases

RICHARD H. HUTCHINGS, Major, M. R. C., U. S. Army, Washington, D. C., said:

One of the surprising developments of the present great war is the importance that mental and nervous diseases have assumed in all the belligerent countries. It was thought that a new disease had made its appearance, and the term "shell shock" was coined. When the patients were returned to home territory and there was opportunity to observe them more carefully, it was soon determined that shell shock is nothing new. It belongs in a well-defined group of diseases which lie between the nervous and mental and partakes of the characters of both, namely, the psychoneuroses. The only way in which shell shock differs from the psychoneuroses encountered in civil life is that the symptoms are to a large extent determined and colored by the sights and sounds of battle instead of by railway accidents, fires, and other scenes of danger common to civil life.

The unprecedented intensity of the present war puts a severe strain on the nervous system of even the most robust. Indeed, it is the nervous system that must bear the brunt

of warfare, different from any ever before experienced. Instead of long marches, and campaigns with periods of rest and freedom from danger, we have trench life with constant exposure to danger from the ground and air, broken sleep and the never ending monotony of daily life.

Guided by the experience of our allies, the Surgeon-General determined that in the selection of the American Army, every care should be used to exclude cases of incipient nervous and mental disease and by that means, as far as may be, the disabilities resulting from them.

Well qualified examiners in mental and nervous diseases were stationed at the officers' training camps, the recruit depots and the Army camps and cantonments for this examination. With the exception of some of the organization which went abroad early last summer, all of the men have been subjected to these examinations, and more than 15,000 cases deemed unsuitable for military service by reason of the existence of nervous or mental disease or defect have been recommended to the disability boards for discharge—about 1.5 per cent.

It is too early as yet to say what influence on the health of the Army this elimination of unsuitable material will be in actual hostilities, but we feel sure that many thousand fewer beds will be occupied in the military hospitals by reason of it, and the men who otherwise would have occupied them will be at home doing what they can in industry and helping to support the fighting men at the front.

Notwithstanding the care that has been exercised in prevention by elimination, we shall have mental and nervous patients to care for, and provision has been made for the insane, epileptic and psychoneurotic. At the Government Hospital for the Insane at Washington, temporary buildings are being erected to care for 500 additional patients; General Hospital No. 4, Fort Porter, N. Y., has been set apart for the care of the insane, and when necessary other accommodations will be made available.

In neurology and psychiatry, however, the reconstruction will be almost wholly mental. Practically every soldier who has been confined to the hospital will require some mental reconstruction to counteract what is known as hospitalization—the habit of being idle and dependent, and of being waited on and needing guidance.

The experience already gained in our civil and military hospitals for the insane has shown so well the advantages of work in the cure of the insane that its usefulness is no longer questioned. It is planned to place the work in charge of instructors who have had experience in work of this kind in civil life. These instructors will be commissioned officers in the Medical Reserve Corps and Sanitary Corps. They will be assisted by civilian aides—teachers of arts and crafts, agriculture, landscape gardening, shop-work, and, in fact, all occupations which have been found in the past to be adapted to the purpose.

It is believed that war neuroses, the so-called "shell shock," can be treated most successfully in hospitals apart from other classes of patients. Their symptoms are such as to attract attention—sometimes ridicule, sometimes sympathy. Any notice of this kind only serves to accentuate the condition and prolong the attack. The best results have been obtained abroad by impressing on the mind of the patient that his case is a hopeful one, that recovery will occur as soon as he exerts himself to gain self-control. The well meant visits from relatives and even strangers usually do harm. The patients should remain under a modified military discipline, and as soon as his condition warrants, exercises in the form of drills and marches are to be employed, and in the intervals and also earlier in the disease, while the patient is yet confined to bed, occupation which will serve to divert his mind from his symptoms. Occupation will also aid to gain better control of his muscles, to overcome tremors, functional paralysis and other physical symptoms which interfere with his activity.

A hospital for war neuroses has been established at Plattsburg, N. Y., utilizing the permanent buildings of the Army post which is situated there. It affords accommodation at the present time for 1,000 patients, and other buildings available, after repairs and reconstruction are completed, will have sufficient capacity to afford accommodation, if necessary, for 2,000 patients. There are ample grounds for agriculture and gardening, and shops will be provided and equipped to afford remunerative employment to those patients who are not suited for outdoor work. An officer commissioned in the Sanitary Corps, to be known as educational director, will have charge of these activities under the direction of the medical officer in command. Instruction in various arts, crafts and industries will be provided through civilian aides.

The importance of recreation has not been overlooked in formulating plans for the treatment of these patients.

The objects to be attained in the therapeutic employment of the insane and neurotic are to divert the mind from delusions and morbid introspection into more wholesome channels of thought. The element of interest should not be overlooked. As soon as work becomes mechanical, requiring no exercise of active attention, the mind is free to pursue morbid trains of thought, and the employment results in no further benefit to the patient than perhaps some improvement to his physical condition.

Exactly the same benefit can be derived from play as from work. In fact, the distinction between work and play is perhaps more an economic than a physiologic consideration. Mere diversions, on the other hand, where the patients are entertained by the efforts of others, they themselves remaining passive, are of distinctly less value but have a place, provided the element of interest remains strong.

The best results will be gained by a judicious combination of remunerative work combined with sports requiring activity of mind or body or both, so arranged that the day will be fully occupied for each individual according to his particular requirements.

As convalescence proceeds and the ability for continuous mental application is strengthened, opportunities will be afforded the soldier to prepare himself for his return to civil life and the responsibilities of self-support. The way out of the realm of mental disability has led him to the curative work shop, and through this many find opportunities for increased efficiency and larger remuneration on his return home in the advantages which will be his for taking in the vocational school.

DISCUSSION

SIR JAMES MACKENZIE, London, England, said:

If I am to be of any help to the doctors who are engaged in this work, the first thing I would say is to keep your head and exercise common sense. You will discover that these wonderful diseases that have been described are nothing more nor less than those you have encountered in your general practice. Speaking as a general practitioner, let me say that you will discover that the principles of treatment that you have employed for yourself and for your patients are the best for the soldiers. You know that when you get tired and overworked or have perhaps some slight illness so that you feel weak and irritable, your wife suggests you should go for a holiday. Wives are generally very wise in these matters. You come back wonderfully recovered. That is the treatment the vast number of these soldiers want when they come back from the front "rattled." In place of simply calling them "rattled," we call them all sorts of fancy names. Simple treatment is what is needed. Arouse the soldier's interest in life and outdoor sports.

I would put recreation in the fore front as a cure for a great number of nervous diseases that effect men. I for one always take care not to speak about things that I do not know, and of shell shock and similar neuroses I will say nothing except that they are a form of what we have long known as neurasthenia. I cannot distinguish them from that, nor can I see that the so-called neurocirculatory asthenia is any different from neurasthenia, at least what we will find in the surgical wards.

The admirable hospital shown us was excellently adapted to the purposes for which it was designed, except that there should be a great space reserved for games. If you study a large number of people you will find that some have the game spirit, others have not. As a therapeutic measure, games have never been sufficiently recognized. I know that I used to avail myself of the curative power of games to a great extent when I was in general practice. In addition to the game spirit there is something which I do not encourage, however, to too great extent—a little bet is wonderfully stimulating.

When the government at my suggestion established a hospital for the study and treatment of cardiovascular diseases, one of the propositions I laid down was there should be sports attached to it, skittles, bowls, croquet or anything else. It was not workable then, and somehow or other they could not get my idea, so my idea has never yet been carried out in a systematic manner. But I have succeeded in getting my men well far more rapidly than those who performed perfunctory exercises in hospitals. The principle that one must avail of in all cases is to get the man out of himself by arousing an interest in sport.

The greatest problem is how to measure properly or assess the value of symptoms. It has never been attacked in a scientific manner. What is the result? Simply guessing. When you say, "This man is not fit," or "This man is fit," you are simply guessing. As an illustration, let me refer to the question of murmurs. They form a large part of the consideration in regard to the mental possibilities of the patient. When through the use of the stethoscope we try to know what the meaning of murmurs is, we search in vain for a clear definition or for knowledge how to assess the value of the murmur. It is laid down as being impossible of assessing. Twenty years ago one of our great physicians in Scotland, Sir William Gardner, in addressing a body of men who were supposed to be specialists in heart diseases, men who examined for life insurance, made this statement, that "Whether it will be possible in the future ever to assess the value of the murmur, I cannot tell. At present we do not know what to do with it. We either reject the candidate or we write him up, or we ignore him; but there is no principle whatever that guides us." Bear that in mind. I would seek to ask you strongly to consider that question whether you should not be able to assess the value of this sign on scientific lines.

I have after thirty-five years endeavored to evolve a principle which will guide you, and if you will carefully understand the meaning of it probably it may help some of you. A man turns up, you discover a murmur or peculiarity, or he has pain, or some other condition, and he wants to know what his future is to be. Now I have devoted the greater part of my life to the solution of that question; it has meant an enormous amount of work, the taking of hundreds of individuals who have had murmurs or pain, and I have kept note and have watched them as they proceeded through life; boys growing into manhood and pursuing military and other occupations; women and girls growing up, getting married, having children, watching the effect of pregnancy, taking a large number of observations, sometimes over a period of twenty-five or thirty years; and I have worked out certain conclusions.

When I write those conclusions down they can be summarized on a scrap of paper about the size of an ordinary page. They are simply common sense rules; for instance, in regard to heart affections you have to consider the efficiency of the heart, how the individual responds to effort—and there is a lot in that last. After all, in estimating the value of any peculiarity it is a matter first of all of common sense.

The essential fact to be determined in every case always is: What can the heart do? What does it do? In answering form questions, in all cases that last and most important question is always left out. That is just as important in the army as in examining for life insurance. When you come to deal with returned soldiers, out of a hundred thousand that will come back from the front you will have 10 per cent. of them invalided out of the army because of some abnormal sound of the heart. Just before the war I had drawn up and Sir Alfred Keogh had recommended for adoption my description of how to assess the value of these abnormal sounds of the heart for the use of the army. Time went on, and it was simply ignored. You cannot begin to teach by a simple memorandum men who were taught on wrong lines in the schools. Just before I left London a typical case came before me of a young fellow who was invalided out of the army because he had a murmur which in my opinion was physiologic. His consciousness of that murmur had broken him down and rendered him unfitted for his work. The consciousness of something of that sort has a most astonishingly depressing effect. I have seen large numbers of such cases. For instance, a farmer came to consult me because he was not able to do his work. I asked him as to his condition, and his reply was vague and indefinite. I said, "What started your illness?" He said that he went up to be examined for the army and was rejected because of a murmur, and he had never been able to work since.

A careful record should be kept by those who are engaged in examining for such symptoms of these people and followed up in their after life to find what happens to them, because there is a great lack of knowledge in regard to what happens to people with these simpler affections. This is an opportunity for advancing the cause of science which let us hope will never come again. But we have here the opportunity to study and classify these cases, and arrive at some conclusions that will eventually enable us to assess accurately the value of these special symptoms. If some of you young men will

undertake this work, twenty years hence you will be able to form some idea of the prognosis.

CHAIRMAN BILLINGS said:

The point brought out by Major Hutchings and Sir James Mackenzie I desire to emphasize. I want to drive home, if I may, the fact that these disabled soldiers should have the opportunity for active physical exercise which play embraces. If we have learned anything from overseas it is that active exercise as a physiotherapeutic measure takes the place of passive exercise or massage to a great degree so that active control—military control, if you please—does much more to restore function than passive exercise. Yet of course massage or passive exercise has its place, and particularly for the maimed man. But control cannot alone be used. Active exercise in the form of baseball, football and tennis can be used as a curative measure for these men. If we are to give them this opportunity we must have land enough provided with our general hospitals to have playgrounds as well as work places. We must have paved streets and necessary buildings with appropriate surroundings so as to conduce to the health and spirits of these men. To do this work well the Surgeon-General should have these hospitals located suitably for the purpose for which they are to be used.

Reconstruction of the Defects in Hearing and Speech

LIEUT.-COL. CHARLES W. RICHARDSON said:

The administration of this section of the Division of Physical Reconstruction will be both military and civil. The military staff will consist of a director and assistants. The military staff will be composed of an assistant director, inspectors and a surgical staff in charge of necessary medical and operative procedures. The surgical staff will be the members of the otolaryngologic section of the Division of Surgery of the Head, attached to General Hospital No. 11, Cape May, N. J., or surgeons elsewhere designated by the section of otolaryngology, to perform such operative work and apply those therapeutic resources as the directors of these sections may mutually deem necessary.

On account of the character of the disability in a large percentage of the defects coming under the charge of this section being of such a nature as to require reeducation, it is necessary to have an educational staff to meet these requirements. This staff will consist of: (1) superintendent; (2) principal, and (3) teachers. The superintendent (selected) is to be a man. The person selected to fill this office is a man coming from one of the largest institutes connected with the teaching of the deaf, a person who is thoroughly conversant with the methods employed in all its phases. The principal (selected) is a woman who possesses a keen knowledge of the principles to be employed in the correction of defects of hearing and speech. She has already had a large experience in pedagogic work and in maintaining an *esprit de corps* among her teachers.

As women have in a greater majority than men devoted their energies to this pedagogic endeavor, we have found in selecting teachers that it was wise to accept as candidates for positions as teachers, women well trained in lip reading. We have already listed sixty candidates for positions as teachers for the defects in hearing. These teachers are thoroughly trained in the teaching of the adult hard of hearing, and constitute practically the pick of the United States in this work among those who are able to accept service. We have also listed forty-six teachers who are willing to serve under various individual restrictions. The selection of teachers for corrective speech work has not been so easy a task as the selection of teachers for defects in hearing; nevertheless we have succeeded in selecting some excellent material. We have already listed thirty-seven candidates for teaching positions in this field of endeavor. It is quite probable if there is an increase in patients over what is normally expected that it may be necessary to assign also a principal to the teachers of speech correction.

As it is possible that a colony system of reconstruction may be established later, and as it will probably be necessary to delegate teachers to go to other hospitals to teach patients whose major wounds hold them at general hospitals for full reconstruction, it will be essential to have inspectors to oversee the work. We have in view, already in the service, several male instructors who will make most competent inspectors.

The defects in hearing are acquired in manifold manners:

1. We have those due to the ordinary diseases of the ear, common in civil life—abscess of the ear, both acute and chronic, and acute and chronic catarrh of the middle ear.

These are simple infections or secondary to the acute infectious diseases.

Those due to warfare are: 1. Shock concussion. This type of case is most frequently due to the action of a single high explosive shell in the immediate vicinity of the one afflicted. Many of these patients eventually recover their hearing completely. 2. Concussion deafness. These cases are usually due to the continuous action of high explosive and shrapnel shell, hand grenades and the more or less continuous play of machine guns. On account of the continuous concussion transmitted to the labyrinthine structure there are evident organic changes produced in the internal ear with the result of permanent impairment of hearing. 3. The slowly progressive type of concussion deafness as so commonly observed in gunners and artillery men. 4. Traumatic, due to casualties about the auditory apparatus or head.

Defects in speech are: 1. Mutism, most frequently of shock origin. 2. Stuttering, stammering—old cases reestablished; new ones produced during the nervous stress of actual combat. 3. Aphonias, neurotic, overstrain of vocal organs, and due to nerve and muscle lesions. 4. Affections of voice due to gunshot, shrapnel, grenade, bayonet and other wounds of the face and upper air tract.

In considering the various types of injury as the result of war casualties there are two in connection with the auditory and speech organs that bring home to the average layman the horrors of warfare.

The disturbance of the auditory apparatus terminating in immediate or remote complete and permanent impairment of hearing is the most impressive in connection with audition.

In our study of the permanently acquired deafness in the adult in civil life we have been impressed with two important features, not physical, apparently correlated with the loss of hearing, i. e., suspicion and social ostracism. These conditions are in no way physically related to deafness, but are more the outcome of the psychology of the deaf mind and the psychology of the nondeaf mind. The deaf person, not hearing what is said around him, becomes necessarily more or less suspicious that general conversation is directed at him personally or relates to his infirmity. We are all well aware that most normal hearing persons have an aversion toward conversing with the hard of hearing or deaf. Add to the state of mind thus created the torment of the various physical subject symptoms, and you necessarily create in the deaf an unhappy state of mind. Contrast a person so afflicted with one afflicted with blindness. The blind has a serene mind born of the knowledge that all mankind extends to him a helping hand, a confidence begotten through the knowledge that universally mankind sympathizes with and is only too happy to give him succor and aid.

The other condition to which I wish to refer is the modification of the voice which is attendant on the terrible face injuries produced in modern warfare. It is a singular trait of mankind that he avoids the deaf and derides the individual who presents difficulty of speech production. These poor individuals are not only subjected to the humiliation on account of their imperfect vocalization, but are subject to the curious observation and scrutiny on account of their facial defects. How different is the mental view held by the general public with regard to these unfortunates and the blind.

It will be the province of the section of defects of hearing and speech to remove these mental attitudes, first, through reeducation and corrective work with patients, and second, through correction of the misapprehension of the layman.

The section devoted to the defects of hearing and speech has well under way the practical development of its plans. The defects in hearing include all those soldiers and sailors whose hearing, with or without casualties of the auditory apparatus, has been completely impaired or reduced to such a degree that their social and industrial intercourse with others is greatly hampered. Defects in speech include those who stammer, who have loss of voice, or whose form of speech is defective from injuries in the speech-producing organ.

The method of procedure to be adopted in the reeducation of the defects in hearing is through stimulation of the auditory centers in certain cases; through lip reading; and, where lip reading is impossible of results, through manual teaching.

The defects in speech are to be taught along the lines which have been established for the restoration of the neurorespiratory cases. Those cases the result of injuries to the upper air tract and face attended with loss of soft and hard tissues to greater or less extent, will require individual study as to the desirability of further prosthesis or operative work for the replacement of lost parts; support and reapplication of attach-

ment for muscles, or release of scar contraction in order to restore impaired voice production.

A careful study is being made of synonyms or homophonous words so that where as result of injury certain single or groups of muscles cannot functionate, that synonym which can be used by the patient may be suggested, and used as a substitute word or phrase in the patient's vocabulary.

The location of the parent school or teaching hospital will be temporarily at General Hospital No. 11, Cape May, N. J.

This department of the Division of Physical Reconstruction is presided over by a director, with the rank of Lieutenant-Colonel, M. C., N. A.

It is very satisfactory to note that the American Association to promote the Teaching of Speech to the Deaf; the Volta Institute; all heads of teaching methods; all institute superintendents, with whom we have had the pleasure of consulting, and all teachers of corrective speech with whom we have consulted, assure us of their hearty aid, support and sympathy, and express their approval of the scope and ultimate vision of the work we have in hand.

Reeducation of the War Blinded

LIEUT.-COL. JAMES BORDLEY, JR., M. C., N. A., Staff of the Surgeon-General, Washington, D. C., said:

Colonel Richardson, who just preceded me, has made the mistake that is usually made by the world; he has mistranslated the position of the blind. Their attitude is not an attitude of happiness, but rather an attitude of resignation. They are really the Ishmaelites of this century, made so by our economic system. They are unable to procure and maintain their own homes; they have been driven out of the community life; they are not permitted to be a part of any industry. The blind have for centuries asked for a chance, and Colonel Richardson is right when he says they have been extended charity. This is not due to any premeditated purpose on the part of society; it is one of the mistakes of our economic system.

From now on we must conserve, and in nothing is conservation more important than in the saving of human energy. As we reestablish or rebuild that economic system we must remember that the blind are a part of our social fabric, that their brain and brawn must be utilized as an asset to the nation. Strange as it may seem, every great advance in the treatment of the blind has followed in the wake of war, and this war has proved no exception. In England, France and Italy they have suddenly discovered that the blind have a real economic value, and they have started out on a broad scale to study that value, to determine and weigh it; and of all the things that have been produced by this war, none are really more wonderful than the results of their experiments in this direction.

The Surgeon-Generals of our Army and Navy have combined forces, and together they are going to educate the soldiers and sailors and marines. This education is to be given them in a military training school for the blind which is to be located on a magnificent estate in Baltimore. This school is to be conducted by the best teachers of the blind in this country. It is to have every appliance which is known and is available in the development of the powers of the blind. When they complete their courses in that school, trial employment will be given them.

We divide the blind into five classes: those who can work at home, those who can work in blind shops, those who can enter industry, those who can go into agriculture, and the professional classes. We are not going to let any of these blind men get away from us until we know that they are ready to go to work.

We propose to utilize the services of every individual and of every organization which can help in this splendid work. The American Branch Belgian Blind Relief Fund has already come to our assistance in a most substantial way, bringing over \$100,000 with which to conduct a certain portion of the work. The American Red Cross, at the request of General Gorgas, has authorized the organization of the Red Cross Institute for the Blind. This Red Cross institute will supply the necessary economic and social supervision for our soldiers, sailors and marines from the time of their discharge from the Army or Navy until they die. This supervision is not to be a charity but a helpful moral support. This institute, for instance, has already organized a purchasing department through which will be bought in quantity, at wholesale rates, the raw materials used by the blind in their homes. They are also organizing a selling department, because one of the great disadvantages of the blind who work at home is the limitation of their market. This selling agency is to take

charge of this work of selling the finished products of the blind. It is starting a savings association, because one of the greatest difficulties the blind man has is to get the means wherewith to make his initial investment in material and machinery and tools. This savings association will not only take the man's money and properly invest it and safely keep it for him, but when the time comes for him to work it will be behind him financially and help him wherever he needs help. We recognize that the blind man has three serious difficulties to overcome before he can make his own living: The first difficulty is his own timidity, the second is the misplaced sympathy of his family and friends, and the third is the reluctance on the part of industry to employ him. To overcome his own handicap, we are going to educate him. To help the family to realize the man's ambitions, the man's troubles, to see the necessity for their moral support in his work, we are going to take one member of the man's family to Baltimore and educate her side by side in our school with the man himself. We propose to keep that member in Baltimore in the house that will be conducted by the Red Cross institute at no cost to the family. To overcome the difficulty of the reluctance of industry to employ the blind, we propose to help the blind man demonstrate to industry that he can take his place and do his part.

The speaker now showed lantern slides and commented on them.

On account of the geographic distribution of our Army we are obliged to have two services or plans of work, one in France, and the other in this country. The service in France, so far as blind men are concerned, begins when the man gets back to his base hospital. We have no intention of going forward to that hospital in order to teach him or to help him. So we begin with the service in the base hospital. In that hospital no serious attempt will be made to teach the man how to help himself to make a living. He will only be taught there how to amuse himself. We shall have our professional instructors there, people who can teach him how to play games. Then when he is through with his base hospital treatment and surgical treatment he goes back to the special hospital center which has been designated as the point of concentration for the blind. In this center we shall have our field director for the blind, who will have supervision over all the work throughout the whole of France; under him will be instructors. In this hospital they will go a little further than in the base hospital, and will try to teach him reading and writing and games; in other words, to begin the serious work of making the man realize that he has abilities that can be developed; in other words, to teach him how to shave and dress himself, how to walk with a cane, how to play games, how to write his own letters, and how to read books for the blind. Then we come to the port of embarkation and ocean transportation. Here are helpers or teachers for the blind, who will also teach the men with other handicaps who will come back on the same ships with the blind, so that they can take care of and amuse them also. Thus there will be no point of transition between their work here and their work there; there will be no two weeks of monotony in which they can deteriorate, which of course with the blind is a very serious handicap.

Then we come to the service in the United States. The men come to the port of debarkation, and come into the hospital for distribution. They are summoned before a special examining board which acts as a vocational board. If this board finds that the man's injuries are permanent and nothing can be done for him, he is sent over to our blind teaching school in Baltimore. If they find that he has still efficiency they may send him to a reconstruction hospital. After he has had his surgical work done there and it is found that it is impossible to do anything further for him, he goes to a blind teaching center. This is a military department. It has its instructor who is an experienced man in handling the blind. This is one of the largest institutions in the United States. The instructor is chosen on account of his particular fitness and adaptability. Under him will be teachers and schools and shops of the mechanical and vocational type.

Then after the man finishes his work at the schools we come really to the practical training. After he undergoes his practical training then he gets training in professional work, commercial work, the trades or agriculture. After that work is done then he will take a course in the institute for the blind, and they will follow him in his work in his home for the rest of his life, making sure that his wants are satisfied.

(End of Morning Session)

PROCEEDINGS OF THE CHICAGO SESSION

THE SIXTY-NINTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION
HELD AT CHICAGO, JUNE 10-14, 1918

THE MEDICAL MILITARY MEETING

MEDINAH TEMPLE, WEDNESDAY
EVENING, JUNE 12

Medical officers of the Army and Navy occupied reserved seats on the stage. The music for this meeting included singing by the audience led by the members of the American Choral Society and accompanied by the Fort Riley band.

The meeting was called to order at 8:15 p. m. by Dr. ARTHUR DEAN BEVAN, President of the Association, who said:

Ladies and Gentlemen: This great meeting tonight is a war meeting of the organized medical profession of America to pay homage to the great leaders of the medical departments of the Army and Navy, the Red Cross, and conservation, and to hear from their own lips their call to the medical profession. This meeting is one to which the American medical profession has invited some of the great leaders in medicine of Great Britain, France and Belgium. These countries are allies in this war for civilization. These countries have sent these men across the seas to us at this time as the representatives of their respective countries and their medical professions to tell us their story, to give us the benefit of the lessons they have learned, so that we can make the mobilization of our own medical profession more efficient. We welcome them here as our brothers. We feel that we belong now to one great family. We share with them the same fortunes and the same future. We shall stand by them and by all our allies to the end—and there can be but one end. (Applause.) The right, humanity and civilization will prevail. The medical profession and the country are fortunate that in this great emergency the medical department of the Army is under the leadership of a man in whom the entire profession and the whole country have absolute confidence—General Gorgas. (Loud applause.)

GENERAL GORGAS, on rising to speak, was enthusiastically received. He said:

Address of General Gorgas

Mr. President, Ladies and Gentlemen: I am very glad to have this opportunity of speaking to our profession on the subject we have in mind, that is, the accession to the Medical Reserve Corps. We could all understand what conditions were a year ago, and how they are changed at the present time as far as our profession is concerned and their relationship to the military service. A year ago we had about 700 men in the Army; now, we have in the neighborhood of 20,000 commissioned medical officers. (Applause.) The task of getting these 20,000 men into the service seemed a year ago to be stupendous; but we have appealed to all our great associations, and their response has been most prompt and loyal. The result is that we have succeeded most admirably in this first stage of the war.

I wish to express my appreciation for all the profession has done, the organized societies of the country that have helped us; but more particularly do I wish to thank the individuals. We, as a profession, are so accustomed to altruism from the time we are born that we little appreciate ourselves the altruism the rank and file have shown in coming into the Army in this war. The doctor, from the time he first commences the practice of medicine, is accustomed without thought to give a larger portion of his time for nothing than men in any other calling. I have often thought why this was. I do not think a doctor is any better man on the average than men of the same education in the community. It has seemed to me that it is the result of his education. From the time he goes into the profession he is taught that it must be done: that the poor and those who are not able to pay must be looked after. The whole community comes to look on it as a duty of the doctor. The doctor is expected to give half of his income in these ways. No other members of the community think of doing this, but it is so general, so universal, that the doctor never refuses; the community has come to look on it as the proper and just thing for him

to do. And so I think that our profession in this war has responded to a greater extent and made greater sacrifices than any other branch of the community; I mean sacrifices in the way of responding to the call because a greater percentage of the members of our profession have answered the call than any other class or any other profession, and they have given without stint everywhere. (Applause.) Men have sacrificed their incomes, sacrificed their comforts, and sacrificed their conveniences. Men who have incomes varying from \$50,000 to \$100,000 a year have given them up for cap-taincies. It is a great and laudable thing, and I admire it; but these men have saved money and earned independence, so that when they come back they can live on what they have saved. I want, however, to pay my admiration to the rank and file of the profession, the young men with practices of \$2,000 or \$3,000 a year, with one or two children, with mortgages on their homes, who drop all these things, knowing that when they come back they will have to commence all over again; and yet these men have come to our aid without any hesitation. So far as I can see there is very little holding back of the members of the profession. I do not see it anywhere; but what comes to me is the man who wants to come in, who gives up home and makes great sacrifices for his country. I wish to express my gratitude to our Corps and to our fellow soldiers for what they have done and are doing. I myself have not the slightest doubt that if we need more men we shall get them. There are many more men in the medical profession who are perfectly willing to make sacrifices as necessity appears more urgent and closer to them.

Finally, I am glad to have met you on this occasion, and I wish to express the gratitude I feel for what you have done in the past. I have in my mind the old definition of gratitude, that is, a lively appreciation of favors that are to come. I thank you. (Loud applause.)

PRESIDENT BEVAN said:

Great Britain at the time of the war saw her duty. She realized that it was a war of civilization against Prussian domination. She refused to stand aside and see Belgium crushed and France invaded and dismembered. She defended for almost three years not only Belgium and France and her own rights, but also our own. We owe her a great debt; but great as it is and late as we have been, we shall pay it. (Applause.) We are going to stand shoulder to shoulder with her and our other allies to help to win this war. Great Britain has sent us three of her strongest and best known men, and I have the pleasure of introducing to you, first, Sir James Mackenzie. (Applause.)

Address of Sir James Mackenzie

SIR JAMES MACKENZIE said:

Mr. President, Ladies and Gentlemen: I cannot tell you how much I feel at the cordial reception which you give us and the cordiality with which we have been received ever since we landed in America. I had the fear when I came here that I would meet a people who were somewhat lukewarm. Your enthusiasm has exceeded anything beyond what my imagination could have thought about. (Applause.) I have had my suspicions that this was peculiarly an enthusiasm limited to the medical profession, because every medical man that I met was kindness, cordiality and encouragement itself. I have asked them about it, and there is no individual in the whole population that knows the people so well as the medical man. I have asked them time and again how do the people among whom they live look on the war at present, and they have unanimously informed me that the people are just as ardent as they are themselves. Time was when we were under the impression that the American people thought there was not much difference between the English and the Germans; that we are in the war to get something. Now, ladies and gentlemen, I was one of those stupid English people who trusted the Germans, who never believed there would be a war. I was warned time and again by my friends about

what was coming. One of my friends, Professor Sherrington, a great physiologist, came back from attending a meeting of physiologists in Germany in 1912 and told me of the sentiments expressed by the physiologists, that they were preparing for a war against England; that they were going to down the English Navy. Well, I thought I knew the Germans pretty well and I trusted them. When the war broke out, when all of what I had believed regarding Germany was dispelled, I was staggered and said to myself, is this a quarrel between Russia and France? But when Belgium was hit, to whom we had given word that we would stand by her, there was no longer any hesitation of what we should do, and from that time we entered the war with grim determination that never shall the sword be laid down until Belgium, Russia and other countries shall be as free as we are today. (Applause.)

There is great difficulty in understanding why this war should have come about; but as one with open eyes looks on the people he discovers not only the mere tendencies of the people but the curious life of the people themselves which it is difficult to express. We have a common phrase known to Englishmen and Americans of what is a gentleman, a man of honor, of integrity, and of chivalry. The kaiser said he wanted this war fought like a gentleman. Where was his chivalry when he murdered Miss Cavell? Where was his chivalry when he sent to the bottom of the ocean innocent women and children? The word is unknown to the Germans. There is another matter which shows that the Germans have respect for us which they do not like to acknowledge, and a very simple incident will bring that to light. One of my nephews told me in 1915 when he was at the front with forty soldiers in No Man's Land, there sprang out of a trench a small boy dressed as a soldier, who did not seem to be more than 15 or 16 years of age. He came running to a party of soldiers exclaiming, "Take me prisoner; take me prisoner!" The leader of the party said, "Go away, we do not want to take you a prisoner," but he exclaimed, "My mamma told me when I saw English soldiers to hold up my hands and beg them to take me a prisoner." They left him alone, and the poor little German followed them in whatever they did. Whenever they sat down to eat, they gave him some food. When they went back to the trenches the little fellow begged to be taken a prisoner. Can you imagine an English or American mother in such a state of mind that she would want her boy taken a prisoner by the Germans and that they treat that boy as our soldiers treated the German boy? This little incident, ladies and gentlemen, gives you a sort of idea of the difference of thought that runs through the whole system which governs us and the system which governs them. I thank you for the attention you have given me. (Applause.)

PRESIDENT BEVAN said:

Great Britain has sent to us with this party one of her great surgeons, one of the men who has been doing outstanding work in the reconstruction of the wounded. I am going to call on Sir Arbuthnot Lane to say a few words to us. (Applause.)

Address of Sir Arbuthnot Lane

MR. LANE was very warmly received. He said:

Ladies and Gentlemen: I happened to be the honored guest at a dinner party in Berlin on the occasion of Sir Edward Gray's very firm letter to the Germans about the invasion of Belgium. There were present at this dinner party several officers who were infuriated at the course events took. They told me as their guest that if they could have got money from the Jews they would have blown us to hell. They dilated on the great advantage that Germany possessed over England, of how the Germans were such an exceedingly intelligent and cultured nation, and how the English were such a stupid nation. They spoke of how the English had control over the greater part of the world, but they were quite unable and unfit to manage their possessions; that the Germans intended to take all of their possessions, and as soon as their army was strong enough and their navy was big enough, they intended to destroy France first and ourselves afterward. I was amazed at the candor and turned around and expressed my astonishment. I am not sure that there isn't a certain element of truth in our stupidity as a nation. (Laughter.) As you know, Lord Roberts told us what was coming. We did not believe him. When I say we, I mean the large majority of the people in Great Britain. They did not believe it because they could not imagine any nation would be so unscrupulous and dishonorable as the Germans intended to be.

We were fortunate in coming from England in having as our companions some very big men and women connected with industries, and it would be difficult to match these men and women for intelligence and for their grasp of the general situation. It was certainly a liberal education for us and I think we took full advantage of it. They told us they had gone over there to see the suffering and bravery of our noble allies, and the immense losses of the Belgians and the French. The Italians had suffered greatly, and they wanted to realize what we and those nations were doing to help on the progress of the war. They told me that they were coming back to America to tell you of what was being done there and to encourage you to take a more active part in the war than you had done. They amazed me by saying that there were numbers of people in America who took little or no interest in the war, and I said to myself that there must be some mistake somewhere, for wherever I have gone the medical profession has preceded any other profession or any other body of men. (Applause.) But among every other part of the community I found personally that there was the same enthusiasm and same desire to fight and beat our foe. We have a magnificent example in the leadership of that magnificent nation with which we are so closely associated now. I suppose they have got the finest general the world has ever known at present, and the British have the same general confidence in General Foch that you have, and we are perfectly certain that he will lead our armies to victory. We have no hesitation whatever on that point. (Applause.) Those men and women told me the reception they received in England was the very happiest, and they said they left England with the feeling of greatest regret. One man told me after he had been shown around all day long by one of the heads of a department, the man turned around and said, "Will you excuse me for a few moments. This morning I got a telegram that my only son was killed." That is the spirit that pervades us all, and I am sure the Americans will not be behind us in this respect. (Applause.)

PRESIDENT BEVAN said:

One of the greatest tributes that has ever been paid to a nation has been paid to Great Britain for the response of her colonies in this war, and I am going to call next on a Canadian surgeon who is serving with the medical service of his mother country in the field, Col. Herbert A. Bruce. (Applause.)

Address of Col. Herbert Bruce

COLONEL BRUCE said:

Mr. President, Ladies and Gentlemen: I feel a little more at home with you than either of my distinguished colleagues because my earliest experience in this war was in the Canadian service, and there I met hundreds of your countrymen who, when the Germans were appearing on the roads to Paris, forgot about the imaginary line and came over and joined our Canadian forces and helped to add to their fame on the field of battle. We recollect in the dim and misty past some feeling of coolness and at times bitterness about this imaginary line, but thank God the shoulders of your young men and our young men touch as they march against the foe, and the German war lord has realized that the bond of liberty representing the nations of the world has been united stronger than his cannon and more enduring than any war machine that any future autocrat may devise. (Applause.)

Serving in the imperial forces for something like a year and a half, I have had somewhat varied experiences up and down the line from the North Sea to Switzerland, but never in my life have I been as deeply and as profoundly stirred as when I looked into the faces of the tear dimmed eyes of the generous Parisian crowds when they saw coming into their city that great American soldier, General Pershing and his staff. (Applause.) From the base up to the line at the front I have seen your men straining at the leash of discipline which held them back, and you know better than we, for we were on the ocean, of the jolt they gave the German soldiers and German morale in their first engagement a few weeks ago. (Applause.)

France has had two great emotions—one when the British soldiers came, and second, when the American soldiers came, and France will not forget.

I have had the privilege of visiting all the hospitals which your government so promptly sent to our help, and which are doing such wonderful work for the British sick and wounded in France. You sent us of your best, and it is only necessary for me to mention the names of these well known surgeons to make you realize the excellent character of the work which they are bound to perform:

Majors John Finney and Hugh Young of Baltimore; Majors George E. Brewer, Charles H. Peck, William Darrach, For-
dyce, St. John, McCreary and Stevens of New York; Lieut.-
Col. Hugh Cabot and Major Harvey Cushing of Boston;
Majors Harte and John Gibbons of Philadelphia; Major Fred
A. Besley of Chicago; Major Fred T. Murphy of St. Louis,
Majors George W. Crile and William Lower of Cleveland,
and many others too numerous to mention. I cannot speak
sufficiently high of the magnificent work which these doctors
and your American nurses are doing.

Before leaving France, Lieut-Gen. Sir Arthur Sloggett, the
Director-General of the British Medical Service, sent for me
and asked me to tell the American people how much he
appreciated the wonderful service which the American doctors
and nurses had rendered to the British sick and wounded.
He said their work had been beyond all praise. He had been
anxious to give recognition to the gallantry and heroism of
the American medical officers and nurses serving at the
front, and had recommended them for honors, but a regula-
tion of your government prevented their being accepted.
Nothing that we can do is too good for the American doctors
and nurses serving with us.

Your medical men have willingly taken their places along-
side our officers in positions of danger, and have as a con-
sequence suffered casualties in exactly the same proportion
as our own doctors serving under the same conditions.

today is more than a match for the Germans. (Applause.)
Please consider these facts: Britain's munition works turn
out in a single day more big shells than during the whole
first year of the war; more medium sized shells in five days
than during the whole first year; more cannon in a week than
during the whole first year. Her munition plants have a
breadth of 40 feet and a length of 25 miles, and these build-
ings have been constructed so as to be turned into profitable
industrial uses when peace returns. (Applause.) And we
should not forget that England has increased her steel output
from 7,000,000 to 10,000,000 tons; transforming 400,000 motors
for carrying munitions and supplies, for the manufacture of
agricultural implements, for the manufacture of tanks and
railroad engines—in fact, meeting every demand of the war.
And no less in her navy have the sailors proved heroes of
the war. Every week 5,000 British ships leave or come to
her harbors. She has loaned 600 ships to France and 400
ships to Italy. These ships have transported 8,000,000 men
to and from her shores, and 10,000,000 tons of war material.
Notwithstanding the submarine, her merchantmen sail the
seven seas. (Applause.) During the first few months of
the war not less than 200,000 women were engaged in war
industry; today there are 1,000,000 women so engaged.
(Applause.) Of the 4,000,000 workers the women constitute
one fourth, and their number is daily increasing, and not less
than the men are the girls and women soldiers, heroines.



CAPTAIN RENÉ SAND
Belgium



M. JUSTIN GODART
France



MAJOR EDOUARD RIST
France

BELGIAN AND FRENCH GUESTS AT THE ANNUAL SESSION

During the recent retirement, although tremendous difficul-
ties were imposed on the Medical Service, the wounded were
all safely removed to hospitals in the rear, and none were
allowed to fall into the hands of the enemy. The nursing and
medical personnel also escaped, although unfortunately suffer-
ing some casualties.

If I were to be asked as to the greatest military develop-
ment at the front during the past year, I would put at the top
of the list the creation of a generalissimo to command the
united forces, and the brigading of your troops with the
British and French into a great united and compact army.
(Applause.) And next I would speak of the tremendous war
machine that peaceful, unprepared Britain has prepared since
the war began. We have heard much, and we do not under-
estimate the great military power of Germany which she has
built up during half a century; but Britain has fought on a
score of fronts, has been banker and provisioner to our
allies until you took her place. The "contemptible little
army" of 100,000 which went over and fought and mostly died
was quite unprepared with guns and munitions, and was in
the most disadvantageous position as compared with the
unlimited supplies which Germany had developed during many
years. That small army of 100,000 was replaced by 2,000,000
men, and the meager supply of shells which kept its guns
mute for days at a time has grown until the British supply

(Applause.) The girls handle the deadly T. N. T. and the
still more deadly fulminate of mercury with a steadiness of
hand and a smoothness of movement that has demonstrated
in every instance they are superior in this regard to men.
(Applause.) All grades of society are occupied and every
branch of industrial life are all linked together in England's
need. Social distinctions have been leveled in the democracy
of overalls and caps. A woman worker, whose husband had
died at the front, took a day off, and then returned to her
work. In the evening the superintendent of the factory found
this inscription chalked on one of the lathes: "Done fourteen
today; beat that if you can, you devils." (Applause.) Such
is the spirit of the women.

I recall the incident when Great Britain sent her expedition
to Ashantee, and when a colonel of the Scotch Guards was
addressing his men he said to them, "I will not command
any one to go on this expedition; there will be suffering; there
will be misery; there will be hardships; there may be death.
Let every man who will volunteer to follow me take one
pace to the front." So saying, he turned his head so as to
give the men time to think and to act. Looking around, a
flash of indignation went over his face as he saw the line
was as solid as it had been before. He turned to his men
and said with a touch of scorn, "My God, the Scotch Guards
and not a single volunteer." A sergeant, touched to the

quick at the rebuke, rushed toward the colonel and said, "Sir, that whole line stepped forward." (Applause.) Ladies and gentlemen, what a great thing it would be for the nations of which we are citizens, for the homes that we represent, for the principles for which we fight—yea, for the institutions which we uphold, if we could all catch that vision and, looking into the face of the generations yet to be, say to them, "This has been a bloody business, but the whole line of civilization has stepped forward." (Applause.)

There is a light about to gleam,
There is a font about to stream;
There is a midnight darkness changing into day,
Men of thought, and men of action, clear the way.

(Loud applause.)

PRESIDENT BEVAN said:

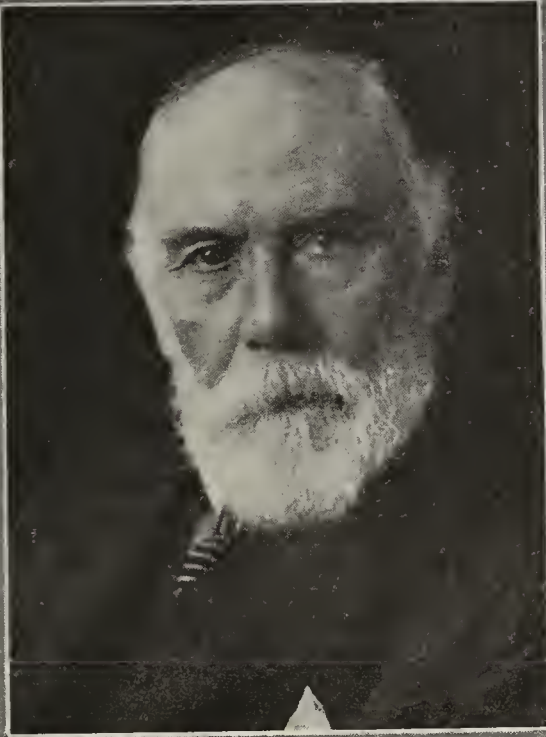
The republic of France; glorious France; immortal France. We are proud to be again your ally. In our struggle for independence you made it possible for us to establish for the first time in modern history a government ruled by the people. We have owed to you for more than one hundred years a great debt; we come to pay it now.

General Pershing, standing before the tomb of Lafayette, expressed the feelings and the emotions of America when, with uncovered head, he said, "Lafayette, we are here."

striven to set forth the highest possible ideals and standards of medical education and medical ethics. It has fostered with unequalled zeal the ideals of devotion to mankind. There is no more public spirited body of men in this country than the American Medical Association. What you have achieved during the first fourteen years of peace of this century is, I am sure, the greatest work which any organized profession has ever endeavored to do and has ever succeeded in doing. The present condition of your medical schools, of your hospitals, of your state and city health departments, the value of scientific work which is constantly coming out of your laboratories, are ample testimony to the idealism of your purpose and to the efficiency of your methods. They are an example and a model for the whole world, not only for their intrinsic value but for what they show us. They show what a self-conscious, well organized, democratically organized medical association can achieve when it is inspired by a common ideal and by self-disciplined energy. You have been in the service of your country during peace, and now you are in her service at war. Indeed, the spirit in which your Association entered this war, unreservedly devoting itself to the pursuance of it is, in my opinion, a most fitting symbol of the spirit in which the American nation as a whole entered this war. (Applause.) Your iron will, your clear sighted and unyielding determination will guide and direct the American nation up to the end—and there can be only one end—



COLONEL HERBERT BRUCE
Canada



SIR JAMES MACKENZIE
England and Scotland



SIR WM. ARBUTHNOT LANE
England

BRITISH GUESTS AT THE ANNUAL SESSION

(Applause.) France has sent to us four of her strong men. I shall introduce to you, first, Mr. Justin Godart, who has done outstanding work for the medical department of France in this war. (Applause.)

MR. GÓDART spoke in French. He referred to the splendid and unselfish work that is being done in France by the American representatives of the Red Cross, and of what American physicians and surgeons were doing, and stated that France and other countries owed America a great and everlasting debt of gratitude for what America had done and was now doing.

PRESIDENT BEVAN said:

I shall call next on one of our French colleagues who comes direct from active service on the Western Front, Major Edouard Rist of France. (Applause.)

Address of Major Edouard Rist

MAJOR RIST said:

Mr. President, Ladies and Gentlemen: On behalf of the French medical profession at war, it is my privilege to address the American Medical Association this evening. To my last day I shall be proud for having had this privilege.

Your Association has always stood for everything that is best and noblest in this, our most noble profession. It has

and there is no more fitting symbol of the perfect friendship and confident cooperation between the nations who are fighting together this great war than the friendship and cooperation which prevails between the medical professions of the allied countries. They are all bent on the same purpose and united in the same feeling of duty toward their country and toward our common cause. (Applause.)

Meetings like this, at which the medical men of the United States, of Great Britain and her Dominions, and of France sit together in order to exchange their observations and views and to learn from each other, used to happen only once in a while before this war. Now, believe me, they are almost daily occurrences, not, of course, on this gigantic scale, nor in such a beautiful hall; but over there in France the medical men of the allied nations are in constant touch with one another. They cooperate daily in every way: in the evacuation work of the wounded, as well as in the medical and surgical care of the wounded and sick, in the equipping and building up of hospitals and the relief of refugees, as well as in scientific research connected with war problems. We have learned to know each other and to love each other. (Applause.) American medical men in France have made a name for themselves, not only because of their professional excellence but because of their perfect courtesy, their delightful simplicity of manner and generosity of heart. I cannot

tell you how rapidly and how completely you have won our sympathies. The medical men of America have given first to us, even before the American nation entered this great war, and we shall never forget it, and now we have your fighters with us, your boys. What they are doing now on the battlefields speaks for itself. There are no words which can describe it and which can express what we feel about them. Let me tell you just one thing, they are as dear to us as our own boys. (Applause.)

Germany has repeatedly announced to the world that her intention was to separate the allied nations from each other. This she is trying to do by military action as well as by political intrigue and propaganda; but the real outcome of this war is and will be more and more to draw close to each other all the nations who are fighting for the freedom of the world. (Applause.) During the terrific drive which the Germans attempted on the Somme River this March and April, they publicly stated that their immediate aim was to separate the British Army from the French Army; but they succeeded in uniting these two great and glorious armies tighter than they had ever been united, under one supreme command. (Applause.) They succeeded in provoking General Pershing's generous and welcome proposition to blend together American units with British units and American units with French units in the same regiments and in the same divisions. (Applause.) There were three allied nations' armies on the western front. There is only one army now. (Applause.) There is one army made up of the combined strength, skill and courage and devotion of the three allied nations. That is how they separated us.

Ladies and gentlemen, there have been many explanations given of the mental distortion which has made Germany a criminal among the nations of the world. What infringement of the natural laws of moral and mental soundness can be made responsible for an attitude of mind which is so utterly repulsive to us? In my opinion, among the many delusions of which the German nation has been a victim, the most important perhaps is the delusion of growth. Growth is one of the most important and mysterious phenomena of biology. It is beautiful in itself and fascinating to study, but it has its limits, and it has its own end. In every living species there is a specific fixed limit for the growth of the individual, and the perfection of the individual must be realized within these limits. It is the same with the organs within our bodies. Growth which exceeds those limits is not only abnormal and ugly, it is dangerous and destructive. A butterfly which grows to be as big as an eagle would not be more beautiful or more perfect; but a butterfly is just as beautiful and perfect in its small size as the majestic eagle. Now, that is the thing which the German nation cannot understand. Belgium was only a small nation, but just as industrious and as ingenious as the big German nation. It has played a great part in the history of civilization, and it has produced everlasting works of art and of science. But Belgium was just a small lovely butterfly which had not been able to grow as big as the German eagle; therefore, it had to be crushed and trampled under the feet of the German army. Germany has sacrificed everything to the delusion of growth and for the sake of growth, and the other nations have been too slow to perceive it. I need not tell you medical men that there is such a thing as a malignant growth of a tissue or of an organ. It begins invisibly and noiselessly, and no doubt the first stages of a new growth are very interesting to study under the microscope and it makes very nice figures. Have we not been watching this strange and uncanny growth of the German nation with a little too much friendly disinterestedness of the pathologist? But now this malignant growth has shown itself in its true light. We had better call it as the people do a cancer which separates the normal cells from each other, which obliterates blood vessels and destroys and kills. There is only one remedy for this growth—the knife. (Applause.) It is applied now. The surgical team doing the work is the best the world can afford. Great Britain, France, Italy and America are at it. Let them do the work thoroughly so that there shall be no recurrence. (Applause.) Let them extirpate this malignant tumor, this poisonous German growth, lest it should infest the whole body. It is hard work, gentlemen, it will be long work, and it is ugly work; but it has to be done if the world is to be saved and freedom restored. (Loud applause.)

PRESIDENT BEVAN said:

Brave Belgium; bruised and tattered Belgium; despoiled and devastated Belgium; outraged and enslaved Belgium, but unconquered and unconquerable Belgium. (Applause.) We

and our allies pledged ourselves to free and restore you, and we shall redeem our promise. We asked Belgium to send us that great surgeon so well known to the medical profession of this country, Dr. Depage, whose wife had endeared herself to so many American hearts and who lost her life in the sinking of the *Lusitania*. On account of the military emergency, Depage found that he could not come, but he has sent his right hand, his assistant, Captain René Sand of Belgium, whom I now introduce to you. (Applause.)

Address of Captain René Sand

DR. SAND said:

Mr. President, Ladies and Gentlemen: Your hearty welcome tells me—and it is not the first welcome since I have been in America—what Belgium means for your country. I will tell you now what America means for Belgium. We did not know you very well before the war. We had heard of your immense resources and of the constructive spirit of your democracy; we had heard of your creative and inventive genius, but we did not know what is most important and the most valuable part in a man as well as in a nation—your heart. (Applause.) Now we know. You have stood by us and for us since the first days of our fight. You have succeeded by a plan that is unique in history in feeding, in clothing and in keeping alive our whole nation during months and months and months across the ocean. You have sent your splendid doctors, your admirable nurses, your Red Cross representatives, but you have done more than that; you have given us your hearts, and today the whole Belgian nation gives you back love for love. (Applause.) Every parcel of food you have sent over, every toy that the American boy has deprived himself of in favor of the Belgian child, every penny you have saved for our children has been not only a material but a moral relief. Every day, for almost four years, you have given to 7,000,000 Belgians that sweet and warm and strong feeling we have around our hearts when we know that somebody cares for us. I will not thank you nor praise you for what you have done. It is beyond praise and beyond thanks. A young brother does not thank his big brother who has helped him; he loves him, and that surpasses everything, and that is how we feel for you. (Applause.) It is in this love which is born from our misfortune and through your generosity that the fraternal love for America and Belgium stands united forever. (Applause.)

PRESIDENT BEVAN said:

It is the purpose of the American people to create and maintain the largest and most efficient navy in the world. The medical department of that great navy, that greatest navy, is being splendidly developed by Admiral Braisted, whom I take great pleasure in introducing to you tonight. (Applause.)

Address of Admiral Braisted

ADMIRAL WILLIAM C. BRAISTED, Surgeon-General, U. S. Navy, said:

Mr. President, Ladies and Gentlemen: I have been enjoying myself today in going over your magnificent training station at the Great Lakes, and I have come here very tired, but very much enthused over what I have seen. Not having prepared anything special for you, I am going, if you will permit me, to run over a few things that have been going through my mind today. First, the seriousness of the situation, the extent of the problem just before us. You may have noticed a few weeks ago a tendency on the part of Germany, so it seems to me, to attempt to strengthen the bonds of the states which compose the middle Europe empire that she is attempting to make. That is loosely accomplished. An enormous territory has been demanded by Germany. In addition to that, we have the enormous area of Russia, and we have been told that German prisoners taken by the Russians were encouraged to bring about friendly relations, to intermarry, with the idea of creating the feeling that Russia and Germany should be one. So you see we have before us an enemy with tremendous territory, with the possibility of enormous supplies both for food and for material supplies or manufactures with millions of men. I imagine Germany's desire is to create this enormous middle Europe empire, hoping probably to take some, if not all, of the channel sea-ports. It seems to me, I can see in that extent of her ambition what she is attempting to do. This territory, of course, may be increased over into Asia Minor as that union is very loosely joined, and it will be her attempt to strengthen and demand that, and if that should be done, you see we have

against us these millions and these supplies and the possibility of a bitter war being continued for an indefinite time. It has seemed to me that we must be prepared for an indefinite struggle, for a struggle against a bitter foe, a relentless foe, where there is no compromise, and it will take from us every bit of energy and every bit of strength and every bit of patience and every bit of resource that we can possibly assemble to overcome this struggle we are now in.

In the Navy we have been through something over a year of war. I look back as Surgeon-General of the Navy with a great deal of satisfaction on the year that has passed. It has been a splendid year for us; it has been a very active year. We have been in the war since the first of April a year ago. In the Navy it has been active warfare. Much has gone on you do not know about, but in time you will be shown the important part that the Navy has been taking in this war, and it has been largely responsible for the success that we have had as far as we have progressed. I view with much pleasure the remarks that have been made about the Medical Corps of the Army and its work. The health of the Navy has been good. We have managed to expand good hospitals. We have hospital ships which we have managed to equip splendidly, including transports, and this work has been done admirably and in a very rapid manner. All this work has been accomplished in the medical department by ourselves. I have asked no help from any one. In time we may ask for help. As yet, we have not asked for one bit of help. That, I think, must show the splendid organization with which we have started, an organization founded on many years of study and of trial, so that I feel we have in the Navy an organization which is complete, and that success demands only material supplies and personnel.

So far as the health of the personnel of the Navy is concerned, of nearly half a million men, it is running about as it does in peace times. At the end of the week of June our casualties, deaths, for all diseases in the Navy was only 2.8 per cent., a very excellent showing for the whole length of the war from casualties due to disease in every quarter of the globe, casualties due to accidents, casualties due to military activity, etc. We have lost out of half a million men which we have now about four men a day on an average. When I first figured that up it seemed to me that it must be impossible that the mortality should have been so small as that. Of course, the conditions that exist in the naval service are far better than you find them in civil conditions in every way. Nowhere can you find sanitation that compares with that we have in the Navy. Ship sanitation must always be most careful and the most improved. Did you ever think of what would happen if contagious disease attacked the fleet and could not be controlled? I have in my time stood face to face with conditions which made me think that the entire fleet would be necessarily affected. To prevent these conditions the utmost care and watchfulness is needed constantly. Very few of you realize the enormous expansion that is going on. Every day something undreamed of or unheard of comes up and is calling constantly not for a change of organization, because we know what to do. We do not have to be told what to do, but the question arises, Am I going to have material supplies to do it with and the personnel? That, gentlemen of the American Medical Association, is where I am going to ask your help. As I have previously said, so far we have done it ourselves. You have heard nothing from the Navy being unequipped. Everything is all right. Everything is fine, but I shall ask your help and your cooperation at any moment when I feel that there may be need of it, and I know as I look in your faces I shall not ask in vain. Everything that can be done by humane men will be done by you to help me in my work in the Navy. (Applause.) But remember this: the Navy has always been ready; the Navy always will be ready, no matter what may happen in this struggle that is going on. We are ready, we are brave, we are strong, and we are resourceful. You need have no fear that your Navy will not acquit itself with credit wherever it may be. (Applause.)

As I went out today to the Great Lakes Training Station I saw the finest and largest naval training station in the world, with 35,000 of the finest young men I ever saw in my life. (Applause.) As I stood and looked at them as they passed in review, the thought came to me, what will be the outcome of this war? And I said to myself, the answer lies in the faces of these boys. (Applause.)

PRESIDENT BEVAN said:

In the organization of this country for war, it became early evident that the food problem was a vital one. The conservation of our food resources, the proper division of our own bountiful food supply with our allies was regarded by the government at Washington as a problem of first importance. Probably the most efficient man in the world was secured for this task, Mr. Hoover. (Applause.) Mr. Hoover has called to his assistance many of the ablest men in the country, and the ablest of them all we have with us tonight, and I want to introduce to you Dr. Ray Lyman Wilbur, President of Leland Stanford Junior University. (Applause.)

Address of President Ray Lyman Wilbur

PRESIDENT WILBUR said:

Mr. President, Ladies and Gentlemen: We stand tonight with a catch in our throats watching the great offensive on the other side, for the world is standing breathless today watching the race between the United States and our allies and Germany, and wondering whether we shall have a sufficient number of men in this fight before it is too late. We heard these terrible words from Lloyd George when he said that England was too late at Gallipoli; that England and France were too late to save Serbia, too late to save northern Italy and too late to save great Russia when she began to topple and crumble as no great nation ever crumbled, and the question that stands before us tonight is, Are we to be too late? No one can answer this question, but it is in the minds and the hearts of the American people not to be too late if we are to meet this crisis as it stands. Our safety tonight depends on the integrity of the Italian, the French and British people, and nothing else. (Applause.)

If you will stop for a moment and look back into recent history you will see that the integrity of a people depends on the food supply and on the morale. Hungry people fight only for food. Men are all alike. They have got to eat. When there is no food for the baby, the mother or the wife, men gather together and they tear down the government, no matter whether it be Petrograd or Chicago. We are all alike, and the one vital and fundamental thing is food for fighting peoples. When the Food Administration of this country was organized and we were facing the harvest in 1917, we knew the civilized world was going to struggle in order to go on with its food supply. We have had to devise some method of bringing the American people into that food problem to teach them the necessity of food conservation, the significance of food in war, and the fundamental character of food. Today through a campaign of education and response on the part of the American people, we are going to send out of this country by the first of September 150,000,000 bushels of wheat. Through self-denial the American people have raised 140,000,000 bushels of wheat. (Applause.)

Revolutions originate in bread lines. Human beings are all alike. It was the fundamental thing for us to do, and we have sent that wheat and are going to send a sufficient amount of products of beef and other things required. We are going to extend our bread lines wider and wider as the war clouds get darker and darker. The whole thing leads us to hope that the American people can go into this war in the same way that they have the food problem. God has been good to us. Our fields are green. We are beginning to reap the harvest from the crop of 1918. We shall have 300,000,000 bushels of wheat more than we require to send to our allies. (Applause.)

Great offensives are possible when there are great reserves. We have great stores of food in reserve. In the winning of this war, food constitutes a very important factor. I appeal to you members of the medical profession of the United States with your influence among the people to wake up this great country, to stir the people as they have never been stirred before, to make sacrifices and make still greater sacrifices to win this war. Why should we say to France, Go on with this war, when she has lost already 1,300,000? Why should we allow the other nations to suffer large losses without pitching into the heat of battle ourselves when we know that the American people can settle this war within a reasonable time? We have seen what England has done, and we know what we can do; but we must have the spirit, the willingness, the same attitude of self-sacrifice that we have put into the food problem. As I have said, one of the great essentials to meet offensives is great reserves in the way of food supplies and material. It is these things that will

count in the end. President Wilson has said, Why limit the Army to 5,000,000? Why not get 6,000,000 or 10,000,000, and ask the people for further deprivation and further self-sacrifice? We have already been told by the fuel administrators that we are 50,000,000 tons short in coal. Are the people paying attention to this problem? If not, they ought to do so because it is a serious matter. Every unit of human energy must be put into this war. Why not put it in soon? I repeat it again, Why not put it in soon? because I feel the medical profession can get at the important things if it wants to do so, and can make the people realize that only by material things can we demonstrate by our spirit that we mean business. We cannot do it with flag waving and by making speeches. Every unit of human energy must be put into this war by the men and women of the country in order to bring it to a victorious end for the allies. We have got to make the men on the other side feel that the hearts of the American people beat with them, and we must get the material things over there—ships, food supplies, and everything necessary to establish absolute confidence, so that we can hold up their morale and make them realize that our hearts beat in unison with theirs. When that has been done, we can exclaim, Hold that line, you courageous men of sunny Italy, you brave men of France. Hold that line, you noble men of Belgium. Hold that line, you stalwart boys of America! Hold that line until we get the men and guns, so that all together we can crash our way through the western front and settle this war against our ruthless, barbaric foe, Germany! (Loud applause.)

PRESIDENT BEVAN said:

When this program was arranged we asked Italy to send us a delegation of their best men. I am sorry to say, at the last minute, Bastianelli, the great Italian surgeon, wired us that on account of the great activity on the Italian front it was impossible for him to be with us here at this meeting. But our hearts are with Italy, and their hearts are with us, and I want you tonight by a rising vote to give me authority to send to Bastianelli and through Bastianelli to our Italian colleagues our greetings and be of good cheer, because we are coming to help them win this war. (Applause.) (The entire audience arose and cheered lustily for Italy.)

PRESIDENT BEVAN continued:

On the battle line in the starving countries invaded and devastated by the enemy, in the countries sickened with plague and pestilence, in our own mobilization and everywhere throughout the world is an angel of mercy giving succor to these great armies under the banner of the Red Cross. (Applause.) We have with us tonight one of the men who for more than a year has led the American forces of the Red Cross in France—Major Alexander Lambert. (Applause.)

Address of Major Alexander Lambert

Major Lambert said:

Mr. President, Ladies and Gentlemen: America perhaps distinguished herself when suddenly called to war by going into the war Red Cross hand first. She did not have an army to send, and she sent as rapidly as possible the Red Cross, which is the other arm of her army and the arm of the government. I think very few of you realize how much of a governmental function the Red Cross really is. It is usually looked on as a private society to give volunteer aid to the wounded and to care for the sick, or to stand ready at any time in calamity to help those in dire need. In reality, it is a governmental function—yes, founded on international treaty, incorporated by act of Congress, under the command of the President of the United States, as is the Army and the Navy, and in its incorporation it says that, besides being prepared to give voluntary aid to the sick and wounded, it is the society, and the only society, through which the people of the United States give voluntary aid to their Army and Navy in time of war. That voluntary aid is simply that which any friend would do to help any other friend or any human being in distress. This, in brief, is the work of the Red Cross, and what it is doing and has done is to build up in France an organization to look after the sick and wounded and to render aid to citizens wherever possible.

It has been my fortune to go from the North Sea in Belgium down through the entire front line, down and back to the line, and down into Italy as far as Rome itself. I

have no stories of excitement to tell you. It has not been my lot to go into that form of life. It has been a matter of fact work to do and of duty done.

I have often been asked by persons what one's feelings are under fire. What is it that you feel? True it is, for the last two or three months in Paris we have been under a constant queer bombardment of a long range gun which drops a shell in Paris every twenty minutes that explodes without warning and without any previous idea when it was to come or where it was to go. Some nights this cannonading would begin as early as 1 in the morning and keep up all night, and then perhaps cease for a day. The feelings of the boys under fire is perhaps best expressed by one of the engineers at Cambrai. After a battle, an English officer, who complimented him on the efficient work he had done, asked him if he had ever been under fire before, and he replied, "No, sir." "What do you think of it?" said the officer. He replied, "I didn't mind it much, but I noticed it took my mind off my work." (Laughter.) That I think is the best description of a soldier's feelings under fire.

The Red Cross has built up its hospitals to care for the sick and wounded or any other Americans in France. It is built up to care for certain hospitals in conjunction with the Army. The Red Cross is now taking care of the American wounded coming down to the end of the Montdidier line. Besides that, it cares for the refugees. It cares for the people of France that it may help them in their work, because the Red Cross has as much to do with the Allies as it has to do with its own people and with the Army which you sent there. It has found that it could hearten the people. It is not the nation fighting as an army sent forward to fight another army that is going to win, but it is the fact of nations fighting together, and the civilian population that can hold out the longest and stand the strain will be that population which will win the war. The ones that give in first will lose it, and that we must remember. You must learn to realize that you have to bear the great strain coming on you, and that strain will be tremendous compared with what you have already undergone. Your Red Cross has heartened the people among which it lives in caring for the refugees and in giving them attention as the necessity arose.

In the last drive, for instance, in March, back of the line, as they came down toward Montdidier the strain became very great, and the wounded were rushed back in such numbers that the hospitals could not care for them, so it was the duty of the Red Cross to load the motormen's trucks in Paris and have them take surgical dressings that had been made to the wounded. We took the surgical supplies out of Paris to the wounded men to meet the needs of the hour. Strange as it may appear, the Red Cross found some hospitals improvised and the men in them working beyond the power of human endurance. It found them without anesthetics, without any surgical aid whatever. The Red Cross gave them aid. It gave them dressings; it gave them every necessary thing it had and so it fulfilled its mission in caring for the hospitals. The Red Cross is caring for the wounded, in helping to give them those things which the doctors and nurses do not find time to give to the sick. That is one of the things that one friend would do to another in hospitals where there is so-called social service. The Red Cross is everywhere working for and working with to help the boys you have sent across the seas. We are aiding them in the way you would wish them to be aided.

There is a tradition in France that none of the statues of Jeanne d'Arc have been destroyed, and wherever you go it is true. Along the front lines these statues seem to have borne a charmed life for they are still apparently untouched. There is one charming statue at Compiègne facing the hills beyond the line where an attack is now going on. It is only a few miles behind the line. It is the charming statue of a young girl, standing, and holding a flag in her hand. Her face is lifted up in earnestness. As I looked at this statue in the twilight, there she stood calling to those of us to come and help her people. There she stands seemingly as imperishable as the valor of her people. Will you not harken to her call? Will you not realize the moral effect, great as it is? Will you not realize the great effort you have made, and that you must make still greater efforts? Will you not harken to this little maid of France and help her? Will you not arouse your people to come to the aid of her people? I believe you will. (Loud applause.)

THE PATRIOTIC MEETING

AUDITORIUM THEATER, THURSDAY
EVENING, JUNE 13

The patriotic meeting of the Association was held, June 13, at 8:30 p. m. Several patriotic musical selections were rendered by the Great Lakes Naval Training Station Band. Bob Dyrenforth sang patriotic songs, with the audience joining in the chorus.

DR. LUDVIG HEKTOEN, in calling the meeting to order, said: You are the guests of the Chicago Medical Society, the local branch of the American Medical Association, and it is as chairman of the Committee on Arrangements that I bid you welcome.

In former years it was customary at the annual meeting of the American Medical Association to hold a President's reception on Thursday evening. Since we entered the war it has seemed better to replace this nonessential function with a patriotic meeting as befitting the spirit of the times. Tonight there will be presented to you other subjects of the greatest importance in relation to the war.

Science and the War

PROF. JOHN M. COULTER, University of Chicago, was introduced as the first speaker of the evening, and spoke on "Science and the War." He said in part:

In presenting such a subject as science and the war, one must choose between a somewhat detailed account of the services rendered by the different sciences and a very general statement which omits details. A few samples of the emergency problems that have come to the National Research Council, however, may give a better conception of the range of such work. All sciences are contributing to the prosecution of this war. Some of them entered into it in a more spectacular way than others, but all of them in a real way. The great profession represented in this meeting is a conspicuous illustration of service so obvious and immediate that it is perhaps better appreciated by the public than are the other fields of scientific service.

Among the emergency problems referred to for fields of scientific investigation may be mentioned a few samples. To physics has come such problems as the detection of submarines, adequate range finders, and improvement in wireless apparatus. Chemistry is dealing with the absorption of noxious gases, synthetic drugs, new specifics, the preparation of special military maps, indexes of military zones, interpretations of topographical maps, and so on. Geology is interesting itself in the description of camp zones, in the recognition of adequate water supplies, in the materials for right building, and in sources of necessary materials. My own work on the National Research Council has had to do with problems relating to plants and the uses to which plants are put through raw products of all kinds. We are discovering what we have of the newer stock in hand, which is far greater than we imagine. The most pressing plant problem is that connected with food production because everything else depends on it. For years our rate of increase in food production had been falling rapidly behind the rate of increase in population. Such a disparity between the two rates of increase could not be allowed to continue if there was no war; but when the war came, as you know, the problem became tremendously more acute. It was discovered that the chief reason for this lack of food production behind the population was a lack of cooperation, that is, a failure to apply the knowledge already available in reference to the most effective methods of handling plants. Isolated investigators in various parts of the world solved important problems, but the results were never brought together and focused on our great need. It has been discovered that the knowledge now available, if applied to the result in food production, would overtake the population if there had been such scientific cooperation in the years that have gone as exists today, and we would not have heard of wheatless days. All of these restrictions of our food administration are simply to help us bridge over this transition. Cooperation is the only method not only to render effective service but also to secure scientific results. Science in this war represents training that is of immense service in meeting emergencies. It has not restricted itself to superficial progress, but has been dealing with fundamentals, and its range of application is

wide, and it offers this training because more than anything else it is patriotic, not in the Prussian sense but in the sense of international cooperation and service. (Applause.)

The Law and the War

JUDGE CHARLES S. CUTTING spoke on this subject. He said in part:

We lawyers are taught to believe in the sacredness of contracts, and all of us Americans ought to be thoroughly imbued with the idea that a solemn compact, whether it be between men or between nations, is something which is made to be kept and not to be violated at will. Military necessity, like any other necessity by one of the parties to an obligation, is an exceedingly convenient way to violate absolutely a solemn agreement. Who is the judge as to military necessity? The power that invokes it and it alone. This throws to the winds all idea of fairness, of justice, of right, of law. Law is the cement which binds together civilization, and without it we relapse into savagery, and savagery is followed by the desecration of the law.

When our great Army shall have come home, let us hope that it shall have on its face, "This world is now safe for democracy, and a world fit to live in. It is of the people, for the people and by the people"; and when that day arrives, I am sure there will go up such a shout of joy from San Francisco to Boston, and from the Lakes to the Gulf that the world will know that the great power that exists for right, for law, for constitutional liberty has spoken, and that the die is forever cast. (Applause.)

PRESIDENT BEVAN said:

This is one of the largest and most successful meetings the American Medical Association has ever held. I want to call your attention in a few words to the flag that hangs in the back of this hall, the service flag, with 23,146 stars. This is the service flag of the American Medical Association and represents the number of physicians who have gone into the service.

American Ideals

BISHOP CHARLES P. ANDERSON spoke on this subject. He said in part:

Whether we be doctors or priests, lawyers or professors, farmers or artisans, soldiers or civilians, rich or poor, or whether we have decorations in front of our names or after our names or not, we are primarily men—men who have been made in the image of God and men who will be measured not by their titles or decorations or positions, but by their moral bulk and their constructive energy for the betterment of the human race. The danger in a professional life is that we are apt to become stilted and mechanical and lose the dignity of the man in the routine of a profession. No profession ever became a great profession until it had produced a great man, and no great man ever lived apart from great ideals. It is about ideals that I shall speak to you tonight, especially as they are represented in American life and thought and action.

We have witnessed during the last year the expansion of a great moral conviction among the American people. The rank and file of our citizenship is not familiar with the intricacies of international law. We are certainly not familiar with European bunglers. Candidly, we are not much interested in these aspects of the case; but we have certain old-fashioned ideas of right and wrong. Our people have been asking themselves for a year, Is it right or is it wrong to do certain things? Is it right or is it wrong to break your word, to violate a treaty? Is it right or is it wrong for the strong to oppress the weak? Is it right or is it wrong to bring about wholesale murder of human beings for any military purpose whatever? Is it right or is it wrong to instigate barbarous practices that shock the individual conscience, even of the savage? And the American conscience is answering these questions in this way: Those things are wrong and they will have to be set right. We have ideals, and we have faith in our ideals. We are ready to make sacrifices for our ideals, and if the submarine does come close to our shores and threatens, or if the drive over there in France should seem to penetrate through that line, and if that should be followed by propositions of an ignoble peace, we will answer back as did John Paul Jones when he was sorely smitten and threatened of being overcome, "Oh, thou enemy, we have not begun to fight yet." (Applause.)

THE HOUSE OF DELEGATES

Third Meeting—Thursday Morning, June 13

The House of Delegates, in accordance with the action taken at the meeting held on Tuesday afternoon, met at 8 a. m. and was called to order by the speaker.

Dr. D. Chester Brown, Connecticut, chairman, presented supplementary reports of the Committee on Credentials, stating that ten additional delegates had registered and were entitled to seats in the House of Delegates, and recommended that they be seated.

Dr. V. G. Vecki, California, moved that the report be adopted. Seconded and carried.

The secretary called the roll and recorded 117 delegates present.

The minutes of the previous meeting were read and approved.

Election of Officers

The next order of business being the election of officers, the House proceeded to an election, which resulted as follows:

President - Elect —
ALEXANDER LAMBERT,
New York.

First Vice President
—WILLIAM N. WISH-
ARD, Indianapolis.

Second Vice Presi-
dent—E. STARR JUDD,
Rochester, Minn.

Third Vice President
—C. W. RICHARDSON,
Washington, D. C.

Fourth Vice Presi-
dent—JOHN M. BALDY,
Philadelphia.

Secretary — ALEXAN-
DER R. CRAIG, Chicago.

Treasurer—WILLIAM
ALLEN PUSEY, Chicago.

Speaker of the House
of Delegates—HUBERT
WORK, Pueblo, Colo.

Vice Speaker of the
House of Delegates—
DWIGHT H. MURRAY,
Syracuse, N. Y.

Members of the
Board of Trustees—
FRANK BILLINGS, Chicago; WENDELL C. PHILLIPS, New York;
THOMAS McDAVITT, St. Paul; and, to fill vacancy caused by
the death of E. J. McKnight, for a term expiring in 1919,
D. CHESTER BROWN, Danbury, Conn.

Members of the Judicial Council, for a term of five years—
W. S. THAYER, Baltimore; to fill the vacancy occasioned by
the election of Alexander Lambert, New York, as President-
Elect of the Association, whose term would have expired in
1919, M. L. HARRIS, Chicago.

Members of the Council on Health and Public Instruction
—For the term of five years, to succeed himself, W. S.
RANKIN, Raleigh, N. C.; to fill the vacancy occasioned by
the election of Frank Billings, Chicago, as a member of the
Board of Trustees, whose term would have expired in 1921,
LUDVIG HEKTOEN, Chicago.

Member of the Council on Medical Education—For the
term of five years, to succeed himself, HORACE D. ARNOLD,
Boston.

Member of the Council on Scientific Assembly—For the
term of five years, to succeed himself, ROGER S. MORRIS,
Cincinnati.

The secretary presented a list of applicants for associate
fellowship endorsed by the Section on Stomatology, and
stated that this is the only list which has so far been trans-
mitted to him from any of the sections.

Dr. E. Eliot Harris, New York, moved that the secretary
be authorized to cast a ballot for the House of Delegates in
each instance, not only of those applicants endorsed by the

Section on Stomatology, but also for those
applicants who may be
endorsed by the other
sections of the Scien-
tific Assembly in which
the applicant is not
eligible for membership
in the state association
of the state in which he
resides, and provided
no objection to the ap-
plicant is filed by the
officers of such state
association. Seconded
and carried.

Place of Annual Session

Dr. Thomas McDavitt, Minnesota, chair-
man, stated that there
had been presented to
the Board of Trustees
from its Committee on
Place of Annual Ses-
sion two cities which
are adjudged to be suit-
able for the accommo-
dation of the annual
session of the Associa-
tion. The Board of
Trustees transmits to
the House of Delegates
these two places with-
out recommendation.
Since the last meeting
of the Board of Trus-
tees, a third such city
has been suggested and
is included in the list
presented, in order that
it, too, may be consid-
ered by the House of

Delegates. These three places suggested for the next Annual
Session are Atlantic City, N. J.; Hot Springs, Ark., and
Philadelphia.

Dr. Wilmer Krusen, Pennsylvania, withdrew Philadelphia
from the list of places to be considered.

The advantages of both Atlantic City and Hot Springs
were presented in a discussion, which was taken part in by
Drs. W. T. Wootton, Arkansas; Wilmer Krusen, Pennsyl-
vania; E. Eliot Harris, New York; H. G. Wetherill, Colo-
rado; G. F. Cott, New York; C. P. Meriwether, Arkansas;
F. D. Boyd, Texas; Otto P. Geier, Ohio, and Dwight H.
Murray, New York.

A ballot was then taken, which resulted in the choice of
Atlantic City, N. J., as the place for the next annual session
of the Association.



MAJOR ALEXANDER LAMBERT, M. R. C., U. S. ARMY
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

Dr. George H. Kress, California, moved that the time for holding the next annual session be referred to the Board of Trustees with power to act.

Seconded and carried.

During the progress of the election, Dr. E. J. Goodwin, Missouri, moved that when the House adjourns, it adjourn with the members standing for a few moments in silence, with heads bowed, in respect to the memory of Dr. E. J. McKnight, a trustee, and to those members of the Association who have lost their lives in the service of our country.

Seconded and carried.

**Supplementary Report of the Reference Committee on
Legislation and Political Action**

Dr. M. L. Graves, Texas, chairman, presented a supplementary report for the Reference Committee on Legislation and Political Action, as follows:

The report of the War Committee has been duly considered and we feel that commendation is due the officers of the American Medical Association for their prompt recognition of the opportunity for service to our country during this war and their loyal tender of this service to the officers of the government as well as for the good work accomplished, which has been graciously acknowledged by the Surgeon-General. We feel that the House should further assure the government that all its officers and organization will cooperate fully with and serve the government whenever desired.

The following resolution was presented by Dr. V. G. Vecki, California, and was referred to your Reference Committee on Legislation and Political Action.

Resolved, By the House of Delegates of the American Medical Association, at its annual session at Chicago, 1918, that in consideration of the impending emergency and in consideration of the indisputable fact that all interests are secondary to the winning of the war and the relief of the wounded soldiers, so splendidly fighting for our country, action be taken provisionally to establish an undergraduate class of medical men, who would have no claim to be licensed to practice medicine after the war without proper additional education as provided by present regulations.

Your Reference Committee believes it unwise to offer any inducement to undergraduates in medicine to abandon their studies, but on the contrary would urge all students to complete their medical courses and thus become qualified to render a far more efficient service to their country.

The committee therefore recommends that this resolution be not approved.

In addition, the following resolution from the Section on Stomatology was transmitted to the Reference Committee on Legislation and Political Action.

WHEREAS, It is highly probable that all hospitals and dispensaries may in the near future be called on to receive, treat and care for disabled American soldiers, it is recommended by the House of Delegates of the American Medical Association in session at Chicago, 1918, that all physicians of German and Austrian citizenship (including those having only their first naturalization papers of American citizenship) should be dropped from those hospitals receiving soldiers during the period of the war.

Your committee feels that the suggested action may be safely left to the judgment of the governing bodies of the hospitals themselves.

Dr. Eliot Harris, New York, moved the adoption of the report. Seconded.

After discussion by Drs. V. G. Vecki, California; E. Eliot Harris, New York, and G. F. Cott, New York, the motion to adopt was put and carried.

**Supplementary Report of Reference Committee on
Hygiene and Public Health**

Dr. J. W. Schereschewsky, U. S. P. H. S., chairman, presented a report from the Reference Committee on Hygiene and Public Health.

The first section of this report was read and a motion to adopt was made and seconded. This motion was discussed by Dr. Otto P. Geier, delegate from the Section on Preventive Medicine and Public Health, who moved an amendment which was accepted, when the motion as amended was put and carried. The section of the report as amended and adopted is as follows:

In accordance with the directions given to the Reference Committee on Hygiene and Public Health, at the last meeting

of the House of Delegates, your committee submits the following resolution concerning animal experimentation and recommends that it be adopted by the House of Delegates.

WHEREAS, The usefulness and, indeed, the imperative need of animal experimentation has been fully established by the improvements in sanitation resulting in the striking difference in the health of troops in this as contrasted with former wars; in the practical abolition of the dreadful wound-tetanus; and in the vast improvements in the results of wound treatment; and

WHEREAS, Further animal experimentation is absolutely necessary for the conduct of the war for the further protection of the gallant soldiers who are risking life, limb and health for our safety; and

WHEREAS, Animal experimentation is absolutely necessary for meeting effectively the practice of the enemy in using poison gases; therefore be it

Resolved, That the House of Delegates of the American Medical Association in convention assembled at Chicago, Illinois, hereby reaffirms its belief that properly regulated animal experimentation is necessary for the sake of the public health; that the necessity for such animal experimentation is greater and more urgent at this time than ever; and that those who interfere with it in any way, thereby interfere with the conduct of the war and fail in the gratitude owing to our defenders.

The Reference Committee on Hygiene and Public Health reports further that it has had referred to it the following resolution which was adopted by the Section on Diseases of Children:

Resolved, That the War Council of the American Red Cross be asked to appropriate \$100,000 for the purpose of better child welfare work, assisting existing organizations working in child welfare, and organizing this work when approved by the Medical Advisory Committee of the American Red Cross. This sum to be expended under the direction of the said committee.

Your committee recommends that this resolution be adopted. Respectfully submitted by order of Reference Committee on Hygiene and Public Health.

J. W. SCHERESCHEWSKY, Chairman,

It was moved that this recommendation of the committee be concurred in.

Seconded and carried.

It was then moved and seconded that the report of the Reference Committee on Hygiene and Public Health be adopted as a whole. Carried.

**Supplementary Report of the Reference Committee
on Constitution**

Dr. Floyd M. Crandall, New York, chairman, presented the following supplementary report for the Reference Committee on Amendments to the Constitution and By-Laws and moved the adoption of the report. Seconded and carried. The report follows:

A communication presented to the House of Delegates on Tuesday, June 11, by Dr. W. T. Wootton of Arkansas, relative to the standardizing of surgical procedure and medical practice, was referred to this committee for action. While the communication proposed the appointment of a standing committee and hence a change in the By-Laws, it dealt with other matters foreign to the work of this committee, and it recommends that it be referred to the Judicial Council.

Respectfully submitted by order of the Reference Committee.

FLOYD M. CRANDALL, Chairman.

**Report of Reference Committee on Sections
and Section Work**

Dr. John D. McLean, Pennsylvania, chairman, presented the following report of the Reference Committee on Sections and Section Work:

The members of the Reference Committee on Sections and Section Work have very carefully studied the report of the Council on Scientific Assembly and have found a diversity of statements in the report. They find no record of any definite recommendations, but have been much impressed with the statement, "We are accused, and the Council on Scientific Assembly believes this is a just criticism, of devoting too much time to scientific work and too little to social enjoyment and getting acquainted with each other."

We find on referring to the program of the Scientific Assembly and to the meeting of the House of Delegates that there are nineteen separate and distinct sections of our association meeting during five days, as follows: House of Delegates, general meetings, scientific exhibits, and sixteen scien-

tific sections. We therefore appreciate the significance of this statement that much time is devoted to scientific work, leaving very little for pleasure and getting acquainted.

We also find that a resolution has been handed to us requesting consideration of the creation of a new section on industrial physicians and surgeons, making additional scientific work. There would then be twenty distinct parts of the association meeting during the five days. We find also, on referring to the program, that there are 562 speakers listed to address the physicians in attendance. This does not include meetings of the House of Delegates or meetings on Wednesday and Thursday evenings.

As a result of all this, we find it impossible to make any definite recommendation to become operative at the next session, and as this involves every member of the Association in attendance, we would recommend that this House of Delegates direct the Council on Scientific Assembly to carefully study this problem and form a definite plan of procedure for future meetings. We would also recommend that the committee be directed to forward the suggested plan of procedure to each member of the House of Delegates, for the next session, at least two weeks prior to the first day of the meeting of the House, and that the report of the Council be submitted to the House of Delegates at the next session for definite action.

The following resolutions have also received consideration:

WHEREAS, Industrial medicine and surgery is rapidly becoming an important special field of medicine, and

WHEREAS, The American Association of Industrial Physicians and Surgeons of over 500 members has been in existence for three years, and

WHEREAS, The industrial physicians and surgeons form a group of the profession making a large contribution both to medicine and to the conservation of man power; now be it

Resolved, That the American Medical Association recognize these facts and give their designation of Industrial Physicians and Surgeons to those properly qualifying for this title, and that they be so designated in the Directory of the American Medical Association; and be it further

Resolved, That the Committee on Sections consider the advisability of inviting the American Association of Industrial Physicians and Surgeons to become a section of the American Medical Association.

Your Reference Committee would recommend that the first resolution be referred to the Board of Trustees with favorable recommendation, and that the second resolution be referred to the Council on Scientific Assembly for consideration in the proposed plan of procedure to be submitted to the House of Delegates at the next session.

JOHN D. MCLEAN,
GUY L. CONNOR,
FREDERICK T. ROGERS,

THOMAS HOLLOWAY,
G. A. MOLEEN.

It was moved that the report be adopted.

Seconded and carried.

Supplementary Report of the Reference Committee on Reports of Officers

Dr. H. G. Wetherill, Colorado, chairman, presented the following supplementary report for the Reference Committee on Reports of Officers:

As regards the report of the Judicial Council, your Reference Committee agrees that it is inadvisable for the medical profession to depart from its traditional principle, namely, that physicians should not derive pecuniary profit from patents on articles for the relief of the sick. This principle is endorsed and reaffirmed, chiefly because it represents the highest ideals of our profession; but it may be noted also that it is one of the foundations of the confidence of the public in the profession, and one of the chief reasons why funds have been given liberally for medical research. Every discovery of the future utilizes the results of these past gifts, and therefore has obligations toward them.

The case is not quite as clear when profits derived from such patents are to be used for the benefit of the public, and not for private gain. This is permitted by the rule of 1916, under which we are now working; and whether this rule is wise or unwise, it could not fairly be revoked in reference to the present case, since this would constitute retroactive legislation.

It must also be pointed out that the Association has no jurisdiction over the University of Minnesota, and therefore the question of what this university should do or should not do does not seem to be a subject for action by this body.

Under the circumstances, it appears that this body may reply to the request of the University of Minnesota by informing it of its own general policy, as above expressed, and leave the adoption and application of these principles to the university.

Finally, it is to be clearly understood that no member of the medical profession is to derive pecuniary profit from the patent; and that the Reference Committee assumes, without hesitation, that the offer of the Mayo brothers was made in a spirit of altruism.

We therefore recommend that the present status be maintained, under the resolution adopted by the House of Delegates at the Detroit session in 1916, and that a copy of this report and of the report of the Judicial Council be forwarded to the president of the University of Minnesota and to Drs. William J. and Charles H. Mayo.

H. G. WETHERILL,
F. E. MURPHY,
S. R. ROBERTS,

TORALD SOLLMANN,
H. B. GIBBY.

At the conclusion of the report, Dr. Wetherill moved its adoption.

Seconded and carried.

Report of Committee on Reapportionment

Dr. Edward B. Heckel, Pennsylvania, chairman, presented the following report of the Committee on Reapportionment:

Your Committee on Reapportionment of Delegates presents the following report, in accordance with Article 5, Section 2, of the Constitution, which provides that "the total voting membership of the House of Delegates shall not exceed 150. The Medical Departments of the Army, of the Navy, and the United States Public Health Service, and the Scientific Sections shall each be entitled to one delegate." This leaves 132 to be apportioned to the constituent associations in proportion to their actual membership, which entitled each 800 members or fraction thereof to one delegate. This makes the voting membership of the House of Delegates 145, and according to the Constitution and By-Laws the apportionment will prevail for three years. The number of delegates to which each state is entitled, in accordance with this ratio, is as shown in the accompanying table (see page 1943).

Respectfully submitted.

EDWARD B. HECKEL,
PHILIP S. ROY,
JOHN RIDLON,

ARTHUR D. BEVAN, President,
ALEXANDER R. CRAIG, Secretary.

At the conclusion of the report, Dr. Heckel moved that it be adopted, with the proviso that the secretary be authorized to correct any errors in it.

Seconded and carried.

Dr. J. W. Schereschewsky, U. S. P. H. S., chairman, presented the following resolution, which is transmitted from the Section on Preventive Medicine and Public Health, and referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The health of the nation is a measure of its effectiveness both in peace and in war; and

WHEREAS, The military army of today was the civilian army of yesterday; and

WHEREAS, The necessity for protecting the public health was never more urgent; therefore be it

Resolved, By the House of Delegates of the American Medical Association, that the three Surgeon-Generals of the Army, the Navy and the U. S. Public Health Service, be memorialized as to the necessity for devising means for protecting the integrity of the health organizations of the several states.

Your committee approves this resolution and recommends its adoption by the House of Delegates.

Respectfully submitted by order of the Reference Committee.

J. W. SCHERESCHEWSKY, Chairman.

A motion to adopt the report was made and seconded.

After discussion by Dr. John D. McClean, Pennsylvania; Dr. J. W. Schereschewsky, U. S. P. H. S.; Dr. S. W. Welch, Alabama, and Dr. Wilmer Krusen, Pennsylvania, it was moved that the resolution be laid on the table.

Seconded and carried.

Dr. Otto P. Gcier, delegate from the Section on Preventive Medicine and Public Health, moved that the resolution

APPORTIONMENT OF DELEGATES

STATE	Membership of State Association, State Secretary's Report, April 1, 1918	Present Apportionment	Apportionment Based on One Delegate to Every 800 and Fraction	Increase	Decrease
Alabama.....	1,750	3	3	..	..
Arizona.....	170	1	1	..	..
Arkansas.....	1,044	2	2	..	..
California.....	2,255	4	3	..	1
Colorado.....	873	2	2	..	..
Connecticut.....	1,017	2	2	..	..
Delaware.....	113	1	1	..	..
District of Columbia.....	558	1	1	..	..
Florida.....	500	1	1	..	..
Georgia.....	1,415	3	2	..	1
Idaho.....	132	1	1	..	..
Illinois.....	6,318	9	8	..	1
Indiana.....	2,055	4	3	..	1
Iowa.....	1,691	3	3	..	..
Kansas.....	1,603	2	3	1	..
Kentucky.....	2,261	4	3	..	1
Louisiana.....	813	1	2	1	..
Maine.....	744	1	1	..	..
Maryland.....	1,014	2	2	..	..
Massachusetts.....	3,665	5	5	..	..
Michigan.....	2,734	4	4	..	..
Minnesota.....	1,352	2	2	..	..
Mississippi.....	400	2	1	..	1
Missouri.....	3,215	5	5	..	..
Montana.....	239	1	1	..	..
Nebraska.....	917	2	2	..	..
Nevada.....	88	1	1	..	..
New Hampshire.....	500	1	1	..	..
New Jersey.....	1,714	3	3	..	..
New Mexico.....	210	1	1	..	..
New York.....	8,468	11	11	..	..
North Carolina.....	1,300	2	2	..	..
North Dakota.....	430	1	1	..	..
Ohio.....	4,153	5	6	1	..
Oklahoma.....	1,466	2	2	..	..
Oregon.....	300	1	1	..	..
Pennsylvania.....	6,872	9	9	..	..
Rhode Island.....	427	1	1	..	..
South Carolina.....	735	1	1	..	..
South Dakota.....	373	1	1	..	..
Tennessee.....	1,102	2	2	..	..
Texas.....	3,601	5	5	..	..
Utah.....	267	1	1	..	..
Vermont.....	254	1	1	..	..
Virginia.....	1,812	3	3	..	..
Washington.....	953	2	2	..	..
West Virginia.....	935	2	2	..	..
Wisconsin.....	1,885	3	3	..	..
Wyoming.....	90	1	1	..	..
Hawaii.....	79	1	1	..	..
Isthmian Canal Zone.....	97	1	1	..	..
Philippine Islands.....	114	1	1	..	..
Porto Rico.....	112	1	1	..	..
Government Services.....	.....	3	3	..	..
Sections.....	.....	15	15	..	..
Total.....	.....	150	147	..	..

presented by the Reference Committee on Hygiene and Public Health, just tabled, be taken off the table.

Seconded and carried.

The resolution was again discussed by Drs. S. W. Welch, Otto P. Geier and John D. McClean, when Dr. Geier moved to amend the resolution by adding to the second part of it the words "maintaining the efficiency and financial support," so that the resolution as amended would read as follows:

Resolved, By the House of Delegates of the American Medical Association, that the three Surgeon-Generals of the Army, the Navy and the United States Public Health Service be memorialized as to the necessity for devising means for protecting the integrity and maintaining the efficiency and financial support of the health organizations of the several states.

Seconded.

After further discussion by Drs. John D. McClean, Pennsylvania, and Dr. Otto P. Geier, the original motion as amended was put and carried.

Dr. E. H. Cary, Texas, moved that a vote of thanks be extended to the resident members and officers of the American Medical Association, and particularly to the Chicago Medical Society, for their hospitality and entertainment of the members of the House of Delegates. Further, that the thanks of the House of Delegates be extended to the ladies of Chicago and citizens for helping to make this meeting so pleasant and enjoyable. Seconded and carried.

Dr. E. Elliot Harris, New York: We all feel a great debt to the Speaker of the House of Delegates for the able manner in which he has conducted the deliberations of this House, and, therefore, I move that a rising vote of thanks be extended to him for his work during this session.

Seconded and unanimously carried.

The members of the House of Delegates, in accordance with the motion made by Dr. Goodwin, then arose and in silence bowed their heads for a few moments in respect to the memory of Dr. E. J. McKnight, late member of the Board of Trustees and of those Fellows and members who have "carried on" in the services of the nation, after which the Speaker declared the House of Delegates adjourned *sine die*.

REGISTRATION AT CHICAGO

The total registration at the Chicago Session was 5,553. Below are given two summaries, one by sections and one by states:

REGISTRATION BY SECTIONS

Practice of Medicine	1,880
Surgery, General and Abdominal	1,417
Obstetrics, Gynecology and Abdominal Surgery	345
Ophthalmology	417
Laryngology, Otology and Rhinology	291
Diseases of Children	222
Pharmacology and Therapeutics	30
Pathology and Physiology	76
Stomatology	29
Nervous and Mental Diseases	157
Dermatology	89
Preventive Medicine and Public Health	152
Genito-Urinary Diseases	119
Orthopedic Surgery	102
Gastro-Enterology and Proctology	71
Registrations without specifying any one section	156
Total	5,553

REGISTRATION BY STATES

	Number		Number
Alabama	17	Nevada	3
Arizona	3	New Hampshire	4
Arkansas	40	New Jersey	15
California	83	New Mexico	7
Colorado	62	New York	144
Connecticut	10	North Carolina	8
District of Columbia	36	North Dakota	20
Florida	9	Ohio	333
Georgia	24	Oklahoma	53
Idaho	14	Oregon	12
Illinois	2,265	Pennsylvania	164
Indiana	307	Rhode Island	8
Iowa	369	South Carolina	11
Kansas	125	South Dakota	25
Kentucky	69	Tennessee	60
Louisiana	19	Texas	62
Maine	2	Utah	10
Maryland	26	Vermont	6
Massachusetts	42	Virginia	24
Michigan	245	Washington	17
Minnesota	151	West Virginia	28
Mississippi	10	Wisconsin	307
Missouri	180	Wyoming	15
Montana	19		
Nebraska	90	Total	5,553

AWARDS IN THE SCIENTIFIC EXHIBIT

The Committee on Awards in the Scientific Exhibit made the following awards:

GOLD MEDAL.—The Fort Riley Sanitary Laboratory, Fort Riley, Kan., fifty models of Army sanitary apparatus.

SILVER MEDAL.—Mayo Foundation, Rochester, Minn., exhibit of the work of the Mayo Clinic and Research Laboratory.

SILVER MEDAL.—Dr. David J. Davis, Chicago, investigations of sporotrichosis, including specimens, cultures and pictures.

CERTIFICATES OF MERIT:

United States Department of Agriculture, Bureau of Animal Industry.—Specimens of disease in food animals.

Dr. Henry F. Smyth, Laboratory of Hygiene, University of Pennsylvania.—Industrial dust—charts, photographs and museum specimens.

Dr. Alfred A. Strauss, Chicago.—Stomach and intestinal surgery—operation for sterility in male.

Dr. Leigh F. Watson, Chicago.—Experimental studies of goiter, specimens, photographs and photomicrographs.

Dr. Daniel N. Eisendrath, Chicago.—1. Experimental effects of cholecystectomy. 2. Anatomy of common duct region. 3. Specimens of kidney surgery.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 22, 1918

THE FOOD OF THE WORKER IN WAR TIME

In THE JOURNAL¹ last week, some facts were presented regarding the nutrition of the Army and the rationing of this selected group now comprising far more than a million of our population. Every one admits that it is of supreme importance to secure the highest physiologic well-being of these persons, on whom depends, in so large a measure, the success of our cause in the international crisis. Scarcely less desirable, however, is the preservation of adequate working strength and efficiency in the great group of laborers who, in one field or another, are producing the supplies without which armed forces cannot be maintained in action. Ships and munitions are among the indispensable requisites in the prosecution of the war. Those engaged in the manufacture of such requisites represent persons at hard work. Their dietary needs are therefore a matter of national concern.

Ordinarily the problems here raised would seem of minor significance so far as an adequate income will permit the purchase of the essentials for proper living. But with a world shortage in food, with a constant, yet surely justified demand on our own citizens to save food to the point of self-sacrifice, and with restrictions both economic and legal placed on the ready purchase of certain food commodities, it may well be asked whether a danger of impairment of the unorganized forces of our great army of labor is imminent. Here the experience of our allies may be of service to us; so that, as has often been reiterated in the course of the past year or two, we ought to profit by the knowledge of the failures or successes of the nations across the sea.

An unusually valuable report on the composition of dietaries, with special reference to those of munition workers, has just been published by the National Health Insurance Medical Research Committee² in Great Britain. The investigation was conducted by Viscount Dunluce and Capt. M. Greenwood of the

Welfare and Health Section, Ministry of Munitions. The organization of the committee, which includes Christopher Addison, A. K. Chalmers, W. Bulloch, F. G. Hopkins, G. R. Murray, Sir W. M. Fletcher and Sir William Leishman as its medical and scientific members, is a guarantee of the presumable value of this inquiry. The committee points out that it usually happens in the progress of scientific knowledge that periods of great activity in the collection of new facts alternate with others of discussion and consolidation. The coming of war caught the study of nutrition in a period of the former kind. The sudden and exceptional demand for practical guidance which sprang from war conditions found many gaps in the body of knowledge actually available for practical use in dietetics. When the food shortage became imminent, physiologists were able in some degree to state in quantitative terms the actual energy consumed in this or that kind of productive work. They were not able, however, to estimate at all fully the adaptability of the human machine. Its demands and its possibilities had been laboriously studied under conditions which circumstances had led us to consider as normal; but exactly how far the machine is capable of being adjusted to other and, presumably, less favorable conditions was less well known.

For the purposes of comparison under the established conditions of environment and dietary habits existing in Great Britain, statistics of working-class diets, collected before the war, are available. They show a steady increase of energy intake with increasing income. The ranges are from 3,000 to 4,000 calories on a man-per-day basis; for these dietaries the protein consumption ranged from under 85 to about 115 gm. In general accord with these figures are further data collected with great care by Miss Ferguson³ and her collaborators on the diets of forty Glasgow families in 1911-1912 and 1915-1916. The outcome is not widely different from the estimations of the United States Department of Agriculture's Division of Home Economics on the dietaries of American farmers, their rating being placed at about 3,500 calories per man per day and including 100 gm. of protein.

The British compilers admit that it is very difficult to draw general conclusions from such averages. Thus the budgets give no information regarding the use of alcoholic drinks, and although these beverages are not primarily drunk because of their food value, they must be allowed to contribute to the calorific properties of a diet containing them. Still, it does not appear that the prewar statistics demonstrate any necessity for the average working man to consume a diet equivalent to more than 3,500 calories.

Turning to war time conditions, we find available an unusually large series of statistics collected during the spring and summer of 1917 in English hostels and

1. The Food of the Army, editorial, THE JOURNAL A. M. A., June 15, 1918, p. 1864.

2. National Health Insurance Medical Research Committee, Special Report Series, 1918, No. 13.

3. Ferguson: Proc. Roy. Soc. Edinburgh, 1917, 37, Part 2, p. 117.

canteens serving the munition workers in various factories. These show the use of 3,463 calories, on the man-per-day basis, as an average of a larger number of dietaries probably than has ever been compiled for a working class population. About 14 per cent. of the calories were furnished by protein, that is, 116 gm. per day. The statistics are, of course, by no means uniform. Only in three hostels out of twenty-two investigated did the energy value of the daily diet sink below 3,000 calories.

As is now well known, there was a season of acute shortage of potatoes in England last year, and coincidently there was an energetic campaign urging the public to "eat less bread." In addition, sugar was very scarce. As a phenomenon of nutrition among the people, it is interesting to learn, from actual dietary statistics, what was the effect of this pronounced tendency to decrease the intake of carbohydrates in the ration. The contrecoup of this economy, as the British report has expressed it, has been a remarkable increase in the consumption of fat and an appreciable rise in that of protein. The need of energy in some form cannot be thwarted. The consumption of fats was almost doubled, while that of the carbohydrates proportionately declined. The British committee is inclined to question the wisdom of such enforced changes. "Physiologically," it states, "we hold that the departure from a normal diet was undesirable because there are reasons why carbohydrates should bear the brunt of the struggle to provide energy for work." Hence it urged a radical modification of the dietaries then current (1917) in the direction of reducing fat and increasing the carbohydrate utilized. Perhaps it is fortunate that in this country, despite the urgent request to "eat no wheat," emphasis has always been placed by the United States Food Administration, thanks to its scientific advisers, on the substitution of other cereals so as to leave the essential make-up of the dietary unchanged.

A RETROSPECT OF THE CHICAGO SESSION

The sixty-ninth annual session of the American Medical Association, held in Chicago last week, was one of the most important the Association has ever held. This statement is made as the meetings, the exhibits, the addresses and the results of the past week pass in retrospect before us. The House of Delegates considered many topics of current war interest and passed a number of resolutions of important, timely character, conspicuous among them being those on animal experimentation, on universal military training, on welfare work among children, on the use of enemy manufactured pharmaceutical products, and on the work of Surgeon-General Gorgas.

The opening meeting of the Scientific Assembly, held in the Auditorium Theater was greeted by an audience of over 4,500 persons, every seat and avail-

able space in the theater being occupied. Unfortunately, many who desired to attend were unable to find accommodations because of late arrival. The music for this session was provided by the Fort Riley Band, which was a conspicuous feature of the annual session, and aided in arousing military enthusiasm. At this meeting, as in all of the night meetings, the medical officers in uniform were seated on the stage, and added military tone and color to the picture.

The scientific programs began on Wednesday and contained numerous papers of military interest, as well as those of a strictly scientific character.

An unusual feature of the session was the replacing of the President's reception by a medical war meeting held in Medinah Temple, the report of which appears elsewhere in this issue. The local committee on arrangements had done notable work in staging this meeting. Every seat in the immense auditorium was filled, over 6,000 persons being present. The speakers were the noted foreign guests, the Surgeon-Generals, the president of Leland Stanford University and Major Alexander Lambert of the American National Red Cross. The enthusiasm of the audience cannot be depicted by words, every speaker and patriotic enunciation being greeted with an ovation. With the introduction of each foreign guest the audience, led by a local choral organization and accompanied by the music of an immense pipe organ and the Fort Riley Band, sang a national song.

On Thursday, practically all of the scientific sections combined in two meetings of the greatest importance to the Army, the profession and the public. These meetings were held in the Auditorium and Studebaker theaters, and concerned the reconstruction and rehabilitation of disabled soldiers and the physical examinations made under the selective service. When the meeting in the Auditorium Theater opened, some 4,000 persons listened attentively to the message brought to them by representatives of the Surgeon-General's Office, of the Red Cross and of foreign nations as to the program for the care of the disabled fighting men in order that they may be returned to a useful civilian life. In the meeting on the selective service, Lieut.-Col. J. S. Easby Smith and Major Hubert Work of the Provost Marshal-General's Office were able to confer with the state aides of the governors of the various states who had been ordered to Chicago for this meeting, and to inform the many physicians representing the 23,000 physicians who are engaged in the work of the local, district appeal, and advisory boards under the selective service law, concerning many points which had not up to this time been made clear to them.

The Thursday night session was again a public, patriotic meeting. The Auditorium was again filled to capacity, the music on this occasion being provided by a detachment of the Great Lakes Naval Training Station Band and by group singing of the audience.

The scientific and commercial exhibits, the former being referred to elsewhere, were open throughout the session and were noteworthy for their practical and military features. The commercial exhibit included practically all of the recently developed foods, pharmaceuticals and mechanical devices resulting from necessities created by the advance of scientific knowledge and the military emergency.

Special arrangements were made for entertaining the medical women who attended the session in large numbers and also for the amusement of women guests. The entertainments included receptions, teas, a musicale, and a visit to the Great Lakes Naval Training Station to attend the dedication of the new Red Cross building. Arrangements had also been made for a visit to the central department Red Cross headquarters and to local merchandise and industrial plants.

To add to the entertainment of the visitors to this session, a medical motion picture show was conducted throughout the session, numerous reels of film lent by the Medical Department of the United States Army being continuously exhibited, including the famous film "Fit to Fight," prepared by the commission on training camp activities. Capt. H. M. Strong, post surgeon at Rantoul, Ill., was permitted to visit the annual session in an aeroplane, and arrived promptly on time in Chicago, being greeted by the Fort Riley Band and by many convention visitors.

The meeting also served to inform many physicians who are about to enter the military service concerning the routine of application and appointment, equipment, assignment to duty, etc. Medical military headquarters were in continuous operation, in charge of medical officers on active duty. Over 600 physicians were given information, supplied with application blanks, and many of them sent directly to the local examiner for physical examination.

The attendance at this session was the largest since the Chicago session of 1908. The total, 5,553, is but a meager 800 less than that of the 1908 session, and when one takes into consideration the fact that about 20,000 physicians are in active military service, that the services of many physicians are continuously needed by civilian communities and industrial institutions, and that railroad rates are comparatively higher than they have ever before been in the history of our country, the attendance at this session may well be said to have been phenomenal. No meeting of the Association has so successfully reached the public as did this sixty-ninth annual session, and the public showed its interest in the session and in the work which the medical profession is trying to accomplish, by attending in large numbers every meeting in which arrangements had been made for it. The local committee on arrangements and the medical profession of Chicago are to be congratulated on the results of this session, and the thanks and appreciation of every Fellow of the American Medical Association is due them.

THE EARLY HISTORY OF BACTERIOLOGY IN THE UNITED STATES

Whenever we are charged, as a nation, with being occupied solely with the life of trade, and the designation of Yankee is used to designate preeminently commercial habits, it is refreshing to turn to the history of science for the truth. Of course, in the earlier days of the United States as a national enterprise the conditions were scarcely favorable for the widespread prosecution of those studies for which the European peoples of the civilized world had been prepared by generations and even centuries of experience. America's intellectual life can at best be measured by decades. How has she progressed in some of the more recently recognized intellectual disciplines? The new science of bacteriology, the outcome of the labors of Pasteur, Lister, Koch and others, was born within the memory of many that are still living. The bacillus of tuberculosis was announced in 1882; the vibrio of Asiatic cholera in 1883; the bacilli of lockjaw and of diphtheria in 1884, the same year that marked the better recognition of the typhoid bacillus, which was really discovered in 1879; in 1894 came the discovery of the bacillus of bubonic plague; and along with this period belongs the finding of the micro-organisms of malaria, sleeping sickness, and several other diseases. In the midst of such developments the newer science of parasitology has found a firmer footing and a novel significance.

We are prone to look abroad for all considerations of guidance in these modern fields. Professor Bergey¹ of the University of Pennsylvania has lately pointed out how early were some of the efforts in this country to present the story of the bacteria. First in the list of early teachers he places the late Prof. T. J. Burrill of the University of Illinois, who introduced the study of the bacteria into his course on the fungi during the seventies. He discovered the organism of pear blight in 1879 and, in the following years, conducted extensive inoculation experiments with this organism on a large orchard of young pear trees, thereby definitely establishing the etiologic relation of the organism of the disease. In 1882, Dr. Burrill published a pamphlet entitled "Bacteria," in which he gives a discussion of the morphology, functions, classification and methods of study — the latter being those of the French school. The classification of the bacteria follows that of Ferdinand Cohn. There is also included a brief description of the bacteria that were then identified.

The late Surgeon-General Sternberg, to whose initiative we owe the appointment of the commission that discovered the mode of transmission of yellow fever by mosquitoes, translated Magnin's work on bacteria in 1880 and published his large manual of bacteriology in 1892. In the Bureau of Animal Industry at Washington, D. C., Salmon began to study the relation of

1. Bergey, D. H.: Early Instructors in Bacteriology in the United States, *Jour. Bacteriol.*, 1917, **2**, 595.

bacteria to animal diseases as early as 1879; and the discovery of the protozoan organism responsible for Texas cattle fever, a classic research which brought prominence to Prof. Theobald Smith, was probably in a sense an outcome of these early endeavors. Before the nineties of the last century, bacteriology was taught systematically in a number of American educational institutions, the enumeration of which would recall many of the prominent investigators of today. Physicians, particularly those of maturer years, are wont to think of bacteriology solely as a branch of pathology or of medicine. The inspection of our scientific institutions shows how inadequate such an assumption is. As Bergey points out, courses in elementary bacteriology are now being given not only to general science students, but also to students in domestic science, agriculture, dairying, water and sewage purification, public hygiene and sanitation, medicine, dentistry, veterinary medicine, pharmacy, the brewing and fermentation industries, food production and preservation, and plant pathology.

THE PATHOLOGY OF "MUSTARD GAS"

Modern gas warfare dates from April, 1915, when the Germans first liberated the abominable cloud of gaseous chlorin on unsuspecting allied forces at the western front. Since then this heinous mode of attack has experienced numerous variations, which have been discussed in *THE JOURNAL*.¹ Meanwhile, methods of defense and protection have also been devised, one succeeding another as rapidly as inefficacy or inferiority was discovered. The respirator has become part of the outfit of the modern soldier in the trenches.

"The use of a gas shell to force a man to put on his mask," says Major Auld, the gas expert of the British Military Mission, in speaking of tear gas shells, "is practically neutralization. If at the same time you can hurt him, so much the better. Hence the change in gas-shell tactics, which consists in replacing the purely lacrimatory substance by one that is also poisonous." Accordingly the Germans developed a plan of gas warfare that not only harasses the enemy but also seriously injures him. Scarcely a year has elapsed since the so-called mustard gas, dichlorethylsulphid, was added to the fighting armamentarium in this capacity. The substance was first made in 1886 by a German chemist, Victor Meyer, who soon recognized its harmful character.

Subsequently the poisonous nature of this compound seems to have attracted little attention in the scientific world until it became one of the weapons of an army. Consequently the knowledge of its toxicology and the pathology of its manifestations has been limited. It should be recalled that the "mustard gas" is in reality a heavy oily fluid sinking below water and not miscible

with it, of neutral reaction, having a faint, sweetish, ethereal odor only slightly suggestive of the sulphur compounds, and with a boiling point of 217 C. It thus has properties whereby it can be distributed in the form of a spray on impact of a shell.

From such reports as have been distributed, it appears that the conspicuous symptoms are conjunctivitis, laryngitis, bronchitis and skin burns, all due to the excoriating effect of the substance. The possibility of such complications as pulmonary edema and bronchopneumonia is apparent. Peculiar is the fact that the recognition of the symptoms is usually delayed for a considerable period, sometimes as long as sixteen hours. We are indebted to Warthin and Weller² of the Department of Pathology at the University of Michigan for an illuminating study of the skin lesions produced by dichlorethylsulphid. These show that it is an escharotic, specific in its action on the epidermis and tissues of the corium, particularly on the endothelium of the vessels. The lesion is a chemical burn unlike that produced by heat, electricity or the ordinary corrosives, such as sulphuric, nitric and hydrochloric acids, or strong alkalis. Of all these agents, the effects are most closely allied to those of hydrochloric acid, but are much greater in intensity. It differs from a heat burn in the absence of thrombosis, in the greater degree of fluid exudation, in the greater moistness of the affected area, and in the fact that the necrosis as shown by the loss of nuclei requires hours, or even days, for its complete development. The coagulated, shrunken and cooked appearance of the tissues in heat burns is not apparent in the tissues of mustard gas burns. The vessels in the affected area are severely damaged and collapsed, and there is a local anemia in the earlier stages, with a marked fluid exudation and leukocyte migration. The process is nonhemorrhagic and nonthrombosing. In man the necrosis of the epidermis is usually evident in two hours through the hydropic change in the epithelium and early vesicle formation. There is no deep edema. It is confined to the epidermis and to the papillary layer in the early stages.

Numerous observers have pointed out the slow and insidious development of the real damage done by the substance. Warthin and Weller state that the deep penetration of the smallest quantities applied to the surface is a most striking feature. There is an undoubted entrance through the hair follicles and the sebaceous and sweat glands. The slowly progressive character of the necrosis is a specific characteristic, the height of the necrosis being reached from five to ten days after application. This may in part be explained by contraction and death of the vessels, with resulting anemia in the affected area. The painlessness of the lesion is also a marked characteristic.

1. The Effects of Inhalation of Chlorin Gas, editorial, *THE JOURNAL* A. M. A., Nov. 27, 1915, p. 1921; Gases in Modern Warfare, April 20, 1918, p. 1160.

2. Warthin, A. S., and Weller, C. V.: The Pathology of the Skin Lesions Produced by Mustard Gas (Dichlorethylsulphide), *Jour. Lab. and Clin. Med.* 1918, 3, 447.

This may be explained by the edema and degeneration of the nerve endings in the affected portion. The lesions recall a roentgen-ray burn of the skin in that healing is slow, owing probably to the injury of the blood vessels.

Current Comment

THE SCIENTIFIC EXHIBIT

The constant throng of interested visitors to the scientific exhibit throughout the annual session last week bore testimony to its value. The exhibit which attracted most interest was that from the Fort Riley Sanitary Laboratory, consisting of more than fifty models of apparatus constructed in the laboratory. Among these were seven original models designed by Major C. S. Williamson, M. R. C., director of the laboratory. His multiple shelf incinerator is inexpensive to build, simple to operate, and after the initial charge of fuel (a very small quantity) will burn garbage or garbage and feces indefinitely with no further fuel whatever. This exhibit served to emphasize the value of a research laboratory devoted to the sanitary problems of the Army and Navy, and many visitors expressed the hope that such a laboratory with proper equipment would be made a permanent institution in the government service. Other exhibits dealt with sanitary problems in civil life, such as the beautiful charts on malaria by the Prudential Insurance Company of America and the striking exhibit of industrial dust from the Laboratory of Hygiene of the University of Pennsylvania. These served to emphasize the fact that sanitary problems are attracting much attention, and that research work in these lines is yielding valuable information which can be put to practical use with great advantage. Exhibits showing interesting points in surgical technic by Drs. D. N. Eisendrath, Victor D. Lespinasse and Alfred A. Strauss were interesting and stimulating, while those bearing on problems associated with infectious diseases and immunity by Drs. Hideyo Noguchi, E. C. Rosenow and the Mayo Foundation, and Drs. D. J. Davis, Josiah Moore, Leigh Watson and others were of high grade. Admiration was expressed for the magnificent specimens of animal pathology as related to man, prepared by Dr. L. Enos Day of the U. S. Bureau of Animal Industry. The fine collection of historic medical books, letters and similar material exhibited by Dr. Mortimer Frank was a source of pleasure to a great many. The exhibits of the Propaganda Department and of the Chemical Laboratory of the American Medical Association afforded an insight into the practical and expansive work conducted through these activities. Of special interest at this time were the moving pictures showing the methods of graphic instruction used in camps and naval stations. One of the new U. S. motor ambulances was examined with much interest. The success of the exhibit seemed to suggest the direction to be taken by subsequent displays. The absence of extensive collections of pathologic specimens, and

the prominence of sanitary subjects was striking. If the scientific exhibit is to be of real educational value it must consist of things graphically emphasizing facts that have a direct interest to those who see them, and it must not consist too largely of technical subjects which interest only a few individuals. Few exhibits attract the attention they deserve or exert their full educational value unless a competent demonstrator is constantly present, and visitors are always especially interested in meeting the person whose work is shown.

ANOTHER CHALLENGE TO THE ANTIVIVISECTIONISTS

The death rate in swine from all diseases for the year ending March, 1918, announced by the United States Department of Agriculture as 42.1 per 1,000, is the lowest in thirty-five years, according to the records kept during that period. The reduction in mortality, in the light of the statistics just published,¹ for previous years shows a sparing of 4,000,000 hogs, equivalent to the consumption of pork and pork products by the entire population of the United States for 1917 for nearly half a month. The marked reduction in the losses of swine for 1918 over preceding periods, in view of the fact that 90 per cent. of these losses are due to hog cholera, indicates clearly the benefit from the combined efforts of state and federal agencies in protecting the farmers against the ravages of this exceedingly fatal disease. Inasmuch as the antivivisectionists are continually decrying the use of protective serums and vaccines with the assertion that they are useless and inhuman, we wonder what new figment of their imagination will be presented to explain away the results so beneficent to our animal neighbors. Or shall we be told bluntly that the government figures are a lie? Perhaps the antivivisectionist loves his pork too well to deny them.

THE PRESIDENT-ELECT, MAJOR ALEXANDER LAMBERT

The president-elect of the American Medical Association, Major Alexander Lambert, M. R. C., U. S. Army, is already en route again to France to resume his duties as medical director for the Red Cross. Major Lambert is a member of a noted medical family. His father, Dr. Edward W. Lambert, an executive of ability, was for forty-five years chief medical adviser of the Equitable Life Assurance Society. This executive ability Major Lambert seems to have inherited to a remarkable degree, as indicated by his achievements. Dr. Lambert was born, Dec. 15, 1861, and received his A.B. from Yale in 1884, his Ph.D. in 1885, and his M.D. degree from the College of Physicians and Surgeons of Columbia University in 1888. After two years' service as an intern in Bellevue Hospital he entered on the active practice of his profession. He became attending physician at Bellevue Hospital in 1894, served as assistant bacteriologist in the New York Health Department from 1894 to 1901, and since 1898 has been professor of clinical medicine in the

1. See weekly News Letter published by the United States Department of Agriculture, Washington, May 29, 1918.

Cornell University Medical College. He has been attending and consulting physician in several New York hospitals, and is recognized especially for his work in circulatory diseases and in the treatment of drug and alcohol addictions. In the American Medical Association he has served in the House of Delegates as a representative of the great state of New York, became a member of the judicial council in 1911, and has been chairman of that body since 1912. As chairman of this council he worked in cooperation with a committee of the Council on Health and Public Instruction in the compilation of much material and in the issuing of notable reports on workmen's compensation and health insurance. In 1917 he became president of the Medical Society of the State of New York. Since 1907 he has been a member of the Medical Reserve Corps of the United States Army; a brief month after the United States entered the war he was ordered to active duty in France as deputy commissioner of war relief of the Red Cross and chief medical adviser of all American Red Cross activities in France and Belgium. His election to the presidency of the American Medical Association is but another recognition of services well rendered with an adequate conception of the duties of a physician to himself, to the public, to the state and to the nation. It does not mark, we are sure, the culmination of an already noteworthy career; it is but the placing of an earnest worker in a position in which he can render still greater service to worthy activities.

ENLISTMENT IN THE MEDICAL
RESERVE CORPS

Since the publication in THE JOURNAL, June 1, of the survey of the medical profession's war service and the repetition of the call of the Surgeon-General for 5,000 additional medical reserve officers before Jan. 1, 1919, there has been a display of renewed active interest by the medical profession in military service. It cannot be called a revival, because at no time has the interest of the medical profession lapsed. Judging from the large number of inquiries now being received, however, interest is at fever pitch. Hundreds of letters and even telegrams have been received by THE JOURNAL asking for information, for application blanks, in fact, asking THE JOURNAL to make the decision as to whether or not it was the duty of the individual inquirer to enter the service. In order successfully to inform physicians, THE JOURNAL has grouped in a small booklet, "Information Regarding Appointment in the Medical Reserve Corps of the United States Army," a number of short, practical paragraphs relative to method of application, the equipment of officers, government insurance, the customs of the service, and work in the training camps. Copies of this booklet will be sent to physicians on receipt of a stamped addressed envelop. The American Medical Association and THE JOURNAL stand willing and ready to do everything possible to aid physicians in their desire to enter the service of our government in any capacity. Inquiries will be cheerfully answered in as reasonable a time as is consistent with the securing of accurate information.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending June 14, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 877, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 403 lieutenants.

MEDICAL RESERVE CORPS: 19,477, including 1,410 majors, 5,245 captains and 12,822 lieutenants. On active duty: 17,763, including 1,345 majors, 4,979 captains and 11,439 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,198, including 20 lieutenant-colonels, 255 majors, 188 captains and 735 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 284, including 6 brigadier-generals, 56 colonels, 213 lieutenant-colonels and 9 majors.

THE DISCHARGES to date are:

Causes	Number	
	M.R.C.	M.C.N.G.
Physical disability	686	53
Inaptitude	263	21
Other branches of service.....	567	72
Resignations	162	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	84	6
Dismissals	11	3
Duty completed	1	0
No reasons given	14	0
	1,897	188

Red Cross Needs Medical Men Abroad

The American Red Cross needs physicians and surgeons for its work abroad. The Medical Reserve Corps of the Army takes precedence over all other calls but there must be men who, rejected for slight physical disability or for being between 55 and 60 years of age, should be available for the various medical duties of the Red Cross. The teaching staff of the medical schools will not be taken unless with the written permission of the dean. Medical men are wanted for clinical work in medicine and surgery, for administration work, for hospital administration, and for the medical work in the manifold Red Cross activities. All who can go as volunteers, paying all their expenses, should do so to aid the Red Cross; but if this is impossible, the Red Cross is prepared to pay their expenses and, when necessary, to add the salary of a first lieutenant—\$160 a month. It will be possible to have men go for work in the Red Cross for eight or nine months abroad and six months home, and again eight months abroad, thus having a rotating service as regards personnel, but a continuous medical service. All applications should be made to Dr. Alfred E. Shepley, Medical Personnel Bureau, Red Cross, Washington, D. C.

ALEXANDER LAMBERT.

Chief Medical Adviser, Red Cross in France.
4 Place de la Concorde, Paris.

Army School of Nursing to Be Established

In order to provide adequately for the sick and wounded of a future possible army of unlimited size, the Surgeon-General of the Army has been authorized to establish an Army School of Nursing with branch training schools in various selected military hospitals throughout the country. The admission qualifications for young women desiring to attend this school are: age, between 21 and 35, a high school education or its equivalent, and physical and moral fitness. A course leading to a diploma in nursing will be given, should the military hospitals continue for the full period of the usual nursing course; should these hospitals be discontinued, on the cessation of hostilities before the completion of the course, a certificate will be issued which will entitle the holder to credit in a civil hospital for the period spent in the military hospital and for those branches in nursing successfully completed. Thus this Army School of Nursing will provide sufficient nursing service for the military hospitals and, while giving an opportunity to thousands of patriotic women who wish to serve their country in this capacity, it will give training very valuable to the candidates whether or not they take up nursing as a profession. Until otherwise specified, applications may be sent directly to the Army School of Nursing, Office of the Surgeon-General of the Army, Washington, D. C.

Leave of Absence for Medical Officers

Officers of the higher grades in the Medical Department, who have been serving continuously for six months at their desks on department business, will be required to take at least a two weeks' vacation, according to a memorandum which, it is reported, has been sent to the Surgeon-General of the Army by Secretary Baker. The memorandum states that this is necessary in order to retain the high efficiency of the Medical Department.

Camp Upton Base Hospital Issues New Publication

The first issue of a publication entitled *The Cure*, "published in the interests of the base hospital rather often" with the "largest high grade hospital circulation in Camp Upton, N. Y.," has just appeared. It is a four page news issue edited by the enlisted personnel of the Medical Department. The value of such publications in sustaining the interest of the men in the work and in upholding that elusive but most desirable quality, known as morale, can hardly be overestimated.

Special Duty for Enlisted Chemists

As the military service is in great need of chemists, the War Department has notified Army commanders that all enlisted men who are graduate chemists must be assigned to duty where their training can be most fully utilized. Therefore commissioned officers have been directed to ascertain the number of graduate chemists now on duty in their commands and to report their names to the Adjutant-General's Office at Washington, D. C., stating in their report special qualifications for any particular branch of chemical work and whether these chemists are now employed on chemical duties. Chemists now in military service in the United States have been ordered transferred to the nearest depot brigade; those now in depot brigades, or hereafter received by them will be assigned to service by the Adjutant-General's Office. Graduate chemists will be sent overseas only on chemical duties, and will be transferred to the nearest detachment or organization of their corps prior to departure.

MEMORANDUM FOR THE SURGEON-GENERAL OF THE UNITED STATES ARMY*

At a meeting of representatives of well recognized medical schools in Chicago, June 11, 1918, called by the Surgeon-General of the Army, the following Advisory Committee on Medical Schools was chosen to act as representative of the medical schools in cooperation with the Medical Department of the Army: Ray Lyman Wilbur, president of Leland Stanford University, chairman; Dr. William J. Means, president of the Association of American Medical Colleges; Dr. Samuel W. Lambert, dean of Columbia University College of Physicians and Surgeons; Dr. J. Whitridge Williams, dean of Johns Hopkins University Medical Department; Dr. Theodore Hough, dean of the University of Virginia Department of Medicine; Dr. John M. Baldy, president of the Pennsylvania Bureau of Medical Education and Licensure, and Dr. N. P. Colwell, secretary of the Council on Medical Education of the American Medical Association, secretary.

June 12, this committee met in conference with the Standing Committee on Medical Education of the Medical Department, consisting of Col. F. F. Russell, Col. V. C. Vaughan, Lieut.-Col. W. H. Welch and Lieut.-Col. H. D. Arnold.

It was voted that Dr. W. A. Pearson of Philadelphia and Dr. John K. Scudder of Cincinnati be added to the Advisory Committee on Medical Schools as representatives, respectively, of the American Institute of Homeopathy and the National Eclectic Medical Association.

The following recommendations were unanimously adopted:

It is recommended that only such medical schools as are amply equipped with teachers, laboratory facilities and clinical material be permitted to enter at this time on a plan of continuous sessions.

It is recommended that the Surgeon-General approve of summer sessions for senior students in such well recognized medical schools as, in his opinion, can furnish the instruction without lowering educational standards.

We approve of the following recommendations in the memorandum from the Surgeon-General to well recognized medical schools, dated May 24, 1918:

OTHER PROVISIONS FOR STUDENTS DURING THE SUMMER OF 1918

Provision should be made for all students who have conditions—either entrance conditions or those incurred in the medical course—to remove these conditions before the opening of the fall session. The plan of continuous sessions leaves little opportunity for making up conditions, and students who are left on inactive status must make normal progress with their class.

Please notify your students of the wishes of the Surgeon-General in this matter.

Students with remediable physical defects should be urged to have these removed during the coming summer. The desirability of thus saving time, and of securing a more complete recovery before active service, is obvious.

Students who must earn money in order to continue their medical education may be allowed to do this during the summer of 1918.

Students who are not provided for by the foregoing arrangements should devote the vacation period to clinical or laboratory work which would better fit them for the duties of medical officers. Schools which cannot organize complete courses for all classes in the school can render valuable service by organizing special courses for some of these students.

It is not practicable for the Medical Department to organize summer military training this year for medical students on an extensive scale.

By these arrangements every medical student on inactive status in the Medical Enlisted Reserve Corps may utilize the summer in active preparation for better service as a medical officer. It is believed that no patriotic enlisted man will be satisfied to take a long vacation when his drafted relatives and friends are in active military service.

FRESHMAN CLASS

Those medical schools which have heretofore held regular summer sessions will, of course, be permitted to continue the admission of students to the freshman class at this time. Schools which adopt the continuous session plan to begin this summer may organize a freshman class to begin the course between June 1 and July 1, 1918.

Well recognized medical schools are authorized to begin matriculation of the freshman class of 1918-1919 at once, whether the next session begins this summer or in the fall. A bona fide matriculation will be accepted as establishing membership in the class, as affecting eligibility for enlistment in the Medical Enlisted Reserve Corps.

ENTRANCE REQUIREMENTS

Permission to enlist in the Medical Enlisted Reserve Corps must now be obtained from the Surgeon-General's Office for each individual case.

Such permission will be granted in the case of medical students, who matriculate in the freshman class of the regular medical course, only when the dean's affidavit shows that matriculation has been based on acceptable credentials which meet the following entrance requirements:

The full completion of fourteen units of secondary education, and, in addition, studies of collegiate grade as follows:

1. In those schools which are members of the Association of American Medical Colleges, at least sixty semester hours of college pre-medical work in a well recognized university, college, or medical school, including at least twenty-four semester hours in chemistry, biology and physics. Credit for at least ten of these twenty-four hours must be for laboratory work, and there shall be credit for at least six semester hours in each of the three sciences of chemistry, biology and physics.

2. In those schools which now require at least two years of college work for entrance, the same requirements, whether members of the Association of American Medical Colleges or not.

3. In those schools which are not members of the Association of American Medical Colleges, and have not heretofore required two years of college work for entrance and have not announced a two year entrance requirement for the session of 1918-1919, at least thirty semester hours of college work of which at least eight semester hours are in chemistry, eight in biologic sciences, and six in physics; and of these at least four semester hours shall be for laboratory work in Chemistry, at least four in biologic sciences, and at least two in physics. All these specifications must be fully met without any conditions and all must be collegiate work.

LIMITATIONS OF NUMBERS

While it is desirable to train as many medical students as possible, and all good schools should be encouraged to accept students to the limit of their capacity, it is also essential that enlisted medical students should obtain an adequate professional training in preparation for the duties of medical officers.

Unless they can obtain such satisfactory training, the Surgeon-General will not be justified to leave them on inactive status. Therefore the number of students admitted to the freshman class should be limited to a number agreed on after conference with the Surgeon-General's Office.

Preference in matriculation should be given to candidates who are already members of the Medical Enlisted Reserve Corps.

Preference next should be given to those who appear to be eligible to become medical officers on graduation. The question of physical fitness should receive consideration. The following facts in regard to nationality affect the problem: A person must be a full citizen in order to receive

* Published by request of Surgeon-General Gorgas.

a commission, and will not be granted a commission if born in an enemy country, whether a citizen or not. Approval for enlistment, therefore, will not be given to those born in enemy countries, nor to other foreign born students unless they have taken out first naturalization papers.

The admission of students who are not eligible for a commission in the Army is not forbidden; but attention is called to the importance of first providing places for *all* who are eligible for military service.

It is recommended that when and where feasible the Surgeon-General shall arrange for active military service for medical students during the summer vacations, with the object of shortening the time for completing their training as medical officers.

It is recommended that the Surgeon-General consider as "well recognized medical schools" only those which enforce as a minimum requirement for admission, two years of college work, including courses in physics, chemistry and biology.

It is recommended that the teaching forces of the schools, as well as the students, be included in the Student Army Training Corps, and that the teachers of all subjects who are otherwise eligible shall be commissioned with suitable rank in that corps.

It is recommended that eligible members of the faculties of well recognized medical schools be commissioned with suitable rank in said corps, and that a sufficient number of these officers be assigned to duty in medical schools with periods of service long enough to provide for the efficient teaching of the medical students. Where feasible, it is desired that such officers alternate in active duty between service with the troops and teaching in medical schools.

It is further recommended that all students who are members of the Medical Enlisted Reserve Corps and the commissioned members of the faculty be required to wear uniforms. It is recommended also that similar provision be made for commissions and uniforms for nonmedical members of the faculties of well recognized medical schools.

Major departments in a medical school cannot be considered as adequately organized unless at least one competent man be retained in addition to the head of the department who can assume his duties.

It is recommended that teachers of medical schools inform themselves of the special application of their subjects to problems of war, and, so far as practicable, include such topics and application in their courses of instruction, always bearing in mind that they are training men for service in the Army; and also consider the feasibility of an interchange between different schools of teachers possessed of this knowledge.

The committee calls special attention to the importance of continuing research work in our medical schools and of providing sufficient personnel for this purpose.

It is recommended that the machinery for carrying out these recommendations be in the office of the Surgeon-General in conference with the dean or other authorized representatives of the medical schools.

The committee voted to present the same recommendations to the Surgeon-General of the Navy, with the suggestion of the desirability of the adoption of the same measures as far as possible.

F. F. RUSSELL, Colonel M. C., N. A.,
Chairman of the Standing Committee on Medical Education of the
Medical Department of the United States Army.

RAY LYMAN WILBUR,
Chairman, Advisory Committee on Medical Schools.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ended June 7, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):			
		Last Week	
All Troops	1056.1	974.5	
Divisional Camps	1135.3	757.8	
Cantonments	975.6	1098	
Departmental and Other Troops	1101.1	979.4	
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:			
All Troops	37.8	36.8	
Divisional Camps	36.8	31.7	
Cantonments	42.2	43.1	
Departmental and Other Troops	33.6	32.7	
3. ANNUAL DEATH RATE PER 1,000 (disease only):			
All Troops	3.16	4.01	
Divisional Camps	3.2	2.5	
Cantonments	3.6	6.	
Departmental and Other Troops	2.58	2.7	

NEW CASES OF SPECIAL DISEASES DURING THE WEEK ENDING JUNE 7, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Beauregard.....	4	5	22	129	4	2	2	..	2	927.3	47.0
Bowie.....	4	..	2	52	51	2	..	..	1	764.1	25.3
Cody.....	11	..	..	3	3	..	..	..	3	967.8	24.5
Doniphan.....	..	..	..	15	..	3	..	1	2	1,479.5	44.0
Fremont.....	8	..	2	14	7	6	..	1	4	1,016.9	38.6
Hancock.....	..	..	..	74	..	1	..	..	0	985.8	43.5
Kearny.....	4	..	1	4	..	4	1	1	3	370.7	20.0
Logan.....	2	..	..	44	..	..	..	..	2	3,198.0	15.0
MacArthur.....	..	..	..	..	..	3	..	..	0	1,032.0	37.2
McClellan.....	2	..	4	26	10	3	..	..	0	582.2	25.0
Sevier.....	10	..	7	269	4	7	..	..	0	1,346.3	46.5
Shelby.....	..	..	8	15	3	2	..	1	0	1,007.3	39.2
Sheridan.....	..	..	1	35	..	6	..	..	0	613.6	35.0
Wadsworth.....	2	..	1	94	..	18	..	..	3	1,257.0	29.9
Wheeler.....	4	..	..	25	5	..	..	..	6	2,846.2	50.9
Custer.....	4	..	1	68	9	11	..	..	2	509.3	20.5
Devens.....	16	..	1	32	7	10	3	..	6	682.2	36.4
Dix.....	3	1	1	170	2	8	1	6	2	871.3	34.3
Dodge.....	4	..	2	99	..	14	..	2	3	1,239.9	59.1
Funston.....	3	..	..	50	4	6	2	..	2	787.1	55.4
Gordon.....	14	..	2	149	5	34	2	..	7	1,591.5	87.6
Grant.....	1	..	..	34	..	3	2	..	2	373.9	17.0
Jackson.....	9	..	1	114	..	58	..	..	1	1,412.7	57.7
J. E. Johnston.....	2	..	..	74	64	6	..	2	0	1,198.9	41.6
Lee.....	9	..	5	272	..	..	6	..	4	626.6	57.5
Lewis.....	4	..	3	235	3	3	3	9	5	1,007.9	33.1
Meade.....	3	..	..	18	4	2	1	..	1	559.7	29.4
Pike.....	14	4	15	72	12	44	2	..	5	1,684.2	60.7
Sherman.....	2	..	1	74	..	4	..	1	0	1,334.8	88.5
Taylor.....	7	..	..	102	..	16	..	..	0	1,017.4	42.9
Travis.....	1	..	6	69	6	26	1	1	2	1,366.1	39.3
Upton.....	8	..	1	283	34	..	1	1	5	740.7	27.2
Northeastern Dept.	2	..	..	27	14	3	..	..	1	735.5	28.5
Eastern Dept.	11	..	4	148	46	8	1	1	3	900.5	23.3
Southeastern Dept.	..	..	3	236	18	5	..	..	2	1,614.0	43.3
Central Dept.	2	..	..	78	37	5	..	2	1	1,591.5	42.2
Southern Dept.	8	2	1	337	90	13	..	9	6	1,172.5	34.4
Western Dept.	5	..	..	69	28	15	..	6	2	916.9	23.0
Aviation, S. C.	16	7	4	505	..	14	..	3	14	1,055.7	30.8
Aleatraz, D. B.	..	..	..	..	..	..	..	..	0	800.0	12.3
Columbus Bks.	..	..	..	22	1	..	..	..	1	570.0	18.7
Edgewood Arsenal	..	..	..	1	1	..	..	..	1	779.0	20.0
Hoboken.....	5	..	7	225	19	37	4	..	3	802.9	29.5
Jefferson Bks.	3	..	..	177	2	4	..	3	1	1,598.6	77.5
Leavenworth, D. B.	..	..	..	6	..	1	..	..	0	805.4	38.3
Fort Logan.....	..	..	..	10	..	..	..	1	2	1,691.5	50.3
Fort McDowell.....	2	1	..	45	..	3	..	1	0	3,824.5	101.0
Newport News.....	10	..	4	328	12	11	2	1	3	1,462.4	61.6
Fort Slocum.....	2	..	..	160	2	..	..	..	1	2,058.7	47.0
Springfield Arm.	..	..	..	..	..	..	..	..	0	..	..
Fort Thomas.....	1	..	1	17	..	4	..	..	0	985.0	29.0
Watervleit.....	..	..	..	..	..	..	..	..	0	600.0	25.9
West Point.....	..	..	..	1	..	..	..	..	0	785.4	13.8
Total.....	222	20	111	4,806	507	425	34	54	114	1,056.1	37.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending June 7, 1918	Departmental and Other Troops, Week Ending June 7, 1918	Divisional Camps, Week Ending June 7, 1918	Cantonments, Week Ending June 7, 1918	Expeditionary Forces, Week Ending May 30, 1918
Pneumonia.....	8.07	6.7	8.5	9.1	15.0
Dysentery.....	0.7	1.0	0.8	0.5	0.43
Malaria.....	4.0	2.38	8.0	3.4	0.95
Venereal.....	174.9	208.0	133.4	167.5	38.3
Paratyphoid.....	0.0	0.0	0.0	0.0	0.0
Typhoid.....	0.14	0.0	0.3	0.17	0.08
Measles.....	15.46	12.2	9.5	21.4	8.6
Meningitis.....	1.23	0.69	0.5	2.1	2.5
Scarlet fever.....	1.96	2.68	0.8	1.9	7.2

COMMISSIONS ACCEPTED

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B. P. MacLEAN, Jr., Huntington
E. J. HYLAND, Jamaica
L. N. SMERNOFF, Jamaica
C. H. MACKEY, Lancaster
F. W. ASH, New York
H. BAKWIN, New York City
W. BERNFIELD, New York City
F. A. BIEN, New York
R. BURLINGHAM, New York City
W. E. CAMPBELL, Jr., New York City
T. H. CURTIN, New York
D. S. DOOMAN, New York
W. M. FORD, New York City
S. D. GIFFEN, New York City
A. LEIBOVITZ, New York City
W. C. MacDONALD, New York
H. S. MARCLEY, New York
D. A. McAULIFFE, New York
F. G. SCHABLE, New York
W. W. TRACEY, New York
A. WEINBERG, New York
N. G. ORCHARD, Rochester
W. W. WOGLOM, Ruyter
H. GAK, S. Onondaga

NORTH CAROLINA

R. M. LANCASTER, Dobson
W. MANN, New Bern
C. E. WOODING, Winston-Salem

NORTH DAKOTA

E. C. STUCKE, Garrison

OHIO

J. E. TALBOTT, Alger
A. E. KISER, Cincinnati
M. L. PETEKSON, Cincinnati
E. C. MYLITT, Cleveland
D. V. ROSENBERG, Cleveland
W. A. ORT, Springfield
M. C. HOUSTON, Urbana
W. D. DAVIS, Wellston

OKLAHOMA

C. J. BRUNSON, Adamson
A. E. HALE, Alva
O. FRANKLIN, Broken Arrow
W. A. AITKEN, Enid
H. S. DRUMMOND, Hailcyville
H. E. BREES, Henryetta
A. F. HOBBS, Hinton
V. H. BARTON, McAlester
C. C. SHAW, McAlester
W. C. WAIT, McAlester
J. H. WHITE, Muskogee
R. D. LOWTHER, Norman
H. REED, Oklahoma City
B. F. NEWLON, Ponca City
H. B. JUSTICE, Sapulpa
G. L. McCALLUM, Sapulpa
W. B. NEWLON, Tulsa
V. M. GOREE, Taloga
G. A. WALL, Tulsa

OREGON

C. T. HOCKETT, Enterprise
R. W. STEARNS, Medford
J. W. McCOLLOM, Portland

PENNSYLVANIA

C. O. PETERS, Albion
L. L. BROWN, Castle Shannon
G. H. CROSS, Chester
J. W. WOOD, Chester
J. V. BURNS, Coaldale
M. U. STONEMAN, Crafton
W. G. TURNBULL, Cresson
D. R. MORGAN, Edwardsville
A. B. HAMILTON, Freeland
G. W. SMELTZ, Markleton
D. C. LINDLEY, New Castle
G. FETTEROLF, Philadelphia
F. FRALEY, Philadelphia
G. W. A. HESS, Philadelphia
S. D. INGHAM, Philadelphia
M. H. JOSEPH, Philadelphia
H. H. LOTT, Philadelphia
F. O. WAAGE, Philadelphia
E. C. NIEBAUM, Pittsburgh
R. J. FORD, Pittsburgh
H. L. W. WIGNALL, Pittsburgh
C. B. LAMP, Seminole
A. C. LAMADE, Williamsport
A. H. CAVEN, Youngwood

RHODE ISLAND

R. P. CAPWELL, Providence
W. G. DWINELL, Providence
W. A. RISK, Providence

SOUTH DAKOTA

A. G. ALLEN, Deadwood

TENNESSEE

P. W. EMERSON, Chattanooga
E. T. WEST, Johnson City
S. C. ANDREWS, Memphis
J. A. SANDERS, Nashville
B. E. DELOZIER, Townsend
J. B. CROSS, Wheat

TEXAS

W. D. BROWN, Beaumont
J. GRIMES, Beaumont
W. F. THOMPSON, Beaumont
O. N. MAYO, Belton
J. W. MACUNE, Davilla
F. W. FRANCIS, Fort Worth
S. H. MOORE, Houston
E. C. MURRAY, Houston
P. SCARDINO, Houston
H. LAFARGE, Kingsbury
W. THOMAS, Mabank
W. S. HANSON, San Antonio
L. S. JOHNSTON, San Antonio
W. B. URMSTON, San Antonio
D. M. STONE, San Antonio
F. C. WALSH, San Antonio

UTAH

R. KANZLER, Ogden
J. U. GIESY, Salt Lake City

VERMONT

H. F. TAYLOR, Hardwick
H. H. HANRAHAN, Rutland

VIRGINIA

P. E. TUCKER, Buckingham
H. WALL, Claremont
H. C. BRADFORD, Norfolk
J. L. STRINGFELLOW, Norfolk
H. M. GROVE, Richmond
A. P. JONES, Roanoke

WASHINGTON

C. G. RAHAL, Ronald
C. D. HUNTER, Tacoma

WEST VIRGINIA

E. W. SMOOT, Clendenin
C. S. FLEMING, Fairmont
C. M. VAUGHAN, Farmington
R. L. DEVEREUX, Wheeling
J. W. GILMORE, Wheeling

WISCONSIN

J. SUTHERLAND, Brodhead
R. B. QUINN, Darlington
A. T. JOHNSON, Sauk City
C. C. DAVIN, Weyerhauser

CORRECTION

The order published May 4, 1918, stating that Lieut. R. P. JOHNSON, M. R. C., was honorably discharged was in error. Lieutenant Johnson writes that he is at this time on active duty in Camp Shelby, Miss.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Army Medical School for duty, from New York, Major FELIX R. HILL.

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Col. CLARENCE J. MANLY; from Camp Sherman, Lieut.-Col. EDWARD G. HUBER.

To Camp Custer, Battle Creek, Mich., for temporary duty, from Camp Sherman, Lieut.-Col. SAMUEL S. CRIGHTON. Base hospital, from Fort Riley, Lieut. MERRILL K. LINDSAY.

To Camp Devens, Ayer, Mass., Camp Dix, Wrightstown, N. J., and Camp Meade, Annapolis Junction, Md., base hospitals, and on completion to his proper station, from Camp Upton, Lieut.-Col. JAY D. WHIT-HAM. To Camp Devens for temporary duty, from Camp Wadsworth, Lieut.-Col. CONDON C. McCORMACK.

To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, from Vancouver Barracks, Lieut.-Col. EDWIN W. RICH; from Camp Meade, Major BERTRAM P. BUCKWALL.

To Camp Gordon, Atlanta Ga., base hospital, from Camp Sheridan, Col. DAVID BAKER; from Fort Oglethorpe, Lieut.-Col. CRAIG R. SNYDER.

To Camp Greene, Charlotte, N. C., Camp Wadsworth, Spartanburg, and Camp Sevier, Greenville, S. C., Camp Gordon, Atlanta, Ga., Camp McClellan, Anniston, Ala., Camp Pike, Little Rock, Ark., and Fort Oglethorpe for inspection, and on completion to his proper station, Lieut.-Col. GEORGE E. DE SCHWEINITZ.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Major GEORGE H. McCLELLAN.

To Camp Lee, Petersburg, Va., Camp Jackson, Columbia, S. C., Camp Hancock, Augusta, and Camp Wheeler, Macon, Ga., Camp Shelby, Hattiesburg, Miss., Camp Sheridan, Montgomery, Ala., and Camp Beauregard, Alexandria, La., for inspection, and on completion to his proper station, Lieut.-Col. HARRIS P. MOSHER. To Camp Lee, base hospital, from Camp Wadsworth, Major WILLIAM R. DEAR; from Fort Riley, Major JAMES A. WILSON.

To *Camp Meade*, Annapolis Junction, Md., for temporary duty, and on completion to his proper station, from *Camp Wheeler*, Lieut.-Col. GEORGE F. KEEMAN, Base hospital, from Fort Riley, Major ROBERT H. DUENNER.

To *Camp Shelby*, Hattiesburg, Miss., as assistant to camp surgeon, from *Governors Island*, Lieut.-Col. FREDERICK S. MACY. For inspection, and on completion to his proper station, from *Camp Sheridan*, Major CHARLES C. HILLMAN.

To *Camp Sheridan*, Montgomery, Ala., as commanding officer of base hospital, from *Charleston*, S. C., Col. LEIGH A. FULLER. To *Camp Sheridan*, Montgomery, Ala., *Camp Sevier*, Greenville, S. C., *Camp Greene*, Charlotte, N. C., *Camp Meade*, Annapolis Junction, Md., and *Camp Dix*, Wrightstown, N. J., for consultation, and on completion to his proper station, from *Camp Kearny*, Lieut.-Col. ALEXANDER MURRAY.

To *Camp Sherman*, Chillicothe, Ohio, *Camp Meade*, Annapolis Junction, Md., and *Camp Dix*, Wrightstown, N. J., base hospitals, and on completion to his proper station, from *Camp Zachary Taylor*, Lieut.-Col. WILL L. PYLES. To *Camp Sherman*, as assistant to camp surgeon, from *Panama Dept.*, Major GEORGE C. BEACH, Jr.

To *Camp Zachary Taylor*, Louisville, Ky., *Camp Dodge*, Des Moines, Ia., and *Camp Grant*, Rockford, Ill., for investigation, and on completion to their proper stations, Col. FREDERICK F. RUSSELL; Lieut.-Col. WILLIAM H. WELCH.

To *Charleston*, S. C., for duty, from Surgeon-General's Office, Col. HENRY P. BIRMINGHAM.

To *Chicago*, Ill., Northwestern University, for duty, and on completion to their proper stations, Col. THEODORE C. LYSTER; Lieut.-Col. DAVID SILVER.

To *Edgewood*, Md., as camp surgeon, from *Camp Wadsworth*, Major SIDNEY L. CHAPPELL.

To *Fort D. A. Russell*, Wyo., for duty, from Fort Riley, Lieut. PAUL K. SAUER.

To *Fort Leavenworth*, Kansas, for duty, from *Camp Lee*, Lieut.-Col. FERDINAND SCHMITTER; from *Rockefeller Institute*, Major CYRUS B. WOOD.

To *Fort Riley*, as camp surgeon, from *Camp Doniphan*, Col. FRANK R. KEEFER.

To *Hamilton*, and *Toronto*, Ontario, Can., for consultation, and on completion to his proper station, Lieut.-Col. GEORGE DREYER.

To *Hoboken*, N. J., for duty, from *Camp Custer*, Lieut.-Col. NEAL W. WOOD; from *Camp Cody*, Lieut.-Col. JOHN B. ANDERSON.

To *Lakewood*, N. J., and *Camp A. A. Humphreys*, Accotink, Va., for sanitary inspection, and on completion to his proper station, Lieut.-Col. FRANK W. WEED.

To *New Haven*, Conn., *Otisville*, and *Staten Island*, N. Y., for inspection, and on completion to his proper station, Col. GEORGE E. BUSHNELL.

To *New York City* for duty, and on completion to his proper station, Lieut.-Col. JOHN A. HORNSBY.

To report to the Surgeon General of the Army for duty, from *Hoboken*, Col. ALFRED E. BRADLEY.

To *San Francisco*, Calif., for duty from *Hawaiian Department*, Lieut.-Col. HERBERT C. GIBNER, Major CHARLES M. WALSON; from *Camp Wheeler*, Lieut. BENJAMIN B. MATTON.

To *Washington*, D. C., for consultation, and on completion to his proper station, from *Cape May*, Col. LOUIS BRECHEMIN; from *Colonia*, Lieut.-Col. ALFRED P. UPSHUR; from *Fort McHenry*, Lieut.-Col. HARRY S. PURNELL; from *Fort McPherson*, Col. THOMAS S. BRATTON; from *Fort Porter*, Lieut.-Col. THOMAS F. WOODSON; from *Hoboken*, Lieut.-Col. HENRY H. RUTHERFORD; from *Lakewood*, Col. ALLEN M. SMITH; from *Takoma Park*, Col. WILLARD F. TRUBY. For duty, the Surgeon-General's Office, from *Camp Devens*, Lieut.-Col. LEARTUS J. OWEN; from *Southern Department*, Major EMERY B. NEFF.

The following order has been revoked: To *Fort Benjamin Harrison*, Ind., for duty, from Fort Riley, Lieut. LEO P. BELL.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To *Camp A. A. Humphreys*, Accotink, Va., to examine members of the command for tuberculosis, and on completion to his proper station, from *Camp Meade*, Lieut. BURTON F. AUSTIN, Chancellor.

To *Camp Dick*, Dallas, Tex., for duty, from *Mineola*, Capt. KOSCIUSKO W. CONSTANTINE, Roebuck Springs.

To *Camp Forrest*, Chickamauga Park, Ga., for duty, Lieut. HILLIE R. DYKES, Arlton.

To *Camp Greene*, Charlotte, N. C., for duty, from *Fort Oglethorpe*, Lieut. EUGENE P. COWGILL, Magnolia Springs.

To *Camp MacArthur*, Waco, Tex., for duty, Capt. JOHN MCP. LOWREY, Birmingham.

To *Fort MacArthur*, Los Angeles, Calif., for duty, from *Camp Hancock*, Capt. MACK ROGERS, Birmingham.

To *Fort Sill*, Okla., for duty, Lieut. LEWIS E. SORRELL, Birmingham.

To *Portland*, Ore., Yeon Building, for duty, from *Lake Charles*, La., Lieut. TOLL H. SUDDUTH, Garden City.

Arizona

To *San Francisco*, Calif., for duty, Lieut. WILLIAM O. SWEET, Phoenix.

Arkansas

To *Hoboken*, N. J., base hospital, from *Army Medical School*, Lieut. ARTHUR G. KEELEY, De Witt.

To *Portland*, Ore., Yeon Building, for duty, from *Fairfield*, Ohio, Lieut. R. NEWMAN BROWN, McGhee.

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Capt. MARDELLE Y. POPE, Monticello; Lieuts. PASCHAL J. PARK, Cabot; JOHN W. BUSH, Hot Springs.

To *Rockefeller Institute* for instruction, in the treatment of infected wounds, and on completion to *Fort McPherson*, Ga., for duty, from *Camp Shelby*, Lieut. FRED S. WATSON, Amity.

California

To *Anchorage*, Alaska, for duty, from *Portland*, Ore., Capt. HUMPHREY P. PALMER, Vacaville.

To *Camp Bowie*, Fort Worth, Texas, base hospital, from *Douglas*, Ariz., Major HARRY C. LOOS, San Diego.

To *Camp Fremont*, Palo Alto, Calif., base hospital, from *Camp Kearny*, Major WALTER V. BREM, Los Angeles. For duty, from *Camp Lewis*, Lieut. GLENN E. MYERS, Agnew.

To *Camp Kearny*, Linda Vista, Calif., as a member of the tuberculosis examining board, Lieut. CHARLES A. SHEPARD, San Bernardino.

To *Camp Lee*, Petersburg, Va., for duty, from *New York City*, Lieut. L. J. SCHERMERHORN, Stockton.

To *Camp Travis*, Fort Sam Houston, Tex., for temporary duty, from *Fort Riley*, Lieut. JOSEPH J. KAVANAGH, San Francisco.

To *Camp Wadsworth*, Spartanburg, S. C., for temporary duty, from *Fort Riley*, Lieut. CHARLES A. WARNER, Ontario.

To *Camp Wheeler*, Macon, Ga., for temporary duty, from *Fort Riley*, Lieut. CHARLES S. YOUNG, Los Angeles.

To *Fort Oglethorpe* for instruction, from *Fort Riley*, Lieut. FRANK W. H. TAYLOR, San Diego.

To *Fort Riley*, hospital train, from *Camp Fremont*, Capt. JAMES H. PARKINSON, Sacramento.

To *Hoboken*, N. J., for duty, from *Camp Sheridan*, Capt. WILLIAM H. WICKETT, Fullerton.

To *Princeton*, N. J., for conference, and on completion to *Philadelphia*, from *Philadelphia*, Major FREDERICK P. GAY, Berkeley.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. FRED O. BUTLER, Eldridge; EDWARD A. DIGGINS, ARCHIBALD A. NORTON, San Francisco.

To *San Francisco*, Calif., for instruction, and on completion to *Camp Cody*, Deming, N. M., base hospital, Capt. WALTER A. BAYLEY, Los Angeles.

To *Vancouver Barracks*, Wash., for duty, from *San Francisco*, Capt. FRED R. FAIRCHILD, Woodland.

To *Waco*, Texas, for duty, from *Mineola*, Lieut. FREDERICK C. LEWITT, San Francisco.

To *Williamsbridge*, N. Y., for temporary duty, from *Camp Hancock*, Capt. THOMAS R. PETCH, Eureka.

Canal Zone

To *Army Medical School* for instruction, Lieut. JAMES W. SHERILL, Ancon.

To *Fort Oglethorpe* for duty, from *Walter Reed General Hospital*, Major SURSE J. TAYLOR, Cristobal.

To report to the commanding general, Panama Canal Department, for duty, Lieut. JOHN C. SCOTT, Ancon.

Colorado

To *Camp Custer*, Battle Creek, Mich., base hospital, Major JACOB C. EPLER, Pueblo.

To *Fort Oglethorpe* for instruction, from *Fort Riley*, Lieut. LOUIS G. BROWN, Colorado Springs.

To *Hoboken*, N. J., base hospital, from *Camp Fremont*, Lieut. FRANK DUNKLE, Denver.

To *Portland*, Ore., Yeon Building, for duty, from *Camp Greene*, Lieut. CHARLES O. BOOTH, Saleda.

To *Rockefeller Institute* for instruction in laboratory work, and on completion to *Army Medical School*, for duty, Lieut. RUFFIN A. PAINE, Denver.

Connecticut

To *Camp A. A. Humphreys*, Accotink, Va., as orthopedic surgeon from *Fort Oglethorpe*, Capt. ROBERT M. YERGASON, Hartford.

To *Camp Gordon*, Atlanta, Ga., for duty, Lieuts. BENJAMIN V. FINKELSTONE, Bridgeport; ISIDORE HENDEL, New London.

To *Camp Jackson*, Columbia, S. C., for duty, Lieut. HYMAN A. LEVIN, New Haven.

To *Camp Meade*, Annapolis Junction, Md., for duty, from *Army Medical School*, Capt. JOHN A. KEYTON, Norwich. To *Camp Meade*, *Camp Dix*, Wrightstown, N. J., and *Camp Upton*, L. I., N. Y., for consultation and on completion to his proper station, from *Camp Sherman*, Major LOUIS Y. MASON, Willimantic.

To *Edgewood*, Md., base hospital, from *Camp American University*, Lieut. MICHAEL E. CLAFFEY, Naugatuck.

To *Fort Oglethorpe* for instruction, Lieuts. JOSEPH F. O'BRIEN, ARTHUR F. ROCHE, THEODORE LER. STOREY, Hartford.

To *Hoboken*, N. J., base hospital, Lieut. KARL R. BRETSFELDER, New Haven.

To *Mineola*, L. I., N. Y., Signal Corps Aviation School, for duty, Lieuts. HARTWELL G. THOMPSON, Hartford; JOSEPH D. RUSSO, New Haven.

To *Newport News*, Va., for duty, Lieut. HERBERT A. ROBERTS, Shelton.

Delaware

To *Camp Custer*, Battle Creek, Mich., base hospital, from *Fort Oglethorpe*, Lieut. ABRAM J. GROSS, Wilmington.

District of Columbia

To *Army Medical School* for instruction, Lieuts. IRL C. RIGGIN, MERRILL C. SOSMAN, JOHN B. WHITE, Washington.

To *Camp Meade*, Annapolis Junction, Md., for duty, from *Army Medical School*, Lieut. HARRY A. BISHOP, Washington.

To *Fort McPherson*, Ga., for duty, Lieut. FREDERICK M. NOLAN, Washington.

To *Fort Oglethorpe* for instruction, Lieut. WILLIAM C. MILLER, Takoma Park.

The following order has been revoked: To *Camp Jackson*, Columbia, S. C., for duty, Lieut. WILFRED M. BARTON, Washington.

Florida

To *Camp Gordon*, Atlanta, Ga., for duty, Lieut. SAMUEL ARONOVITZ, Jacksonville.

To *Camp Lee*, Petersburg, Va., as assistant to camp surgeon, from *Fort Oglethorpe*, Major GEORGE R. PLUMMER, Key West.

To *Camp Sherman*, Chillicothe, Ohio, for temporary duty, from *Fort Oglethorpe*, Lieut. HERBERT A. McCLURE, Greenwood.

To *Fort Des Moines*, Iowa, base hospital, from *Washington*, D. C., Capt. GEORGE B. COON, Tampa.

To *Miami*, Fla., Gunnery School, for duty, Lieut. WILLIAM A. MILLS, Miami.

To *Portland*, Ore., Yeon Building, for duty, from *Arcadia*, Capt. HENRY P. BEVIS, Arcadia.

Georgia

To *Camp A. A. Humphreys*, Accotink, Va., to examine members of the command for tuberculosis, and on completion to his proper station, from *Camp Meade*, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Bowie, Fort Worth, Texas, base hospital, from Army Medical School, Lieut. GALVIN W. DAVIS, Atlanta.

To Camp Greene, Charlotte, N. C., for duty, from Americus, Major WILLIAM A. JACKSON, Atlanta.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. WILLIAM R. RICHARDS, Calhoun; CHARLES B. UPSHAW, Rydal.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Army Medical School, Lieut. JEFFERSON W. PAFFORD, Nicholls.

To Houston, Texas, Signal Corps Aviation School for duty, from Americus, Capt. JOHN MCG. SPENCE, Camilla.

To New Haven, Conn., for duty, Lieut. ARCH ELKIN, Atlanta.

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Lieut. CARSWELL J. HIND, JR., Atlanta.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. EMMET B. ANDERSON, Atlanta.

Idaho

To Camp A. A. Humphreys, Accotink, Va., to examine members of the command for tuberculosis, and on completion to his proper station, from Camp Meade, Capt. CLYDE E. WATSON, Nampa.

To Fort Oglethorpe for instruction, from Fort Riley, Capt. JOSEPH ASPRAY, Moscow.

Illinois

To Army Medical School for instruction, from Camp Dodge, Lieut. CHARLES A. CIBELIUS, Chicago.

To Blacksburg, Va., Virginia Polytechnic Institute, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion to his proper station, from Camp Wadsworth, Lieut. JOHN V. DILLMAN, Louisville.

To Boston, New York City and Philadelphia, for duty, and on completion to his proper station, from Chicago, Major JOHN RIDLON, Chicago.

To Camp A. A. Humphreys, Accotink, Va., to examine the command for nervous and mental diseases, from Camp Travis, Capt. JAMES K. POLLOCK, Elgin. To examine members of the command for tuberculosis, and on completion to his proper station, from Camp Meade, Lieut. JOHN F. GRANT, Chicago.

To Camp Cody, Deming, N. M., base hospital, Capt. ST. ELMO M. SALA, Rock Island.

To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Lieut. HARRY W. KINNE, West Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Capt. JUNIUS C. HOAG, Chicago. For duty, Lieuts. HENRY A. HOUGH, Arrow-smith; ARTHUR B. SUPPLE, Chicago; JOHN J. HOPKINS, Hinds-boro; GEORGE P. SANDROCK, Shannon.

To Camp Devens, Ayer, Mass., for duty, from Chicago, Lieut. CHARLES L. KERRICK, Chrisman.

To Camp Dix, Wrightstown, N. J., for duty, Capt. ROBERT A. SEMPILL, Chicago.

To Camp Dodge, Des Moines, Iowa, for temporary duty, from Fort Riley, Lieut. MELVIN L. HOLE, Danville.

To Camp Gordon, Atlanta, Ga., for duty, Capt. EDWIN L. WINSLOW, Danville; Lieut. FRANKLIN H. DORNBUSCH, Chicago; from Camp Meade, Capt. ROY R. FERGUSON, Chicago; from Camp Sherman, Lieut. HARVEY C. ASHER, Chicago; from Fort Oglethorpe, Lieut. CLARENCE W. FLINT, Chicago.

To Camp Hancock, Augusta, Ga., for duty, from Camp Shelby, Capt. CLAUSEN M. WILMOT, Speer.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. LESTER C. WEST, Chicago. For duty, Lieuts. ANSEL O. MAGILL, Concord; ARNOLD F. MUELLER, Johnburg; EUGENE B. PERRY, Melvin.

To Camp Joseph E. Johnston, Jacksonville, Fla., as member of the tuberculosis examining board, from Williamsbridge, Capt. EDWIN S. GILLESPIE, Wenona.

To Camp Kelly, South San Antonio, Tex., for duty, from Mineola, Capt. EUGENE CARY, Chicago.

To Camp Lee, Petersburg, Va., base hospital, from Camp Meade, Lieut. EVERETT E. HOWARD, Rossville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. HARRY N. CHAMBERLAIN, Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. ORVAN A. PHIPPS, Toledo.

To Camp Wheeler, Macon, Ga., base hospital, from Chicago, Lieut. HERMAN C. KOCH, Chicago.

To Cape May, N. J., for duty, Major HERBERT A. POTTS, Chicago.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Camp Gordon, Lieut. OTTO H. SCHOTT, Chicago.

To Douglas, Ariz., for duty, from Fort Riley, Capt. JOHN A. BORTZ, Nauvoo.

To Fort Bliss, Texas, for temporary duty, from Philadelphia, Lieut. FRANK J. JIRKA, Chicago.

To Fort McPherson, Ga., base hospital, from Fort Oglethorpe, Capt. William W. HOYT, Chicago. For duty, from Fort Riley, Lieut. HAROLD SWANBERG, Chicago.

To Fort Oglethorpe for instruction, Lieuts. VIRGIL D. GREER, Chicago; JAMES S. ANTLE, Utica.

To Fort Riley, as division psychiatrist, from Camp MacArthur, Capt. ROMMEY M. RITCHEY, Elgin.

To Hoboken, N. J., for duty, from Army Medical School, Capt. VICTOR M. DALY, Pontiac; from Camp Dodge, Lieut. CARL F. LEWIS, Jerseyville. Base hospital, Lieut. HARTLEY F. MARS, Chicago; from Camp Grant, Lieut. CHARLES E. WEST, Decatur; from Fort Oglethorpe, Lieut. LOUIS A. MANGAN, Chicago; from Fort Riley, Lieuts. SIDNEY B. CONGER, HENRY C. WERNICKE, Chicago.

To Markleton, Pa., for duty, from San Antonio, Capt. SAMUEL M. MARCUS, Chicago.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Fort Sill, Capt. DAVID R. SCOTT, Macomb.

To New York City, Hospital for Ruptured and Crippled, for instruction, from Philadelphia, Capt. PERCY P. HASLITT, Marshall.

To Portland, Ore., Yeon Building, for duty, from Memphis, Lieut. ROBERT B. MILLER, Rock Island.

To report to the commanding general, Philippine Department, for duty from Camp Custer, Lieut. ELMER O. DAHL, Chicago. To report to the Governor of the Panama Canal for duty, from Camp Zachary Taylor, Lieut. ALBERT F. RYAN, Chicago.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort Riley, Lieut. WILLIAM R. WHITLEY, Chicago.

To Waynesville, N. C., for duty, from Fort Riley, Capt. DANIEL W. YOUNG, Paris.

Honorably discharged, Capt. FRANK B. IRELAND, Washburn. On account of physical disability not incurred in the line of duty, Lieut. FRANKLIN B. PEARCE, Eldorado. On account of physical disability existing prior to entrance into the service, Lieut. LAWRENCE H. MARLEY, Nokomis.

Resignation of Lieut. CHRIS E. EMMERY, Chicago, accepted.

The following orders have been revoked: To Camp Meigs, Washington, D. C., for duty, from Camp Hancock, Lieut. CLINTON STALEY, Enfield. To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. GEORGE E. ARZT, Chicago.

Indiana

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from San Antonio, Capt. WILLIAM C. MOSS, Bunker Hill.

To Camp Custer, Battle Creek, Mich., for duty, Lieut. ALBERT C. CLAUSER, Delphi.

To Camp Gordon, Atlanta, Ga., base hospital, from Army Medical School, Capt. MERTON A. FARLOW, Milroy.

To Camp Kearny, Linda Vista, Cal., as assistant to the camp surgeon, from Fort Riley, Lieut. ALFRED W. HADLEY, Jasonville.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. PORTER W. HOPKINS, East Chicago.

To Camp Sevier, Greenville, S. C., for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM C. MEYERS, Dava.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. HUBERT P. BUTTS, Pierceville.

To Fort McHenry, Md., for duty, from Camp Lee, Major ALFRED P. ROOPE, Columbus; from Fort Oglethorpe, Capt. JONES L. SAUNDERS, Newport.

To Fort Oglethorpe for instruction, Lieut. HAROLD J. PIERCE, Terre Haute.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. EARL M. KOONS, Indianapolis.

To Otisville, N. Y., for duty, from Camp Wadsworth, Capt. BENONI S. ROSE, Evansville.

To report by wire to the commanding general, Western Department, for assignment to duty, from Camp Kearny, Capt. JOHN E. METCALF, Gary.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort Oglethorpe, Major HORACE R. ALLEN, Indianapolis.

Iowa

To Camp Greene, Charlotte, N. C., base hospital, from Army Medical School, Lieut. FRED W. NIEHAUS, McClelland.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. JOHN I. MARKER, Centerville; RALPH LOVELADY, Sidney.

To Fort Oglethorpe for instruction, Lieut. ISAAC H. ODELL, Des Moines.

To Mineola, L. I., N. Y., for temporary duty, and on completion to his proper station, Major EUGENE R. LEWIS, Dubuque.

To New Haven, Conn., for duty, from Camp Travis, Lieut. MILTON D. JEWELL, Decorah.

To Portland, Ore., Yeon Building, for duty, from Fort Omaha, Lieut. JOSEPH W. TYRRELL, Des Moines.

Resignation of Capt. LEO E. EVENS, Waterloo, accepted.

Kansas

To Camp Crane, Allentown, Pa., base hospital, from Camp Zachary Taylor, Lieut. GEORGE T. THACHER, Waterville.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Lieut. LEON MATASSARIN, Wichita.

To Kansas City, Mo., Sweeney Auto and the Rahe and Tractor Schools, to make physical examinations and give medical attention to the drafted men enrolled at these institutions, Capt. CLAY E. COBURN, Kansas City.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieuts. DAVID E. KISECKER, JOHN C. MCKINNON, Caldwell.

The following order has been revoked: To Army Medical School, for instruction, Lieut. EARL C. LIGHTFOOT, Mineral.

Kentucky

To Camp A. A. Humphreys, Accotink, Va., as assistant to the camp surgeon, from Fort Riley, Lieut. ROBERT W. PORTER, Georgetown.

To Camp Custer, Battle Creek, Mich., base hospital, from Fort Oglethorpe, Capt. HERBERT B. BLAYDES, La Grange.

To Camp Hancock, Augusta, Ga., as assistant to the camp surgeon, from Camp Zachary Taylor, Capt. LEE J. ERNSTBERGER, Louisville.

To Camp Pike, Little Rock, Ark., for duty, from Camp Joseph E. Johnston, Lieut. SAMUEL E. STANLEY, Louisville.

To Camp Travis, Fort Sam Houston, Texas, for duty, Capt. JOE L. BARKER, Pembroke; Lieut. SAMUEL T. SCRIVNER, Millers Creek.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. CHARLES K. BECK, Louisville.

To Charleston, S. C., as assistant to the camp surgeon, from Camp Grant, Capt. GARLAND W. HILL, Springfield.

To Fort Oglethorpe for instruction, Capt. SAMUEL J. BAKER, Madisonville.

To Hoboken, N. J., for duty, from New Haven, Capt. ERWIN C. BRANDON, Springfield.

To report to the Governor of the Panama Canal, for duty, from Camp Raritan, Capt. DELFRERS P. CURRY, JR., Bowling Green, from Camp Pike, JAMES A. GRIDER, Smith's Grove.

The following orders have been revoked: To Army Medical School, for duty, from Rockefeller Institute, Lieut. FERDINAND H. HAESLER, Louisville; to Camp Dix, Wrightstown, N. J., base hospital, from Camp Shelby, Capt. JOHN T. PRICE, Harrodsburg.

Louisiana

To Camp Devens, Ayer, Mass., for temporary duty, from Fort Oglethorpe, Capt. JOHN MCKOWEN, Baton Rouge.

To Camp Forrest, Chickamauga Park, Ga., for duty, Lieut. GEORGE A. RAMSEY, Farmerville.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. I. I. ONEL F. LORIO, Glynn; LUCIEN A. LEDOUX, New Orleans.

To Fort Adams, R. I., for duty, and on completion to Army Medical School for instruction, from Plattsburg Barracks, Lieut. ABRAHAM MATTES, New Orleans.

To Fort Oglethorpe for instruction, Lieut. REYNOLD C. VOSS, New Orleans.

To Hoboken, N. J., base hospital, from Fort Riley, Major JAMES B. GUTHRIE, New Orleans. For duty, from Army Medical School, Capt. RALPH HOPKINS, New Orleans.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Lieut. MICHEL F. MORVANT, Jeanerette.

Resignation of Lieut. EDWIN C. SIMONTON, Jonesboro, accepted.

Maine

To Camp Crane, Allentown, Pa., base hospital, from Camp Devens, Lieut. HAROLD E. E. STEVENS, Lewiston.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. DE FOREST WEEKS, Portland.

To Hoboken, N. J., for duty, from Camp Dix, Lieut. CARL D. GRAY, Portland.

To report by wire to the commanding general, Northeastern Department, for assignment to duty, Lieut. ALBERT L. STANWOOD, Andover.

Maryland

To Army Medical School for instruction, from Camp MacArthur, Lieut. GEORGE H. PRESTON, Baltimore.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Lee, Lieut. WILLIAM R. GERAGHTY, Baltimore.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. DAVIS N. RICHARDS, Germantown.

To Fort McHenry, Md., for observation and treatment, Capt. ALGERNON D. ATKINSON, Baltimore.

To Fort Sam Houston, Texas, Department Laboratory, for duty, from Army Medical School, Lieut. CHURCHILL F. WORRELL, Baltimore.

To Hoboken, N. J., base hospital, Lieut. JOHN R. DAVEE, Baltimore.

To New Haven, Conn., for duty, Lieut. SAMUEL SNYDER, State Tuberculosis Sanatorium.

To New York City, Neurological Institute, for instruction, Lieut. GEORGE L. LAVERTY, Roland Park.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Meade, Lieut. CLAUDE C. KELLY, Baltimore.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. LOUIS A. M. KRAUSE, Baltimore.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, from Camp Dix, Lieut. NOLAN D. C. LEWIS, Crownsville.

Massachusetts

To Americus, Ga., Signal Corps Aviation School, for duty, from Wichita Falls, Lieut. WILLIAM F. MACKNIGHT, Fall River.

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. ELIE J. LALIBERTE, Fall River; HERBERT W. ELLAM, Gardner.

To Baltimore, Md., for instruction, from Camp Dodge, Capt. ANDREW W. SELLARS, Boston.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Lieut. NORMAN W. GILLESPIE, Dorchester.

To Camp A. A. Humphreys, Accotink, Va., for temporary duty, from Fort Riley, Lieut. FRANK B. BERRY, Cambridge.

To Camp Devens, Ayer, Mass., for conference, and on completion to Lakewood, N. J., for consultation, and on completion to his proper station, Major KENDALL EMERSON, Worcester.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Devens, Capt. WILLIAM K. S. THOMAS, Cambridge; from Camp Meade, Lieut. WARREN S. SHIELDS, Boston.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. NATHAN A. BOLOTOW, Boston; from Hoboken, Lieut. NICHOLAS A. GALLAGHER, Malden.

To Camp Hancock, Augusta, Ga., as orthopedic surgeon, from Philadelphia, Lieut. FRANK W. HODGDEN, Jr., Boston. Base hospital, Lieut. Paul C. DENNETT, Allston; from Fort Slocum, Capt. ALFRED P. CHRONQUEST, Hathorne.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Capt. ARTHUR W. AKERLEY, Boston. Base hospital, from Rockefeller Institute, Lieut. JAMES H. PARK, Jr., Boston.

To Camp Lee, Petersburg, Va., for temporary duty, from Fort Oglethorpe, Lieut. RICHARD M. ASH, West Quincy.

To Camp MacArthur, Waco, Texas, as orthopedic surgeon, from Philadelphia, Lieut. ARTHUR L. BRUNELLE, New Bedford. With the board examining the command for nervous and mental diseases, from Camp Dodge, Lieut. WALTER A. JILLSON, Westborough.

To Camp Upton, L. I., N. Y., to examine the command for nervous and mental diseases, from Camp Dix, Major GEORGE E. MCPHERSON, Medfield.

To Fort Adams, R. I., for duty, Capt. WINSOR H. TYLER, Lexington.

To Fort Oglethorpe as instructor in military roentgenology, from Fort Riley, Major ARIAL W. GEORGE, Boston. For instruction, Lieut. HUBERT N. ENGLISH, Boston.

To Hoboken, N. J., for duty, from Camp Jackson, Capt. BRONSON CROTHERS, Cambridge; DONALD MACOMBER, Newton.

To New Orleans, La., for duty, from Fort Oglethorpe, Capt. NATHANIEL K. NOYES, Duxbury.

To Richmond, Va., for duty, from Aberdeen, Md., Major ARTHUR H. CROSBIE, Boston.

To West Point, Miss., for duty, from Camp Greene, Lieut. ALFRED J. BONNEVILLE, Hatfield.

The following orders have been revoked: To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HARRY A. WALKER, Somerville. To Camp Jackson, Columbia, S. C., for duty, Lieut. FREDERICK A. MEADE, Williamsett.

Michigan

To Aberdeen, Md., for duty, from Edgewood, Capt. THOMAS B. HENRY, Northville.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Devens, Lieut. HEROLD F. OHRT, Detroit.

To Camp Beauregard, Alexandria, La., for duty, Lieut. LYLE B. KINGERY, Ann Arbor.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CLARK C. PIPER, Detroit. For duty, Lieut. ARTHUR J. NUMANN, ARTHUR W. NEWITT, Detroit.

To Camp Dix, Wrightstown, N. H., as assistant to the camp surgeon, from Williamsbridge, Major WILLARD H. HUTCHINGS, Detroit.

To Camp Jackson, Columbia, S. C., for duty, Lieut. SPENCER DEW. GUY, Benton Harbor; from Camp Beauregard, Capt. JACK R. BOLASNY, Detroit.

To Camp MacArthur, Waco, Texas, with the board examining the command for nervous and mental diseases, from San Antonio, Lieut. NICHOLSON W. PINTO, Kalamazoo.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Jackson, Capt. HENRY J. MEYER, Saginaw.

To Fort Oglethorpe for instruction, from Camp Hancock, Lieut. LELAND H. TOWER, Battle Creek.

To Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. THOMAS M. KANE, Jr., Lansing.

To Mincolo, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. CARL N. LARSEN, Detroit.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to his proper station, from Camp Shelby, Capt. BURT F. GREEN, Hillsdale.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. NELSON McLAUGHLIN, Lake Odessa.

The following orders have been revoked: To Fort Riley for instruction, Capt. LOUIS BARTH, Grand Rapids. To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to his proper station, from Camp Sherman, Lieut. WORTH W. WALTON, Mancelona.

Minnesota

To Camp Greene, Charlotte, N. C., base hospital, from Fort Riley, Lieut. JOSEPH C. MICHAEL, St. Paul.

To Camp Laurel, Laurel, Md., for duty from Camp Grant, Lieut. WILLIAM F. MAERTZ, New Prague.

To Camp Lee, Petersburg, Va., as orthopedic surgeon, from Chicago, Lieut. JOHN A. SAARI, Eveleth. As assistant to camp surgeon, from Fort Riley, Lieut. JAMES R. McVAY, Rochester.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Shelby, Capt. THOMAS G. CLEMENT, Vernon Center.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. MILLARD F. SMITH, St. Paul.

To Camp Pike, Little Rock, Ark., as assistant to the camp surgeon, from Fort Riley, Lieut. JOSEPH MOSES, Jr., Northfield.

To Camp Sevier, Greenville, S. C., base hospital, Capt. BYRON A. KAMP, Albert Lea. As orthopedic surgeon, from Chicago, Lieut. CARL PAULSON, Minneapolis.

To Fort Oglethorpe for instruction, from Memphis, Lieut. GROVER C. BLACK, Minneapolis.

To Fort Riley, hospital train, from Pullman, Lieut. PETER C. BJORNSBY, Bagley.

To Mincola, L. I., N. Y., for duty, Lieut. PAUL B. GILLESPIE, Minneapolis.

To New Haven, Conn., for duty, from Fort Riley, Lieut. LEE W. POLLOCK, Rochester.

To report to the commanding general, Philippine Department, for duty, from Camp Kearny, Capt. RALPH J. SEWALL, Crosby.

To Rochester, Minn., Mayo Clinic, as instructor, from Washington, Major CHARLES H. MAYO, Rochester.

The following order has been revoked: To Hoboken, N. J., for duty, from Fort Riley, Lieut. JOSEPH C. MICHAEL, St. Paul.

Mississippi

To Camp Lee, Petersburg, Va., base hospital, from Camp Meade, Lieut. LEONIDAS F. BARRIER, Greenwood.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. THOMAS A. STRAIN, Meridian; JAMES H. SLAUGHTER, Plattsburg.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Lieut. BARTON J. FARR, Holcomb.

Missouri

To Army Medical School for instruction, from Camp MacArthur, Lieut. JOHN H. MURPHY, St. Louis; from Hoboken, Lieut. SIDNEY J. WOLFERMANN, St. Louis.

To Camp Crane, Allentown, Pa., for duty, from Cleveland, Lieut. EUGENE A. MILLER, St. Louis.

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Capt. CHARLES A. VOSBURGH, St. Louis.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Fremont, Capt. OSCAR F. BAERENS, St. Louis.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. ARTHUR J. SMITH, Boonville; JESSE MADDON, Moberly; FLORIEN VAUGHN, Shelby.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. PATRICK McGENNIS, St. Louis.

To Douglas, Ariz., for duty, from Camp Travis, Capt. JOSEPH C. HYNES, St. Louis.

To Fort Des Moines, Iowa, for temporary duty, from Fort Oglethorpe, Lieut. CHARLES F. DAVIS, Jr., Kansas City.

To Fort Oglethorpe for instruction, from Dallas, Lieut. CHARLES D. MENELEE, Perry.

To Kansas City, Mo., Sweeney Auto School and the Rahe and Tractor School, to make physical examinations and give medical attention to the drafted men to be enrolled at these institutions, Lieut. WILLIAM G. THOMPSON, Holden.

To Mincola, L. I., N. Y., Signal Corps Aviation School, for duty, Capt. ANDREW W. McALESTER, Kansas City.

To New York City, Hospital for Ruptured and Crippled, for instruction, from Chicago, Capt. LUTHER O. NICKELL, Macon.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to Camp Woodworth, Spartanburg, S. C., base hospital from Rockefeller Institute, Capt. W. T. ELAM, St. Joseph.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Capt. NORVALL W. SHARPE, St. Louis; from Camp Dick, Lieut. ELIJAH A. COLLEY, St. Joseph; from Lonoke, Lieut. ALFRED L. WESSLING, Martinsville.

To report to the commanding general, Philippine Department, for duty, from Jefferson Barracks, Capt. MARC R. HUGHES, St. Louis; from Fort Riley, Lieut. LEVI S. LONG, St. Joseph.

To Rockefeller Institute for instruction in laboratory work, and on completion to St. Louis, Mo., Washington University, for duty, from Washington, D. C., Major EUGENE L. OPIE, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Greene, Capt. CHARLES H. HECKER, St. Louis.

Montana

To Camp Gordon, Atlanta, Ga., for duty, Capt. ALOYSIUS N. J. DOLAN, Great Falls.

To Fort Ontario, N. Y., for temporary duty, from Fort Riley, Lieut. JULIO R. SOLTERO, Belgrade.

To Fort Riley for instruction, Lieut. CHARLES A. GARDNER, Columbus.

To San Francisco, Calif., for instruction, and on completion to Camp Kearny, Linda Vista, Calif., base hospital, Lieut. JOHN L. TREACY, Helena.

Nebraska

To Camp Dodge, Des Moines, Iowa, as orthopedic surgeon, from Fort Riley, Capt. HOMER DAVIS, Genoa.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Grant, Capt. JOHN BUIS, Pender.

To Camp Travis, Fort Sam Houston, Texas, for duty, Capt. WILLIAM J. DOUGLAS, Atkinson; Lieut. LOUIS N. SMERNOFF, Omaha.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. THOMAS LAHNERS, Belvidere.

To Fort D. A. Russell, Wyo., for duty, Lieut. OSCAR P. SCHNE-TAZY, Schuyler.

To Fort Des Moines, Iowa, base hospital, from Fort Riley, Major JOHN P. LORD, Omaha.

To Fort Slocum, N. Y., for duty, from Army Medical School, Lieut. GUY S. PHILBRICK, Omaha.

To Hoboken, N. J., base hospital, from Camp Shelby, Capt. JOHN C. MOORE, Omaha.

To Portland, Ore., Yeon Building, for duty, from Fairfield, Ohio, Lieut. FRANK W. SCOTT, Lodge Polc; from Fort Omaha, Lieut. WILLIAM E. MOGAN, Petersburg.

Honorably discharged, Capt. HARRY M. BONNIWELL, Lincoln.

Nevada

To Camp Crane, Allentown, Pa., base hospital, from Camp Shelby, Capt. WILLIAM J. CIRCE, Carson.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. DAVID W. BEDINGER, Ruth.

New Hampshire

To Boston, Mass., for orthopedic instruction, and on completion to his proper station, Major KENDALL EMERSON, Worcester.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HILLARD C. CLARK, Bethlehem.

To Camp Pike, Little Rock, Ark., with the board examining the command for nervous and mental diseases, from Camp Meade, Capt. LEE C. STILLINGS, Alstead.

To Newport News, Va., for duty, Capt. WALTER A. ALLEN, Hamstead.

New Jersey

To Camp Crane, Allentown, Pa., base hospital, from Hampton, Lieut. HUGH S. CHIDESTER, Hoboken.

To Camp Dix, Wrightstown, N. J., for duty, Capt. HENRY COGAN, Paterson.

To Camp Jackson, Columbia, S. C., for duty, Lieut. EARLE R. DAVIS, Hadron Heights.

To Camp Meade, Annapolis Junction, Md., as orthopedic surgeon, from Fort Oglethorpe, Major HAROLD D. CORBUSIER, Plainfield.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Army Medical School, Lieut. LOUIS C. ROSENBERG, Newark.

To Hoboken, N. J., base hospital, Capt. HARRY C. REYNOLDS, Passaic; Lieut. JESSE R. PATTON, Long Branch.

To New Haven, Conn., for duty, Lieut. SAMUEL BARISHAW, Jersey City.

To Otisville, N. Y., for duty, from Camp Dix, Lieut. ALONZO W. LITTLE, Jersey City.

To report to the commanding general, Philippine Department, for duty, from Camp Custer, Lieut. IRWIN MARKOWITZ, Jersey City.

New Mexico

To Fort Oglethorpe for instruction, from Fort Riley, Lieut. NATHANIEL D. FRAZIN, Tyrone.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. ANTHONY E. LANKFORD, Dedman.

New York

To Army Medical School for instruction, from Camp Meade, Lieut. FREDERIC DAMRAU, Brooklyn. On completion to Boston, Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. LOUIS F. CRASSON, Brooklyn.

To Boston, Mass., for duty, Capt. JOSEPH RAPHAEL, Brooklyn.

To Buffalo, N. Y., and Toronto, Can., for duty, and on completion to his proper station, Major RICHARD H. HUTCHINGS, Ogdensburg.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieuts. DAVID PASHMAN, New York; CHARLES RIEGER, Staten Island. To examine members of the command for tuberculosis, and on completion to his proper station, from Camp Meade, Lieut. ALEXANDER ALTSCHUL, New York.

To Camp Crane, Allentown, Pa., for duty, from Walter Reed General Hospital, Capt. SAMUEL STEWART, Syracuse; from Cleveland, Lieut. DONOLD E. BRACE, New York City. Base hospital, from Camp Lee, Lieut. ABRAHAM SHORR, Brooklyn.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CHARLES W. DUNN, Jersey City.

To Camp Dix, Wrightstown, N. J., for duty, Capt. SAMUEL A. BUCHENHOLZ, New York. With the board examining the command for nervous and mental diseases, Capt. JOHN S. RICHARDS, Randall Island.

To Camp Gordan, Atlanta, Ga., for duty, Lieuts. RICHARD M. FIELD, MAX RESNICOFF, Brooklyn; CHARLES J. BARONE, JOSEPH J. ZIMMERMAN, Buffalo; WILLIAM A. MACPHERSON, LeRoy; WALDO B. FARNUM, New York; DARRY H. PATRIE, Red Hook from Camp Devens, Lieut. FRANK TANNEBAUM, New York; from Camp Grant, Lieut. DANIEL B. LYNCH, New York; from Fort McHenry, Lieut. RUSSELL C. PARSON, Brooklyn.

To Camp Greene, Charlotte, N. C., for duty, from Garden City, Major ATTILIO M. CACCINI, New York.

To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. DANIEL J. SWAN, Flushing.

To Camp Jackson, Columbia, S. C., as a member of the tuberculosis examining board, from Camp A. A. Humphreys, Lieut. WILLIAM B. EBELING, Brooklyn. Base hospital, Capt. DENIS A. McAULIFFE, New York; from New York City, Lieut. FRANK G. WALZ, Buffalo. For duty, Lieuts. DAVID NEWMAN, Bronx; AARON ROTH,

Brooklyn. With the board examining the command for nervous and mental diseases, Lieut. HOMER I. REXFORD, Willard; from Newport News, Lieut. HOWARD W. DAVIS, Poughkeepsie.

To Camp Lee, Petersburg, Va., as camp psychiatrist, from Camp A. A. Humphreys, Major ARTHUR S. MOORE, Middleton. For duty, from Fort Oglethorpe, Lieut. BYRON E. CHAPMAN, Albany.

To Camp MacArthur, Waco, Texas, with the board examining the command for nervous and mental diseases, from Camp Pike, Capt. JOHN MILLER, New York.

To Camp McClellan, Annapolis, Md., base hospital, from Philadelphia, Lieut. RUSSELL PEMBERTON, New York.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Beauregard, Lieut. WILLIAM GOLSTEIN, New York. With the board examining the command for nervous and mental diseases, from Fort McHenry, Lieut. FREDERICK P. SCHENKELBERGER, Gowanda.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Custer, Capt. LEWIS H. TAFT, New York.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. DANIEL V. CATALANC, Staten Island.

To Camp Sherman, Chillicothe, Ohio, as member of the tuberculosis examining board, from Camp A. A. Humphreys, Capt. EDWARD P. EGLES, New York.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Capt. WILLIAM F. PLUMLEY, Rochester.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. GEORGE W. WHEELER, New York. For duty, from Fort Oglethorpe, Lieuts. SAMUEL J. BLUMENTHAL, Brooklyn; MAX I. ORVEN, New York.

To Cleveland, Ohio, Lakeside Hospital, for instruction, from Fort Ontario, Lieut. DONALD E. BRACE, New York.

To Colonia, N. J., for temporary duty, from Fort Oglethorpe, Major FRED H. ALBEE, New York.

To Fort Leavenworth, Kan., for duty, from Camp Gordon, Lieut. HAROLD R. ROBERT, Dannemore.

To Fort McHenry, Md., base hospital, Lieut. JUNIUS W. STEPHENSON, New York.

To Fort McPherson, Ga., for duty, from Camp Hancock, Lieut. HUGH M. BULLARD, Brooklyn.

To Fort Oglethorpe, for duty, from Pullman, Lieut. ADFUR E. MAINES, New York. For instruction, Lieuts. RUDOLPH H. RUEDEMANN, Albany; LOUIS F. SARMANN, New York.

To Fort Sam Houston, Texas, Department Laboratory, from Army Medical School, Lieut. RALPH F. GREGORIUS, Corning.

To Hoboken, N. J., base hospital, from New York City, Capt. MILES W. JOHNS, Utica; Lieut. MILTON L. STRAHL, Brooklyn; from Fort Oglethorpe, Lieut. STANLEY E. ALDERSON, Albany. For duty, from Fort Oglethorpe, Capt. CHARLES P. ROACH, New York; from Army Medical School, Lieuts. DAVID M. GARDNER, Benson Mines; NATHAN WEINBERG, Brooklyn; GEORGE P. OLCOTT, New York.

To Lenoque, Ark., Signal Corps Aviation School, for duty, from Rantoul, Capt. SAMUEL M. STRONG, New York.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieuts. PHILIP E. BERNSTEIN, Brooklyn; SAMUEL Z. ORGEL, New York; WILLIAM E. GAZELY, Schenectady; from New York City, Lieut. DAVID D. STOWELL, New York.

To New Haven, Conn., for duty, from Army Medical School, Capt. EWING TAYLOR, New York; from Camp Devens, Lieut. EDWIN F. SAMPSON, New York. Yale University, for duty, from Camp American University, Capt. JEAN R. OLIVER, New York.

To Newport News, Va., for duty, Lieuts. PHILIP B. BREGMAN, Bronx; MORRIS STAHL, Brooklyn; JULIUS R. ALMER, JAMES B. MILLER, EDWARD R. WARE, New York.

To New York City, Hospital for Ruptured and Crippled, for instruction, from Philadelphia, Lieut. JULIUS T. COHEN, Buffalo.

To Plattsburg Barracks, N. Y., for duty, from Camp Upton, Major AARON J. ROSANOFF, Kings Park.

To Princeton, N. J., for conference, and on completion to his proper station, from Camp Lee, Major EDWARD K. DUNHAM, Capt. RALPH A. KINSELLA, New York; from Rockefeller Institute, Major ALPHONSE R. DOCHÉZ, New York.

To report to the commanding general, Philippine Department, for duty, from Fort Oglethorpe, Capt. HAROLD L. HUNT, New York.

To Rockefeller Institute for duty, and on completion to Washington, D. C., Major CARROLL G. BULL, New York. For instruction in laboratory work, Capt. FRANK G. SCHAIBLE, New York. For instruction in the treatment of infected wounds, and on completion to Camp Greene, Charlotte, N. C., base hospital, Capt. BURDGE P. MACLEAN, Jr., Huntington.

To Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment, from Edgewood, Capt. FREDERICK W. FILSINGER, Buffalo.

To Washington, D. C., for consultation, and on completion to his proper station, from New York, Lieut. HENRY W. HAYNES, New York.

To Waynesville, N. C., for observation and treatment, from Fort Screven, Capt. SPENCER FRANKLIN, New York.

The following orders have been revoked: To Fort Oglethorpe for instruction, Lieut. MORRIS H. NEWTON, Iliou. To Hoboken, N. J., for duty, Lieut. OSCAR G. FINKLE, New York. To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to his proper stations, from Camp Sherman, Capt. FREDERICK J. PFIESTERER, Ceres; MILTON G. BURCH, Hornell; LEWELL T. GENUNG, Worcester.

North Carolina

To Camp Bowie, Fort Worth, Texas, as orthopedic surgeon, from Philadelphia, Lieut. FRANCIS W. CARRUTHERS, Hillsboro.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Wadsworth, Lieut. ADLAI S. OLIVER, Greensboro.

To Camp Hancock, Augusta, Ga., as orthopedic surgeon, from Philadelphia, Lieut. WILLIAM MONCURE, Jr., Hamlet.

To Fort McPherson, Ga., base hospital, from Camp Beauregard, Lieut. HUGH E. CLARK, Rocky Mount, from Camp Bowie, Capt. HERBERT H. OGBURN, Greensboro; from Camp Hancock, Capt. JACOB H. SHUFORD, Hickory, from Camp McClellan, Capt. ARTHUR T. PRITCHARD, Asheville; Lieut. ANZI J. ELLINGTON, Raleigh; from Camp Sevier, Lieut. MILTON T. EDGERTON, Jr., Greenville; from Camp Wadsworth, Lieuts. LEWIS M. GRIFFITH, Asheville; JOHN E. WINE, Wilmington; from Fort Oglethorpe, Major MARSHALL H. FLETCHER, Lieuts. LOUIS G. BEALL, Asheville; EDWARD C. ASHBY, Greensboro; THOMAS M. STANTON, High Point; ALVIN C. MCCALL, Rocky Mount; SAM W. HURDLE, Spray; JAMES F. ROBERTSON, Jr., Wilmington.

To Fort Oglethorpe for instruction, Capt. CHARLES E. WOODING, Winston-Salem.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. HENRY B. MAXWELL, Whiteville.

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Lieut. JOHN A. BECK, Gloucester City.

To Rockefeller Institute for instruction in bacteriology, Lieut. FRANK C. HODGES, Greenville.

Honorably discharged, Lieut. THURMAN G. WRIGHT, Elizabeth City.

North Dakota

To Camp Gordon, Atlanta, Ga., for duty, Lieut. WALTER D. BAYARD, Fargo.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. JOHN A. JOHNSON, JR., Grand Forks.

Ohio

To Army Medical School for instruction, from Fort McPherson, Lieut. WALTER S. BENNETT, Cardington.

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Walter Reed General Hospital, Major FRANK WINDERS, Columbus.

As orthopedic surgeon, and on completion to his proper station, from Army Medical School, Capt. ELMER A. KLEIN, Norwood.

To Camp Cody, Deming, N. M., as orthopedic surgeon, from Philadelphia, Lieut. RUDOLPH S. REICH, Cleveland.

To Camp Crane, Allentown, Pa., for duty, from Cleveland, Capt. HENRY K. YAGGI, Salem; Lieut. JOHN A. MELLON, Columbiana.

To Camp Fremont, Palo Alto, Calif., base hospital, from Fort Riley, Capt. ALBIN M. PAINTER, Youngstown.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. JOHN R. WARREN, Lower Salem; CLIFFORD G. SMITH, Marion; from Camp McClellan, Lieut. THOMAS H. BROWN, Toledo.

To Camp Jackson, Columbia, S. C., for duty, from Camp Lee, Lieut. MILTON B. COHEN, West Salem.

To Camp Laurel, Laurel, Md., for duty, from Hoboken, Major WILLIAM W. CONGER, Toledo.

To Camp Pike, Little Rock, Ark., for duty, Lieut. LEROY S. HENNEN, Leetonia; from Fort McPherson, Lieut. WILLIAM L. LAYPORT, Cincinnati.

To Camp Sevier, Greenville, S. C., base hospital, from Ann Arbor, Lieut. JAMES McC. McGEORGE, Salem.

To Fort McPherson, Ga., base hospital, from Camp Shelby, Capt. HARRY S. NOBLE, St. Mary's; from Fort Oglethorpe, Capt. SIDNEY D. FOSTER, Toledo.

To Fort Oglethorpe for instruction, Lieut. EDWIN E. SHEFFIELD, Elyria.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. JAMES G. SMAILES, Coshocton.

To Orono, Me., University of Maine, to make physical examinations and give medical attention to the drafted men enrolled at that institution, and on completion to his proper station, from Camp Devens, Lieut. EDWARD REMY, JR., Mansfield.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. EDGAR D. ALLEN, Crooksville.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. JOHN L. TRAVIS, Germantown.

To Rockefeller Institute for instruction in laboratory work, Lieut. ROLL H. MARKWITH, Columbus. On completion to Washington, D. C., for duty, Lieut. ROBERT B. STEVENSON, Columbus.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. ALBERT G. FREIBERG, Cincinnati; from Camp Jackson, Lieut. GEORGE B. BOOTH, Toledo.

The following orders have been revoked: To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to their proper stations from Camp Sherman, Capt. VICTOR BIDDLE, Stubenville; Lieut. CHARLES S. JACKSON, Edison.

Oklahoma

To Camp Beauregard, Alexandria, La., base hospital, Lieut. CHARLES B. TAYLOR, Oklahoma City.

To Camp Jackson, Columbia, S. C., for duty, from Camp Dix, Lieut. EARL F. VANDEVER, Lahoma.

To Camp Laurel, Laurel, Md., for duty, from Camp Grant, Lieut. CECIL B. SHROUT, Shawnee.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. LLOYD M. SACKETT, Oklahoma City.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. POWELL L. HAYS, Vinita.

To Fort Oglethorpe for instruction, Lieut. FRANK THOMASON, Drumright.

To Fort Sam Houston, Texas, for temporary duty, from Camp MacArthur, Lieut. JOHN A. WALKER, Shawnee.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. ELIJAH S. SULLIVAN, Oklahoma City.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. WALTER M. SYKES, Ramona; from Fort Sill, Lieuts. ELMER E. HEADY, Buffalo; JAMES W. WHEELER, Gracemont; ROBERT L. BAKER, Wynnewood; from Houston, Lieut. GEORGE B. COKER, Cyril; from Memphis, Lieut. WILLIAM C. FASHEE, Grandfield.

To report to the commanding general, Philippine Department, for duty, from Chicago, Capt. FANTON M. SANGER, Oklahoma City.

Oregon

To Army Medical School for instruction, Lieut. GUY C. MILNOR, Portland.

To Fort Oglethorpe for instruction, from Fort Riley, Lieuts. FRANK E. BUTLER, Hot Lake; JULIUS H. GARNJOBST, Salem.

To Hoboken, N. J., base hospital, from Camp Lewis, Capt. OTIS B. WIGHT, Portland.

To Newport News, Va., as orthopedic surgeon, from Philadelphia, Capt. EDGAR H. BROWN, McMinville.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. FRANK C. HART, Portland.

Pennsylvania

To Americus, Ga., Signal Corps Aviation School, for duty, from Camp Greene, Major WALTER S. CORNELL, Philadelphia.

To Army Medical School for instruction, from Camp Sherman, Lieut. LAWRENCE H. FITZGERALD, Pittsburgh. On completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Gordon, Lieut. WILLIAM C. ELY, Philadelphia.

To Baltimore, Md., Johns Hopkins University, for duty, and on completion to his proper station, from Cape May, Major CHARLES H. FRAZIER, Philadelphia.

To Boston, Mass., for duty, Lieuts. GEORGE A. PARKER, Pottsville; WILLIAM L. CRAWFORD, Dillsbury.

To Buffalo, N. Y., for duty, from Walter Reed General Hospital, Capt. WILLIAM P. McINTOSH, Philadelphia.

To Camp A. A. Humphreys, Accotink, Va., base hospital, and on completion to Army Medical School, for instruction, from Army Medical School, Lieut. ROBERT D. SPENCER, Philadelphia. For duty, from Fort Andrews, Lieut. WALTER L. LYNN, Wilkes Barre.

To Camp American University, Washington, D. C., for duty, from Camp Sevier, Capt. JOSEPH LEIDY, Philadelphia.

To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Lieut. EUGENE C. MURPHY, Philadelphia; from Cleveland, Lieut. CHARLES D. BIERER, Uniontown.

To Camp Dix, Wrightstown, N. J., base hospital, Major ALLEN JOHN SMITH, Philadelphia; Lieut. FLOYD D. LOHR, Bradenville. With the board examining the command for nervous and mental diseases, Lieut. JOSEPH P. BOYLE, Lansford.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ALBERT V. CROSBY, Abington; WILLIAM T. MARTIN, Pelzer; WILLIAM H. HAUCK, Philadelphia; from Camp Greene, Capt. WILLIAM P. CLANCY, Clarendin; from Camp Meade, Lieut. ROBERT McR. BIDDLE, Ashland; from Williamsbridge, Lieut. CLAUDE L. BRADFORD, Pittsburgh.

To Camp Greene, Charlotte, N. C., base hospital, from Philadelphia, Capt. WALTER B. HARVEY, Pittsburgh. For duty, Lieut. CHARLES O. PETERS, Albion.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. DANIEL W. FRYE, Pittsburgh.

To Camp Jackson, Columbia, S. C., base hospital, from Philadelphia, Capt. CLEMENT R. BOWEN, Philadelphia. For duty, Lieut. PAUL S. SEABOLD, Philadelphia. With the board examining the command for nervous and mental diseases, Lieut. WILLIAM C. MILLER, Warren; from Camp Hancock, Lieut. WILLIAM M. DONOVAN, Philadelphia.

To Camp Las Casas, San Juan, Porto Rico for duty, Lieut. RAMON J. SIFRE, Philadelphia.

To Camp Leach, Washington, D. C., for duty, Lieut. HIRAM G. STRAUB, Minersville.

To Camp Lee, Petersburg, Va., base hospital, from Camp Wadsworth, Capt. CLARK N. YEAGER, Wilkes-Barre.

To Camp Logan, Houston, Texas, base hospital, from Camp Gordon, Major LINNAEUS H. PRINCE, Philadelphia.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. HARRY H. LOTT, Philadelphia. For duty, from Army Medical School, Capt. JAMES A. BUCHANAN, Strickersville; Lieut. LAWRENCE L. BLACKBURN, Philadelphia.

To Camp Sevier, Greenville, S. C., base hospital, Major GEORGE FETTEROLF, Philadelphia.

To Camp Upton, L. I., N. Y., with the board examining the command for nervous and mental diseases, Lieut. EDGAR M. BLEW, Allentown.

To Camp Wadsworth, Spartanburg, S. C., for duty, Capt. ALBERT C. LAMADE, Williamsport.

To Camp Wheeler, Macon, Ga., for temporary duty, from Fort Oglethorpe, Lieut. JOHN M. CONNOLLY, Philadelphia.

To Camp Zachary Taylor, Louisville, Ky., as orthopedic surgeon, from Philadelphia, Lieut. HOWARD S. MYERS, Pittsburgh.

To Fort McPherson, Ga., base hospital, from Camp Meade, Lieut. DON D. BROOKS, Connellsville; from Camp Sevier, Lieut. SAMUEL B. STURGIS, Philadelphia.

To Fort Oglethorpe for instruction, Capt. MYER SOLIS COHEN, Philadelphia; Lieut. HARRY A. D. BAER, Philadelphia, CLARENCE J. McCULLOUGH, Washington; from Aberdeen, Md., Lieut. WILLIAM C. REESE, Wilkes-Barre; from Philadelphia, Lieut. ALBERT T. RANSOME, Philadelphia.

To Fort Screven, Ga., for duty, Capt. ARTHUR C. MORGAN, Philadelphia.

To Hamilton and Toronto, Ontario, Can., for consultation, and on completion to his proper station, Major ISAAC H. JONES, Philadelphia.

To Hoboken, N. J., base hospital, Lieut. BENJAMIN W. McKENZIE, Philadelphia; from Camp Meade, Lieut. JACOB PEARL, Philadelphia. For duty, from Army Medical School, Lieut. ARNE W. CLOUSE, Geneva; from Camp Grant, Lieut. THOMAS SCHUBB, Pittsburgh.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieuts. HAROLD F. LANSHE, Allentown; HARRY W. BACHMAN, Philadelphia.

To New Haven, Conn., Yale University, for duty, from Camp Leach, Capt. JOSEPH LEIDY, Philadelphia. For duty, Capt. ISAAC H. ALEXANDER, Pittsburgh; from Fort Oglethorpe, Lieut. HAROLD W. KINDERMAN, Philadelphia.

To Newport News, Va., for duty, Lieuts. VICTOR K. MARSTELER, Bethlehem; EDGAR C. NIEBAUM, Pittsburgh.

To New York City, Neurological Institute, for instruction, from Camp Jackson, Major EVAN W. MEREDITH, Pittsburgh. School for Military Roentgenology, for investigation, and on completion to his proper station, from Fort Oglethorpe, Major WILLIS F. MANGES, Philadelphia.

To Plattsburg Barracks, N. Y., for duty, from Cape May, Lieut. CLARENCE A. PATTEN, Philadelphia.

Resignation of Capt. EDWARD B. GLEASON, Philadelphia, accepted. The following order has been revoked: To Hoboken, N. J., for duty, Capt. ISAAC H. ALEXANDER, Wilkesburg.

Porto Rico

To Camp Las Casas, San Juan, P. R., for duty, Lieut. AMNUEL F. NATER, San Juan.

Rhode Island

To Camp McClellan, Anniston, Ala., base hospital, from Army Medical School, Lieut. EDWARD W. MULLIGAN, Providence.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Doniphan, Capt. HOWARD E. BLANCHARD, Providence.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Lieut. KENNETH CHURCHILL, Providence.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Fort McHenry, Md., for duty, Capt. WILLIAM B. CUTTS, Providence.

South Carolina

To Camp Crane, Allentown, Pa., base hospital, from Camp Jackson, Capt. WILLIAM H. JOHNSON, Charleston.

To Camp Hancock, Augusta, Ga., base hospital, from Camp Lee, Lieut. RALPH H. McFADDEN, Chester.

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILLIAM H. MATHIS, Collins; from Williamsbridge, Lieut. LADSON D. BOONE, Charleston.

To Camp Travis, Fort Sam Houston, Texas, as assistant to camp surgeon, from El Paso.

To Fort McHenry, Md., for duty, from Camp Meade, Lieut. WILLIAM R. JOHNSON, Windsor.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. COLLINS E. SMITH, Ridgeville.

South Dakota

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. ARCHIE P. KIMBALL, Colome; GEBBARD J. LONG, Oldham.

To Milwaukee, Wis., base hospital, from Camp Zachary Taylor, Lieut. CARL N. HARRIS, Wilmot.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. HARLEY D. NEWBY, Parker.

To San Francisco, Calif., for duty, Capt. ALFRED C. ALLEN, Deadwood.

Tennessee

To Camp Dix, Wrightstown, N. J., base hospital, from Fort Riley, Lieut. PERCY D. BIDDLE, Columbia.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Travis, Lieut. ELMER S. MAXWELL, Nashville.

To Camp Gordon, Atlanta, and Camp Forrest, Chickamauga Park, Ga., for duty, from Camp McClellan, Capt. LEE A. STONE, Memphis.

To Camp Gordon for duty, Capt. EDWARD T. WEST, Johnston City; Lieut. JAMES H. JONES, Hampshire; from Fort Oglethorpe, Lieut. VIRGIL E. MASSEY, Knoxville.

To Camp MacArthur, Waco, Texas, as orthopedic surgeon, from Philadelphia, Lieut. BEECHER L. OGLE, Knoxville.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. JOHN B. CROSS, Wheat.

To Camp Wadsworth, Spartanburg, S. C., and Camp Hancock, Augusta, Ga., for duty, from Camp Forrest, Capt. LEE A. STONE, Memphis.

To Portland, Ore., Yeon Building, for duty, from Lonoke, Ark., Capt. CHARLES W. BROWN, Nashville; from Fairfield, Ohio, Lieut. HUGH W. ALLAN, Knoxville.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Lieut. DURWARD B. ROACH, Nashville.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Meade, Major EDWARD C. ELLETT, Memphis.

Resignation of Major MATTHEW C. MCGANNON, Nashville, accepted.

The following orders have been revoked: To Fort Oglethorpe for instruction, Capt. DAVID R. NEIL, Nashville. To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to their proper stations, from Camp Sherman, Lieuts. JOHN S. MILLER, Colliersville; THOMAS W. MENEES, Nashville.

Texas

To Army Medical School for instruction, from Camp MacArthur, Capt. EUGENE V. POWELL, Fort Worth; from Camp Devens, Lieut. ERNEST J. STEVENS, San Antonio.

To Camp Beauregard, Alexandria, La., base hospital, from Camp Cody, Capt. THOMAS C. BROOKS, Bay City.

To Camp Bowie, Fort Worth, Texas, base hospital, from Camp Travis, Lieut. THOMAS T. JACKSON, San Antonio.

To Camp Devens, Ayer, Mass., base hospital, from Fort Riley, Lieut. MELVIN O. REA, Dallas.

To Camp Doniphan, Fort Sill, Okla., as orthopedic surgeon, from Philadelphia, Lieut. CARL B. YOUNG, Jr., Houston.

To Camp Kearny, Linda Vista, Calif., base hospital, from Camp Cody, Lieut. WILLIAM T. DUNNING, Gonzales.

To Camp MacArthur, Waco, Texas, base hospital, from Army Medical School, Lieut. GEORGE M. JONES, Smithville. For duty, Lieuts. AUGUST J. STREIT, Marlin; LEWIS S. JOHNSTON, San Antonio.

To Camp Pike, Little Rock, Ark., for duty, from Army Medical School, Lieut. HUBERT L. BROWN, Sherman.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Camp Cody, Capt. MILES J. DUNCAN, Dallas. For duty, Lieuts. ROGERS W. McKEAN, Fort Worth; OSCAR M. DILLEN, Lufkin; FRED A. ALLIN, San Antonio; HENRY C. BAILIFF, EDWARD E. YEAGER, Temple.

To Fort Bliss, Texas, for temporary duty, from Camp MacArthur, Capt. DAVID H. LAWRENCE, El Paso.

To Fort Oglethorpe for instruction, from Camp Hancock, Lieut. JOHN C. THOMAS, Taylor; from Camp Logan, Lieut. JOSEPH E. McDOWELL, Shamrock; from Everman, Texas, Lieut. JOSEPH H. HICKS, Elkhart.

To Fort Sam Houston, Texas, base hospital, from Fort Douglas, Lieut. EDWARD J. BURUS, Carrizo Springs.

To Hoboken, N. J., for duty, from Camp Cody, Lieut. CHARLES C. COOKE, Keene; from Fort Oglethorpe, Lieut. PERE M. KUYENDALL, Moody.

To Houston, Texas, Signal Corps Aviation School for duty, from West Point, Lieut. ERASTUS B. WHEAT, Cooper.

To Portland, Ore., Yeon Building, for duty, from Camp Dick, Lieut. IYLE G. THORNTON, West Point; from Camp Greene, Lieut. EDW. J. BURNETT, San Antonio; from Houston, Lieut. HOMER T. ELKINS, Sinton.

To report to the Commanding general, Philippine Department, for duty, from Camp MacArthur, Lieut. JOHN W. BROWN, Pearsall.

To San Antonio, Texas, Signal Corps Aviation School, for duty, from Mineola, Lieut. WILSON M. BASSETT, San Antonio.

To West Point, Miss., Signal Corps Aviation School, for duty, from San Antonio, Capt. WILLIAM R. JAMIESON, El Paso.

Utah

To Dallas, Texas, for duty, from Mineola, Capt. ROBERT R. HAMPTON, Salt Lake City.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. REINHOLD KANZLER, Ogden.

Vermont

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. WILLIAM A. FLOOD, North Bennington.

To Camp Leach, Washington, D. C., for duty, Lieut. CLAIBORNE WILCOX, Norfolk.

To Camp Lee, Petersburg, Va., base hospital, from Camp Sevier, Capt. WILLIAM B. PORTER, Richmond. For duty, from Fort Oglethorpe, Lieut. WALTER D. SIMMONS, Richmond.

To Fort Oglethorpe for instruction, Lieut. JAMES McN. FADSLEY, Falls Church.

To New Haven, Conn., for duty, Lieut. JAMES L. STRINGFELLOW, Norfolk.

To report to the commanding general, Philippine Department, for duty, from Camp Custer, Lieut. ARTHUR HOOKS, Blackstone.

Washington

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Kearny, Capt. COPELAND PLUMMER, Seattle.

To Fort Oglethorpe for instruction, from Fort Riley, Lieut. LORENZO S. DEWEY, Okanogan.

To Hoboken, N. J., base hospital, from Mayo Clinic, Lieut. HUBBARD T. BUCKNER, Seattle.

To Philadelphia, Pa., University Hospital, for instruction, and on completion to his proper station, from Camp Meade, Lieut. WHITTING B. MITCHELL, Sumner.

To Portland, Ore., Yeon Building, for duty, from Houston, Major ROBERT A. ALLEN, Tacoma; from Anchorage, Alaska, Lieut. CHAS. C. BENEDICT, Seattle.

To San Diego, Calif., Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. RICHARD W. PERRY, Seattle.

West Virginia

To Arcadia, Fla., Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. WILLIAM W. GILL, Richmond.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. SAMUEL B. NICKELS, Big Stone Gap.

To Boston, Mass., Franklin Union Training Detachment, for duty, Lieut. ULYSSES G. ARNETT, Henderson.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Capt. McRAE C. BANKS, Raleigh.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. RICHARD L. DEVEREUX, Wheeling.

To Camp Grant, Rockford, Ill., base hospital, from Army Medical School, Lieut. JOHN P. FARSON, Century.

To Camp Jackson, Columbia, S. C., for duty, Lieut. HERSCHEL R. YOST, Fairmont.

To Camp Pike, Little Rock, Ark., base hospital, from Army Medical School, Lieut. SOLOMON L. CHERRY, Clarksburg.

To Camp Upton, L. I., N. Y., with the board examining the command for nervous and mental diseases, Capt. CECIL DENHAM, Buckhannon.

To Newport News, Va., for duty, Lieut. EDGAR W. SMOOT, Glendenin.

Wisconsin

To Camp Devens, Ayer, Mass., as assistant to the camp surgeon, from Hoboken, Major E. J. BARRETT, Sheboygan.

To Camp Grant, Rockford, Ill., base hospital, Lieut. TIMOTHY J. HOWARD, Milwaukee.

To Portland, Ore., Yeon Building, for duty, from Arcadia, Lieut. CHARLES F. REHLING, Fremont.

To report to the Commanding general, Philippine Department, for duty, from Camp Custer, Lieut. MARTIN DUFRENNE, Middleton.

To Washington, D. C., for duty, and on completion to his proper station, from Cape May, Capt. J. GURNEY TAYLOR, Milwaukee.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Health Subsidy Restored by State.—On being informed that \$5,000 has been appropriated for the maintenance of a tuberculosis ward at the San Francisco Hospital, and that the board of supervisors have voted to select a site for a new tuberculosis sanatorium, the state board of health has restored the state subsidy to the San Francisco Hospital.

Personal.—Dr. Robert A. Peers, Colfax, who resigned recently from the state board of health to enter military service, has arrived in France.—Dr. William L. Whittington, Santa Rosa, has been appointed first assistant physician at the Sonoma State Home.—Dr. James G. Baird has resigned as a member of the board of health of Riverside.—Dr. John P. Gilmer has resigned as police surgeon at the Receiving Hospital, Los Angeles, to enter the Naval service and has been succeeded by Dr. Clayton G. Stadfield.—Dr. Charles W. Girdlestone has resigned as health officer of Riverside.—Dr. Placida Gardner, city bacteriologist of Los Angeles, has started for France.—Dr. Carl P. Jones, Grass Valley, has accepted the directorship and organization of Naval Station Hospital Unit No. 11.

GEORGIA

Cancer Committee Appointed.—At the meeting of the State Medical Association of Georgia in April, a committee was appointed to educate the public and call the attention of the profession to the increasing danger of cancer. The committee is composed of twelve members, one from each congressional district of the state. Dr. James L. Campbell, Atlanta, is chairman.

ILLINOIS

Violators of Practice Act Convicted.—The department of registration and education reports that it has recently secured convictions for violations of the medical practice act in the following cases:

Martin Krause, Chicago. Fined \$100 and costs.
Philip H. Griggs, Jacksonville. Fined \$50 and costs.
Mrs. Ella Brown, Hillsboro. Fined \$75 and costs.
Mrs. Emma Calvin, Monticello. Awaiting sentence.
H. N. Mettler, Rock Island. Fined \$200. Appealed to Supreme Court.
D. Cecilio, Witt. Fined \$50 and costs.
George Granthau, Irving. Fined \$50 and costs.
J. J. Vizgird, East St. Louis. Fined \$200 and costs.
Dora Dennis, East St. Louis. Fined \$75 and costs.
J. W. McClellan, East St. Louis. Fined \$50 and costs.
Joseph R. Kloppenburg, East St. Louis. Fined \$50 and costs.
A. P. Milliken, Somonauk. Fined \$25 and costs.
S. Hirschfield, Chicago. Fined \$100 and costs.
James Brown, Springfield. Fined \$50, with thirty days in jail.
L. G. Lewis, Galesburg. Fined \$25 and costs.
C. E. Brandt, Bushnell. Fined \$25 and costs.
Wm. B. Wilson, Hoopeston. Fined \$25 and costs.
R. R. Roberts, Chicago. Fined \$50 and costs.
R. Langfields, Chicago. Fined \$100 and costs.
C. Claybourn, Centralia. Fined \$150 and costs.
J. J. McCue, Springfield. Fined \$25 and costs.
Johann Henrich Wilhelm Harmsen, Chicago. Fined \$25 and costs.
W. L. Myers, Bushnell. Fined \$25 and costs.
Barbara Glaum, Chicago. Fined \$150 and costs.

The following cases are pending:

L. Brodawicz, East St. Louis. Held to circuit court; \$1,000 bond.
F. C. Shaklee, Galesburg. Held for action of grand jury; \$300 bond.
E. S. Spaulding, Cairo. Held for action of grand jury; \$300 bond.

Chicago

Election of Officers.—At the annual election of the Chicago Medical Society, held June 18, the following officers were elected: president, Dr. John V. Fowler; secretary, Dr. Hugh N. MacKechnie.

INDIANA

College News.—Contracts for the erection of a new building for the Indiana University School of Medicine, Indianapolis, on the grounds of the Robert W. Long Hospital, were awarded at a recent meeting of the trustees. Plans to continue the Indiana School of Medicine without vacation have been announced by the registrar of the institution.

City Health Board Changes.—Drs. Thomas B. Eastman, Robert O. Alexander, Willis D. Gatch, all of Indianapolis, have resigned as members of the city board of health and charities on request of the mayor. Dr. Gustavus B. Jackson, president of the board, has resigned to enter military service. Drs. James C. Carter and Harry E. Gabe have been appointed members of the board.

IOWA

Personal.—Dr. Guilford H. Summer, Des Moines, secretary of the state board of health, has been unanimously reelected to the position for a term of five years.—Dr. George S. Muirhead, Marion, was operated on for cholecystitis, May 24, at Mercy Hospital, Cedar Rapids, and is reported to be doing well.—Dr. David M. Ghrist, Ames, was seriously injured in an interurban wreck near Boone, May 9, and is under treatment in the Mary Greeley Hospital.

MARYLAND

Service Flag.—A service flag bearing twenty-six stars has been suspended between the two buildings of the Shepherd and Enoch Pratt Hospital, near Towson.

Government Not to Buy Quarantine Station.—On account of the enormous demands upon the federal treasury for war purposes, the House committee on appropriations has refused to consider the expenditure at this time of \$176,000 for the purchase of the Baltimore city quarantine station and its equipment, which had been recommended by the United States Public Health Service. The Baltimore quarantine is the only one of the city and state maintained quarantine services which the federal government has not taken over and made a part of its federal quarantine system. Assistant Surg.-Gen. Richard H. Creel stated before the committee that the Baltimore quarantine service is satisfactorily maintained by the city at a cost of about \$24,000 a year. This the Public Health Service believes the government can reduce to \$10,000 or \$12,000. The quarantine service was turned over to the government by the city a few weeks ago at a rental of \$1 a year, pending action on the congressional appropriation. The intention of the city officials was to use

the money from quarantine in establishing a new municipal hospital in the western part of the city.

Personal.—Major Alfred P. Roope of the Medical Reserve Corps has arrived at General Hospital No. 2, Fort McHenry, from Camp Lee, Va. There are now in the hospital about 300 patients.—Dr. Charles A. Reifschneider, Medical Reserve Corps, medical superintendent of the University Hospital, has been ordered to Camp Meade, Md. He has been assigned to Evacuation Hospital No. 19. Dr. Harry Schmuck, Baltimore, has been made superintendent of the hospital in place of Dr. Reifschneider.—Dr. J. Carroll Monmonier, Catonsville, captain in the hospital corps, who has been for some months in France, has been made chief of the medical and sanitary staff of one of the hospitals near the front, having been transferred from the aero squadron to which he was attached.—Dr. C. Frank Jones, a health warden of Baltimore city, is recovering from an operation performed at St. Joseph's Hospital. Dr. Jones was city diagnostician during the outbreak of infantile paralysis two years ago.—Dr. Luigi D. Stefano has been appointed health warden of the fifth ward of Baltimore, succeeding Dr. Joseph E. Heard, deceased.—Dr. Edward P. Smith, superintendent of Mercy Hospital, Baltimore, resigned, May 29.—Dr. George Y. Massenburg has returned to Baltimore after eight months' service with the Roumanian Red Cross.—Dr. H. G. Tonkin has been elected mayor of Martinsburg.—Dr. Mildred Jencks, who will sail for China in August to become resident physician of the David Gregg Hospital for Women and Children, was the guest of honor at an informal reception held in the Brown Memorial Church, May 7.

MASSACHUSETTS

Laboratory for Cancer Research.—A new laboratory building for the Huntington Memorial Hospital for Cancer Research, Boston, is to be erected at an estimated cost of \$6,000, one third of which has already been obtained.

Sentence Confirmed.—It is reported that the state supreme court has decided that Dr. Lemuel F. Noble, Roxbury, Boston, must serve a term of eighteen months at Dear Island; this sentence was imposed by the superior criminal court a year ago, when he was found guilty on ninety-six counts of an indictment charging the unlawful prescribing of narcotic drugs.

Personal.—Dr. Albert M. Shattuck, Worcester, has succeeded Mr. Perreault as trustee of the Grafton State Colony.—Dr. William H. Coon, formerly of Wakefield, has resigned as director of public health of St. Louis, in order to accept a position of director of health and sanitation of the Federal Ship Building Board.—Dr. Frank C. Richardson, Brookline, who has been seriously ill with neuritis, is reported to be improving.—Dr. Ernest V. Scribner, Worcester, is a patient at the Peter Brent Brigham Hospital, Boston.—Dr. Arthur W. Gilbert, secretary to the committee on agriculture of the Boston Chamber of Commerce, has been appointed milk administrator for New England by the New England Regional Milk Commission.—Dr. Ada F. Harris, Worcester, has been appointed pathologist of the Massachusetts State Hospital, Grafton.

District Society Meetings.—Franklin District Medical Society elected officers at Springfield, May 14, as follows: president, Dr. Charles Moline, Sunderland; vice president, Dr. John A. Mather, Colerain; secretary, Dr. Frank A. Millett, Greenfield.—Bristol South District Medical Society at New Bedford, May 9: president, Dr. Joseph A. Barre, Fall River; vice president, Dr. Edwin D. Gardner, New Bedford; secretary-treasurer, Dr. Alanson J. Abbe, Fall River.—Worcester District Medical Society at Worcester, May 8: president, Dr. William L. Johnson, Uxbridge; vice president, Dr. William J. Delahanty, Worcester; secretary, Dr. George A. Dix, Worcester; treasurer, Dr. George O. Ward, Worcester.—South Essex District Society at Nahant, May 7: president, Dr. John J. Egan, Gloucester; vice president, Dr. Carolus M. Cobb, Lynn; secretary, Dr. Hamlin P. Bennett, Lynn; treasurer, Dr. George Z. Goodell, Salem.

Faculty Changes.—At the last meeting of the board of overseers of Harvard University, Dr. Richard C. Cabot was made clinical professor of medicine; Dr. Eugene A. Crockett, Le Compt, professor of otology; Dr. Franklin S. Newell, Boston, clinical professor of obstetrics; Dr. William Worth Hale has succeeded Dr. McIver Woody, Boston, as secretary of the medical faculty; Dr. Edwin A. Locke has been appointed assistant professor of medicine; Drs. Fritz B. Talbot and Charles H. Dunn, Boston, instructors in pedi-

atrics; Dr. Robert M. Green, instructor in anatomy; Dr. Calvin G. Page, instructor in bacteriology; Dr. Frederick E. Jones, instructor in dermatology; Dr. Ernest W. Goodpasture, instructor in pathology, and Edward A. Boyden, instructor in comparative anatomy. Dr. Alexander Quackenboss has been granted leave of absence to enter government war work. Drs. Martin J. English, assistant professor in medicine; Horace K. Sowles, alumni assistant in surgery; Francis M. Rackemann, assistant professor of medicine, and James B. Ayer, instructor in anatomy, have resigned. The following appointments have been made: Dr. William A. Perkins, alumni assistant in surgery; Dr. Algernon Coolidge, acting dean of the graduate school of medicine; Dr. William B. Robbins, alumni assistant in medicine; Dr. William N. Souter, Portsmouth, N. H., instructor in ophthalmology.

MISSOURI

Prosecution of Midwives.—The second successful prosecution of a midwife for negligence and failure to report and properly to care for a case of ophthalmia neonatorum, undertaken by the Missouri Commission for the Blind, St. Louis, resulted in the imposition of a fine of \$25 on Mrs. Ida Diamant, a local midwife. The prosecution was made through the St. Louis Department of Health. The midwife had failed to report a case of ophthalmia neonatorum. The baby lost one eye; the other was saved by skilful medical attention.

NEBRASKA

Medical School Not Recognized.—It is reported that the Nebraska State Board of Health has endorsed the action of the advisory board in refusing to permit graduates of the Lincoln Medical College to take the examination for the practice of medicine in that state. It was claimed that the medical school has not conformed to the requirements of the state law.

Personal.—Dr. Harris A. Newell, Marshalltown, Iowa, has been appointed first assistant physician at the Lincoln State Hospital, succeeding Dr. Frank S. Marnell, promoted to the position of assistant superintendent.—Dr. Edward Bollinger, first assistant physician at the Hastings State Hospital, has resigned.—Dr. Laureston A. Merriam, Omaha, was struck by an automobile, May 26, and sustained serious injuries.—Dr. Ernest T. Manning has been appointed health commissioner of Omaha.—Dr. Michael J. Ford, Omaha, who has been ill with pneumonia for six weeks, has recovered.

NEW YORK

Personal.—Canisius College has conferred on Dr. William G. Bissell of Buffalo the honorary degree of Doctor of Laws.—Dr. Joseph B. Ringland, Oswego, has been elected president; Dr. Edward J. Wynkoop, Syracuse, vice president, and Dr. Herman G. Weiskotten, Syracuse, secretary, of the Syracuse University College of Medicine Alumni Association.

Free Milk for Babies.—Five new milk stations have been added to the eight that are maintained all the year around by Nathan Strauss. These stations will not only supply milk to babies but will give it free of cost to soldiers and sailors. Of sixty-three babies examined on one day recently at the New York Diet Kitchen Association, more than 50 per cent. were suffering from malnutrition. To remedy the conditions found at the various examination centers, a canvass for the purpose of bringing babies under supervision has been planned. A census of New York's 600,000 children of less than 5 years of age is to be made. It has been found that one visitor reaches about fifty children a day and a physician can examine about thirty babies a day.

New War Hospitals.—The War Department has taken the ten-story building at the northwest corner of Lexington Avenue and Twenty-Second Street, which has just been completed by the city for the Manhattan Trade School for Girls, for use as a war hospital.—The New York Homeopathic Medical College and Flower Hospital has completed plans to convert a six-story factory building on East Sixty-Third Street into a hospital for wounded soldiers. This property adjoins the Flower Hospital. It is estimated that the changes in the building and the equipment will cost about \$100,000.—Ground has been broken at 18 West One Hundred and Thirty-Third Street for a hospital to be known as the McDonough Hospital. The building is to cost about \$100,000. It will be a regulation base hospital and will accommodate 200 patients. It is to be used exclusively for negro patients. White physicians will head the departments temporarily until

negro physicians are trained to take over the work. Dr. Charles N. Dowd will head the surgical department. Dr. Howard C. Taylor and Dr. William P. Healy will also be on the staff temporarily.

New York City

Instruction in Health Work for Young Children.—In cooperation with the Peoples' Institute, Federation for Child Study, and the Bellevue Social Service, a course in war-time training for volunteers in health work for children of school age is now being conducted by Teachers College, Columbia University, under the auspices of the nutritional committee.

Personal.—Dr. C. H. Stockwell, surgeon of the *Carolina*, which was torpedoed, June 4, is among the rescued.—Dr. Herbert C. Allen, chief of staff, Dr. J. Hubley Schall, chief surgeon, and Dr. E. Rodney Fiske, of the Cumberland Street Hospital, Brooklyn, have handed their resignations to Charity Commissioner Bird S. Coler.—Dr. Henry Keller sailed for the Orient, June 11, with the medical unit that is being sent to Palestine.

New York Clinic for Speech Defects.—This is the first free medical clinic to be licensed by the state board of charities devoted solely to the cure of defective speech conditions. Though open only a few months, it has already treated more than 300 cases. It was organized to treat all forms of speech and voice disorders; to take care of teeth, mouth, and jaw conditions when such conditions are the causative factors of defective speech; to reeducate patients to overcome faulty voice or speech habits; to reeducate those who are deaf or hard of hearing. The clinic also maintains a bureau of information and a clearing house for speech and voice defects.

OHIO

Typhoid Statistics.—It is estimated by the state department of health that if the prevalence of typhoid fever in 1918 is as great as in 1917, 1,400 Ohio men of military age and at the most productive period of life will lose four weeks of working time. The department urges local health officials to support it in a vigorous campaign against typhoid.

More Tuberculosis Beds Needed.—The state department of health estimates that Ohio should raise its capacity of 1,500 tuberculosis beds to 5,000 in order to care adequately for the sufferers from tuberculosis in the state and to protect the remainder of the population from infection. The department is endeavoring to enlarge the state sanatorium at Mt. Vernon, and is urging the formation of health districts in counties which have not as yet organized.

Personal.—Dr. Austin S. McKittrick, Kenton, has been elected a trustee of the Ohio Northern University, Ada.—Dr. Charles L. Brown, Cincinnati, has been appointed city dairy and food inspector.—Dr. Joseph W. Hall, Cincinnati, has succeeded Dr. Philip Dorger as city physician. Dr. Dorger has been city bacteriologist.—Dr. Harry M. Box has been appointed chief police and fire surgeon of Cincinnati, succeeding Dr. J. Stewart Hagen, who resigned to enter military service.—Dr. John M. Withrow has resigned as a member of the staff of the Cincinnati General Hospital, after eighteen years of continuous service.—Dr. Mark A. Brown has been appointed clinical professor of medicine in the University of Cincinnati.

PENNSYLVANIA

Personal.—Dr. John T. Dougherty, Hudson, suffered a fracture of the leg when his automobile went over an embankment, May 21.

Women Graduated.—A class of eight was graduated by the Women's Medical College of Pennsylvania, Philadelphia, June 5. The principal address was delivered by the Rev. Anna Howard Shaw of New York City.

Solarium Transferred.—The exercises attending the transfer of the new solarium for tubercular children of Ashland and vicinity to the state, were held June 5, at Ashland. The solarium is the gift of Mrs. Caroline Lind of Brooklyn. Dr. Jonathan C. Biddle, superintendent and chief surgeon of the Fountain Springs State Hospital, was in charge of the exercises.

Thirty Dispensaries to Be Opened.—Arrangements have been made by the state health department for the opening of a genito-urinary dispensary at Harrisburg. The dispensary will be in the rooms of the tuberculosis dispensary conducted by the state. This dispensary is one of thirty to be opened in various parts of the commonwealth by the health authori-

tics. They are organized for a three-fold purpose: the relief of the physician from the almost compulsory burden of caring for the numerous charity patients suffering from venereal diseases; the prompt and efficient care of such patients free of charge who otherwise would neglect their condition with serious results, and, the betterment of the general health of the community by diminishing and, if possible, eliminating the menace of transmission of the seriously infectious venereal diseases by reaching all such cases and rendering them innocuous as rapidly as possible. The dispensaries were planned by the late Dr. Samuel G. Dixon, months before his death.

Philadelphia

Portrait Presented to Academy.—Through the generosity of Edward H. Coates, for many years president of the Pennsylvania Academy of Fine Arts, the permanent art collection has been enriched by a portrait of the late Dr. S. Weir Mitchell, who for many years was president of the academy.

Infant Mortality High.—The Child Federation has been investigating the problem of its child mortality, which is now higher than in any other city of the United States with one exception. The investigations show that in the poorer sections, the salaries of a year ago are being stretched over the greater demands of today with the result of crowded housing conditions, poor and insufficient food, and inadequate sanitation.

College of Physicians Meets.—At the stated meeting of the College of Physicians of Philadelphia, June 5, papers were read by Lieut.-Col. Pearce Bailey, M. C., N. A., on "Neuropsychiatry in the Army"; by Major Robert M. Yerkes, San. C., N. A., on "Psychological Examinations in the Army"; by Major Charles Bagley, Jr., M. R. C., U. S. Army, on "Neuro-surgical Lessons of the War." The discussion on these papers was opened by Major Stewart Paton, M. R. C., U. S. Army.

Personal.—Dr. Elmer H. Funk has been appointed medical director of Jefferson Medical Hospital to succeed Dr. Henry K. Mohler, who recently resigned to join the Jefferson Base Hospital Unit No. 38. To assume this position, Dr. Funk has resigned as a member of the tuberculosis examining board at Camp Dix.—Dr. Malcolm MacFarlan was knocked down by an automobile, June 14, while crossing Market Street and was taken to the Hahnemann Hospital, where he was found to be suffering from slight internal injuries.

TEXAS

Medical Colleges Merge.—The Fort Worth School of Medicine, medical department of the Texas Christian University, is reported to have merged with the Baylor University College of Medicine at Dallas.

VIRGINIA

New Officers.—At the annual meeting of the Norfolk Medical Society, June 3, Health Commissioner Powhatan S. Schenck was elected president, Dr. Southgate Leigh, vice president, and Dr. Dandridge P. West, Norfolk, secretary-treasurer.

Hospital Notes.—The state orthopedic hospital, which has been offered by the Medical College of Virginia to the state board of health, has been accepted by the board and will be conducted at the Medical College of Virginia and operated in connection with the Memorial Hospital until suitable buildings can be erected.

Personal.—Drs. Lawrence Ingram and Thomas L. Driscoll have been appointed members of the staff of district physicians of Richmond by the administrative board.—Dr. B. L. Phillips, Richmond, has reconsidered his resignation and consented to continue to serve as a member of the staff of the district physicians until the end of his present term.—Dr. Richard W. Garnett, health officer of Fauquier County, has accepted a position with the state board of health and will have charge of medical inspection and of the control of contagious diseases.—Dr. William T. Graham, Richmond, has been appointed head of the state orthopedic hospital.

New State Board of Examiners.—The following members of the state board of medical examiners have been commissioned for a term of four years: first district, Dr. John H. Ayers, Accomac; second district, Dr. P. St. Louis Moncure, Norfolk; third district, Dr. Junius E. Warinner, Richmond; fourth district, Dr. J. Bolling Jones, Petersburg; fifth district, Dr. Richard S. Martin, Stuart; sixth district, Dr.

John W. Preston, Roanoke; seventh district, Dr. Philip W. Boyd, Winchester; eighth district, Dr. Samuel W. Maphis, Warrenton; ninth district, Dr. William W. Chaffin, Pulaski; tenth district, Dr. Robert Glasgow, Lexington. Dr. J. Leonard Jennings, Danville, was named as homeopathic member of the board and Dr. E. H. Shackelford, Richmond, as osteopathic member.

CANADA

Miscellaneous.—The government of Saskatchewan is to make a medical inspection of all defective children in that province.—Western University, London, Ont., has fallen into line in admitting women students to the study of medicine in that institution.

Personal.—Col. Alexander Primrose, Toronto, has been made a Companion of the Bath.—Col. George E. Armstrong, Montreal, has been made a Companion of the Order of St. Michael and St. George.—Dr. George Badgerow, formerly of Toronto, but for several years a practitioner in London, England, has been made a C. M. G.

Research at Toronto and McGill Universities.—A donation of \$2,000,000 has been promised to the University of Toronto for research work, and the governors are considering the acceptance of the gift. Prof. A. B. Macallum, chairman of the scientific and industrial research council of Canada, recently gave it as his opinion that research science faculties should at once be established at McGill and Toronto universities.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

To the Medico-Chirurgical Faculty of Maryland, his medical library, by the will of Dr. Henry M. Wilson, Baltimore.

American Theatrical and Hospital Association, \$6,000, by the annual benefit at the Auditorium Theater, Chicago, June 9.

Goshen (Ind.) Hospital, \$5,000, by the will of Hannah B. Walker.

Ossining Hospital, Ossining, N. Y., \$1,000, by the will of Mrs. Julia Geer Simmons.

Catholic Hospital Association Meeting.—The third annual convention of the Catholic Hospital Association was held, June 18, 19 and 20, at St. Francis Xavier's Academy, Chicago. The program included several addresses bearing on the standardization of hospitals. The Rev. Charles B. Moulinier, S.J., regent of the Marquette University School of Medicine, Milwaukee, is president of the association.

National Tuberculosis Association Meeting.—The fourteenth annual meeting of the National Tuberculosis Association was held in Boston from June 6 to 8, under the presidency of Dr. Charles L. Minor, Asheville, N. C. The following officers were elected: President, Dr. David R. Lyman, Wallingford, Conn.; honorary vice president, Col. George E. Bushnell, M. C., U. S. Army; vice presidents, Drs. Lawrason Brown, Saranac Lake, N. Y., and Lee K. Frankel, New York City; secretary, Dr. Henry Barton Jacobs, Baltimore; treasurer, Dr. William H. Baldwin, Washington, D. C.; executive committee, William T. Parsons, Washington, D. C., and Drs. Orville W. McMichael, Chicago; Charles L. Minor, Asheville, N. C.; Hoyt E. Dearholt, Milwaukee; Fred A. Hoffman, Newark, N. J., and Edwin R. Baldwin, Saranac Lake, N. Y.; directors, Mrs. F. C. Hodgston, Atlanta, Ga.; George F. Canfield, New York City; Col. Frank Billings, M. C., N. A., Chicago; Dr. Alfred Henry, Indianapolis; Bolton Smith, Memphis, Tenn.; Col. George E. Bushnell, M. C., U. S. Army, Washington, D. C.; Miss Agnes Randolph, Richmond, Va.; Dr. Alfred Meyer, New York City; W. Frank Persons, Col. A. M. Foster, New Haven, Conn.; Isaac Adler, Rochester, N. Y.; Thomas McCrae and Dr. W. Jarvis Barlow, Los Angeles, Calif. The association adopted resolutions deploring the retirement of Surgeon-General Gorgas, and requested that he be continued in active service in his present position, so that neither his work nor his plans may be interrupted.

Training School for Mental Hygiene Workers.—It is announced from the New York headquarters of the National Committee for Mental Hygiene that a war emergency course will be given at Smith College, Northampton, Mass., to prepare workers to assist in reclaiming soldiers suffering from nervous and mental diseases. There is a large number of these maladies in the present war, as has been found in the experience of foreign countries as well as in our own Army. In the treatment of these soldiers, civilian aides as well as medical specialists are required, and it is for the training of these aides that the course is provided. It will be given also at the Boston Psychopathic Hospital through a sub-

committee consisting of Drs. E. E. Southard, Boston; William L. Russell, L. Pierce Clark of New York, Walter E. Fernald Waverly, Mass., and William A. Neilson, Ph.D., president of Smith College. The work is to be under the immediate direction of Miss Mary C. Jarrett, chief of social service at the Boston Psychopathic Hospital. The course will continue for more than eight months and will be open to college graduates and other young women who have had an equivalent of technical training. The academic portion of the instruction will be given at Smith College from July 8 to August 31, to be followed by six months' practice work at various centers where there are opportunities for social work with psychiatric cases under the direction of trained social workers. Many eminent psychiatrists, psychologists and sociologists will be among the lecturers in the course.

FOREIGN

Medical Society Organized at Athens.—We are informed from Greece that a medico-surgical society has been organized at Athens, the purpose of which in part is to inform the profession in other countries of what is being done in the medical sciences in Greece. It seems to be the plan to send out carbon copies of the typewritten transactions, in French, to a few leading medical journals in other lands. Dr. N. Alivisato is president and Dr. A. Portocalis, Rue Canaris 11, Athens, is secretary.

National Information Bureau in France.—The French authorities have organized a special service for the purpose of disseminating information on various questions, particularly connected with the war, and it has distributed millions of educational pamphlets and circulars in the last year or two. The headquarters are at rue François Ier 3, Paris, which is also the headquarters of the Union contre la Propagande ennemie. The National Paper Commission has also been organized, which has lightened the burdens of the periodical press, and the National Press Commission is also simplifying matters. The medical press is not represented in this Office national de la Presse, and the Association de la Presse médicale has recently petitioned the government to permit it to be represented in the commission, citing various reasons why this should be done.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Argentine Medical Association Organizes an Honor Court.—The *Semana Medica* states that at the recent annual meeting of the Asociacion Medica Argentina at Buenos Aires, a *tribunal de honor* was organized, and Drs. J. Mendez, A. M. Centeno, E. Zarate, D. J. Cranwell and I. Allende were appointed as the executive board.

Twenty-Fifth Anniversary of the Gaceta Medica de Caracas.—As this journal is the official organ of the National Academy of Medicine of Venezuela, the twenty-fifth anniversary of its establishment was celebrated by a special historical meeting of the academy, although the academy itself was not organized until 1904. The evolution of medicine in Venezuela was reviewed by the first president of the local medical society, Dr. F. A. Risquez, and the history of the *Gaceta* was told by Dr. L. Razetti, the only director of the *Gaceta* since its foundation, who is also permanent secretary of the academy.

The Alcohol Question in Chile.—The *Semana Medica* reproduces a letter recently received from the secretary of the Liga Nacional contra el Alcoholismo of Santiago, Chile, Dr. C. F. Peña. He relates that last December an official committee was appointed by the authorities to study ways and means to reduce the consumption of alcohol. One of the first steps was to publish a series of articles which the lay press is publishing, not only to educate the public regarding the evils of alcohol, but also to convince the liquor manufacturers that it would be to their own pecuniary interest to restrict materially their output of spirituous beverages. The higher prices they would receive from restricted output would more than counterbalance the loss in quantity. The lay press has taken up the matter with energy, supplementing the league's articles with editorials. Peña urges the anti-alcohol forces in Argentina to have his league's articles or their equivalent reproduced in the Argentine lay press, as he thinks that this measure of restricted production and higher prices solves the problem of alcohol by harmonizing private interests with public health interests. He adds that concerted action in neighboring countries would strengthen the movement materially.

BUENOS AIRES LETTER

BUENOS AIRES, May 6, 1918.

Medical School at La Plata

The executive board of the University of La Plata, on the initiative of the rector of the university, Dr. R. Rivarola, has voted to organize a preparatory school for the medical sciences, corresponding to the first three years of the medical curriculum at the University of Buenos Aires. The principal reason for the foundation of this medical school is the overwhelming number of students of these first years at Buenos Aires. There are more than 3,000 students enrolled at Buenos Aires in the medical and dental departments and in the departments for pharmacy and obstetrics. The cities of Buenos Aires and La Plata are only 60 kilometers (37 miles) apart. The new school will start the first two year courses in 1919, and the third year will be added in 1920.

Strike of Students at Cordoba

There has long been a movement under way for the reform of the statutes of the University of Cordoba, in northern Argentina, but any change has been opposed by the executive board of the university. The officers of the various faculties form the board, and their positions are for life. This system of administration was modified some time ago in the other state university, the one at Buenos Aires. On account of some of the measures imposed by the board of the University of Cordoba, there has recently been a strike on the part of the students, which compelled the intervention of the national authorities. Dr. Matienzo was appointed arbitrator, and he has made his report to the government, and the decision of the latter is now awaited. All the medical schools of Argentina (Buenos Aires and Cordoba) are state institutions. No schools of the kind can exist except those belonging to the state, according to the laws of the country.

Campaign Against Malaria

The president of the Public Health Service has gone to the northern part of the country to reorganize the antimalaria service for more effectual work. On account of the enormous size of the area affected and the scanty population, as well as the funds available, it will be necessary to limit to certain selected points the measures to be applied.

Official Organ of the Academy of Medicine

When the Academia de Medicina of Buenos Aires was founded in 1822, a bulletin was issued the following year, entitled the *Anales de la Academia de Medicina*, but it was not long lived. The bulletin has been now revived, and the first number of the first volume has appeared. The leading article is Ayerza's report on endemic regional arsenic poisoning [from the drinking water. The region affected is the Bell Ville district. This endemic chronic poisoning was described in THE JOURNAL, Feb. 16, 1918, p. 496.]

Alcoholism and Mental Disease

The official report of the state insane asylum, covering a period of twenty-seven years to date, reveals that among the 28,035 patients during that period alcohol was responsible for the insanity in 39.6 per cent.

New Chief of Public Health Service

The national executive has appointed Prof. Dr. G. Araoz Alfaro president of the Departamento Nacional de Higiene. Dr. Alfaro has ratified the appointments of all the personnel of the service, and intends to reorganize the department. Among his chief efforts figures the organization of an active campaign against pulmonary tuberculosis, with permanent institutions to aid in combating it. New hospitals, sanatoriums and dispensaries are to be created. The government plans a tax on the Lottery which it is expected will bring in about four millions annually.

Death of Dr. B. Sommer

Dr. B. Sommer died April 11, two years after he had completed twenty-five years' service as professor of dermatology in the medical school of the University of Buenos Aires. He was the founder of this chair in 1892.

Elections in the Medical Societies

The annual elections have recently been held in the principal medical societies of Buenos Aires. In the Asociacion Medica Argentina Dr. C. Robertson was elected president, Dr. J. Saralegui secretary, and Dr. P. Hardoy, director of the

Revista, published by the association. In the Sociedad de Cirugia, Dr. M. Castro was elected president and Dr. M. Antelo, director of the *Revista*. In the Sociedad de Higiene, Microbiologia y Patologia, Dr. J. E. Penna was appointed president.

LONDON LETTER

LONDON, May 22, 1918.

Interallied Conference on Disabled Fighting Men

The Duke of Connaught has opened the Interallied Conference on Disabled Fighting Men in the Central Hall, Westminster. The object is to discuss the after-care of discharged sailors and soldiers. Nearly 100 British representatives attended. The other countries represented were Australia, Belgium, Canada, France, India, Italy, New Zealand, Portugal, Serbia, South Africa and the United States. Speaking in French, the duke welcomed those present on behalf of the king and the government of Great Britain. "It is just a year ago," he said, "that the first Allied Conference, called by the French and Belgium governments, met in Paris and laid the foundation of these meetings, resulting in the formation of a permanent committee with a research bureau and museum in Paris. The first number of the *Inter-Allied Review on the After-Care of Disabled Men* has just appeared, and in its pages will be found from time to time all the latest developments of science in the great cause which we all have so much at heart, namely, the healing of wounds and the reestablishing in civil life of men maimed and disabled by war. As our armies are united in the field against the common foe to uphold liberty and justice against invasion and oppression, so are we all united here today to bring to light and to discuss all that is new and all that is scientifically possible to alleviate the sufferings and heal the wounds of the brave and gallant men who side by side have fought and shed their blood for home and country in this great war. I am happy and proud to welcome here today delegates from all our great Allies and neighbors, whose armies are now fighting shoulder to shoulder with our men in the terrible struggle only some hundred miles away—delegates from France (among whom I am pleased again to see Dr. Bourrillon, president of the Permanent Committee in Paris), Italy, Belgium, United States, Portugal, Serbia, and Siam, and from our gallant Dominions of Canada, Australia, South Africa, New Zealand, India, Newfoundland, and other parts of the British Empire." In connection with the conference there is an exhibition of the various kinds of apparatus used by the disabled and at which they perform such operations as basket making and boot repairing. This was visited by the king and queen, who took great interest in the work and chatted with representatives of foreign countries, frequently in their own language.

The Medical Service of the Navy

In this war the navy has been called the silent service, not because of any want of recognition of the fact that its work is all-important, but because the circumstances have rendered it necessary that secrecy should be maintained as to most of its operations. Hence while much has been heard of the work of the Army Medical Service, little is heard of the Naval Medical Service. Yet it could furnish a wonderful record of preparation and foresight and work performed without a hitch on the two most important occasions when it was put to the test—the battles of Jutland and Zeebrugge. Several new formations have been created under war experience, such as the Naval Medical Transport Unit, the Naval Massage Corps, and the Naval Voluntary Aid Detachment. In July, 1914, the number of medical officers serving was 520; at the present time the number is 1,378, in addition to surgeon-probationers and dentists. There are fifty-nine dental surgeons holding commissioned rank in the Royal Naval Volunteer Reserve, and serving with the fleet at sea, and 218 surgeon-probationers with the relative rank of sublieutenants. The nursing sisters at home and abroad number in all 252. Of the new services, the special unit to deal with the transport of sick and wounded from the fleet is numerically the most important. It consists of thirty medical officers and 500 ratings, with a civilian voluntary personnel consisting of the voluntary aid detachments and bearer parties of approximately 1,200 men, all exempt from military service. There are five regular service ambulance trains, and in addition there is a voluntary aid detachment train always ready for service at Glasgow. There are more than 100 motor ambulances. In Scotland and on the east coast of England are mobile parties which can be sent at short notice from place to place. Nine qualified masseurs or masseuses are attached

to each large naval hospital, and recently 104 women members of the voluntary aid detachment have been enrolled for service with the navy and are employed only in hospitals. The great naval hospitals at Haslar, Plymouth and Chatham have accommodations for 3,556 patients, and in the United Kingdom there is accommodation for approximately 10,000 men. In addition there are hospitals at Hong Kong, Bermuda, Simonstown, Malta and Gibraltar, the last two named providing accommodations for 1,450 patients. Since the outbreak of war the health of the navy has been remarkably good, and, in fact, is probably better than in the years preceding the war. There are eleven hospital ships working between the fleet and the shore hospitals. Though the number of naval medical officers killed in action is small in comparison with the Army Medical Corps, a heavy toll has been taken when the comparatively small size of the force is considered. The number of naval medical officers killed or drowned in action to the present date is eighty-three, while nineteen have died in service.

The Epidemic of Acute Encephalitis

The epidemic of acute encephalitis (described in my last two letters) still continues. The various names that have been applied to the condition—acute infective ophthalmoplegia, acute encephalitis myelitis, botulism, etc.—show that considerable doubt prevails as to its nature. Investigations by the local government in collaboration with health officers and physicians continue. The earliest case is reported to have had its onset January 28, and there were two having onset in the week beginning February 10, and two in the last week of that month. In consecutive weeks in March, 7, 3, 10 and 14 cases came to notice; and in April and the first week of May the corresponding numbers were 11, 19, 14, 16 and 6. The largest number of cases has been recorded in London, but groups of cases have occurred also in Sheffield and Birmingham, and single cases have been reported from many other parts of England and Wales. The cases occurred among persons having the most varied occupations. No group of cases was associated with a single occupation. In only one instance were there two cases in the same household. The cases about equally affected the two sexes. The case mortality has approached 20 per cent. It is probable that slight cases have been overlooked. Three cases occurred in infants in the first year of life, one of them being in a breast-fed infant aged 3½ months. Five were in children from 1 to 5, and seven in children from 5 to 10. Of 105 cases of which partial reports are available, sixty-four occurred in persons over 20 years of age. The clinical records at present available relate to eighty-seven cases, but many of them are incomplete, and it is not certain that in all cases there was paralysis of the cranial nerves. The symptoms and signs recorded may be thus summarized: Among general symptoms pyrexia was present in 41 of the 87 cases, usually in the early stage of the illness; it may have been present in some other cases which were not reported on while in that stage. In eight cases it was stated that there was no fever. Of other general symptoms, headache or localized occipital, temporal or frontal pain was recorded in 31 cases. Profuse sweating was noted in 7 cases and an erythematous or other rash in 6. Various mental symptoms come next to pyrexia in order of frequency, namely, drowsiness in 29 cases, lethargy in 18, stupor in 13, asthenia in 12, coma in 9; also vertigo in 17 and delirium in 20. Absence of lethargy was recorded in 3 cases, and the presence of restlessness, irritability or sleeplessness in 5. Of symptoms referable to partial or complete paralysis of certain cranial nerves, there were recorded bilateral facial paralysis in 9, unilateral in 11; bilateral ptosis in 32 cases, unilateral in 2; ophthalmoplegia in 18, diplopia in 18, strabismus in 10, nystagmus in 9, double third nerve palsy in 6, pupillary dilatation with failure of accommodation in 2, and paralysis of the tongue in 2. Affections of speech were noted in 5 cases. Rigidity of the muscles was recorded in 10 cases, muscular tremors in 9, and twitching or jerking of certain muscles of the face or limbs in 6. Among symptoms referable to the gastro-intestinal system, obstinate constipation was recorded in 35 cases, vomiting in 10 cases, difficulty of swallowing in 9, and dryness or soreness of the throat in 3. The parotid glands were swollen in 2 cases. Retention of urine was recorded in 15 cases, and incontinence in 3. The records relating to the circulatory and respiratory systems are not sufficiently complete for useful summary at present. Although in a considerable proportion of the reported cases there was a history of the recent consumption of such foods as sausages, sardines, shrimps, lobsters, canned salmon, cheese,

bacon and ham, these and other exceptional foods had not been consumed in the majority of reported cases; and no particular food has been found to be related to the outbreak. The pathologic investigation of the outbreak is being undertaken by the Medical Research Committee. The results so far obtained show no bacteriologic evidence of botulism and give no support to the association of the outbreak with infection from food. Further investigations are in progress. The view has been put forward that the epidemic is the cerebral form of acute anterior poliomyelitis, that is, poli-encephalitis; but against this is the fact that there is no prevalence of the ordinary or spinal form of this complaint.

A Permanent Anthropometric Department

At a meeting of the reconstituted National Birth-Rate Commission (instituted by the National Council of Public Morals), a resolution advocating the inclusion in a ministry of health of a permanent anthropometric department was passed. Prof. Arthur Keith stated that the Anthropological Survey Committee, appointed in 1916 by a conjoint board of scientific societies, had reported that a survey was highly desirable in the national interest—the survey of adult males by the Ministry of National Service, of schoolchildren by the Board of Education, and of factory children by factory physicians working under the Home Office. An anthropometric survey is being made of soldiers of the new armies of the United States, and the committee is in communication with the American committee to secure adoption of common methods, so that their results may be comparable. It would be interesting, he said, to compare the original national (Britain) with her descendants in America. A comparison of the skulls and skeletons of ancient with modern British people shows that distinct changes have taken place and apparently are taking place, particularly in the teeth, jaws and faces of modern persons. These changes are of a degenerative nature. There is reason to believe that certain racial constituents of the people suffer from these changes more than others, and the survey should be of such a nature as to elicit the racial constituent of each district and each section of the people in that district.

PARIS LETTER

PARIS, May 16, 1918.

The Commission for Radioactive Substances

By decree of the minister of armament and war materials, there has been instituted a committee to be known as the "Comité des corps radioactifs" which will take up particularly the needs of the state and private industries in respect to radioactive substances, and supervise the purchase, manufacture, import and export of such substances. One of the vice presidents of this committee is a representative of the army medical service; the civil practitioners and the radium institute are also represented. This decree is based on reports showing the increasing use of radioactive substances in war and private industries, and in military and civil hospitals. The radium industry, a product of France, should have a much greater growth and development after the war.

Gift from the American Red Cross

The American Red Cross has donated to the French Red Cross 10,000,000 francs in recognition of the valuable services rendered by the latter and to cement the friendship already existing between these two bodies. The American Red Cross has admitted to its honorary membership the Société de secours aux blessés militaires, l'Union des Femmes de France and l'Association des Dames françaises.

Epidemic Lethargic Encephalitis

March 22, Prof. Arnold Netter called the attention of the Société médicale des hôpitaux de Paris to the existence of a small epidemic of lethargic encephalitis. This affection, usually febrile in nature, makes its onset with headache and sometimes vomiting. Soon there appears somnolence, increasing in degree gradually, and nearly always an involvement of the muscles of the eyes. Lumbar puncture is negative, bacteriologically and otherwise. Since then other physicians in Paris have seen similar cases, and they have also appeared in England in London, Sheffield and Manchester (epidemic stupor). The characteristic symptoms in connection with the eye include ptosis of the eyelid, strabismus, immobility of the eyeball and nystagmus. The internal eye muscles are not involved so often, although there may be paralysis of accommodation, a slowness of the iris to react to light. The muscles innervated by the facial nerve, those of the tongue, of the larynx and of the extremities, may participate in the

paralysis. Tremor is not exceptional. The typical symptoms of meningitis, Kernig's sign, stiffness of the muscles and irregular pulse, are absent or present only in mild degree. The disease is grave. Death or a cure may take place in a few days. Usually the disease is prolonged for weeks or months. During the convalescence the persistence of muscle fatigue and eye disturbances is noted for a long time. Netter is of the opinion that this disease is similar to that mysterious epidemic which was observed in Italy in 1890 and known as "nona" and which was characterized by a lethargy which often proved fatal.

Signs of Death

The usual procedure employed at the front to determine that death has actually occurred is to inject fluorescein according to the method of Dr. S. Icard of Marseille. In the living the eye will take on a peculiar green color, as though a large emerald had been set in the orbit. If there is no such coloration to be noted one or two hours after this injection, it may be stated positively that the person is dead. Another positive sign is the acid reaction of the spleen tissue (Ambard and Brisse-morel). Dr. Terson of Paris has called attention to eye signs indicative of death which are obtained by acting on the external circulation of the eye. Halluin recommended the instillation of ether, which produces rubefaction in the living eye; but this is sometimes very dangerous for the cornea. It is better to produce a reaction by mechanical means, by scarification, cauterizing the conjunctiva of the eyeball or of the eyelids, chemically by means of copper sulphate or by conjunctival injections of sodium chlorid solution. These procedures are not dangerous; if redness is not produced thereby it signifies that there is no circulation. Terson has experimented with the use of ethyl-morphin hydrochlorid powder (dionin), which produces intense vasodilatation in the living, with chemosis, and yet without any danger to the eye. He is of the opinion that if the result of these various methods is negative, two hours after the supposed death, there is no danger of premature burial.

Sanitation of Dugouts

The Société de médecine publique et de génie sanitaire recently discussed this subject at some length. The results of this discussion may be summarized as follows: The making of airholes in these dugouts or shelters has never caused any special inconvenience, hence openings should be made in the masonry recently built to prevent the entrance of asphyxiating gases. These openings should, however, allow air to enter so that the shelters will be ventilated sufficiently. The number of men to be admitted to these shelters and the cubic feet of air space which they should have should be computed at not less than 4 cubic meters of air space for each person. After each alarm these dugouts must be ventilated as much as possible by opening wide the entrances. They should be cleaned and disinfected at regular intervals; all shelters should be taken care of in this way; milk of lime (suspension of calcium hydroxid) seems to be the best available agent for this purpose. All persons suffering with infectious diseases should be isolated as much as possible from the other individuals who have sought refuge in the same shelter. The society called the attention of the authorities to the most efficacious means of avoiding the accidents resulting from the ignition of gas freed by a broken conduit or the invasion of the shelters by gas.

For the Blinded Soldiers

Acting on the suggestion of Mr. Georges Kessler, president of the Fonds permanent d'assistance aux aveugles de guerre britanniques, français et belges, Mr. J. Seligman recently placed at the disposal of the blinded soldiers of the allied armies the château de Madrid with 160 rooms, situated near Paris on the confines of the Bois de Boulogne. Mr. Seligman has set apart for this service an annual income of 75,000 francs with the sole proviso that American soldiers are to be received and cared for at the château in the same way as the British, French and Belgian soldiers. The château is given for this purpose for a term of three years.

The Legion of Honor

Dr. Alexis Carrel of New York has been made a commander of the Légion d'honneur, and Dr. G. Lafayette Foster, director of the Canadian Army Medical Service an officer.

Personal

May 21, the Académie de médecine elected Dr. Siredey of Paris to membership in the section on pathologic anatomy.

Dr. Vaillard, medical inspector general (retired) has been made a member of the Conseil supérieur d'hygiène publique de France, vice Dr. Mosny, deceased.

Deaths

John Harper Long, professor of chemistry at the Northwestern University Medical School and member of the Council on Pharmacy and Chemistry, died at his home in Evanston, Ill., June 14, after an illness of over six months. Professor Long was born near Steubenville, Ohio, in December, 1856. He was graduated from the University of Kansas in 1877, and later studied at Tübingen, Germany, receiving the degree of doctor of science in 1879. He was appointed professor of chemistry in the medical school of Northwestern University in 1881. Professor Long was a member of the referee board of consulting scientific experts of the United States Department of Agriculture.

He was a chemist of the state board of health and of the sanitary district of Chicago. He served as president of the American Chemical Society in 1903, of the American Association for the Advancement of Science in 1903 and of the Institute of Medicine of Chicago in 1917. Professor Long was a member of the United States Pharmacopoeia Revision Committee, and from the time of its organization until his death a member of the Council on Pharmacy and Chemistry.

During 1913-17 he was dean of the school of pharmacy of Northwestern University.

Professor Long did much chemical research work, particularly in the branches of physiologic chemistry closely related to medicine. As a member of the Council on Pharmacy and Chemistry he not only gave much time to the routine work, but in addition carried out many original investigations.

Professor Long leaves, besides his widow, Catherine S. Long, four sons—Albert, Esmond, Lothar, Captain, United States Marine Corps in France, and Byron, Lieutenant, United States Army—and one daughter, Ariel, wife of Lieut. E. P. Miller of Washington, D. C.

Arthur Washington De Waldes, New Orleans; Tulane University, New Orleans, 1870; died 69; formerly a Fellow of the American Medical Association; fellow of the American Otolaryngological Association and president in 1916-1917; a member of the American Otolaryngological Society; emeritus professor of diseases of the eye, ear, nose and throat in the New Orleans Polyclinic; assistant surgeon of the Sixth International Ambulance Corps during the Franco-German War; under, trustee and surgeon-in-chief of the Eye, Ear, Nose and Throat Hospital, New Orleans; commander of the Legion of Honor in France; commander of the Order of St. Gregory; Great and knight of the Order of Saints Maurice and Lazarus; died at his home in New Orleans, June 13.

Seth Delmar Dice, Hollywood, Calif.; New York University, New York City, 1897; Cornell University, New York City, 1899; aged 46; formerly a Fellow of the American Medical Association; who contracted tuberculosis while an intern in Bellevue Hospital, and after an arrest of the infection was again attacked in 1906, and had been ill since that time with pneumothorax, pneumonia, and empyema, for which his ribs were resected in 1915; died in Los Angeles, May 19, from amyloid degeneration of the liver and kidney.

George Winfield Foster, Stevenson, Ala.; Vanderbilt University, Nashville, Tenn., 1892; aged 61; a Fellow of the American Medical Association; and Association of Surgeons Southern Railways, and president of the Jackson County Medical Society; local surgeon for the Nashville, Chattanooga and St. Louis, and Southern railroads; died at his home, March 11, from meningitis following mastoiditis.

Benjamin E. Miller, Albion, Ind.; Cincinnati College of Medicine and Surgery, 1871; aged 72; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; and treasurer of the Noble County Medical Society; a veteran of the Civil War; for twenty-two years a pharmacist, and for many years health officer of Albion and Noble County; died at his home, May 31, from valvular heart disease.

U. Sim Grant Deaton, Toledo, Ohio; Memphis Hospital Medical College, Memphis, Tenn., 1894; aged 50; a member of the Ohio State Medical Association; a member of the House of Representatives and state senator from Lucas County; captain and assistant surgeon in the Spanish-American War, with service in Cuba, China, and the Philippine Islands; died in Robinwood Hospital, Toledo, May 31, from appendicitis.

John Hillman Bennett, Pawtucket, R. I.; Boston University, 1891; aged 48; a member of the Rhode Island Medical Society, and for several terms president; for many years a member of the State Board of Health, and at the time of his death president; and health officer of Pawtucket; died at his home, June 4, from aneurysm of the aorta.

William Seth Watson, Sacramento, Calif.; Bellevue Hospital Medical College, 1870; aged 67; formerly a Fellow of the American Medical Association and American Electro-Therapeutic Association; medical director of the Institute for Nervous and Mental Disease, Fishkill-on-Hudson, N. Y., and mayor of Fishkill; for nine years a resident of California; died at his home, May 26.

Lieut. Thomas Hart Raines, M. R. C., U. S. Army, Savannah, Ga.; Medical College of Georgia, Augusta, 1900; aged 39; formerly psychiatrist in the Westchester County Penitentiary, East View, N. Y.; and local medical examiner for the Atlantic Coast Line District; on duty as psychiatrist at the Base Hospital, Fort Riley, Kan.; died at that institution, May 24.

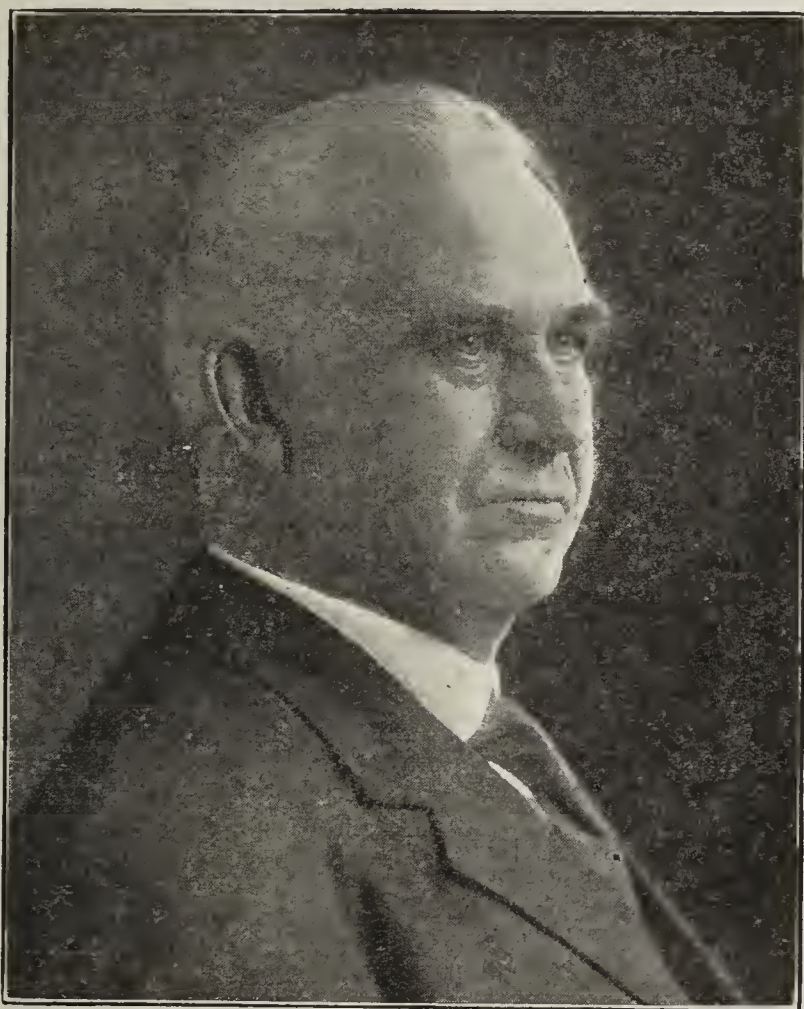
Robert R. Hopkins, Richmond, Ind.; Cincinnati College of Medicine and Surgery, 1868; aged 73; a member of the Indiana State Medical Association; surgeon of United States Volunteers during the Civil War; for two years superintendent of an asylum near Cincinnati; an expert on medical jurisprudence; died at his home, May 30.

Robert Day William, Trafalgar, Ind.; Miami Medical College, Cincinnati, 1868; Bellevue Hospital Medical College, 1879; aged 75; a member of the Indiana State Medical Association and once president of the Johnson County Medical Society; a veteran of the Civil War; died at his home, June 3.

Lieut. Tony Edward Hunter, M. R. C., U. S. Army, Versailles, Ind.; Kentucky University School of Medicine, 1904; aged 39; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; died in Hattiesburg, Miss., April 18, from pneumonia.

William Bacon McGill, Lancaster, Calif.; University of Pennsylvania, Philadelphia, 1889; aged 59; a member of the Medical Society of the State of Pennsylvania; district surgeon for the Southern Pacific System; died at his home, March 19, from septicemia following erysipelas.

Albert Jeremiah Elliott, San Diego, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1897; aged 45; formerly a Fellow of the American Medical Association; died in St. Joseph's Hospital, San Diego, May 23, a day after a surgical operation.



PROF. JOHN H. LONG,
Member of the Council on Pharmacy and Chemistry

Henry B. McKenzie, Enid, Okla.; Medical Department of the University of Tennessee, Nashville, 1887; aged 65; a member of the Oklahoma State Medical Association, and president of the Garfield County Medical Society; formerly health officer of Enid; died at his home, April 23, from pneumonia.

Gaines Worley, St. Augustine, Fla.; Chattanooga (Tenn.) Medical College, 1900; aged 42; a Fellow of the American Medical Association; surgeon of the Florida East Coast Railroad Hospital, St. Augustine; died in Johns Hopkins Hospital, Baltimore, May 30.

William Lockwood Parker, Baker, Ore.; University of Oregon, Portland, 1896; aged 48; formerly a Fellow of the American Medical Association; a member of the Oregon State Medical Association; died in the Good Samaritan Hospital, Portland, May 31.

Gabriel F. Foster, Memphis, Mo.; Long Island College Hospital, Brooklyn, 1868; aged 80; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; died at his home, April 18, from cerebral hemorrhage.

Ethelbert Eldridge Meek, Regina, Sask.; Manitoba Medical College, Winnipeg, 1901; aged 40; medical officer of the sixty-eighth battalion and for two years on duty in France; died from wounds, in a Canadian Hospital at Boulogne, France, June 2.

Jaroslav Radda, New York City; University of Maryland, Baltimore, 1908; Fordham University, New York City, 1909; aged 45; a Fellow of the American Medical Association and American Urological Association; died at his home, June 5.

James Henry Tobin, Pittsfield, Mass.; Albany (N. Y.) Medical College, 1890; aged 50; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; died at his home, June 6.

William Thomas Bruce, Lebanon, Pa.; Hahnemann Medical College, Philadelphia, 1876; aged 72; for several terms a member of the City Council, local board of health and board of education; died at his home, June 1, from uremia.

Joseph Hervy Buchanan, North Plainfield, N. J.; Jefferson Medical College, 1896; aged 46; a Fellow of the American Medical Association; clinical assistant in the Muhlenburg Hospital, Plainfield; died at his home, June 7.

Lieut. Charles Richard Long, M. R. C., U. S. Army, Sedalia, Mo.; National University of Arts and Sciences, St. Louis, 1916; a member of the Missouri State Medical Association; was killed in battle in France, early in April.

Samuel A. S. Jessop, Kittanning, Pa.; Jefferson Medical College, 1879; aged 61; a member of the Medical Society of the State of Pennsylvania; died at the home of his brother in Kittanning, June 2.

Joseph Henry Mattingly, Johnstown, Ohio; Medical College of Ohio, Cincinnati, 1885; aged 58; formerly a member of the Ohio State Medical Association; died at his home, June 4, from arteriosclerosis.

James Cook Benson, Camden, Ala.; University of Alabama, Mobile, 1887; aged 50; a member of the Medical Association of the State of Alabama; died at the Burwell Infirmary, Selma, June 1.

William J. Robinson, Lapeer, Mich.; Michigan College of Medicine, Detroit, 1881; aged 64; a Fellow of the American Medical Association; died at his home, May 31, from septicemia.

Paul D. Carpenter, Pittsford, N. Y.; Jefferson Medical College, 1867; aged 52; a Fellow of the American Medical Association; died at his home, June 4, from peritonitis.

John Henry Hinchman, Richmond, Va.; Medical College of Virginia, Richmond, 1879; formerly a member of the Medical Society of Virginia; died at his home, about May 31.

Don Leroy Talcott, Crofton, Neb.; State University of Iowa, Iowa City, 1904; a member of the Nebraska State Medical Association; died at his home, May 26.

William S. Purkhiser, Moscow, Ohio; Eclectic Medical Institute, Cincinnati, 1898; aged 53; for several terms coroner of Clermont County; died at his home, June 4.

Watson F. Quinby, Wilmington, Del.; Jefferson Medical College, 1847; aged 93; one of the original experimenters with aircraft; died at his home, May 26.

Aurelia Springer, Lewiston, Maine; New England Female Medical College, Boston, 1872; aged 82; died in the Maine General Hospital, Lewiston, June 3.

Frank Oakley Stockton, East Orange, N. J.; College of Physicians and Surgeons in the City of New York, 1881; aged 58; died at his home, May 27.

Joseph W. Binckley, Canton, Ohio; Cleveland University of Medicine and Surgery, 1867; aged 80; formerly mayor of Canton; died at his home, June 1.

Warren Lee Hummer, Greenfield, Iowa; University of Nebraska, Omaha, 1904; aged 43; died in a hospital in Omaha, May 28, from nephritis.

James J. Choate, Los Angeles; Washington University, St. Louis, 1879; died about June 1, from heart disease, while making a professional call.

Archibald W. Rhea, Seattle; (license, Washington, 1896); a practitioner since 1860; aged 76; died at the home of his son in Tacoma, May 21.

Orville Juan Perkins, Chicago; Bellevue Hospital Medical College, 1878; aged 68; died at his home, June 14, from valvular heart disease.

Jesse Braman, Wadhams, N. Y.; University of Vermont, Burlington, 1884; aged 64; died at his home, May 28, from cancer of the rectum.

Lewis Robert McFarland, Transfer, Pa.; Eclectic Medical Institute, Cincinnati, 1883; aged 68; died at his home, May 15, from diabetes.

George E. White, Nashville, Tenn.; (license, Tennessee, 1911); aged 41; died at his home, April 23, from traumatic lobar pneumonia.

John K. Stone, Arlington, Texas; Texas Medical College and Hospital, Galveston, 1877; aged 65; died at his home, May 27.

Robert A. McKinney, Lagrange, Texas; University of Pennsylvania, Philadelphia, 1870; aged 73; died at his home, May 30.

Merton Reynolds Streeter, Oshkosh, Wis.; Rush Medical College, 1889; aged 52; died at his home, May 28, from nephritis.

Uriah Irvin Ward, Wichita, Kan.; University of Wooster, Cleveland, 1865; aged 80; died in the Masonic Home, Wichita, May 19.

Alexander Hitchcock, Port Clinton, Ohio; University of Wooster, Cleveland, 1872; aged 70; died at his home, May 27.

Elwood Holaday, West Elkton, Ohio; Pulte Medical College, Cincinnati, 1886; aged 64; died at his home, May 31.

Evan Edmiston Gwynne, Chicago; Hahnemann Medical College, Chicago, 1879; died at his home, about June 5.

Edwin Charles Loomis, Perrysville, Ind.; (License, Indiana, 1898); aged 72; died at his home, May 27.

Leon M. Rosenson, Brooklyn; University of Kharkov, Russia, 1887; aged 54; died at his home, June 3.

Marriages

CAPT. RALPH THOMAS KNIGHT, M. R. C., U. S. Army, Minneapolis, on duty with the Mobile Surgical Operating Unit, Allentown, Pa., to Miss Phoebe Clara Hill, of Lincoln, Neb., at Mount Vernon, N. Y., June 4.

LIEUT. CLAYTON JAMES HYSLOP, Chicago, on duty at Camp Wheeler, Macon, Ga., to Miss Edna Forsythe, Galesburg, Ill., at Macon, Ga., June 8.

LIEUT. ROBERT JAY COOK, M. R. C., U. S. Army, Boston, to Miss Edith M. Valet, at Chickamauga Park, Ga., June 3.

LIEUT. EDWIN FRANKLIN SYROP, M. R. C., U. S. Army, Baltimore, to Miss Rena Fleischman, recently.

WILLIAM WILSON MERIWETHER, Montgomery, Ala., to Miss Mattie D. Hudson, of Macon, Ga., June 19.

LOUIS BERNARD SAMAINE, Mulliken, Mich., to Miss Dorthia Nichols, of Charlotte, Mich., May 27.

DAVID WOLIN, Rochester, N. Y., to Miss Lillian Feinbloom, of Poughkeepsie, N. Y., May 6.

RALPH LEROY THOMPSON, to Mrs. Elizabeth S. Schuyler, both of St. Louis, May 28.

CHARLES WENDELL GAREY, to Miss Margaret Fowler, both of Quincy, Mass., June 1.

VICTOR ALBERT WILLIAMS, to Miss Mary Bryan, both of Pittsburgh, June 3.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SEVERAL "MIXED" VACCINES NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The "mixed" vaccines which are discussed in the reports that follow were considered by the Council during the past year because inquiries had been received in regard to them.

In publishing these reports it is desirable that the attitude of the Council toward "mixed" vaccines again be stated. In view of the rapid development of bacterial therapy, the possibility for harm that attends the use of bacterial vaccines and the skepticism among experienced clinicians as to the value of vaccines representing a combination of organisms, the Council has felt that it should scrutinize the claims for such agents with exceptional care and that there should be admitted to New and Nonofficial Remedies only those vaccine mixtures for which there is acceptable evidence to indicate that the use of the particular mixtures is rational.

In considering the subject the Council has borne in mind the fact that in many institutions in which cases are studied and the results of therapeutic measures carefully observed and controlled, vaccines of any sort are practically never used—certainly here the stock mixed vaccine has no recognition. Experienced clinicians have generally come to the conclusion that mixed vaccines have no specific action and that any effect they may produce is due to a non-specific protein reaction.

As set forth in the reports, in no case was the evidence submitted by the proprietors sufficient to establish the claims made for the preparations. Hence none was accepted for New and Nonofficial Remedies.

The preparations that form the basis for the accompanying reports are only a few of the many that are being made and sold by some biological houses. Doubtless many of those not dealt with in this report are equally irrational and sold under claims equally—or probably even more—unwarranted than those with which the present report deals.

W. A. PUCKNER, Secretary.

Mixed Vaccines-Abbott

In response to inquiry the Council undertook a consideration of the following "mixed" vaccines sold by the Abbott Laboratories:

M. Catarrhalis-Combined-Bacterin, said to contain killed *Micrococcus catarrhalis*, *Bacillus Friedländer*, *Pneumococci*, *Streptococci*, *Staphylococcus aureus* and *Staphylococcus albus*.

B. Coli-Combined-Bacterin, said to contain killed *Streptococcus viridans*, *Streptococcus hemolyticus* and *Bacillus coli*.

Pertussis-Combined-Bacterin, said to contain killed *Bacillus pertussis*, *Pneumococci*, *Streptococci*, *Staphylococcus albus*, *Staphylococcus aureus* and *Micrococcus catarrhalis*.

Streptococcus-Rheumaticus-Combined-Bacterin, said to contain killed "Streptococci (Rheumaticus, Viridans, etc.)" and *Pneumococci*.

Streptococcus-Viridans-Combined-Bacterin, said to contain killed *Streptococcus viridans*, *Streptococcus hemolyticus*, *Pneumococcus* and *Staphylococcus albus*.

The Abbott Laboratories were asked to assist in the investigation of these products and to submit evidence to establish their eligibility for admission to New and Nonofficial Remedies. The manufacturer was informed that the Council accepts "mixed" vaccines or bacterins, provided the usefulness of these products is established by acceptable clinical evidence, and references to the literature bearing on the value of the preparations were requested.

The Abbott Laboratories submitted specimens of the products, the advertising matter therefor and a considerable list of references to current literature; all of which was transmitted to the Committee on Serums and Vaccines for consideration. In due time a referee of the committee submitted the following report:

THE COMMITTEE'S REPORT

The referee has studied the literature covered by the references submitted. In general the articles are favorable to the use of vaccines, though many of these papers do not consider "mixed" vaccines; indeed, a number of the articles do not discuss treatment at all, but are devoted entirely to the consideration of etiology of the disease. Many of the papers are by those who are obviously overenthusiastic on the subject of the use of biologic preparations. One paper—not included in the references submitted by the Abbott Laboratories—records an alarming reaction following a dose of mixed vaccine; no claim is made that improvement followed.

The following comments on the submitted references are offered:

M. Catarrhalis - Combined - Bacterin.—Only four of the nine references given deal with the therapeutic use of the vaccine. The reported results in general were favorable, but sometimes in the discussion evoked by certain of the papers, views the reverse of those expressed by the author were brought forward. The enthusiasm of one writer is shown in his statement that following the use of vaccine in cases of carbuncle complicating diabetes the sugar in the urine disappeared or was reduced. One observer, who reports excellent results in nasal and pharyngeal catarrh, speaks of certain vaccines as "bulk goods," while another considers "—'"s No. 7" as the proper thing. It is evident that the reports are not based on careful, scientific data, or such unscientific definition of the product employed would not be used.

B. Coli-Combined-Bacterin.—In the references cited in support of this preparation the following general statements are noted: One enthusiastic writer says, "It must be recognized that we have no satisfactory explanation of the action of vaccines, and their use at present is empirical." One author dwelt on the superiority of autogenous vaccines but admits that occasionally stock vaccines are indicated. One vaccine therapist in concluding an article states, "It is simply impossible to practice modern urology without our modern biologic products." Yet it is a well-known fact that many successful and capable genito-urinary surgeons avoid the use of vaccines, mixed or simple.

Pertussis-Combined-Bacterin.—These reports are uniformly favorable, but are not controlled and their value is not to be compared with a recent report from the New York City Department of Health which indicates that the vaccine is practically valueless. It is noted, further, that one of the articles cited which dealt rather fully with the treatment of pertussis did not mention vaccines.

Streptococcus-Rheumaticus-Combined-Bacterin.—The references cited in support of the preparations by the manufacturer give no support whatever for the use of mixed stock vaccines. The first reference deals with the relation of *Streptococcus viridans* to arthritis deformans and endocarditis and reports the following cases:

- Case 1.—Vaccine case—improvement after eight months.
- Case 2.—Slight improvement following use of vaccine.
- Case 3.—Slight improvement following use of vaccine.
- Case 4.—Marked improvement.
- Case 5.—Prompt improvement.
- Case 6.—Vaccine not mentioned.
- Case 7.—Vaccine followed by slight improvement.

In each of the cases other methods of treatment were used. The paper shows the etiologic relation of *Streptococcus viridans* rather than the value of vaccines. There is no indication that stock vaccines were used, though the paper is not clear on this point. The second paper deals with the application of vaccine therapy in the treatment of arthritis. This paper is by a man who is avowedly an enthusiast on vaccine therapy. The indications are that he generally used a mixed autogenous vaccine, but the reports of cases are not always clear. This writer apparently makes no serious attempt at the classification of the joint conditions he treats. The third reference is a purely experimental study and has no bearing on the use of vaccines in treatment. The fourth article was admitted by the manufacturer to be "negative as regards evidence." The fifth reference specifically states that "the vaccine must be autogenous." The sixth reference deals

with the experimental production of appendicitis by the use of diplococci, and has not the most remote bearing on the use of vaccines in the treatment of rheumatism.

Streptococcus - Viridans - Combined - Bacterin.—The article which bears evidence of more care than the others admits that we are not in position to state the value of vaccines in pyorrhea but the author believes they may have value supplementary to local treatment.

It is not surprising that a large number of favorable reports can be accumulated when we appreciate how promptly men report what they consider to be their successes and how commonly they leave their failures unrecorded. Bearing in mind the fact that these stock mixed vaccines, though before the profession for many years, have not been used, or continued in use, in hospitals where work is rigidly controlled and that they are used practically not at all in the large government hospital service, a candid critic must hold that there is no substantial evidence in favor of the therapeutic use of a mixed vaccine, certainly not for stock "goods" and that probably there is but a limited field for the employment of autogenous vaccines.

The referee calls attention to a shift in the advertising matter on vaccines—the tendency to recommend vaccines to be used in conjunction with drugs. A heading in the Abbott booklet reads, "The Biologics Do Not Replace Drugs"; and the paragraph speaks of serums and bacterins as "new tools, supplemental to those we already have, but not replacing them." . . . "We need them both."

The referee recommends that the several mixed vaccines discussed in this report be not accepted on the grounds that satisfactory evidence of their value is wanting.

Having been endorsed by the Committee on Serums and Vaccines the Council adopted the report and declared M. Catarrhalis-Combined-Bacterin, B. Coli-Combined-Bacterin, Pertussis - Combined - Bacterin, Streptococcus-Rheumaticus-Combined-Bacterin and Streptococcus - Viridans - Combined-Bacterin ineligible for admission to New and Nonofficial Remedies.

Catarrhal Vaccine Combined-Lilly and Influenza Mixed Vaccine-Lilly

Because of inquiry received, the Council requested Eli Lilly and Company to aid in determining the acceptability of the following products for New and Nonofficial Remedies: "Catarrhal Vaccine Combined," said to contain killed cultures of the Bacillus of Friedländer, Micrococcus catarrhalis, Staphylococcus aureus and albus, Pneumococcus and Streptococcus; "Influenza Mixed Vaccine," said to contain killed cultures of Staphylococcus albus and aureus, Streptococcus, Pneumococcus, Micrococcus catarrhalis and Bacillus influenzae.

Lilly and Company sent the circulars, etc., used in advertising these products. A circular for "Catarrhal Vaccine Combined" contained the following claim:

"Catarrhal Vaccine has been especially useful in many respiratory infections, including bronchitis, pharyngitis, rhinitis, chronic catarrh and in the mixed infections of pulmonary tuberculosis."

A circular for "Influenza Mixed Vaccine" contained the following:

"The vaccine is useful in the treatment of influenza and ordinary colds, and in any infection in which the Bacillus influenzae is the causative agent."

An advertising pamphlet contained the following:

"Catarrh, Acute and Chronic; Colds, Influenza.—The micro-organisms capable of producing catarrhal conditions of the nose and pharynx and most commonly isolated are B. Friedländer, M. catarrhalis, staphylococcus, pneumococcus (in infections beginning in the larynx), B. influenza and streptococcus. These organisms are found normally in the respiratory passages and acquire virulence only when resistance has been lowered through overwork, exposure to cold, etc.

"The results following the use of Catarrhal Vaccine Combined (in the non-epidemic forms) and Influenza Mixed Vaccine (in the epidemic types) have been very satisfactory, due to the great vascularity of the tissues. Acute attacks are aborted altogether or shortened in duration and the danger of complications greatly minimized."

No evidence was submitted which warrants the preceding claims nor is the Council aware of any reliable testimony to indicate that the administration of the mixtures here discussed is warranted or desirable. On the recommendation of the Committee on Serums and Vaccines the Council voted that "Catarrhal Vaccine Combined-Lilly" and "Influenza

Mixed Vaccine-Lilly" be not included in New and Non-official Remedies because satisfactory evidence of their value is wanting.

Influenza Serobacterin Mixed-Mulford

Because of inquiry received, the Council took up the consideration of "Influenza Serobacterin Mixed-Mulford," and requested the Mulford Company to present evidence to establish the admissibility of the preparation to New and Non-official Remedies. The Mulford Company sent specimens of the serobacterin in question, an advertising circular and a letter by the director of its Biologic Laboratories.

According to the label on the package, the preparation is made from the following organisms: Bacillus influenzae, Staphylococcus aureus, Staphylococcus albus, Streptococcus, Pneumococcus and Micrococcus catarrhalis (group). This mixture is recommended by the manufacturer:

"For the prophylaxis and Treatment of Common Colds, Mixed Infections of the Respiratory Mucous Membranes, Acute and Chronic Catarrhal Conditions of the Nose, Throat and Respiratory Passages."

No evidence is submitted for this recommendation except that in "colds and bronchitis and the other common infections of the upper respiratory passages . . . five or six bacteria are very commonly present—two or more of them are nearly always present . . ." and the letter by the director of the Mulford Biologic Laboratories expressing the belief that in his own case the use of the mixed vaccine has aborted or prevented colds.

As regards the use of this complex biologic preparation:

First, the cause of common colds is, at the present time, quite unknown. One of the most striking things is that at the beginning of a cold the organisms to be cultivated from the nasal mucous membrane are very few in number and there is no uniformity in the type of organism found. If some one of the well-known organisms (Streptococcus, Staphylococcus, Pneumococcus, Micrococcus Catarrhalis, Influenza Bacillus, etc.) were responsible, we should expect to find one of them preponderating and in overwhelming numbers. This is far from the case. After the duration of the cold for a day or two with the increased production of mucus and apparently with the infection of a mucous membrane whose powers of resistance have been greatly lowered, bacteria of all kinds are to be found in immense numbers. There is considerable reason for believing that an ultramicroscopic organism is responsible for this condition (See Foster, *Journal of Infectious Diseases*, November, 1917, 21, 451).

Second, there is no acceptable clinical evidence that vaccination with the influenza bacillus, the Streptococcus, the Pneumococcus or the Micrococcus Catarrhalis will influence the course of an infection due to one or the other of these organisms. It has been repeatedly found that a staphylococcus vaccine is of a certain degree of value when the infection with the staphylococcus is localized, but it is well known that general systemic infections with the staphylococcus are not at all benefited.

Third, the letter submitted as evidence by the Mulford Company is not convincing. The Council is not prepared to accept evidence of this sort unless it is in volume large enough to justify a definite conclusion.

Holding that there is no evidence for the value of this mixture, the Council declared "Influenza Serobacterin Mixed-Mulford" inadmissible to New and Nonofficial Remedies because its use is illogical.

Sherman's Mixed Vaccine No. 40

Because of inquiry received the Council decided to consider this preparation and requested the manufacturer, G. H. Sherman, Detroit, Mich., to submit evidence in support of the claims made for it.

This vaccine is said to be made from killed cultures of Streptococcus, Pneumococcus, Micrococcus catarrhalis, Staphylococcus aureus, and Staphylococcus albus. In the printed matter sent out by G. H. Sherman this vaccine is recommended for hay-fever, in which it is stated that some of the symptoms are due to bacterial invasion of the respiratory mucosa; for tonsillitis, both as a remedy and as a prophylactic against rheumatic and other sequelae; for "throat

infections"; for rhinitis with the claims that acute coryza can be aborted within twenty-four hours; for pneumonia in which it is advised for all stages; for laryngitis, for bronchitis, and for asthma.

No acceptable evidence was submitted as to the value of the product in the treatment of any of the foregoing conditions. In view of what is known about non-specific reactions, it seems likely that any influence which this vaccine may have on the divers conditions enumerated by the manufacturer, is due to this, rather than to the combination of organisms used in its preparation.

On the recommendation of the Committee on Serums and Vaccines, the Council declared "Sherman's Mixed Vaccine No. 40" ineligible to New and Nonofficial Remedies because the therapeutic claims made for it are unwarranted (Rule 6) and because the combination, in view of its complexity, is irrational and detrimental to sound therapy (Rule 10).

Correspondence

PROCAIN AND NOVOCAIN IDENTICAL

To the Editor:—It appears that in certain quarters the attitude is taken that the local anesthetic sold as procain is not identical with that marketed as novocain. The Subcommittee on Synthetic Drugs of the National Research Council believes it important that this misunderstanding should be corrected and hence offers the following explanation:

The monohydrochlorid of para-amino-benzoyldiethyl-amino-ethanol, which was formerly made in Germany by the Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst A. M., and sold under the trademarked name "Novocaine," is now manufactured in the United States. Under the provisions of the Trading with the Enemy Act, the Federal Trade Commission has taken over the patent that gave monopoly for the manufacture and sale of the local anesthetic to the German corporation, and has issued licenses to American concerns for the manufacture of the product. This license makes it a condition that the product first introduced under the proprietary name "Novocaine" shall be called procaine, and that it shall in every way be made the same as the article formerly obtained from Germany. To insure this identity with the German novocain, the Federal Trade Commission has submitted the product of each firm licensed to the A. M. A. Chemical Laboratory to establish its chemical identity and purity, and to the Cornell pharmacologist, Dr. R. A. Hatcher, to determine that it was not unduly toxic.

So far the following firms have been licensed to manufacture and sell procain: The Abbott Laboratories, Ravenswood, Chicago; Farbwerke-Hoechst Company, New York; Rector Chemical Company, Inc., New York, and Calco Chemical Company, Bound Brook, N. J. Of these, the first three firms are offering their products for sale at this time, and have secured their admission to New and Nonofficial Remedies as brands of procain which comply with the New and Nonofficial Remedies standards.

While all firms are required to sell their product under the official name "Procaine," the Farbwerke-Hoechst Company is permitted to use the trade designation "Novocaine" in addition, since it holds the right to this designation by virtue of trademark registration.

In conclusion: Procain is identical with the substance first introduced as novocain. In the interest of rational nomenclature, the first term should be used in prescriptions and scientific contributions. If it is deemed necessary to designate the product of a particular firm, this may be done by writing Procaine-Abbott, Procaine-Rector, or Procaine-Farbwerke (or Procaine [Novocaine brand]).

JULIUS STIEGLITZ, Chicago.

Chairman, Subcommittee on Synthetic Drugs, National Research Council.

COMMENT.—Physicians should adopt the Federal Trade Commission's recommendation to use the official name of the

licensed drugs in connection with all written articles and prescriptions, and if the proprietary brand name is to be used, to place this side by side with the official name.

The official names so far adopted by the Federal Trade Commission are:

Arsphenamine for salvarsan, diarsenol and arsenobenzol, etc.

Neoarsphenamine for neosalvarsan, neodiarsenol and novarsenobenzol, etc.

Barbital for veronal.

Barbital-sodium for medinal and veronal-sodium.

Procaine for novocaine.

Procaine nitrate for novocaine nitrate.

Phenylcinchoninic acid for atophan.

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—Regarding the communication of Dr. Hindman (THE JOURNAL, May 25, 1918, p. 1561) in which he states that "sodium acetate [recommended by me for preservation of complement, THE JOURNAL, Sept. 22, 1917] forms a precipitate with some guinea-pig serums," let me state, after considerable experience with this method, that no such precipitate occurs from acetate solutions up to 25 per cent. strength. Solutions above this strength may cause a crystalline precipitate, which can be sedimented off and does not interfere in any way with the complement fixation reaction.

In regard to his observation as to the possibility of getting a negative reaction in a weakly positive case, on account of the sharp reaction or possible overaction of acetated complement, allow me to suggest that this is a matter entirely of exact technic.

In my experience, which has been entirely with guinea-pig serum, I found that in using acetated complement in which the complementary unit has been stabilized, one must be much more exact in the technic (as excess would give overactivity) than in handling an unpreserved complement in which the complementary activity is constantly diminishing, especially in warm weather.

Therefore the unit not only of the guinea-pig complement but also of the amboceptor, the antigen and the complementary unit for each individual batch of red cells (see my note, THE JOURNAL, Nov. 17, 1917, p. 1728) must be determined by titration. If, then, the patient's serum is inactivated to do away with its varying content of complement which would act as excess, one will not, when using titrated units of acetated complement, get any negative reactions in weakly positive cases.

B. W. RHAMY, M.D., Fort Omaha, Neb.

Captain, M. R. C., U. S. Army.

THE CONTROL OF VENEREAL DISEASE IN THE ARMY

To the Editor:—Owing to the great interest awakened in the morbidity of venereal diseases incident to the prime necessity of a supply of healthy, vigorous manhood with which to win the war, the public is now learning how vitally necessary it is to keep undefiled the spring of that stream not alone by sanitary regulations of extracantonment zones but also of the cities and towns from which our soldiers enlist or are drafted.

We all know the report, how well founded I cannot say, that Germany sent a flood of prostitutes to infect and disable the French and British troops; but whether Germany had anything to do with it or not, the soldier in the hospital from a venereal disease is just as much a noncombatant as a soldier disabled in combat. Moreover, he occupies and demands shelter, medicines, transportation, beds, bedding, nurses and doctors, all of which tax the military resources and to which he should not be entitled since he takes an oath to defend the United States against all their enemies and not to go to bed sick and to that extent aid Germany.

Now that we are alive and anxious to do, for military reasons, what we would not do for purely moral reasons or public health reasons in time of peace, we see plainly

that prostitution is pro-German and that every one engaged in the occupation of prostitution or aiding or abetting it by pandering or renting rooms or buildings for its practice is an enemy of the Republic and pro-German.

I believe, therefore, that as a legal measure two things would cut to the root: 1. Punish all landlords, hotel managers, boardinghouse keepers and other persons who maintain places for the practice of prostitution by a term of years in a penitentiary. 2. Punish all prostitutes by restraint in internment camps for treatment and segregation during the war. I do not suggest fines because the traffic is already burdened with high rentals and graft bribes and could no doubt stand more, because those whom this act is designed to reach will gladly pay a nominal fine, viewing it very lightly, too, as a tax laid by the state on the traffic, which is a matter to our minds unthinkable.

FRANK THOMAS WOODBURY, M.D.,
Camp Gaillard, C. Z.

Lieutenant-Colonel, M. C., U. S. Army.

"THE VALUE OF THE WASSERMANN REACTION"

To the Editor:—Referring to the article "The Value of the Wassermann Reaction: A Reply," by Drs. Larkin, Levy and Fordyce (THE JOURNAL, June 1, 1918), may I ask the courtesy of a few lines of space; although Dr. Symmers needs no protector, the responsibility for publishing Dr. Symmers' article which they criticize being entirely mine. At a future date Dr. Symmers will answer the points which the authors criticize.

The article by Dr. Symmers was read and approved by me as director of laboratories of Bellevue Hospital at that time. Dr. Symmers had nothing to do with the performance of the Wassermann reactions. The methods employed in the pathologic department of Bellevue Hospital are well known, as a description was published by Dr. Cyrus W. Field, and they thus became public property. I might add that Dr. Field and myself were members of the committee appointed by Dr. Haven Emerson several years ago to bring harmony of methods into the various laboratories, public and private, of New York City, and that, therefore, we believe ourselves to be entirely familiar with the details of the technic of the Wassermann reaction. The laboratory at Bellevue Hospital was one of the first to make routine Wassermann examinations, and for several years every patient entering Bellevue Hospital and remaining for a period of three days or longer was thus investigated, so that many thousands of reactions have been made. Bellevue Hospital was fortunate, moreover, in having the expert services of serologists of repute, such, for example, as Dr. Cyrus W. Field, and their co-workers were always men of training and ability.

In regard to the matter of careless postmortem observations, I may state that, as director of laboratories of Bellevue Hospital, I saw most or nearly all of the necropsies and personally corrected all postmortem records during the thirteen years of my incumbency. Any fault that is to be found with the observations is largely mine, and I am willing to assume the responsibility for it, although in fairness to Dr. Symmers it should be stated that, during practically the whole of the Wassermann era, he has been actively associated with me at Bellevue Hospital and has acted in an advisory or supervisory capacity in a great many additional post-mortem and microscopic investigations.

The assumption of Drs. Larkin, Levy and Fordyce that because no mention of histologic examinations was made in the paper by Dr. Symmers, this branch of activity at Bellevue Hospital is neglected, is unwarranted, since it has always been one of the rigid rules of the laboratory to keep pieces of the viscera of all bodies coming to necropsy, and in the great majority of cases the histologic preparations still form part of the laboratory records. I should also like to call attention to the fact that Drs. Larkin, Levy and Fordyce have been guilty of the negligence of which they accuse us, namely, they do not state the methods by which they have come to the conclusion that they were dealing with syphilis. More-

over, in detailing the remarkable successes which they have had, clinically and pathologically, with the Wassermann reaction, they neglect to detail the serologic methods employed, while at the same time they severely criticize Bellevue Hospital for a like omission, in spite of the fact that a report of our methods has been published.

CHARLES NORRIS, M.D., New York.

Formerly Director of Laboratories, Bellevue and Allied Hospitals.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SLOUGHING OF GUMS AFTER INSTALLATION OF GOLD BRIDGE

To the Editor:—A perplexing problem presents itself here in my office which is associated with that of a dentist, Dr. J. Wallace. His patient was referred to me because of a sloughing of the mucous membranes of the mouth taking place thirty-six hours after a gold bridge had been placed therein. The sloughing seems most pronounced at the immediate point of contact with the gold, which was 22 carats fine. Phosphoric acid enters into the cement, but at the crown margin the sloughing is not pronounced. The symptoms are those of pronounced salivation. The cement used is Fellowship Cement. Could you shed some light on the subject? Many have used this cement without any ill effects, and this is the first case of this nature to come to my attention.

D. H. PETTINGELL, M.D., Ely, Nev.

ANSWER.—From the meager description of the case, it is difficult to solve the problem offered. However, it is certain that neither the 22 carat gold nor the cement used was a cause of the sloughing of the gums. If a local anesthetic was injected into the gums during the fitting or setting of the bridge, it may have caused the destruction of the adjoining tissues. This may follow the use of local anesthetics containing suprarenal products. It was rather soon for an infection to result, though the fitting of the abutments may have preceded the setting of the bridge several days. If this were the case, the gums may have been infected in the primary operation. The description leads one to think of what is known as Gilmer's disease—acute ulcerous gingivitis, or, as it is sometimes called, "trench mouth." Acute ulcerous gingivitis is due to the *Bacillus fusiformis*. It is a rather uncommon affection of the gums, commencing with ulceration of the gum margins about a few teeth. The gums are destroyed rapidly, leaving a grayish deposit not unlike that found covering the so-called "mucous patches." There is extensive salivation, slight rise in temperature, and fetid breath. The treatment is indicated by the nature of the organism causing it, which is an anaerobe; that is, an oxidizing agent such as hydrogen peroxid, with a weak solution of potassium permanganate to offset the odor. Calomel in small doses is indicated.

Incineration.—The incineration of dead human bodies is a practice which, while desirable from the modern point of view, grows slowly on account of lack of popular knowledge concerning it, or on account of religious, superstitious or social prejudices. It needs the impetus of a strong, continuous propaganda to make it the sole method of disposing of the dead. Figures furnished by Dr. Charles Scott Miller, chief of the division of vital statistics of the bureau of health and charities of Philadelphia, show that from 1876, when the first crematory was built in the United States, to and including 1915, the total number of bodies incinerated in the United States was 110,012, and only since 1913 has the annual figure reached the 10,000 mark. In 1913 the number was 10,183, in 1914 it was 11,239, and in 1915 it was 12,767. At present about half the states have crematories. The tremendous impetus given by the war to the study and practice of better sanitation should include a better knowledge and extension of incineration of the dead. While distinctly a sanitary question in some of its aspects, the matter of incineration of the dead, when rightly understood, should appeal even more strongly to sentiment as compared with earth burial.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

ARIZONA: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 9-11. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

MAINE: Augusta, July 2-3. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, July 9-11. Sec., Dr. W. P. Bowers, Rm. 501, 1 Beacon St., Boston.

NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

NEW YORK: Albany, Buffalo, New York City and Syracuse, June 25-28. Sec., Dr. W. J. Denno, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Mr. N. C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Montana April Examination

Dr. S. A. Cooney, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, April 2-4, 1918. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 17 candidates examined, 12 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1917)	75	75
Loyola University	(1916)	79.2	
Rush Medical College	(1897) 77.5; (1901) 81.5; (1917)	78.1	
State University of Iowa College of Medicine	(1891)	77.9	
University of Louisville	(1892)	82.2	
Maryland Medical College	(1903)	75.2	
Harvard University	(1888)	89.5	
University of Michigan Medical School	(1906)	77.6	
John A. Creighton Medical College	(1917)	75.3	
Medico-Chirurgical College of Philadelphia	(1915)	75	

College	Year Grad.	Per Cent.
Chicago Homeopathic Medical College	(1901)	69.7
Keokuk Medical College, Coll. of Phys. and Surg.	(1901)	62.8
University of Minnesota, Coll. of H. M. and Surg.	(1895)	65.1
Ensworth Medical College	(1909)	34.1
Memphis Hospital Medical College	(1911)	62

Washington January Examination

Dr. C. N. Suttner, secretary of the Washington State Board of Medical Examiners, reports the written examination held at Spokane, Jan. 1-3, 1918. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 32 candidates examined, 30, including 5 osteopaths, passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Denver College of Medicine	(1899)	77.3	
Gross Medical College	(1899)	84	
University of Colorado	(1914)	83.1	
Chicago College of Med. and Surg.	(1916)	78.1, 79.1	
Loyola University	(1916)	83.4	

Rush Medical College	(1910) 80.9; (1916)	93.1
University of Illinois	(1916)	87.1
Medical College of Indiana	(1898)	79.6
State University of Iowa, Coll. of Homeo. Med.	(1910)	86.8
Baltimore Medical College	(1895)	93.3
Harvard University	(1911)	81.9
University of Minnesota	(1917)	79.5
Columbia University	(1916)	90.5
University of Buffalo	(1914)	92.2
Jefferson Medical College	(1908) 77.8; (1916)	82.1
University of Virginia	(1910)	88.7
Manitoba Medical College	(1916)	86.7
Trinity Medical College	(1900)	80.5
McGill University	(1913)	75.6
Kyoto Imperial University	(1904)	82.5
Kyushu Imperial University	(1908)	83.1
Okayanna Special Medical School	(1906)	86.4

FAILED

Saginaw Valley Medical College	(1902)	54
University of Oregon	*	30.3

* Year of graduation not given; graduation not verified.

Missouri March Examination

Dr. G. H. Jones, secretary of the Missouri State Board of Health, reports the oral and written examination held at St. Louis, March 19-21, 1918. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 49 candidates examined, 42 passed and 7 failed. Eighteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College	(1917)	90.9	
University of Illinois	(1917)	85.4	
Marion-Sims-Beaumont Medical College	(1903)	85.3	
National University of Arts and Sciences	(1918) 75.1, 77.1, 78.1, 80.1, 80.2, 81.1, 81.4, 81.6, 82.1, 82.1, 83.6, 84, 84.1, 84.2, 84.7, 84.9, 85.1, 85.1, 85.3, 85.4, 85.5, 85.9, 85.9, 86.4, 86.5, 87.1, 87.7, 88.6, 91.1.	79.3	
St. Louis Coll. of Physicians and Surgeons	(1915) 75; (1917)	79.3	
St. Louis University	(1918) 82.9, 85.3, 87.1.		
Washington University	(1918)	90.5	
John A. Creighton Medical College	(1917)	86.7, 89.8	
University of West Tennessee	(1915)	75.1	
Vanderbilt University	(1917)	85.1	

FAILED

National University of Arts and Sciences	(1918)	57.2
St. Louis University	(1905)	72.1
Meharry Medical College	(1916) 72.8; (1917)	66.1, 72.8
University of West Tennessee	(1915)	63.3, 68.4

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1910) (1912)		Illinois
Illinois Medical College	(1908)		Illinois
University of Illinois	(1914)		Illinois
Keokuk Medical College	(1898)		Iowa
Hospital College of Medicine	(1897)		Kentucky
Maryland Medical College	(1905)		W. Virginia
Beaumont Hospital Medical College	(1888)		Iowa
Ensworth Medical College	(1909)		Kansas
St. Louis College of Phys. and Surg.	(1905) (1909)		Illinois
University Med. Coll. of K. C.	(1904) (1912) (1913)		Kansas
Medical College of Ohio	(1878)		Indiana
Meharry Medical College	(1915)		Kentucky
University of Tennessee	(1909)		Tennessee
Vanderbilt University	(1908)		Tennessee

Illinois February Examination

Mr. F. C. Dodds, superintendent of registration, Department of Registration and Education, reports the written examination held at Springfield, Feb. 6-7, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 65 candidates examined, 50 passed and 15 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Licensed
Chicago Coll. of Med. and Surg.	(1908) (1916, 2) (1917, 17)		20
College of Phys. and Surg., Chicago	(1908)		1
Jenner Medical College	(1915) (1917)		2
Loyola University	(1916) (1917, 8) (1918, 2)		11
Rush Medical College	(1917)		7
University of Illinois	(1912)		1
Indiana University	(1917)		1
Keokuk Medical College, College of P. & S.	(1904)		1
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1904)		1
Meharry Medical College	(1914) (1916, 2)		3
University of Tennessee	(1899)		1
University of Toronto	(1911)		1

FAILED

Bennett Medical College	(1914)	1
Chicago College of Med. and Surg.	(1916, 2) (1917, 5)	7
Chicago Hospital College of Medicine	(1915)	2
Loyola University	(1917)	3
Meharry Medical College	(1912)	1
Queen's University	(1913)	1

Medicolegal

Physician Entitled to Damages for Eviction of Trespass

(*Grammont Holding Co., Inc., v. Lellmann* (N. Y.), 168 N. Y. Supp. 29)

The Supreme Court of New York, Appellate Term, First Department, in reversing a judgment obtained by the plaintiff, and granting the defendant, a physician, a new trial, with \$30 costs to him to abide the event, says that this action was brought to recover for rent of an apartment in a house owned by the plaintiff. The only matter litigated was the counterclaim of the defendant physician, based on acts of the plaintiff during the defendant's occupancy, which resulted in his abandonment of the premises. It appeared that the plaintiff undertook to reconstruct its building; that in the course of that work it disconnected the telephone service, stopped the operation of the elevator, and attempted to run pipes through the defendant's apartment; and that as a result of the work in the building water and large quantities of dust and plaster entered the apartment occupied by the defendant. There were also continuous loud noises and shocks generally accompanying the performance of the work which shook the premises. The defendant claimed damages by reason, among other things, of interference with his business as a practicing physician, and expense entailed in moving. The plaintiff urged that damages for an eviction were limited either to a nominal figure or at most to the difference between the rental value of the premises as they were and the rent reserved in the lease, but conceded that, in case the interference with the leased premises amounted substantially to a trespass, a more liberal measure of damages would be applicable. The evidence here presented a case wherein, short of deliberate personal violence offered to the defendant, the proof of trespass on the leased premises was overwhelming. By the very rule conceded by the plaintiff, therefore, the defendant was entitled to prove at least the loss of business which he suffered by reason of such interference. It was unnecessary to pass on all the items of damage which the defendant claimed and undertook to prove, as the evidence was excluded by the trial court. Indeed, the defendant's position did not rest solely on an eviction, but might perhaps with equal force be sustained on the theory of trespass alone.

Adulteration with Saccharin

(*People v. Excelsior Bottling Works, Inc.* (N. Y.), 168 N. Y. Supp. 570)

The Court of Special Sessions, City of New York, holds that the defendant, in keeping and offering for sale a beverage called strawberry soda, which contained saccharin, was guilty of violating Section 68 of the Sanitary Code of the board of health of the department of health of the city of New York, prohibiting the having, selling, or offering for sale of any adulterated or misbranded food, including beverages. The court holds that this section and a resolution of the board of health, to the effect that foods containing saccharin shall be deemed adulterated, were passed in pursuance of a reasonable exercise of the public power; and that they are not obnoxious, in any respect, to the provisions of the constitution of the United States, or of the constitution of the state of New York. The opinion of Chief Justice Russell says that the testimony in this case was very voluminous and covered about 477 pages of stenographic minutes. Eighteen witnesses were examined at length, several of whom were world-famed scientists, and eminent in the medical profession as food experts. This record, at least, showed that there is a difference of opinion among those best qualified to judge respecting saccharin and on the question of excluding it from foods. Saccharin is a substitute for sugar, and itself has no food value. Under the authorities, although as an ingredient of food it may not be deleterious, still its use can be absolutely prohibited. An article may be manufactured in imitation or semblance of a well known article in common use, and consumers or purchasers may be thus imposed on. Legislation intended

to prevent such an article from being manufactured has been held valid. The legislature certainly cannot forbid or wholly prevent the sale of a wholesome article of food. But in forbidding the sale and use of saccharin as food, no attempt was made to prevent the sale of a wholesome article of food. Saccharin is not a food, but a product of coal tar, a synthetic substance from a laboratory. The object of such regulation was to prevent imposition and fraud. Nor will a suitable label afford a sufficient protection to the public against fraud. The blind and illiterate are entitled to the full protection of the law. Then, too, a certain amount of nourishment will surely be lost if saccharin is permitted to displace sugar as a sweetener.

Liability for Representations and Negligence or Incompetence of Physicians

(*Denver & R. G. R. Co. v. Ptolemy* (Colo.), 169 Pac. R. 541)

The Supreme Court of Colorado reverses a judgment obtained by the plaintiff for damages for personal injuries, because it holds that the evidence failed to justify the setting aside of a settlement previously made in consideration of the payment to her of \$450, but which she alleged that she was induced to accept by reason of the false and fraudulent representations made to her by the defendant company's claim and by its physician as to her condition and the nature and extent of her injuries. The court says that the plaintiff had the burden of proving the charge that the defendant's agents—the physicians and the claim adjuster—deliberately and consciously misrepresented to her her physical condition, with intent to induce her to make the settlement, and that she was thereby induced to make it. To prove fraud the evidence must be clear, precise and indubitable. It could not be said that such evidence was presented in this case. The plaintiff herself testified only that the physician who had entire charge of the case, after her first day in the hospital, and during her stay there, stated "as his opinion" that her injuries were not serious. She now complained that she was, in fact, suffering from internal injuries, but in at least two places in her brief it was said that the defendant's physicians failed to discover such injury. Clearly, then, they were not and could not be guilty of fraudulent misrepresentation as to that injury. If they failed to discover it, that might indicate negligence on their part, but that was no part of the issue made by the pleadings. If the physicians were negligent or incompetent, the defendant would be liable for the results of such negligence or incompetence only in case it appeared that the defendant knew or should have known of the physicians' unfitness, and that, too, in a case wherein the pleadings presented that question. A physician's diagnosis is necessarily a matter of opinion, except in cases wherein the ailment is external and visible. There was in this record no evidence which even raised a suspicion that the statements made to the plaintiff as to her condition were not made in perfect good faith. Neither of the physicians who attended her for the defendant was present at the settlement, nor did they at any time take part in the negotiations for it. The attempt to invalidate the contract of settlement wholly failed.

Testicle Held to Be Member of Body

(*State v. Sheldon* (Mont.), 169 Pac. R. 37)

The Supreme Court of Montana, in affirming a conviction of the defendant of the crime of mayhem in depriving a man of his right testicle, says that the sufficiency of the information depended on whether the right testicle of a male human being is "a member of his body" within the meaning of Section 8304 of the Revised Codes of Montana defining the crime of mayhem, and that the court thinks it so obviously is that any discussion of the matter is unnecessary. The contention that it is not was based on the claim that at common law the only members of the body within the definition of mayhem are those directly useful in fighting, such as to enable one to defend oneself or to annoy one's adversary. But however this may be, and there is room for doubt about it, the answer is that the Montana statute is not so restricted.

Social Medicine, Medical Economics and Miscellany

THE GREAT MELTING POT

The Amalgamation of Our Citizens Through the War

The Ambulance des Alliés, as its title implied, was equipped and operated for the Allies; at least that was the interpretation put on its name by the chief surgeon—an American. Consequently, when in due course of time our —th Division quietly slipped in and occupied an adjoining sector, where they literally rubbed elbows, company by company, with their French comrades in arms, proper steps were at once taken to receive our Amex's and give them a touch of home life. As this particular sector was only to be temporarily occupied by our troops, it had been judged more expedient not to have any of our sanitary formations in the zone of the lines of communications. A wounded American received first aid at his regimental aid station, from which post he was sent back to a French evacuation hospital for further treatment. As the Ambulance des Alliés was operated under the administrative supervision of the French Service de Santé, the transfer of wounded Americans to our formation presented no formidable difficulties. Our hospital boat could go up the river as far as division headquarters, making the question of transportation an exceedingly simple one.

When the first group of our wounded boys arrived in ambulances at the boat landing, saw the nurses in their smart uniforms, and heard the English language spoken, after having spent several days in a French hospital, they burst into tears.

A perusal of their "diagnosis tags," followed by short chats with one after the other of the first fifty or so American admissions, suggested the title for this story. Armenia, Ireland, Italy, Poland, Russia, Sweden, and the French province of Canada were all represented, often in the same company. A sturdy descendant of the Pilgrim fathers was flanked on either side by an offspring of the Ghetto and a Swedish emigrant; a Polish factory boy tried to converse in broken English with his neighbors, a French Canadian on one side, an Italian on the other; an irrepressible Irish lad flung Bowery jokes at an Armenian, the latter smiling his polite misunderstanding. They were all Americans, all doing their "bit" for the common cause of liberty; what mattered a few generations more or less, spent on American soil? "We tutti have to crossa da bigga oceano soma tim," said Tony Damiano.

Ah! the proud look on the boys' faces as they one and all vouchsafed the information that they were not drafted but had volunteered. That the Middle West is the great melting pot for the downtrodden masses of the Old World is a fact long admitted by all; but that this particular division, recruited in the New England States, should contain the same elements in its cadres was interesting and significant.

Beppo Yanko, called "Macaroni" by the nurses, was as handsome a specimen of southern Italy as one could wish to see. His birthplace was Calabria, his country: "Me Americano, volontario! Me landa en America at ten years; me liva en Lawrence, Mass.—do averything—shina da shoe, worka da shov', sella da banan; Guerra he come, me fighta for ma new country; me soldier boy, var' fina ting; me wounda in da leg by big Germ'; me killa da son-of-a-gun, no care go-dam; killa some more soma day!" Good old macaroni! In spite of his queer handling of the English language, his comrades respected and treated him as one of their own—as a pal.

Maddy Archambault, lineal descendant of a long line of "voyageurs," was following the career of a lumber jack in the Maine woods when the call came to him and he enlisted in the nearby village. With his knowledge of "habitant" French, which managed to be understood wherever he went, Maddy had, immediately on landing in France, become the unofficial interpreter, go-between and purchaser of "extras" for his company mess. A quiet, modest, retiring sort of lad was our Maddy, yet, on his breast was the coveted Croix de guerre, which a French general had pinned on him for con-

spicuous bravery. His face and arms had been badly peppered by shrapnel, which made the boy sometimes wonder whether his best girl at home, up in the Maine woods, would still favor him with her smiles when he returned. Old boy, if Angéline is the right sort of girl, she will fasten her adoring and admiring eyes on your military cross, and feign not to see the absence of part of your nose and upper lip. Bon courage and good luck to you. With Duplessis, Labelle and Leclerc—all good old French Canadian names—you formed a quartet of sterling fighters; would that more of your kind could slip across the border and enter our army.

Iky Rhozinski, typical product of any large city ghetto, felt the importance of his new rôle in society. Gone were the sloping shoulders, pussy-foot gait and shifting eye, inherited traits which are the natural result of centuries of persecution. Iky stood like a flagpole and looked you straight in the eye; he had been wounded "in line of duty," suffered uncomplainingly and was secretly very proud of his bandaged and splinted limb; he felt that he was an American, and his comrades treated him as such.

To Walter Brodowski, Catholic, Iky should have been anathema, for there has never been any love lost between Catholics and Jews in unhappy Poland. The two frequently conversed together, now in broken English, now in Polish, apparently on the very best of terms.

Walter—he confided to me that he had been baptized Stanislas but had found Walter more comfortable for school purposes—was a typical Slav with tawny hair, high cheek bones, low forehead, dilated nostrils, large mouth and sad blue eyes. Several years of premature factory life had given him that dull, hopeless look so familiar to settlement workers. He was doing his manly best to overcome the old handicap, but it still lingered in gait and facial expression. Six months from now, if all goes well with him in the meantime, Stanislas will be completely emancipated from the old fetters, which had been prematurely crushing and aging him at home. He will be a real man. Just what his attitude will be toward his prewar "job" when he returns is one of the big problems for our sociologists to work out. Where are we going to get our future factory slaves from? Is a man who has breathed God's fresh air, slept under the starry heavens, and faced death unflinchingly going to return to the States in order again to punch the time clock and be known as plain No. 975, d—d Pollak?

Of course Timothy O'Neil had freckles, carrot hair, a stub nose and "pug" chin. Tim, enlisted belligerent in B Co., Nth Infantry, entered the hospital with "mitts" clenched and an angry gleam in his eye. Shot through the left foot, with the wound badly infected and needing immediate surgical attention, Irish Tim announced to all who cared to listen to him that it would take ten nurses and six surgeons to get him into the operating room. "Tim, my boy," said the surgeon quietly, patting him on the shoulder, "you will have to have your foot drained if you don't wish to lose it; take these crutches, walk with them to the operating room, and climb on the operating table yourself." Blue eyes looked into equally blue eyes for a few seconds; then a sheepish grin slowly spread over the lad's face as he picked up the crutches and said, "Yes, sir." From that moment, Tim became the star patient of his ward. Full of grit and determination, fairly bubbling over with native wit, he constituted the only necessary tonic, disbursing this commodity in continuous heroic doses. My last recollection of Tim, before a hurried evacuation to a safer zone, was when, leaning on his friendly crutches, he played ball with Iky—also on crutches—in the hospital yard, before an admiring crowd of convalescent English, French and American soldiers. Both were good pitchers and catchers; both stopped overhead balls with a crutch, and nobody sighed for a pennant game that day. How quickly a scene can change during war time! That same courtyard has, since that last happy afternoon, resounded with the daily and nightly rumble of ambulances, bringing in desperately wounded men to us from the nearby improvised lines.

Yan Jansen—no need to tell you that he was of sturdy Norse descent—had grown up to be a famous ski jumper 'way back in Minnesota; he was also an expert lumberman,

and had been coaxed to the Maine woods by the lure of war wages and a foreman's job. Neither job nor wages had been able to still the great call to duty, and Jansen had become an excellent ambulance driver, assigned to a French division which occupied a nearby sector. Of his Scandinavian origin, only the name and physique remained, for Yan had finished high school at home and now spoke French with a fluency which made him the envy of his less linguistically inclined comrades.

John Arda, a handsome, black haired, dark eyed Armenian, had given up peddling imitation Oriental rugs in Boston in order to show his gratitude toward his new fatherland. This was truly a holy war for John; his people in Armenia had not been heard from for two years, and he had given them up for dead—or worse. His face would light up with long suppressed passion as he recounted the tales of unprintable atrocities committed on his people under the guise of Kultur. Well did he know at whose door in Potsdam lay the real blame; whose were the brains which had engineered the wholesale Armenian deportations. Though wounded, Arda felt that he had given more than he had received, and he was eager to meet Fritz again and again on the battlefield.

As for the American-born Sammies—genuine Yankees most of them—they were in France because the honor of their fatherland had been trampled underfoot and they had enlisted in order to right a hideous wrong. Splendid, lovable fellows, all of them, many were mere children in worldly wisdom; a few of the older ones more or less sophisticated. With their strong, though boyish-looking faces, their manifest intelligence and splendid physique, they were the admiration of their French comrades. With the help of a smile, a hand-shake and a cigaret, new and mutually valuable international friendships were soon formed, and it was a joy to see Sammies and Poilus, on a sunny afternoon—rare treats, alas, in this part of France—basking in the sun and carrying out all sorts of impossible conversations in Frankingle or Inglefrank—depending on whether French nouns and verbs were being anglicized or English nouns and verbs were frenchified.

What a liberal education for one and all of them; what a rare opportunity for free exchange of thought! After this hideous war is over, will there evermore be such a thing as a d—d foreigner—at least among the Allies? Will not this great cataclysm which has befallen the civilized world, save the mark, bring about a better understanding among the people who have been gasping and struggling in our great melting pot? If it does, we, at home or in the field, will almost feel repaid for the suffering we are enduring and the sacrifices we are making, in order to see the struggle through to a victorious end.

GEORGE DE TARNOWSKY, France.

Major, M. C., U. S. R.

THE FRAMINGHAM EXPERIMENT IN TUBERCULOSIS

A report on the progress of the Framingham Community Health and Tuberculosis Demonstration has been issued in Monograph 1, Publication 1 of the General Series of publications which will be issued regarding the experiment. It is planned to issue three series of reports, the first a general series covering the program itself, educational, social and economic, a second medical series presenting the results of the health census, medical examination, tuberculin survey, etc., and a third sanitary series covering reports and statistics of sanitary and hygienic conditions among infants, in schools, factories, etc. The demonstration has been in operation a little more than a year, and this first publication gives an account of the foundations which have been laid. The main objectives are summarized as the thorough medical examination of a substantial proportion of the population, the discovery of tuberculosis, and lending assistance to the community in organizing its forces to meet its own health obligations. Under this plan expert examinations have been made of 5,000 persons, about one third of the population, with the object of discovering and placing under treatment and observation incipient, advanced or arrested cases of tuberculosis, of which about 200 have been found; a sanitary

survey has been made covering infant conditions, schools, factories, food, milk, rural sanitation, vital statistics, etc.; a health census, a patriotic census of the man power resources of Framingham; a von Pirquet tuberculin survey of children between 1 and 7 years of age; a health camp for children; standards for the diagnosis, classification and treatment of children and adults, domestic science classes and home economic classes, the development of health educational work, etc., have also been among the accomplishments of the first year. The details of each of these divisions of effort will be given in subsequent publications.

Society Proceedings

COMING MEETINGS

American Academy of Ophth. and Oto-Laryn., Denver, Aug. 6-8.
American Ophthalmological Society, New London, Conn., July 9-10.
Idaho State Medical Association, Seattle, July 17-19.
Montana Medical Association, Butte, July 10-11.
New Jersey Medical Society, Spring Lake, June 25-26.
Oregon State Medical Association, Portland, June 27-29.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.
Western Roentgen Society, Colorado Springs, June 27-28.
Wyoming State Medical Society, Casper, Aug. 7.

THE AMERICAN GYNECOLOGICAL SOCIETY

Forty-Third Annual Meeting, held at Philadelphia, May 16-18, 1918

(Concluded from page 1885)

The Bladder of Women After Operation

DR. ARTHUR H. CURTIS, Chicago: Postoperative catheter cystitis is really urinary tract infection caused by residual vesical urine. An essential feature in the treatment of post-operative cases has been the prevention of urine stagnation in the bladder. In 465 consecutive operations the patients have been managed thus: All who complain of vesical distress are catheterized. Also, even when the power to void urine is present, catheterization is performed if residual urine is suspected. Furthermore, those patients who have required repeated catheterization are thereafter catheterized once daily immediately after urination, as long as residual urine is obtained. At the time of catheterization, 15 c.c. of one-eighth per cent. silver nitrate is instilled before the catheter is withdrawn. Medication consists of hexamethylenamin in amounts sufficient to maintain a positive formaldehyd test. In the presence of alkaline urine, acid sodium phosphate is added. Those who show idiosyncrasy to hexamethylenamin, or whose urine yields no formaldehyd, are treated with alkalis. In the presence of urinary tract infection, meats are permitted only twice a week. Seasonings of all sorts are forbidden, salt excepted. Sugar, sweets and pastry are limited. Under this plan, postoperative bladder troubles have disappeared. Retention of urine is a factor of the utmost importance in the etiology of pregnancy pyelitis. It is urged, therefore, that obstetric patients be tested for residual urine whenever carefully collected specimens reveal pus and bacteria. Through judicious catheterization, immediately after urination, these patients can often be saved from the danger of pyelitis.

DISCUSSION

DR. JOHN A. SAMPSON, Albany, N. Y.: After a radical operation for carcinoma of the cervix, severe cystitis is a common complication. I attribute the bladder disturbance to interference with the blood supply and with its function. Some of these patients, in whom there was incidentally a vesicovaginal fistula, were not troubled with cystitis, and I even went so far as to suggest that possibly in these severe cases the formation of a vesicovaginal fistula temporarily would obviate the cystitis. One of the most important ways of treating a severe cystitis is to establish free drainage and rest.

DR. GUY L. HUNNER, Baltimore: I agree that retention of urine is, perhaps, the chief factor, and this is most often due

to postoperative overdilatation of the bladder. Interference with the circulation and traumatism to the bladder itself do not have an important bearing on the question of postoperative cystitis; but if these patients are allowed to go on after operation with overdilatation of the bladder, we may get a partial paresis which may last for several days or weeks, creating a most favorable condition for infection to take place.

DR. J. RIDDLE GOFFE, New York: I should like to ask about the treatment after washing out the bladder.

DR. T. J. WATKINS, Chicago: We always pass a catheter as soon as the patient has any distress. After a patient has been catheterized every two or three days, we also catheterize once a day after that until we are sure she is not carrying an excess of residual urine. Daily catheterization is stopped as soon as we are convinced that the patient is not carrying a large amount of stagnant urine.

DR. LEROY BROUN, New York: To what extent do you find residual urine, and in what quantity?

DR. T. J. WATKINS, Chicago: We almost invariably find a crippled bladder in women who have had to be catheterized every two or three days. Patients that require catheterization very seldom carry stagnant urine.

Tubal and Ovarian Hemorrhage: Its Etiologic Relation to Pelvic Hematocele and Extra-Uterine Pregnancy

DR. J. WESLEY BOVÉE, Washington, D. C.: Trauma plays a part in producing these hemorrhages. Hemorrhage from the fallopian tube may occur from general conditions that similarly affect other tissues. Venous stasis from circulatory disturbances or pressure from tumors may reasonably be included in a list of its causes. Ovarian hemorrhage may be confined within the ovary, constituting one or more hematomas, or it may take place into the peritoneal cavity, producing, if abundant, a hematocele. No other organ of the body is so frequently the seat of hemorrhage as is the ovary. Stromal hemorrhage is commonly preceded by infection of the ovary. In but few cases have correct diagnoses been made before operation or necropsy. As to treatment, in the milder forms of the condition rest and anodynes may meet all indications. In the severer forms the same rules apply as are employed in the treatment of ectopic pregnancy.

End-Results of the Conserved Ovary

DR. JOHN O. POLAK, Brooklyn: From a study of seventy-three reoperations on patients in whom one or both ovaries were conserved, we must draw the following conclusions: 1. Routine conservation without due consideration of the ovarian and contiguous pathologic condition as it exists in the individual case, is not good teaching. 2. Regeneration of the conserved ovary depends largely on the type and duration of the existing infection and the condition of the tunica of the individual ovary. 3. Even when the most detailed technic is observed, the ovarian circulation is impaired. 4. The retained ovary, without the uterus, is always a focus for possible trouble. 5. The life history of the retained ovary is of short duration, and the trophic influence of the diseased ovary has been overestimated. Finally, a cured patient has few nervous symptoms.

The Most Effective Methods of Preventing Venereal Diseases

DR. J. MONTGOMERY BALDY, Philadelphia: Legislation in the line of prohibition has proved a failure. Education has proved a failure. All methods, single and combined, used in the past have driven victims of the diseases to drug store clerks and quacks. The "holier than thou" attitude of the community has been most disastrous. The methods of control which give any promise whatever of success are the open treatment of the whole subject on the basis of sanitation, dealing with these venereal diseases as with any other class of diseases. The community must be taught that the old attitude in regard to these matters is erroneous. Hospitals must be forced to repeal any rules they may have prohibiting the admission of these patients to their wards. Superinten-

dents assuming the attitude of fear of these diseases must be taught to change their attitude in these matters, or be driven out of the business. Hospital staffs must have full liberty of admission of such patients who in their judgment need hospital treatment. Hospitals running dispensaries must open special dispensaries for the treatment of these diseases. All advertisements in public places of a quack nature must be abolished, and in their place must be substituted notices of legitimate clinics at which such sufferers may apply. This class of patients must be taught that their confidence will be kept just as secretly as will their confidence in any other class of disease, and that they are perfectly safe in applying to hospitals for treatment. Hospitals must gradually provide free treatment for those suffering with these diseases who are unable to pay for them. The question of registration by physicians of patients at public boards of health, except in an extremely limited way, the name of the patient being not involved, is, to say the least, indiscreet if results are to be obtained.

Why the Midwife?

DR. J. CLIFTON EDGAR, New York: Hospital records bear out the fact that foreign-born women, after their first confinement under the care of the midwife, subsequently turn to the maternity hospital or a physician for obstetric aid. After a short residence in this country, the foreign-born woman does not usually persist in the employment of a midwife. Her ambition is eventually to be in a financial position enabling her to employ the services of a regular practitioner. During the existence of the Midwife Bellevue School, 235 midwives have been graduated; 5,125 confinements have been conducted by the pupils, 1,755 in the school, and 3,370 in the patients' homes, with a maternal mortality of 0.7 per cent. Only three patients died in the school itself, a mortality of 0.05 per cent. Six others died after being transferred to Bellevue for operation. The 5,125 patients cared for by the midwives of the Midwife School and in the patients' homes were practically all normal labor cases, as in fetal and maternal dystocia, and in bleeding cases, severe toxemia, and other abnormalities, the patients were sent to the Bellevue Obstetric Service for treatment. As far as the handling of strictly normal labor cases by the midwives go, the results have been excellent. The records indicate that little septic infection has resulted.

A plan for better and safer obstetrics in the outlying rural districts must recognize two main problems: 1. The best practical care of normal patients and, 2, the detection of abnormal patients and their care.

By education and supervision the midwife may be rendered reasonably safe for strictly normal labor, safe even for a minimum of sepsis, or for the prevention of ophthalmia neonatorum; but she is not safe, and no amount of education can fit the material which physicians have been brought in contact with, for the early care of prenatal complications, and maternal and fetal dystocia, which caused most of the infant and maternal mortality. Who should determine what is a strictly normal labor—the midwife? Never! She is incompetent to do so, and only the trained obstetrician can do so. The midwife can never stand on her own responsibility. For safe obstetrics the obstetrician must ever perform the prenatal examination and care. He must ever be at hand for the maternal and fetal dystocia of labor and the complications of the postnatal period.

Treatment of Puerperal Blood Stream Infection by Means of Arsphenamin (Arsenobenzol)

DRS. H. A. MILLER and S. A. CHALFANT, Pittsburgh: We have treated eleven cases of puerperal infection by means of arsphenamin (arsenobenzol) given intravenously, usually in 0.6 gm. doses, as frequently as three or four day intervals, giving from one to four doses. There were no toxic effects other than a mild albuminuria. Seven patients had a streptococcus in the blood stream, and two of them died; two had a gram-negative bacillus; both lived. Two had a negative blood culture, but were classed as cases of bacteremia clinically; both died. Two patients had intra-uterine irrigations with neutral solution of chlorinated soda at two hour

intervals. One recovered and one died. In the fatal case, necropsy revealed the uterus free from infection. Death was due to multiple abscesses of both kidneys. With the intravenous injections of arsphenamin we have been able to rid the blood stream of its invading organism in every instance. All varieties of organisms so far encountered seem to be equally influenced. After arsphenamin has been given there is a marked increase in the leukocyte count. If, after this time, there is a decided decrease in the leukocytes, it is possible that the patient has reinfected herself, and arsphenamin should be given without waiting for confirmation of the culture report. The blood stream is usually found to be sterile in twenty-four hours, always in forty-eight hours, except in one case in which only 0.4 gm. of arsphenamin were given. Rabbit experiments indicate that a dose of 6 mg. is necessary to secure prompt results. In suspected blood stream infections, arsphenamin may be given immediately after a culture has been taken in order to avoid the delay incident to waiting for a laboratory report.

Two Hundred and Ten Fibroid Tumors Treated by Radium

DR. HOWARD A. KELLY, Baltimore: Radium treatment, which is without danger and which is found effective in 93 per cent. of the cases, should be preferred to operation, which is, after all, a major operation of mutilating character offering considerable risk to life and health. The accomplishments of radium in this class of cases are: 1. Control of hemorrhage and checking of menstruation. 2. The shrinkage of the tumors. 3. In many instances the disappearance of the tumors. 4. In some cases, even after two years, the return of menstruation, either normal or scanty. There has been no mortality associated with the treatment of 210 consecutive cases. In 182 cases the results are known. In 171 radium alone was sufficient to relieve the patient. The tumor was either gone or markedly diminished, or the patient was symptomatically well. In five of the remaining eleven cases, some complicating condition was present (ovarian cyst, gallstones, calcified uterus); in two cases operation was preferred to further treatment; in three cases operation was found not to have been necessary, as the tumor had decreased under treatment; one case proved resistant to prolonged treatment. Nine of the eleven patients were operated on. If radium fails, the operation has simply been postponed without detriment to the patient. Menopausal symptoms are usually not severe. In 50 per cent. of the cases, no menopausal symptoms are complained of; in slightly more than 25 per cent. they are moderate and in slightly less than 25 per cent. they are marked.

Cancer of the Cervix Complicating Triplet Pregnancy

DR. BENJAMIN P. WATSON, Toronto: In a quintipara, aged 30, a large cauliflower carcinoma was found growing from the anterior lip of the vaginal portion of the cervix. The abdomen was opened, the uterus incised, and three 5-month fetuses removed, and then three separate placentas connected by membrane. A Wertheim operation was done. The patient made a good recovery.

The Graduate Degree in Obstetrics and Gynecology

DR. JENNINGS C. LITZENBERG, Minneapolis: The Minnesota plan for graduate work in the medical specialties is new, but new only in its application to medicine. The plan simply applies the principles governing university graduate work in any other branch of advanced learning to the medical branches, and places them not only under the same principles but actually in the graduate school of the university. The requirements for entry are a college degree, a medical degree, a thorough reading knowledge of French and German, and an internship of at least one year. The course extends over three years of work with a major and a minor, the same as for candidates for other advanced degrees, and examinations are held by a graduate faculty. A thesis, which must be an original contribution to science, is required and must be defended. This leads to the degree of Doctor of Philosophy in Obstetrics and Gynecology. A two years' course may lead to Master of Science. It is a plan to raise to a high level the training of specialists.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

*One Hundred and Twelfth Annual Meeting, held at Albany,
May 21-23, 1918*

The President, DR. ALEXANDER LAMBERT, in the Chair

- Diagnosis of Nephritis

DR. ALBERT A. EPSTEIN, New York: A diagnosis of nephritis is confronted with two distinct problems: First, the determination of the pathologic processes involved, and, second, the evaluation of the kidney function. An accurate diagnosis of nephritis, therefore, entails a circumspect and complete analysis of all the morbid conditions present; the probable etiologic factors involved, the disturbance in function and other disorders which arise therefrom. To regard nephritis as an independent condition is a fallacy. The problem in the diagnosis of acute nephritis is essentially different from that of chronic nephritis. A consideration of the etiologic factors involved is very important; they are usually bacteria or their toxins, or, as I believe to be the case with certain subacute types, constitutional disorders of metabolic or endocrine origin. The existence of acute nephritis, excepting of course the chemical nephritides and the types occurring in pregnancy, point usually to an antecedent infection. But renal disorders with urinary signs frequently occur in febrile diseases of all kinds, which do not represent true nephritis, and thus the problem of differentiation often arises. In the latter group of cases the signs usually are not so pronounced. There is an albuminuria, at times, with casts. Functional disorders also arise. But there is not, as a rule, that marked evidence of renal involvement such as is found in the true cases of nephritis, nor does the disturbance last much beyond the duration of the febrile state. The difference is, perhaps, arbitrary and only one of degree. In the matter of chronic nephritis, the problem of etiology as a source of information is much more difficult. No doubt in a certain number of cases a history of acute nephritis or recurring infections may be elicited, and a diagnosis made; but the connection between the two is not always clear. Chronic poisoning, tuberculosis or syphilis may be contributory factors and require consideration in the diagnosis. There is one difficulty that presents itself from the clinical side in investigating the question of the connection between acute, subacute and chronic nephritis, and that is, that acute and subacute nephritis may appear without the development of symptoms other than the urinary signs during any infection. Furthermore, in the chronic nephropathies it is the possibility and the frequent occurrence of compensatory processes that create difficulty in arriving at a diagnosis. This is particularly true when the question is viewed from the functional standpoint. In the application of functional tests in the diagnosis of nephritis, two points should be borne in mind, namely, that a number of the different functional tests should be made and that they should be repeated in each and every case. As a prerequisite to the proper interpretation of the results obtained by functional tests, extrarenal factors that are capable of modifying or influencing them should be excluded.

Congenital Hydronephrosis

DR. JOHN T. GERAGHTY, Baltimore: There is a group of cases which has been puzzling practitioners for years. I refer principally to so-called primary hydronephrosis. The term "primary" has been used in these cases because there has been no etiologic factor that can be determined easily as the cause of this hydronephrosis. Many of the cases have been considered congenital, and until recently physicians have been of the opinion that most of the cases in which we can actually determine any cause for the extreme process are congenital. Recent studies, however, have shown that we are wrong. Two types of aberrant vessels are most apt to cause hydronephrosis. In one instance the vessels arise from the aorta behind the ureter and enter into the lower surface of the kidney at its lower pole. In the second case the vessel arises from the vena cava, crosses the anterior surface of the ureter, and enters the posterior surface of the

kidney. These two conditions give rise to a condition that produces obstruction. In a series of fifteen cases, I was able to find aberrant vessels as the cause of hydronephrosis in only two. The vessel crossed at the ureteropelvic junction. Marked kinking of the ureter or pressure of a vessel crossing over the ureter is not sufficient to produce hydronephrosis. However, in some cases of unusual mobility in which the kidney drops down over the aberrant vessel, that vessel may play an important rôle. Even though aberrant vessels are found, it is well to bear in mind that may not be the primary cause. There may be other factors that play a causal rôle. Renal mobility is put forward as a common cause, and most urologists give it first place. In my experience it has been the most common cause of hydronephrosis.

In a series of fifteen cases, nephrectomy was performed in ten. In three cases plastic procedures were carried out, and in two cases aberrant vessels were divided. In a study of these ten cases, with one exception there was found at the ureteropelvic juncture, or in the upper part of the ureter, an inflammatory infiltrate. Most of these cases were considered congenital beforehand, but sections through the ureter in studying the pelvis showed varying amounts of infiltration.

The diagnosis of hydronephrosis is not difficult. It is possible to make a diagnosis of hydronephrosis by pyelography and to demonstrate the exact point where the hydronephrosis begins. In most cases the kidney is destroyed when the patient is first seen. At any rate, it is either badly infected or the kidney is destroyed. Nephrectomy is the proper treatment.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

April, 1918, 74, No. 4

- 1 Psychiatric Family Studies. A. Myerson, Boston.—p. 497.
- 2 *Examination of Regiment, U. S. Army, for Nervous and Mental Diseases. K. M. Bowman.—p. 555.
- 3 Impulsive Acts in Particular Form of Swallowing Foreign Objects, as Met with Among Insane. A. W. Hoisholt, San Francisco.—p. 569.
- 4 Drink and Its Control in Relation to Work and Health in Great Britain. R. A. Jones.—p. 579.
- 5 Study of Cases of Manic Depressive Psychosis Arising After Age of Forty. R. L. Whitney, Waverly, Mass.—p. 587.
- 6 Value of Outpatient Work Among Insane. A. W. Stearns, Boston.—p. 595.
- 7 *Results in Treatment of Paresis by Inunctions of Mercury and Drainage of Cerebrospinal Fluid. A. D. Finlayson, Warren, Pa.—p. 603.
- 8 Influence of Wars on Psychology of Times. C. K. Mills, Philadelphia.—p. 625.
- 9 Receiving Unit of State Hospital at Howard, Rhode Island. A. H. Harrington.—p. 635.
- 10 Sociologic, Neurologic, Serologic and Psychiatric Study of Group of Prostitutes. J. Don Ball and H. G. Thomas, Oakland, Calif.—p. 647.
- 11 So-Called Lucid Interval in Manic Depressive Psychoses. Its Medicolegal Value. A. Gordon, Philadelphia.—p. 667.

2. Examination of Regiment in Army for Nervous and Mental Diseases.—In all, 1,189 cases were examined. There were 647 cases, or 54.5 per cent., negative in every way; 542 cases, or 45.6 per cent., showed positive findings; 117 cases gave positive family histories of nervous and mental disorder, and in 40 of these cases all other findings were negative. There were 57 cases which gave positive personal histories of nervous and mental disorder, and in none of these cases were all other findings negative; 475 cases positive findings from the neurologic and mental examination and in 367 of these cases all other findings were negative. The 117 cases of positive family histories afforded the following data: Nervousness, 54, in which 37 were of the mother, 5 of the father, 6 of one brother or sister, 6 of two or more brothers

and sisters. Fainting attacks, 10, in which 2 were of the mother, 2 of the father, 3 of one brother or sister, 2 of two or more brothers and sisters, 1 of grandparent. Epilepsy, 19, in which 3 were of the mother, 2 of the father, 10 of one brother or sister, 2 of two or more brothers and sisters, 2 of uncle or aunt. Goiter, 23, in which 8 were of the mother, 2 of the father, 13 of one brother and sister. Insanity, 5, in which 4 were of the mother, 1 of one uncle or aunt. Chorea, 3, in which 2 were of one brother or sister and 1 of one uncle or aunt. Miscellaneous, 3. The 57 cases of positive personal histories yielded the following: nervousness, 39; fainting attacks, 4; epilepsy, 8; chorea, 4; miscellaneous, 2.

The 475 cases with positive neurologic and mental findings ran as follows: 69 cases showed sufficient evidence of mental deviation to warrant further examination; 59 of these were classed as possible mental defectives, 15 of whom were negative in every other way; 10 were classed as possibly unstable emotionally. Only a few of the most important neurologic findings need be given: 71 cases showed the presence of several stigmata of degeneration; 112 cases showed pupillary changes; 93 cases showed thyroid changes; 108 cases showed knee-jerk changes; 126 cases showed the presence of tremors; 106 cases showed tremors of the fingers; 14 cases showed a slight stuttering or stammering; 35 cases showed combination of alteration of pupils and alterations of jerks and tremors. In the second examination, 144 cases were studied. The Wassermann test was done on 47 of these cases; the Binet test in 25; 27 were recommended for discharge. The diagnoses in these cases were as follows: defective mental development, 6; defective mental development and epilepsy, 3; defective mental development and constitutional inferiority, 3; defective mental development and constitutional inferiority with psychosis, 3; chorea, 3; exophthalmic goiter, 3, and exophthalmic goiter and defective mental development, 1.

7. Treatment of Paresis by Mercury.—Fourteen paretics, who had been showing symptoms from nine months to several years, received daily inunctions of mercurial ointment, 50 per cent. Every tenth day a lumbar puncture was made and from 20 c.c. to 40 c.c. of fluid withdrawn, the amount depending on the pressure and the rapidity of the flow. A Wassermann reaction was done, using the blood serum; a globulin test, cell count, Lange's colloidal gold test, Wassermann reaction and a chemical test to determine the presence of mercury were done, using the fluid. In seven, or 50 per cent., of the cases the blood Wassermann became negative and remained so for varying periods of time; one case had a negative blood at the time of admission and it remained so throughout the period of observation. In six, or 43 per cent., of the cases the spinal fluid became negative and remained so for varying periods of time. In no instance did the blood or spinal fluid become negative and remain so. All cases had negative globulin tests at one or more examinations; but, with the exception of one case, more positives than negatives were obtained. The cell count showed an irregular decrease in all instances. In four, or 28 per cent., of the cases the colloidal gold became negative, that is, was neither paretic nor syphilitic in type, but all showed "paretic curves" at some later examination. After fifteen months' treatment a trace of mercury was found in 500 c.c. of grouped spinal fluids. No mercury was found on previous examinations. One case showed a good remission mentally, but all the serologic findings remained strongly positive. Another case did not improve quite as much, but approached a state termed a remission, and has shown some negative serologic findings. The remaining twelve cases showed no greater mental or physical changes than would be found in a similar group of untreated cases. Finlayson emphasizes the fact that the lack of correlation between the serologic findings and mental conditions leaves little ground on which to base definite conclusions as to the value of the treatment.

American Journal of Physiology, Baltimore

May, 1918, 46, No. 2

- 12 *Regulation of Renal Activity. Regulation of Urea Excretion by Epinephrin. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 39.

- 13 *Id. Regulation of Urea Excretion by Pituitary Extract. T. Addis, G. D. Barnett and A. E. Shevsky, San Francisco.—p. 52.
- 14 Activation of Muscle Catalase by Liver. T. C. Burnett, San Francisco.—p. 63.
- 15 *Muscular Strength and Muscular Symmetry in Human Beings. E. G. Martin, Boston.—p. 67.
- 16 *Regulation of Renal Activity. Effect of Epinephrin and Pituitary Extract on Action of Kidney Under Strain. T. Addis, M. G. Foster and G. D. Barnett, San Francisco.—p. 84.
- 17 Relation of Suprarenals to Piqure Hyperglycemia and to Glycogen Content of Liver. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 90.
- 18 *Normal Mechanism for Control of Oxidation in Body. W. E. Burge and A. J. Neill, Urbana, Ill.—p. 117.

12. Regulation of Urea Excretion by Epinephrin.—The authors found that the subcutaneous injection of epinephrin is followed by an increase in the urea excreting activity of the rabbit's kidney. There is a certain amount of epinephrin which produces the greatest increase in function. Smaller amounts have less and less effect until there is no change from the normal. With larger amounts the augmenting effect on secretion also becomes less until, with relatively large doses the reverse effect of a decrease in function is found. Except with these large amounts the rate of urea excretion is more rapid than in animals not given epinephrin in spite of a lowering of the blood urea concentration.

13. Regulation of Urea Excretion by Pituitary Extract.—The subcutaneous injection of pituitary extract was followed in all effective amounts by a decrease in the urea excreting activity of the rabbit's kidney. The rate of urea excretion is slower than in animals not given pituitary extract, although the blood urea concentration is higher.

15. Muscular Strength and Muscular Symmetry in Man.—Strength tests by means of a spring balance method were made by Martin on 240 children between the ages of 5 and 18 years. The average percentage distribution of the strength among the muscles of the body was determined for each age. These percentage distributions are proposed as standards of muscular symmetry in children.

16. Effect of Epinephrin and Pituitary Extract on Action of Kidney Under Strain.—At high blood urea concentrations the degree of change in the urea excreting activity of the kidney produced by epinephrin and by pituitary extract is less than at low blood urea concentrations.

18. Mechanism for Control of Oxidation in Body.—Burge and Neill state that ingestion of the foodstuffs increases the catalase of the blood and hence of the tissues parallel with the increase in heat production. The increase in catalase is due mainly to the stimulating effect of the absorbed foodstuffs on the liver. The ingestion of protein, in keeping with its greater stimulating effect on heat production, produces a greater increase in catalase than fat or carbohydrate. After the removal of the liver from the body of an animal, the liver cells continue to liberate catalase for about two hours, due presumably to the stimulating effect of the dextrose formed from the glycogen.

American Journal of Public Health, Boston

May, 1918, 8, No. 5

- 19 History of American Public Health Association. P. H. Bryce, Ottawa.—p. 327.
- 20 Public Health Publicity and Education Through Public Schools. I. S. Wile, New York.—p. 336.
- 21 Publicity in Health Matters a Public Right. O. Dowling, New Orleans.—p. 341.
- 22 Public Health Education and Family Magazine. C. E. Terry and F. Schneider, Jr., New York.—p. 345.
- 23 Service of State Public Health Laboratories in Time of War. H. Albert, Iowa City, Iowa.—p. 349.
- 24 Control of Typhoid in Chicago. H. Spalding and H. N. Bundesen, Chicago.—p. 358.
- 25 Practical Standards for Factory Illumination. L. B. Marks, New York.—p. 363.
- 26 Effect of War on Production of Garbage and Methods of Disposal. I. S. Osborn.—p. 368.
- 27 Practical Aspects of Dehydrated Foods. L. P. Brown, New York.—p. 372.
- 28 Physical Preparedness. G. B. Young, Norfolk, Va.—p. 375.

American Journal of Syphilis, St. Louis

April, 1918, 2, No. 2

- 29 Syphilis of Stomach; Report of Forty Cases. G. B. Eusterman, Rochester, Minn.—p. 205.

- 30 Syphilis at Pyloric Sphincter of Stomach. P. Eisen, Chicago.—p. 220.
- 31 Some Differential Points Between Cancer and Syphilis of Stomach. G. M. Niles, Atlanta, Ga.—p. 222.
- 32 Syphilis of Lungs. M. F. Morris, Jr., Chelsea, Mass.—p. 231.
- 33 Leukoplakia of Tongue. D. W. Montgomery, San Francisco.—p. 237.
- 34 Syphilis of Inner Ear and Eighth Nerve. G. W. MacKenzie, Philadelphia.—p. 241.
- 35 History of Cerebrospinal Fluid. A. Levinson, Chicago.—p. 267.
- 36 Parasitology and Serology of Syphilis. A. Keidel, Baltimore.—p. 276.
- 37 Preparation of Colloidal Gold Solution. J. H. Black and L. Rosenberg, Dallas, Texas.—p. 288.
- 38 Bruck's Nitric Acid Test. H. J. Farbach, Louisville, Ky.—p. 292.
- 39 Roentgenology of Syphilis. R. D. Carman, Rochester, Minn.—p. 297.
- 40 Diagnosis and Treatment of Syphilis in Men. H. Goodman, New York.—p. 344.
- 41 Early Syphilis as Public Health Problem. W. J. Heimann, New York.—p. 365.

Georgia Medical Association Journal, Augusta

May, 1918, 8, No. 1

- 42 Army in Relation to Tuberculosis Problem. G. E. Bushnell.—p. 1.
- 43 Some Principles Involving Treatment of Infected Wounds. J. C. Bloodgood.—p. 9.

Journal of Biological Chemistry, Baltimore

May, 1918, 34, No. 2

- 44 Method for Detecting Small Quantities of Chloretone (Trichloro-tertiarybutyl Alcohol) in Aqueous Solutions. T. B. Aldrich, Detroit.—p. 263.
- 45 Suprarenals in Relation to Carbohydrate Metabolism. Influence of Repetition of Epinephrin Injection on Intensity of Glycosuria and Hyperglycemia and Glycogen Content of Liver. S. Kuriyama, New Haven, Conn.—p. 269.
- 46 Id. Influence of Suprarenalectomy on Glycogenetic Power of Liver. S. Kuriyama, New Haven, Conn.—p. 287.
- 47 Id. Epinephrin Content of Suprarenals in Various Experimental Conditions. S. Kuriyama, New Haven, Conn.—p. 299.
- 48 Physiologic Behavior of Raffinose. S. Kuriyama, New Haven, Conn.—p. 321.
- 49 *Blood Dextrose as Affected by Morphin and Morphin with Ether Anesthesia. E. L. Ross, Chicago.—p. 335.
- 50 Determination of Various Forms of Nitrogen in Bovine Flesh, Including Products of Hydrolysis of Some of Proteins. Hexone Bases of Some Flesh Proteins. W. E. Thrun and P. F. Trowbridge, Columbia, Mo.—p. 343.
- 51 Id. Bromination of Hydrolysates of Some Beef Flesh Proteins. W. E. Thrun and P. F. Trowbridge, Columbia, Mo.—p. 355.
- 52 Basis of Measurement of Antagonism. W. J. V. Osterhout, Cambridge, Mass.—p. 363.
- 53 Determination of Hemoglobin During Infancy by Palmer and Van Slyke Methods. V. B. Appleton, New York.—p. 369.
- 54 Monthly Metabolism of Nitrogen, Phosphorus and Calcium in Healthy Women. H. C. Sherman, L. H. Gillett and H. M. Pope, New York.—p. 373.
- 55 Nutritive Value of Maize Protein and on Phosphorus and Calcium Requirements of Healthy Women. H. C. Sherman, L. Wheeler and A. B. Yates, New York.—p. 383.
- 56 Influence of Neutral Salts on Viscosity of Gelatin Solutions. J. Loeb, New York.—p. 395.
- 57 Effects of Electrolytes on Gelatin and Their Biologic Significance. W. O. Fenn, Boston.—p. 415.
- 58 *Stizolobin, Globulin of Chinese Velvet Bean, Stizolobium Niveum. C. O. Johns and A. J. Finks, Washington, D. C.—p. 429.
- 59 Globulin of Buckwheat, Fagopyrum Fagopyrum. C. O. Johns and L. H. Chernoff, Washington, D. C.—p. 439.
- 60 *Production of Glycosuria by Zinc Salts. W. Salant and L. E. Wise, Washington, D. C.—p. 447.
- 61 Distribution and Elimination of Zinc and Tin in Body. W. Salant, J. B. Rieger and E. L. P. Treuthardt, Washington, D. C.—p. 463.

49. Effect of Morphin and Ether on Blood Dextrose.—A series of animals was subjected to the action of morphin injected subcutaneously and ether administered in an air mixture. These drugs were applied alone and together and in different orders. Blood dextrose determinations were made at various intervals. The data obtained lead Ross to the following conclusions: 1. Morphin administered hypodermically to dogs in doses of 10 mg. per kilogram of animal produced an average increase of 59 per cent. in the blood sugar in half an hour, 66 per cent. in 45 minutes, and 77 per cent. in an hour and a half. 2. Ether, given after morphin has been acting for half an hour, does not cause as much increase in blood sugar as if the morphin had not been used. However, the final degree of hyperglycemia is approximately the same, either with or without morphin.

58. **Stizolobin, Globulin of Chinese Velvet Bean.**—The globulin of the Chinese velvet bean has been isolated by Johns and Finks and analyzed. This protein has been named stizolobin. The basic amino acids in stizolobin have been determined by the method of Van Slyke. Analyses indicate that stizolobin contains all the basic amino acids known to exist in proteins. The lysin content is 8.27 per cent. of the protein. Tryptophane is also present. The free amino nitrogen in stizolobin has been found equal to very nearly one half of the lysin nitrogen as determined by the Van Slyke method.

60. **Glycosuria and Zinc Salts.**—The essential facts established by Salant and Wise are as follows: When zinc malate was injected intravenously into rabbits, glycosuria and hyperglycemia appeared, the presence of sugar in the urine as well as its increased amount in the blood being observed in well fed and in fasting animals; when sucrose was fed glycosuria was produced more easily. Glycosuria was also produced by subcutaneous injections and after the administration of zinc malate or acetate per os, but much larger doses were required. The amount of sugar in the urine was never large, being usually about 0.35 per cent., or less, in rabbits, but much larger averages were found in the urine of cats. Albuminuria, which in some cases became very pronounced, was likewise observed after administration of zinc salts, and it appeared either simultaneously with or before the glycosuria and lasted sometimes until the animal died. The duration of the glycosuria was about one to four days and also appeared irregularly in some experiments. Glycosuria, as well as albuminuria, was frequently absent in carrot-fed rabbits. When calcium chlorid was injected intravenously, immediately after or before zinc malate, glycosuria was slightly increased. The rate of secretion of urine was either diminished or remained unchanged after the administration of zinc salts. In a few cases only was the amount of urine augmented after the zinc. It appears, therefore, that some of the effects produced by zinc salts are analogous to those caused by the administration of other heavy metals.

Journal of Cancer Research, Baltimore

April, 1918, 3, No. 2

62 Cancerous Diseases in Norway. F. G. Gade.—p. 107.

63 *Some Phases of Radium Action with Special Reference to Hematopoietic System. J. A. P. Millet and T. Mueller, New York.—p. 127.

64 *Influence of Heat and Radium on Induced Immunity against Transplanted Animal Tumors. G. L. Rohdenburg and F. D. Bullock, New York.—p. 181.

65 *Fluctuations in Growth Energy of Malignant Tumors in Man, with Especial Reference to Spontaneous Recession. G. L. Rohdenburg, New York.—p. 193.

63. **Action of Radium on Hematopoietic System.**—The blood of ten cases of squamous cell carcinoma of the cervix uteri and vagina has been studied by Millet and Mueller in order to ascertain the immediate and remote effect of radium and roentgen-ray treatments on the formed elements of the blood. They found that the immediate effects of radium on the blood are not altered qualitatively by previous roentgen-ray or radium treatments, although the quantitative action may be somewhat diminished during a second treatment. The remote effects of radium on the blood are essentially similar to the effects of combined roentgen-ray and radium treatment. Individual slight differences in response to radium applications are often noted to occur again on a second application in the same individual. The immediate effects of radium on the blood are the following: (a) An immediate drop in total white count, reaching its maximum from one half to six hours after the application. (b) A return of the total white count to its former level within twenty-four hours after the application, usually within the first twelve hours. (c) An occasional secondary rise of the total white count to a point well above its original level from twelve hours to three days after the application. (d) A close adherence of the total polymorphonuclear count to the curve of the total white count. (e) An absence of characteristic changes in the total lymphocyte and total large mononuclear counts. (f) A tendency of the total lymphocyte count to follow in some degree the fluctuations of the total white count, espe-

cially when these are marked. This effect is not constant (g) A tendency of the relative lymphocyte count to drop, and of the polymorphonuclears to rise during the course of treatment. This tendency is reversed during the period immediately following the removal of the radium.

Remote effects of radium treatment on the blood are as follows: (a) Early. 1. Fall in lymphocyte count from two to four weeks after treatment, sometimes lasting till the end of the second month. 2. Fall in polymorphonuclears after treatment, sometimes simultaneous with the fall in lymphocytes but usually coming later and being less striking. 3. An attempt of the lymphocytes to recuperate, as shown by a rise in most cases at some later date, varying from three to nineteen weeks after treatment, to the approximate level seen before treatment. (b) Late. 1. Change in the relative counts as the patient's resistance weakens, with increase in polymorphonuclears and decrease of lymphocytes, but without leukocytosis. 2. Terminal leukocytosis, due in the main to increase of the absolute polymorphonuclear count, although usually accompanied by an absolute decrease in lymphocytes.

64. **Heat and Radium Action on Immunity Against Transplanted Animal Tumors.**—None of the results obtained by Rohdenburg and Bullock in their experimental work lead in any way to the conclusion that the improvement described in human cancer under radium treatment is due to the stimulation of autologous cells, or that benefit is to be expected by radiumization and previous or subsequent injection of homologous lymphoid tissue. Even though the tumors employed in the experiments had been cured, the results could not have been transferred to man, where the problem is to cure a spontaneous (as distinguished from a transplanted) neoplasm.

65. **Fluctuations in Growth Energy of Malignant Tumors.**—The literature of cancer is rich in reports of the recession of malignant tumors after one or another type of medical treatment, the particular therapeutic procedure which is supposed to have brought about the recession in each case being at once hailed as a "cure," only to give rise to failure and disappointment when tried out on a large group of cases. It is probable, therefore, that the isolated cases referred to are really spontaneous recessions and not therapeutic cures. With the idea of emphasizing the frequency of variations in the growth energy of human tumors, and at the same time of seeking further facts bearing on these variations in proliferative activity, the cases of marked recession or spontaneous cure recorded in the literature have been summarized by Rohdenburg, additional cases added, and the entire material subjected to analysis from the standpoint of his present knowledge of experimental cancer. It is concluded that recession of a malignant growth can occur in either sex, at any age period, with any type of malignant tumor, and irrespective of the location of the growth. It occurs after a variety of conditions, a proof that no particular one is specific, and it is very probable that all the conditions noted are preliminary, so to speak, and act by depressing the proliferative energy of the malignant cell until the defensive forces of the body (cytotoxins, cytolytics) are able to accomplish the final destruction. It appears that the most efficacious of all the many conditions which can bring about regressive change is heat, applied from without or occurring under the limited conditions of long duration and comparatively low degree. Including three personal observations recorded in this paper, Rohdenburg has been able to collect a total of 302 cases in which recession, either temporary or permanent, has occurred in a malignant growth. The chief lesson to be learned from the summary of cases here presented is that occasionally, perhaps with greater frequency than is ordinarily imagined, a malignant tumor will spontaneously recede. That such a regression does ever occur suggests that there may be found some method of bringing it about at will, even though this cannot be accomplished at the present time. Rohdenburg says that the occurrence of partial or complete spontaneous recession should make one very critical in judging new therapeutic procedures, that they may not be credited falsely with the results produced by forces of the nature of which we are for the present entirely ignorant.

Journal of Laboratory and Clinical Medicine, St. Louis

May, 1918, 3, No. 8

- 66 *Pathology of Skin Lesions Produced by Mustard Gas Dichlorethylsulphid). A. S. Warthin and C. V. Weller, Ann Arbor, Mich.—p. 447.
- 67 *Discussion of Lipoids Concerned in Growth; Action of Tethelin. E. L. Barney, San Francisco.—p. 480.
- 68 Gonococcal Action of Protein Silver Solution in Vitro. H. Culver, Chicago.—p. 487.
- 69 Demand for and Training of Laboratory Technicians. J. A. Kolmer, Philadelphia.—p. 493.
- 70 Hoover's Diagnostic Signs Elicited from Movements of Ribs. R. G. Pearce, Cleveland.—p. 497.

66. **Skin Lesions Produced by Mustard Gas.**—This investigation concerns itself solely with the study of the gross and microscopic pathology of the cutaneous lesions produced in man and animals by the direct application of the liquid. The human material was obtained from auto-application, amputation material with consent of the patient, and accidental chemical laboratory lesions. Dichlorethylsulphid (mustard gas) is an escharotic, specific in its action on the epidermis and tissues of corium, particularly on the endothelium of the vessels. The lesion is a chemical burn unlike that produced by heat, electricity, or the ordinary corrosives such as sulphuric, nitric, and hydrochloric acids or strong alkalis. Of all these agents, the effects are most closely allied to those of hydrochloric acid, but are much greater in intensity. It differs from a heat burn in the absence of thrombosis, in the greater degree of fluid exudation, in the greater moistness of the affected area, and in the fact that the necrosis, as shown by the loss of nuclei, requires hours, or even days, for its complete development. The coagulated, shrunken and cooked appearance of the tissues in heat burns is not apparent in the tissues of mustard gas burns. The vessels in the affected area are severely damaged and collapsed and there is a local anemia in the earlier stages, with a marked fluid exudation and leukocyte migration. The process is nonhemorrhagic and nonthrombosing.

In man the necrosis of the epidermis is usually evident in two hours through the hydropic change in the epithelium and early vesicle formation. There is no deep edema. It is confined to the epidermis, and to the papillary layer in the early stages. In animals the intense and deep edema is most striking and altogether different from that seen in man. Vesicle formation was not noted by us in animals. The deep penetration of the smallest quantities applied to the surface is a most striking feature. There is an undoubted entrance through the hair follicles, sebaceous and sweat glands. The slowly progressive character of the necrosis is a specific characteristic, the height of the necrosis being reached five to ten days after application. This may, in part, be explained by contraction and death of the vessels with resulting anemia in the affected area. The painlessness of the lesion is also a marked characteristic. This may be explained by the edema and degeneration of the nerve endings in the affected portion. In none of the animals was there any conjunctivitis or irritation of the respiratory tract produced by the cutaneous applications.

The authors conclude that there is no evidence of metastasis from the local lesion, as claimed by both Meyer and Haldane. The authors believe that the conjunctival and respiratory lesions are due alone to the direct action of mustard gas, and when animals are protected from the vapor no lesions in these organs will result, no matter how severe the skin burn. Contrary to the statements of certain English and French observers, the admixture of water does not increase the escharotic action, but if the oil is immediately washed away, the lesion is greatly reduced in intensity. Washing within two minutes with tincture of green soap may entirely prevent the lesion or result in only a slight hyperemia. The authors believe that the lesions observed in the axilla, between the fingers and toes, around the genitals and between the thighs of men gassed in action are probably due to the greater moisture of these parts from perspiration and the resulting resolution of the gas. The slow healing is probably chiefly due to the vessel injury and the relatively slight leukocytic demarcating infiltration. In this respect the lesion is strikingly like a roentgen-ray burn of the skin.

67. **Lipoids Concerned in Growth; Action of Tethelin.**—Evidence is advanced by Barney of the efficiency of tethelin in the treatment of chronic ulcers.

Laryngoscope, St. Louis

May, 1918, 28, No. 5

- 71 Cartilaginous Tumors of Larynx. G. B. New, Rochester, Minn.—p. 367.
- 72 Decompression Operation on Hypophysis by Nasal Route. O. J. Stein, Chicago.—p. 376.
- 73 *Vaccine Treatment of Ozena. O. Glogau, New York.—p. 380.
- 74 Aphasia. M. K. Scripture, New York.—p. 408.
- 75 Defective Speech and Some of Its Phases. M. S. Ersner, Philadelphia.—p. 416.

73. **Vaccine Treatment of Ozena.**—In Glogau's opinion ozena as characterized by foul odor and yellowish crusts, is not a clinical entity and is therefore not caused by a specific organism such as the Perez bacillus. In those cases in which the coccobacillus fetidus Perez is found, there has been transmitted directly or indirectly from the animal's nose (dog, rabbit, etc.) the bacillus bronchisepticus, the causative germ of distemper, on a previously predisposed soil of atrophied and, therefore, abnormally functioning nasal mucous membrane. The Perez bacillus has never been found in a normal nose and even not in one showing atrophy without crust formation and fetor. Crustation is due to the stagnation of secretion in an enlarged cavity. Only within these decomposing crusts, presenting an offensive odor, have those bacilli been found that have been claimed by different investigators as being the etiologic factors of ozena. Transient improvement in crust formation and fetor is found not only by the much heralded Perez vaccine, but also by any stock vaccine of staphylococci, streptococci, Abel bacillus, Friedländer bacillus, etc., if these germs happen to be present in the crusts. Strong antiseptic and germicidal local applications after thorough and regular cleansing will have a similar transient positive effect on both crusts and fetor. The crux in the treatment of what is called ozena lies in the fact that the atrophy of the nasal mucous membrane and its underlying structures is the primary condition and that this atrophy will therefore never be cured by any vaccine treatment whatsoever.

Medical Record, New York

June 1, 1918, 93, No. 22

- 76 Primary Cause of Shock. F. B. Turck, New York.—p. 927.
- 77 Broken Noses, Their Pathology and Treatment. W. W. Carter, New York.—p. 940.
- 78 Carrel-Dakin Treatment; Its Application in Surgery in Civil Practice. M. W. Ware, New York.—p. 942.
- 79 Some Recent Studies in Percussion and Auscultation in Pulmonary Tuberculosis. M. Grossman, Brooklyn.—p. 944.
- 80 True Pruritus Ani; Its Association with Pyorrhea Alveolaris. E. J. Clemons, Los Angeles.—p. 945.

New Orleans Medical and Surgical Journal

June, 1918, 70, No. 12

- 81 Removal of Tonsils and Adenoids Under Local Anesthesia. S. M. Blackshear, New Orleans.—p. 891.
- 82 Cerebrospinal Meningitis, Especially Eight Cases in One Family. R. B. Wallace, Alexandria.—p. 893.

New York Medical Journal

June 1, 1918, 107, No. 22

- 83 Use a Specific for Every Pathogenic Micro-Organism. E. H. Ochsner, Chicago.—p. 1009.
- 84 Treatment of Hay Fever and Asthma by Pollen Extracts and Bacterial Vaccines. W. Scheppegehl, New Orleans.—p. 1016.
- 85 Infection of Children with Tubercle Bacillus. E. M. Sill, New York.—p. 1018.
- 86 Diagnostic Kinks in Infectious Diseases. S. D. Hubbard, New York.—p. 1021.
- 87 Gallstones. S. Weiss, New York.—p. 1022.
- 88 Polyglandular Disease; Report of Case. M. H. Frantz, New York.—p. 1028.
- 89 Cardiovascular Problem of Draft. H. Brooks, New York.—p. 1034.

South Carolina Medical Association Journal, Greenville

May, 1918, 14, No. 5

- 90 Work of Medical Advisory Board in Draft. K. M. Lynch, Charleston.—p. 119.
- 91 Epidemiology of Cerebrospinal Meningitis. J. A. Hayne, Columbia.—p. 123.
- 92 Consideration of Proper Management of Obstetric Engagements in Sparsely Settled Districts. D. H. Smith, Glenn Springs.—p. 127.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

May, 1918, **26**, No. 5

- 93 Cerebellar Localization. G. W. Robinson, Kansas City, Mo.—p. 97.
- 94 Treatment of Cerebrospinal Syphilis. R. Bolend, Oklahoma City.—p. 103.
- 95 Treatment of Spinal Tuberculosis. E. D. Ebright, Wichita, Kans.—p. 105.
- 96 Pneumonia. F. H. Clark, El Reno.—p. 107.

Washington Medical Annals, Washington, D. C.

May, 1918, **17**, No. 3

- 97 Treatment of Eye with Ductless Gland Products. S. B. Mun-caster, Washington, D. C.—p. 187.
- 98 *Case of Cyst of Femur. J. A. Gannon, Washington, D. C.—p. 193.
- 99 Case of Aneurysm of Ascending Aorta, Involving Innominate and Proximal Portions of Right Subclavian and Common Carotid. C. B. Conklin, Washington, D. C.—p. 196.
- 100 Early Diagnosis and Treatment of Syphilis of Central Nervous System. J. E. Lind.—p. 198.
- 101 Charles Lamb and His Melancholia. D. S. Lamb, Washington, D. C.—p. 202.
- 102 Food Conservation. L. E. Kress, Washington, D. C.—p. 212.

98. **Cyst of Femur.**—Gannon's patient, a man, aged 65, was admitted to the hospital with extensive gangrene of right foot; arteriosclerosis and endarteritis as predisposing causes, and exposure to cold as the exciting cause. Examination showed besides the gangrene, an enlargement of the femur where, as he stated, there had been a fracture seven years ago. Gannon amputated the gangrenous limb by sawing through the enlargement of the thigh, and divided exactly in half, what proved to be the cyst. It contained about a half ounce of straw-colored fluid and a thick connective tissue membrane which was readily peeled from the surrounding bone. The membrane was removed from the proximal portion of the bone and the stump was sutured in the usual manner.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 11, 1918, **1**, No. 2993

- 1 *Prophylactic Use of Quinin in Malaria. C. H. Treadgold.—p. 525.
- 2 Interlobar Empyema and Other Surgical Complications of Thorax. W. Broadbent.—p. 529.
- 3 Cholecho-Enterostomy for Constriction of Common Bile Duct Following Perforated Duodenal Ulcer. W. A. Sneath.—p. 531.
- 4 Case of Hematidrosis. C. T. Scott.—p. 532.
- 5 Intermittent Hematemesis Following on an Injury to Chest. A. H. D. Smith.—p. 533.
- 6 Phagocytic Response to Introduction of Bacteria into Clean Wounds. W. J. Wilson.—p. 533.
- 7 Perforating Wound of Heart; Death on Fifth Day. C. F. Wight-man.—p. 534.

1. **Prophylactic Use of Quinin in Malaria.**—Between the beginning of February and the end of April, 1917, Treadgold examined the various units of a certain division in Macedonia with a view to determining the proportion of men on duty who were infected with malaria. Smears from 540 men were stained and searched for parasites. Plasmodia were found in over 30 per cent. of the men who had been in Macedonia during the previous summer, while the altered differential leukocyte count suggested that over 60 per cent. of such men were in reality infected. Parasites were found in nearly 8 per cent. of men with no history of fever; if the increased hyaline count is regarded as evidence of infection, their number increases to over 37 per cent. Gametes were found in over 90 per cent. of the positive slides, and schizonts were also present in a large proportion. *P. vivax* was the common parasite found; *P. falciparum* was noticed on seven occasions, *P. vivax* being also present in four out of the seven; *P. malariae* was only diagnosed once. As to the prophylactic use of quinin in malaria, Treadgold says, that speaking generally, it may be stated that quinin prophylaxis is usually a bad investment for immigrants in the absence of protection against mosquito bites; taking one thing with another, the practice would in their case seem to be little more than a pious fraud, which has been perpetuated from one generation to the next simply because public opinion throughout the world has never been sufficiently enlightened to encourage

the working out of the problem on scientific lines. Clinical and theoretical considerations compel us to admit that the general course of the disease may be noticeably affected by the previous taking of quinin, and that the sum of such influences is frequently unfavorable. So far as the allied armies in Macedonia are concerned, there is every reason to suppose that quinin taken daily over periods of many months has increased the severity and chronicity of the disease in a certain proportion of cases. Taking one thing with another, the available evidence indicates that in Macedonia, at any rate, the disadvantages of quinin prophylaxis outweigh the advantages.

Dublin Journal of Medical Science

May, 1918, **145**, No. 557.

- 8 Treatment of Syphilis. T. P. C. Kirkpatrick.—p. 273.
- 9 Id. H. C. Donald.—p. 280.
- 10 Id. G. E. P. Meldon.—p. 286.
- 11 *Malaria; Its Treatment and Complications. W. F. Wicht.—p. 288.
- 12 New Femoral Index. J. R. D. Holtby.—p. 294.

11. **Treatment of Malaria.**—Wicht's line of treatment of malaria is as follows: As soon as there is evidence of an attack of fever he starts the patient off on 10 grains acetyl salicylic acid along with a diaphoretic mixture. He places him between blankets, and at the same time starts the administration of quinin. For the first ten days quinin is administered at the rate of 40 grains per day. It is then reduced to 30 grains and liquor arsenicalis is given at the rate of 5 minims daily. This treatment is continued in the foregoing manner for another ten days, then the quinin is reduced to 20 grains, and the liquor arsenicalis to 7½ minims per diem. Then the quinin is further reduced to 10 grains after another ten days of this treatment, but the dosage of the liquor arsenicalis remains the same. Finally the quinin is discontinued altogether after the expiration of another ten days. Wicht's treatment for chronic malaria is as follows: Starting off with antipyretics and quinin, in a manner similar to the treatment of acute cases, he continues by putting the patient through a course of arsenical preparation for four consecutive days. If the patient still shows malarial parasites in his peripheral blood he puts him back and gives him a further course of arsenic for six consecutive days. He continues driving the quinin in doses similar to those quoted for the ordinary acute infection.

Edinburgh Medical Journal

May, 1918, **20**, No. 5

- 13 Present Day Outlook on Tuberculosis. R. W. Philip.—p. 289.
- 14 Training of Student of Medicine.—Pathology and Medical Student. H. R. Dean.—p. 307.
- 15 Teaching of Pathologic Anatomy, with Special Reference to Clinical Medicine. I. Mackenzie.—p. 318.
- 16 *Pathology in General Practice. J. S. Edwards.—p. 329.
- 17 Teaching of Pathology. L. Smith.—p. 334.

* 16. **Pathology in General Practice.**—Edwards urges that: 1. Every graduate should have a thorough training in pathology, both theoretical and practical. This should be sufficient to allow him, should he find the opportunity, to carry out for himself not only routine laboratory work but also research. 2. Every general practitioner should have the right to laboratory report on any pathologic material, and this at no expense to himself or his patient. This should certainly include the right to the services of a competent pathologist to perform a postmortem examination in any case of interest. 3. Every provincial hospital should be provided with a fully equipped laboratory and a whole time pathologist. The only method of bringing pathology into active touch with the general practitioner is through the medium of the local hospital. All such local laboratories must be in intimate touch with the pathology department of some university, so that the more difficult examinations may be submitted for expert opinion.

Journal of Tropical Medicine and Hygiene, London

May 1, 1918, **21**, No. 9

- 18 Case of Trypanosomiasis with Other Protozoal Infections Contracted in Cameroons; Relationship of Filaria Diurna with Calabar Swellings. P. W. B. Smith.—p. 93.

Practitioner, London

May, 1918, 100, No. 5

- 19 Influence of Dose and Its Bearing on Question of Communicability of Tuberculosis. L. Cobbett.—p. 402.
- 20 Chemotherapeutic Treatment of Gonorrhea. J. E. R. McDonagh.—p. 416.
- 21 Some Suggestions for Extension of Vaccine Therapy. H. G. Leyton.—p. 429.
- 22 Treatment and Degree of Curability of Neurasthenia Pura. S. H. Bennett.—p. 431.
- 23 Ionic Medication in Middle Ear Catarrh. A. A. Pim.—p. 440.
- 24 Nonsurgical Treatment of Exophthalmic Goiter—Counterblast. T. B. Scott.—p. 442.
- 25 Petrol Dermatitis. G. B. Page.—p. 451.
- 26 Case of Acute Tuberculous Peritonitis in Course of Paratyphoid Simulating Perforation. K. Yacoub.—p. 452.

Archives des Maladies du Cœur, etc., Paris

April, 1918, 11, No. 4

- 27 *Dextrocardia. A. Clerc and J. Bobrie.—p. 145.

27. **Dextrocardia.**—Clerc and Bobrie report a case in a robust soldier without associated lesions discoverable with the roentgen rays. His general depression and palpitations with slight tachycardia had developed only recently after a shell concussion, and his symptoms from the shell shock did not seem to differ from those in men with normal hearts. In 42 of the 56 known cases of dextrocardia the subjects were males. The anomaly was discovered in infancy in 6; and in the others at various ages up to 67. More than half were under 20. In 23 of 55 cases the anomaly was congenital beyond question and there were other malformations. In the 32 cases of pure, isolated dextrocardia there were no appreciable lesions or disturbances in the circulatory apparatus.

Archives de Médecine des Enfants, Paris

May, 1918, 21, No. 5

- 28 *Echinococcus Disease in Children. F. Dévé.—p. 225.
- 29 *Meningococcus Septicemia. A. Netter.—p. 246.
- 30 *Bilateral Crossed Herpes Zoster. J. Comby.—p. 253.
- 31 *Child Welfare Work in America. J. Comby.—p. 258.

28. **Echinococcus Disease in Children.**—Dévé insists that echinococcus disease in children is merely a simple cyst without complications. In examining a child, the possibility of echinococcus disease should be borne in mind and strict search made for it, as excision of the cyst eradicates the disease. This is Dévé's fifteenth published study on echinococcus disease. He has long emphasized the futility of the recommendations for prophylaxis by hygiene. Can we ever get children to refrain from playing with dogs, eating raw fruit or drinking water that is not boiled or filtered? It is impossible to protect human beings and animals against the invisible germs of the disease scattered by the dog infested with the echinococcus. But we can prevent the dog from acquiring these germs. This is the true solution of the problem of prophylaxis: protection of the dog. The dog becomes infested only by eating the viscera of animals slaughtered for meat, beef, pig and sheep, affected with what the butchers call "bubbles," *boules d'eau*. Especially in rural districts, the destruction by fire of all the viscera from an animal infested with the echinococcus, and the absolute exclusion of every dog from the places where animals are slaughtered, will eradicate the disease. Treatment of the single cyst in a child is a simple operation when preceded by injection of formaldehyd to kill the parasites and ward off postoperative recurrence. The prognosis is favorable unless the cyst is in the brain, lung or abdomen. In the lung the outcome is fatal more often than in adults, and multiple cysts in the abdomen usually require several interventions. In diagnosis, the persisting good general condition accompanying a tumor in the liver is characteristic. The specific antibodies in the blood may confirm the diagnosis, but in about 10 per cent. the findings are misleading. Eosinophilia is seldom characteristic in children, especially in those with helminths.

29. **Intermittent Fever with Meningococcus Septicemia.**—Netter reports a typical case in illustration of the fact that meningococcus infection may assume the type of a regular daily or tertian intermittent fever. It is often accompanied by eruptions, a nodular or polymorphous erythema or purpura, and one or two months or more may elapse before the

cerebrospinal meningitis caps the clinical picture. In some cases the meningitis never develops at all. Bacteriologic examination of the blood clears up the diagnosis when the spinal fluid gives negative findings. The intermittent febrile attacks yield promptly to proper serotherapy, preferably polyvalent treatment. Intravenous injection may induce alarming reactions even at the first injection, so that the intraspinal route is preferable.

The case described in detail was in a boy of 15, and the febrile paroxysms occurred irregularly, morning or afternoon, every day or third day. In the intervals he did not seem sick. This was the rule also in the similar cases in infants and others on record. The chill, fever and enlargement of the spleen were sometimes accompanied by joint symptoms, but the eruptive manifestations pointed to meningococcus infection rather than to malaria in one of his five cases. In a case reported by Cantieri the diagnosis had been successively malaria, Addison's disease, tuberculosis, Malta fever, septicemia and febrile syphilis. No signs of meningitis were apparent until the eighty-first day. No meningococci were found in the spinal fluid until a day or two later. Serotherapy then promptly restored the patient to health, after months of futile other measures.

30. **Crossed Bilateral Herpes Zoster.**—Comby's two patients were a boy and girl over 7. The boy developed herpes zoster simultaneously in the left upper chest and back of the right thigh. The girl had symmetrical herpes on both buttocks. In forty-two cases of herpes zoster in children recorded in the last few years, there was no neuritic pain, no neuralgia followed, and recovery was soon complete. The cases in children confirm the assumption that the zona is the result of some local or general infection affecting some nerve or ganglion with transient or chronic congestion.

31. **Welfare Work for Children.**—Comby speaks appreciatively of what is being accomplished in the United States in the line of puericulture, and especially the work of the Children's Bureau of the American Red Cross. He says, "The Americans of the North, the United States of America, in taking their place beside us to fell the German monster, want to aid us not only in the present but even in the future. After having done the possible to ensure the victory of Right over Might, of Civilization over Barbarism, they have thought of tomorrow, and affirmed their intention of aiding in the rescue of future generations." He describes what has already been accomplished and is planned, and remarks in conclusion, "This splendid attitude of our friends from America merits more than gratitude on our part. It should rouse us to put forth all the energy of which our race has shown itself capable in the course of its history."

Bulletin de l'Académie de Médecine, Paris

April 23, 1918, 79, No. 16

- 32 Pigments of the Blood Serum. G. Patein.—p. 318.
- 33 Histology of Rapidly Growing Fibroma. A. Siredey.—p. 320.

April 30, 1918, 79, No. 17

- 34 *Skull Plastics. J. A. Sicard, G. Dambrin and H. Roger.—p. 331.

34. **Bone Plastic Operation on the Skull.**—Sicard and his co-workers have been using for two years a method of closing the breach in the skull with a plate of bone taken from the skull of a cadaver. They have had no mortality in their eighty-five cases while the outcome has been a reliable and durable success. Metal plates are liable to become a source of irritation, and cartilage and other bone grafts are liable to grow weak in time and even be absorbed, with return of pulsation in the area.

Bulletin de la Société Médicale des Hôpitaux, Paris

March 8, 1918, 42, No. 9

- 35 *Cancer of Esophagus. A. Siredey and Alevisatos.—p. 233.
- 36 *Nonrenal Edema. M. Labbé and Marcocelles.—p. 236.
- 37 *Ligation for Causalgia. Lortat-Jacob and G. L. Hallez.—p. 239.
- 38 *Concussion of Spinal Cord. G. Guillaud and J. A. Barré.—p. 244.
- 39 Histologic Bacillosis of the Kidney. E. Lenoble.—p. 247.
- 40 Resisting Power of the Blood Vessels in Malaria Under Quinin. J. Baur, Bocca and Tulasne.—p. 250.
- 41 The Transfuso-Aspirator. J. E. Larché.—p. 252.
- 42 Cancer of the Prepuce. M. Pinard and Milon.—p. 254.
- 43 *Acroparesthesia from Chilling. J. Cottet.—p. 257; p. 260.

35. **Cancer of Esophagus.**—The ignored cancer in the man of 47 had never caused appreciable symptoms until it perforated into the trachea.

36. **Edema Without Nephritis.**—Labbé and Marcorelles report two cases of retention of salt, with anasarca, although the kidneys seemed to be normal. The diffuse and extreme edema in each case had developed during an attack of dysentery with anemia, and the edema subsided completely on a salt-free diet plus theobromin. The kidneys, heart and liver seemed to be entirely or approximately normal. The great loss of fluids from the dysentery seems to favor retention of chlorids and edema. The latter resembles in every respect the familiar edema with Bright's disease. The mechanism of its production is a mystery.

37. **Ligation of Nerve Cures Causalgia.**—Jacob and Hallez found all measures futile to relieve the intense pain in the domain of the right median nerve following a war wound entailing paralysis of the median and ulnar nerves. The causalgia persisted and there was not a trace of anything suggesting recovery of motor functioning by the end of the ninth month. Then Jan. 9, 1918, the median nerve was exposed for about 5 cm. well above the wound, and a ligature of No. 1 catgut was thrown around it. The nerve seemed large and much vascularized, with a slight edematous aspect. Within a few hours the pains were much reduced, and by the next day the causalgia had entirely subsided and there has been no recurrence during the months since although the motor paralysis and the reflexes were not modified. The hyperesthesia in the domain of the median nerve has changed to almost complete anesthesia, and the vasomotor and secretory disturbances in the region have almost entirely disappeared. The moderately tight catgut ligature inhibits or suppresses the irritability of the sympathetic fibers surrounding the nerve and the congestion in the trunk nerve, while the ligation does not injure the nerve fibers proper which are undergoing centrifugal regeneration. As the catgut is absorbed in a few days, the whole intervention is simpler and less of an operation than the other measures that have been applied in treatment of causalgia, including peripheral sympathectomy, injection of alcohol, or division of the nerve to which some have had recourse as the last resort.

38. **Paraplegia from Concussion of Spinal Cord.**—Summarized in Paris Letter, June 1, p. 1620.

43. **Acroparesthesia from Chilling.**—The sensory, vasomotor and trophic disturbances in the extremities under the influence of cold are important on account of the predisposition they entail to Raynaud's disease, to freezing of the feet, and to the so-called physiopathic contractures and paralyses after war wounds. There is evidently some constitutional or acquired vasoconstriction in hands or feet or in both, accompanied by analgesia of the four members and also sometimes of the nose and the ears. This analgesia embraces the limb except for the palm of the hand and the front part of the dorsum of the feet. When acquired, this syndrome can always be traced to some prolonged exposure to cold. Men known to have this acroparesthesia should be guarded against exposure to freezing, etc.

Paris Médical

April 13, 1918, 8, No. 15

- 44 *Stiff Joints. M. Nageotte-Wilbouchewitch.—p. 289.
45 Acute Swelling of Half of Tongue. G. Schreiber.—p. 299.
46 Measurement of Pleural Effusion. A. Challamel.—p. 301.

44. **Stiff Joints from Shortness of Muscles.**—Thirteen years ago Nageotte-Wilbouchewitch called attention to the inability of certain children to flex their joints normally. She explained it as the result of abnormal shortness of the muscles involved, and time has unmistakably confirmed this assumption. A number of typical cases are illustrated here. There is nothing to suggest inflammation or contraction in the muscles; they are merely too short in proportion to the bone levers which they control. She has coined the term brachymyonia to express this condition. It may become apparent at the age of 6 or 7, but it is usually during the period of intense growth, from 11 to 15, that the play of the joints is most restricted. The children are awkward and the mothers com-

plain that they seem to be petrifying. Boys are affected more often than girls, and there is usually a family history of nervousness, sluggish metabolism or chronic rheumatism. Some of the children had been prematurely born or were twins. A familial and hereditary occurrence is not rare but the children of the poor and the children of the well-to-do escape. She found it restricted to the middle class; perhaps it represents a kind of atavism, generations of sedentary occupations breeding this lack of proportion between the growth of the skeleton and the growth of the muscles.

The insufficiency of the movements and the chronic asphyxia when the "stiffness" affects the chest, keep the child in a vicious circle. Passive and active exercises and massage may improve the condition, but they have to be kept up during the entire period of growth and for some time afterward. Her experience indicates that when the bones have got their growth, the muscles keep on growing for a time, so that finally normal proportions are restored. This brachymyonia involving the chest, preventing the normal play of the lungs, seems to be the hardest to correct, while it is exceptionally hard to outgrow, and is fraught with exceptional peril for the child's health in general. All kinds of measures to restore the normal excursions of the thorax are indicated, with training in diaphragm breathing. Corsets and tight belts are exceptionally harmful for girls in this category. Improvement in mind and body parallels the improvement in the movements as the children lose their awkward stiffness and grow supple again.

Presse Médicale, Paris

April 18, 1918, 26, No. 22

- 47 *Gas Gangrene. E. Sacquépée.—p. 197.
48 Fitness for Service after Wounds of Peripheral Nerves. P. Descouts.—p. 198.
49 Nervous and Mental Disease and War Pensions. R. Benon.—p. 199.

April 22, 1918, 26, No. 23

- 50 *Acute Meningitis in Inherited Syphilis. V. Hutinel.—p. 205.
51 Fluctuations in Spleen Early in Malaria. R. Porak.—p. 208.
52 Comparison of Bacteriologic and Chemical Analyses of Water. M. Brulé and R. Hazard.—p. 211.

47. **Gas Gangrene.**—Sacquépée reports that two anaerobes, the septic vibrio and the *Bacillus bellonensis* were found so constantly in 121 complete analyses in 100 cases of gas gangrene, that he is convinced that these are the specific agents of primary gas gangrene. The former seems to be responsible for the gas gangrene, the bellonensis for the gas gangrene and the edematous forms. They reproduce constantly the disease in animals, and exert the same toxic action.

50. **Acute Meningitis in Inherited Syphilis.**—Hutinel describes some cases in children between 3 and 15 in which the meningitis developed on a basis of inherited syphilis. It is like the meningitis in adults from acquired syphilis. In the first few weeks of life the specific meningitis is part of the grave general septicemic disease, but after the age of 2, there is not so much acute meningitis as the rearousing of old reactions on the part of the meninges to some casual infection acting on the already damaged nerve cells. The reaction may simulate tuberculous meningitis or it may be insidious and latent. Inherited syphilis should be suspected when the meningitis does not present the classical picture of ordinary meningitis and suspicious stigmata suggest possible syphilis, but the convincing proof is the recovery under specific treatment. Even when everything seems to suggest true tuberculous meningitis, he waits before informing the family until after a course of specific treatment. This does no harm in the tuberculous form while there is always a possibility that syphilis may be responsible for the meningitis, and that it may subside under treatment. The signs and symptoms of the *poussées méningitiques* in inherited syphilis are those of any acute meningitis; convulsions are frequent. The spinal fluid may show the findings common in tuberculous meningitis, or the lymphocytes may be replaced by medium or large mononuclears or polynuclears, and the cell count may vary rapidly. Spirochetes are not generally found in the fluid, and the Wassermann reaction is often negative. In about half his cases, a positive response to the Wassermann test in blood and spinal fluid was not obtained until after recovery.

The specific treatment evidently reactivated the substances yielding the Wassermann reaction.

Chirurgia degli Organi di Movimento, Bologna

February, 1918, 2, No. 1

- 53 *Kinematic Plastics. G. Vanghetti.—p. 1.
- 54 *Operative Treatment of Varicose Veins. A. Guaccero.—p. 21.
- 55 *War Fractures of Long Bones. M. Francini.—p. 41.
- 56 Fractured Humerus. F. Rossi.—p. 83.
- 57 *Transitional Artificial Legs. V. Putti.—p. 91.

53. **Vitalization of Artificial Limbs.**—Vanghetti describes the history of his twenty years of efforts to have surgeons adopt the principle of direct muscular control of the movements of the artificial limb by the muscles in the stump. He is not a specialist surgeon himself, but he advocated the principle and had published seven articles on the subject between 1898 and 1908 and several since. He has devised fifty-one different ways in which the principle can be applied in various ways, including the utilizing of antagonist muscle action. He gives no mechanical details, leaving the working out of the principle to surgical specialists, as Sauerbruch in Germany (1916-1917) has already done although forgetting to mention the Italian source of the principle.

54. **Varices.**—Guaccero reviews the history of operative treatment of varicose veins in the leg, describing eight different technical procedures for the purpose, and sixteen operative cases from his own experience. He advocates operative treatment in all cases with extensive and progressive invasion, especially in the young. The most imperative indications are in the cases with areflux from the heart on account of the insufficiency of the valves. The insufficiency of the valves of the internal saphenous vein, with ectasia, tortuous course and ampular dilatations, is shown up prominently by having the reclining patient stand up. The saphenous vein is then seen to fill up from above as well as from below, a centrifugal wave meeting the centripetal wave. The primary iliac and the external iliac have no valves, and when the saphenous vein is so enlarged that its valves become insufficient, then the result is a single long open tube into which the blood backs from above. The advancing wave from above can be checked by pressing the finger on the vein, but when the pressure is released, the vein at once grows turgid. In such cases the vein is liable to rupture, with profuse hemorrhage, and operative measures are urgently indicated. Removal of the entire vein is the most logical and certain treatment, removing the whole trouble at once. If this is not practicable, he advises excision of the most pronounced varices, and suture of the skin over other parts of the vein after cutting out a spindle-shape flap. Bringing the lips of the wound together exerts a pressure like that from an elastic stocking.

When the sign of the cardiac reflux is not apparent, then the cause of the varices is what he calls deep regurgitation. Muscles contracting over the deep system of veins compress the veins and force the blood in them out into the superficial veins. When this is the case, the varices develop at points where the intercommunicating veins are most numerous, namely, in the middle of the leg, in the middle third of the thigh, and in the triangle of Scarpa. Extensive removal of the vein is the best procedure here also, preferably of the entire vein. In the sixteen cases reported, total saphenectomy was done on the left leg in eight, the right in two and on both legs in three. In two, both the internal and external saphenous vein were removed. The results were invariably most gratifying, at the time and during the years since. In what is called varicose cyanosis, involving the capillaries, injections of some coagulating substance may be useful to supplement the removal of the vein.

55. **War Fractures of Long Bones.**—Francini discusses his two years of experience in a field hospital. In one case tetanus followed gas gangrene. On account of the gas gangrene, the thigh had been amputated. Antitetanus serum was given at the time and again a week later and the stump seemed to be healing perfectly when rapidly fatal tetanus appeared the fourteenth day, as also in another case, the twenty-first day. Amputation is imperative when gangrene from anemic necrosis becomes superposed on the bacterial, and at the

earliest possible moment. Francini's extensive experience teaches that the whole of the muscle is infected throughout when one segment is unmistakably affected with gas gangrene. The stump, therefore, should be short unless the amputation can be done in the thigh, for instance, when the infection is in the leg. As the seat of the infectious process seems to be exclusively in the muscles, there is no advantage in a disarticulation rather than amputation. A high amputation with a lateral incision, as in the second step of a disarticulation, favors elimination of secretions and of necrotic tissue. He emphasizes that the gas impregnation of the tissues may extend higher than the actual infectious process. Hence we are not completely disarmed even if the characteristic sound (*scricchiolio*) reaches above the root of the limb. Of course the outlook is less favorable, but he has had successes even under these conditions, and so have others. Reamputation later is liable to rouse the sleeping or healing process anew, with disastrous consequences.

The circular method of amputation is his choice, and he swabs the stump freely with iodine. The soft parts can be stretched to cover the stump by means of two loops of adhesive plaster on each side fastened to a circular strip around the skin of the stump. A similar cage made of wire projects below the end of the stump. A piece of rubber tubing fastens the apex of the wire cage to the similar cage formed by the adhesive plaster strips. Gentle traction is thus exerted on the soft parts of the stump, and in a few days they are long enough to cover the stump completely. In his first series of twenty-nine amputations for gas gangrene only 24 per cent. of the men died, but in twenty-five recent cases so many hours had elapsed before it was possible to pick up the men, that all died but seven.

57. **The First and the Transitional Prostheses.**—Putti discusses the principles involved in preparing the stump for the definite prosthesis by the wearing of the pilon, and the importance of the proper fitting of the latter and of the transitional prosthesis.

Gazzetta degli Ospedali e delle Cliniche, Milan

April 4, 1918, 39, No. 27

- 58 *Chronic Typhoid. F. Bergolli.—p. 267.

April 7, 1918, 39, No. 28

- 59 *The Staphylococcus Albus. G. A. Pari.—p. 273.

58. **Chronic Typhoid.**—Bergolli reports three cases which warn that possibly typhoid with a tendency to chronicity may be mistaken for ordinary intestinal catarrh, febrile dyspepsia or masked tuberculosis, when examination of the blood or the agglutination test would reveal the typhoid origin of the disturbances. These disturbances may be of the nature of a series of complications, or anemia with much enlarged spleen, or a mild septicemia with gastro-intestinal manifestations. This latter group includes cases in which there seem to be series of reinfections, and also cases with series of relapses. In the first of his three cases the man had intervals of comparative health alternating with febrile bowel disturbances requiring hospital care. The paratyphoid B was cultivated from the blood each time, as also at the latest febrile period, ten months after the first symptoms. The temperature at this time ran up to 104 F. for one day and kept subfebrile for some time, with intense anemia but no delirium. The liver was hard and very large, and there was a tendency to urticaria. After subsidence of the fever this time the blood findings and tests were negative. There were no rose spots at any time. It is possible that paratyphoid is responsible for many cases of vague morbid conditions that drag along over months and are labeled catarrhal enteritis, febrile dyspepsia, etc. In another case the diarrhea, abdominal pains, headache and general weakness had lasted with ups and downs for a year. The paratyphoid B bacillus was found then in the blood, and the liver was very large and hard. A third patient had typhoid early in 1917 for sixty days. A month later he returned with fever and typhoid symptoms but the blood tests were negative. During the entire year he had to go to the hospital again and again on account of headache, diarrhea and abdominal pains, and finally the fever became continuous and the liver very much enlarged, but

there was no diarrhea. The fever gradually declined during the following three weeks, but then ran up very high, with a chill. After this it subsided to normal range by the thirteenth week. There had been no typhoid status during these weeks, and the blood findings were negative until the sixth week when typhoid bacilli, agglutinating at 1:400, were found. The importance of repeated bacteriologic examination of the blood in such cases is evident.

59. **The Staphylococcus Albus.**—Pari reports a number of typical cases which confirm the pathogenic properties of the *Staphylococcus albus*. He never was able to cultivate it from the blood of apparently healthy persons, but found it frequently in the blood of those presenting symptoms suggesting some coccus septicemia. In one boy of 13, polyarthritis dominated the clinical picture, in another a suppurative process in one hip joint yielded both the albus and aureus. In one man of 56 there was pericarditis and pleurisy in addition to polyarthritis and symptoms of sepsis, with final convalescence after nearly four months of illness with the albus cultivated from the blood. It was obtained also by puncture of the spleen in a boy of 16 with a mild form of albus sepsis. The fifth case is that of a woman of 31 with acute otitis media and mastoiditis, chills, fever, pleurisy, phlegmons and cystitis, developing shortly before delivery of a child that died an hour after birth. No microbes could be cultivated from the blood, but pure cultures of the albus were derived from the subcutaneous tissue of the arm at the point of the greatest infiltration.

Pediatrics, Naples

April, 1918, 26, No. 4

- 60 *Meningitis at Palermo. G. Di Cristina and M. Sindoni.—p. 193.
61 *Factors Impeding Breast Nursing. A. Borrino.—p. 220.
62 Pituitary Feminism and Adenoids. P. Caliceti.—p. 233.

May, 1918, 26, No. 5

- 63 *Congenital Syphilis of the Kidneys. A. F. Canelli.—p. 257.
64 Biologic Tests for Casein in Stools. L. Maccone.—p. 270.
65 *Vaccine Therapy of Malta Fever. P. Chiriaco.—p. 282.

60. **Epidemic Meningitis.**—Di Cristina and Sindoni relate that meningitis has been prevailing in epidemic form at Palermo during the last five years. The mortality showed a downward trend until last year when there seemed to be an unusual predominance of extremely toxic cases, and of relapses, flaring up of latent infection into the acute form, and protracted forms, the fever dragging along as if maintained by some suppurative process. Notwithstanding free application of serotherapy, the mortality was over 54 per cent. in nurslings. The meningococci responsible for the tardy relapses and flare-ups seemed to be the same as at first, having regained their virulence after it had been for a time attenuated under the influence of the serotherapy. They had lost their agglutinating property, however, and had become resistant to the action of the antiserum. In fifty cases of the epidemic meningitis, sixteen developed these severe recurrences or relapses when the disease seemed to have been entirely conquered and the patients had apparently recovered or were convalescing. At first all those affected died. Serotherapy at this stage seemed to be futile and induced symptoms suggesting anaphylaxis even when this could not have been the case. They then began vaccine therapy, and when the intravenous route was adopted, the mortality dropped from 98 to 16.5 per cent. The charts from several cases in children given this vaccine therapy are reproduced. The fever declined and disappeared and both the general and local symptoms subsided and the spinal fluid cleared up.

61. **Functioning of the Mammary Gland.**—In this second study of this subject, Borrino sought to determine the reasons why bottle feeding, instead of breast feeding, had been given a certain proportion of the 1,110 children at the children's clinic at Turin and at the dispensary and consultations. As she found from her previous research, the women actually incapable of nursing their children are few and far between. Another point emphasized by her experience is that medical advice and assistance during the first week are able to increase materially the number of women able to nurse their children amply. Only in eighteen of 200 cases had the breast nursing been suspended later than the first month. In all the others

the artificial feeding had been instituted during the first or second week. Consequently medical supervision and advice during the first two weeks may be said to ensure breast milk to the child. Milk stations, etc., to supply milk for infants are not needed so much as consultations, where the mothers are advised how to care for their infants. Distribution of milk has the wrong effect; it trains to artificial feeding of infants. In conclusion she reiterates that the first two weeks are the vital ones in this respect, and that prizes, lunches and other inducements should be offered to coax the mothers to bring their infants for consultations during these first weeks above all.

63. **Congenital Syphilis of the Kidney.**—Canelli has found congenital syphilis of the kidneys relatively frequent at necropsies. The manifestations of it are sclerotic atrophy, gummas, and cysts from retention. Amyloidosis of the kidneys is not characteristic of congenital syphilis. The nephritis from inherited syphilis may be an acute interstitial and parenchymatous form or a chronic sclerous atrophic. Familial syphilitic albuminuria may be a manifestation of tardy inherited syphilis.

65. **Vaccine Therapy in Malta Fever.**—Chiriaco reports three typical cases in children out of his extensive experience to sustain his statements as to the remarkable curative value of vaccine—made by the Di Cristina-Caronia technic—in treatment of undulant or Malta fever. He declares that no time should be wasted on quinin, dieting and intestinal disinfectants, but the vaccine should be given at once, as the patient grows worse under the other measures until irreparable damage results. He gives the vaccine by intramuscular injection, and relates that the results were always certain and extremely effectual, often actually remarkable from the rapid and complete disappearance of the infection.

Rivista di Clinica Pediatrica, Florence

April, 1918, 16, No. 4

- 66 *Familial Spasmophilia. M. Pincherle and A. Pollidori.—p. 169.

66. **Familial Spasmophilia.**—Pincherle and Pollidori have been making a special study of spasmophilia in different members of various families. They analyze what has been written on spasmophilia to date, especially on the familial factor, and review their experiences during the last ten years at the Bologna clinic for children's diseases. In ninety-one examples of typical spasmophilia, a familial factor was evident in twenty-five, that is, in nearly 25 per cent. It usually was manifested in the appearance of tetany in two or more members of the family. In some the spasmophilia was latent and required special tests to bring it into evidence. In some families alcoholism or grave constitutional disease or neuropathic stigmata were manifest in parents or brothers or sisters. Rachitis, status lymphaticus, adenoids or merely enlarged glands often accompanied the symptoms of spasmophilia. The boys outnumbered the girls in the children with spasmophilia. A familial occurrence is thus shown to be not the exception but the frequent rule. Instead of incriminating defective feeding and other extraneous factors, some constitutional abnormality is probably responsible. The causal factors are more than a mere casual accidental hemorrhage in the parathyroids which some have suggested as the cause. The whole thyroid and thymus system may be below par, or the endocrine system. This view is sustained by Fiore's case in which hypotrophy of the thymus occurred in a pronounced form in both parent and child.

Annaes Paulistas de Med. e Cirurgia, S. Paulo

July, 1917, 8, No. 7

- 67 Trauma of Spinal Cord Simulating Radiculitis. A. de Lima and L. Torres.—p. 149.
68 *Treatment of Tuberculosis. C. Ferreira.—p. 157.
69 *Ambard's Constant in Diagnosis. M. de S. Aranha.—p. 162.
August, 1917, 8, No. 8
70 *Treatment of Amebic Dysentery. T. Bayma.—p. 173.
71 *Brain Tumor. H. Xavier.—p. 184.

68. **Treatment of Tuberculosis.**—Ferreira reviews a year's experiences with tuberculin treatment at the special tuberculosis clinic. He restricts the use of tuberculin to the first

stage of tuberculosis of the lungs, and to cases not showing a rapidly progressive or highly toxic course. He found it of benefit to give a complementary course with bovine tuberculin and then return to human tuberculin, or vice versa. Always he made a point of keeping the doses down to those inducing merely a minimal reaction, convinced that the tuberculin has no specific action but merely stimulates the organism to a more effectual defense. Hence it is futile to give it when the organism is not capable of devoting its energies to defense or is not free to do so. A lively reaction to the skin tuberculin test is a favorable sign. Tuberculins of different makes seemed to have always about the same action. One of the eight patients treated with induced pneumothorax died from complications and one has grown worse. The others are all either clinically cured or materially improved. The air at S. Paulo is very humid for heliotherapy. The patients did not even tan much under the exposures, showing that the ultraviolet rays scarcely reached the skin, but still five patients seemed to be materially benefited by the sun baths. Roentgen treatment gave good results in treatment of tuberculous glands. In twelve patients the tuberculin and Wassermann tests were both positive and there was one case which proved to be exclusively syphilis of the lung.

69. **The Value of Ambard's Constant.**—Aranha summarizes recent works on uremia in heart disease, in jaundice and with gastro-intestinal disease. All demonstrate the high value of the ureo-secretory constant both in diagnosis and prognosis.

70. **Amebic Dysentery.**—Bayma remarks that he was the first to try epinephrin in treatment of amebic dysentery, publishing in July, 1915, his report on the systematic use of epinephrin in amebic dysentery. In later communications he endorsed its efficacy also in amebic liver disease and in appendicitis. In 1912 he found amebas in 0.11 per cent. of 3,419 stools examined at S. Paulo; in 1914 the proportion had risen to 2.04 per cent. of 3,418 stools, and in 1916 to 10 per cent. of 5,429 stools. Reports during the war from various countries indicate a wider prevalence of amebic dysentery in temperate climates than was formerly suspected. Epinephrin has certain advantages over emetin for treatment of amebic dysentery, and the experiences to date seem to indicate that the ameba is eradicated by it and does not pass into the encysted form. The epinephrin further has an important action on the suprarenalitis which has lately been demonstrated to be part of the clinical picture of amebic dysentery. Emetin and also the biniodid of bismuth and emetin have a more or less depressing action in amebic dysentery, directly aggravating the depression, weak pulse and tendency to syncope which reveal insufficiency on the part of the suprarenals. Epinephrin, on the other hand, suppresses the distressing colic and tenesmus, toning up the general system by its angiotonic and antitoxic action. The epinephrin can be given by the mouth up to 3 or 5 mg. a day without appreciably raising the blood pressure. Patients treated by Bayma with epinephrin over two years ago have remained in the best of health with nothing to indicate persisting infection with the ameba, and with nothing to suggest injury of the arteries or other organs from by-effects of the epinephrin. Only when the epinephrin is given by intravenous or intratracheal injection is there danger of by-effects. Bayma discusses further the experiences to date with oil of chenopodium, etc., and gives the bibliography of all these newer methods of treating amebic dysentery.

71. **Brain Tumor.**—Xavier reports a case of tumor in a man of 60 which had destroyed nearly all the white matter of the right hemisphere from the frontal pole to the occipital pole. The extent of the tumor explained the wide range of the symptoms. The sense of smell was lost but not vision. The absence of epilepsy spoke for a subcortical site. The ataxia had not been accompanied by vomiting or other cerebellar symptoms.

Cronica Medico-Quirurgica, Havana

April, 1918, 44, No. 4

72 Present Status of Leprosy. J. E. L. Silvero.—p. 194.

73 Should the Patient be Informed of Impending Incurable Blindness? J. Santos Fernandez.—p. 200.

74 Sick Mother Should Nurse Her Child. T. Hernandez.—p. 206.

75 *Trachoma in Cuba. J. M. Penichet.—p. 211.

76 Circumcision in Women: Five Cases. P. Pelaez.—p. 219.

77 Quackery in Cuba. F. M. de la Cruz.—p. 221.

78 *Brazilian Trypanosomiasis and the Thyroid. E. Novaes.—p. 224.

75. **Trachoma in Cuba.**—Penichet's work was awarded the prize offered by the *Cronica* at the recent Cuban Medical Congress. He has found classic epidemic trachoma only in foreigners in Cuba, the natives having few cases and the disease so attenuated as to mask its nature. Trachoma formed only from 3.5 to 5.77 per cent. of the cases of eye disease treated in the clinics, and only 3.25 per cent. of Santos Fernandez' 36,242 eye patients between 1875 and 1903. In recent years the proportion of suspicious cases has risen to 10 per cent. but not all the cases with the clinical aspect of trachoma are the actual disease. The secretion may contain only the bacteria commonly found in inflamed eyes, and treatment may be promptly effectual. In one remote district Penichet found every one of the 1,000 children suffering from this false trachoma. He saw how the eye disease spread through the whole family when one member contracted a simple acute conjunctivitis, the total lack of hygiene favoring its transmission. By the time the first member of the affected family enters on convalescence he becomes infected anew from some of the other members of the family, and a vicious circle is started. One small vicious circle starts others and larger ones, so that it is a difficult matter to stamp out such an epidemic. These repeated inflammations finally entail more or less hardening, the conjunctiva reacting with hypertrophy, and it is very easy to mistake cases at this stage for trachoma. They respond as if by magic to operative treatment. In 10,000 cases of eye disease he has examined he found true trachoma only in less than 4 per cent., and he now is wary in diagnosing trachoma until he has had a chance to study the effects of treatment. Guiral and Soler have recently announced that the features of trachoma suggest a fungus origin, but the commission appointed to study this phase of the subject were unable to confirm their statements. No effects were obtained by Penichet with autogenous vaccines.

78. **Brazilian Trypanosomiasis.**—This seems to be a translation of an article which was summarized in *THE JOURNAL*, Nov. 11, 1916, p. 1479.

Revista de Medicina y Cirugia, Havana

April 25, 1918, 23, No. 8

79 *Iodin in Surgery of the Eyes. R. Guiral.—p. 224.

79. **Iodin in Ophthalmology.**—Guiral comments on the absence of caustic action when tincture of iodine is applied to the eye. He has used it in 107 cataract operations without iridectomy and in seventy-four cases with iridectomy, and all were cured in three days. In four cases of hernia of the vitreous body all were cured in four days. He regards it as harmless for the eyeball; no signs of irritation are apparent when the eye is dressed the next day. Even the vitreous body does not seem to be injured by it, he says, while it wards off postoperative pain and promotes rapid healing.

Revista Medico-Cirurgica do Brazil

January, 1918, 26, No. 1

80 *Radiology in France during the War. M. D. de Abreu.—p. 4.

81 *Elimination of Chlorids in Pneumonia. A. de F. Guiao.—p. 9.

82 Heteradelphus Parasitic Monster. A. Silva, Jr.—p. 30.

80. **Roentgen Work in France.**—De Abreu is chief of the radiologic cabinet connected with the Franco-Brazilian ambulance stationed at Paris, and he descants on the revolution that has taken place in France since the war began in the general estimation of the roentgen rays. Before that, there were a few very eminent radiologists in France but the rank and file of the profession paid little attention to the roentgen rays, "and nothing," he remarks, "opposes such unconquerable resistance to the onward march of ideas as silence." The professional roentgenologists were misled by the Austrians into viewing radiology almost exclusively from the therapeutic standpoint.

The rays were experimented with in every disease and although the results were found excellent in some, this was

restricted to certain parasitic skin diseases, tumors and certain forms of bone or skin tuberculosis, and leukemia. The rays were also used in diagnosis by a few French writers, especially the internists. But the majority of the physicians knew little and cared less about this method of examination, and even some of the first class medical services in the hospitals only rarely called for a roentgen examination of a patient, and then only for cancer of the stomach or kidney stones, and the chief of the service never followed the patient to the roentgen room. De Abreu had charge of the roentgen service in the largest hospital, and in his long months there only Chauffard, and he only once, followed the patient to the roentgen room. All apparently were content with the auscultation and percussion, the pathologic anatomy and bacteriology and chemistry findings.

But with the war and the necessity for locating projectiles in the tissues, radiology sprang at once into the first rank, and its importance for diagnosis in wide fields was soon recognized—a revelation for all. At the same time, roentgenology did not detract one iota from the value of clinical examination but enhanced its value. The war precipitated the use of the roentgen rays and de Abreu pleads for a similar diffusion in Brazil of knowledge concerning them and their wide and systematic utilization, without waiting for a war to force it on the country. He urges the creation of a chair for radiology in the University of Rio de Janeiro. Both in civilian and in military circles the young physicians of Brazil should get this training in roentgen work, and perhaps take a leading part in radiology, as some have done already in bacteriology.

81. Elimination of Chlorids in Pneumonia.—Guião devotes twenty pages to discussion of the literature on the retention of chlorids in pneumonia and the findings in ten cases personally investigated. He determined repeatedly the proportion of chlorids in the urine and in the sputum, with control research on some tuberculous and healthy controls. The chlorid content was higher in the sputum than in the urine during the febrile period, but after defervescence the reverse was observed. The difference between the total elimination of chlorids before and after defervescence is minimal. In the tuberculous, the chlorid content of sputum and urine kept approximately the same.

Siglo Medico, Madrid

March 9, 1918, **65**, No. 3352

- 83 *Endemic Goiter in Spain. J. Goyanes.—p. 182. Conclusion.
84 Jacksonian Epilepsy or Hystero-Epilepsy? F. G. Aguilar.—p. 184. Conclusion.

March 16, 1918, **65**, No. 3353

- 85 *Echinococcus Cysts Back of Bladder. I. S. Covisa.—p. 202.
86 Blunders in Roentgen Diagnosis of Echinococcus Cyst in Lung. A. Piga and A. Ferran.—p. 205.
87 Is Isolation Useful in Measles? B. H. Briz.—p. 207.
88 Social Insurance. Ubeda y Correal.—p. 208. Conclusion.

83. Endemic Goiter in Spain.—The previous instalments of Goyanes' article were reviewed on page 1570. He here gives illustrations of cretins and adults with goiter from the various villages in the Avila province. In one with 300 inhabitants he found four cretins. In one district with 1,780 inhabitants, in 1914 every one of the young men registered for military service was rejected on account of goiter.

85. Retrovesical Echinococcus Cysts.—Covisa's patient was a young man of 20, with no appreciable pathologic antecedents, who complained that micturition had been difficult for about four months. A smooth tumor could be felt reaching from the prostate region to the hypogastrium, with no signs of general or local inflammation. The complement deviation test for echinococcus disease was strongly positive, and the huge cyst was opened through a hypogastric incision and sutured to the lips of the wound. It apparently filled completely the space between the bladder and rectum and extended to the abdominal wall in the hypogastrium. In a second case with this same localization of a large echinococcus cyst between the bladder and the rectum, the latter had been compressed most and the disturbances had been mainly in defecation instead of in urination. This cyst was detached from below.

Hospitalstidende, Copenhagen

March 27, 1918, **61**, No. 13

- 89 *Invagination from Tumor. J. Henrichsen.—p. 385.
90 *The Anamnesis with Eye Disease. H. Rønne.—p. 403.
April 3, 1918, **61**, No. 14
91 *Hypertonic Treatment of Ulcers. C. Permin.—p. 417.
92 Experiences with Carrel-Dakin Treatment. P. V. Tuxen.—p. 422.
April 10, 1918, **61**, No. 15
93 *Meningococcus Infection. S. T. Sørensen.—p. 449.
94 Present Status of Hemeralopia. K. K. K. Lundsgaard.—470.
Commenced in No. 14, p. 429.

89. Invagination from Tumor.—In the case described, the woman of 51 recovered after resection of ileum and colon, the seat of invagination induced by a polypous fibroma in the cecum. She had had several attacks suggesting ileus, probably disturbances from invagination which had spontaneously corrected itself in time while the tumor was small. At first the attacks were merely periodical, vague digestive disturbances and abdominal pains. As they returned at long intervals they simulated various abdominal morbid conditions to actual ileus. Even if the invagination corrects itself, it is liable to recur, so that an operation when invagination is certain or even suspected is advocated.

90. The Anamnesis with Eye Disease.—Rønne remarks that when the practitioner is consulted on account of asthenopia, he can assume that the trouble is more likely to be from conjunctivitis if it has developed recently and acutely. Intolerance for tobacco smoke is perhaps the most constant symptom of conjunctivitis, as also of a sty. Recurring styes can be easily and certainly cured, he adds, with a persevering salve treatment, for example, with Ung. chloret. amido. hydrarg. With epiphora, the extent of the flow of tears can be estimated by asking whether a handkerchief has to be carried in the hand in the street to wipe the eye, and whether the flow continues in the house. Especially if the flow is only on one side, treatment is called for as dacryocystitis practically always develops in consequence of a chronic stricture or catarrhal process in the lacrimal duct.

With the sensation of a foreign body in the eye, the knowledge that the sensation comes and goes, testifies against there being an actual foreign body; with this the sensation would be continuous. Intermittent sensations of this kind are probably from some accumulation of conjunctivitic secretions. These foreign body pains are always located in or just beneath the conjunctiva, contrary to the pains from iritis. These are of a neuralgic type, mostly in the temple and forehead, and growing worse at night. Atropin is the best remedy here; it acts usually nearly instantaneously. Inflammatory glaucoma induces exactly the same type of pains, but atropin is absolutely contraindicated here. Glaucoma can be excluded not only by its objective symptoms but also by the rainbow halo around lights. The anamnesis is also highly instructive with bullous keratitis, developing after a scratch of the cornea and returning again and again after free intervals of days, months or years.

He warns against mistaking simple glaucoma for senile cataract as treatment of the former in time may arrest it. The beginning cataract is usually accompanied by monocular diplopia; women notice that in threading a needle they see two or several needles. An incipient cataract may induce some myopia; when the elderly suddenly lay aside their presbyopia glasses and read without them, this warns of beginning cataract. Simple glaucoma on the other hand, has scarcely any anamnestic symptoms, not even the rainbow halo, if treatment is not delayed until too late. The physician must be on the alert to detect hemianopsia and diplopia, even if the patient has not recognized himself the true nature of his visual disturbance.

91. Hypertonic Saline in Treatment of Wounds and Ulcers.—Permin found that the infected wound healed up remarkably quickly under hypertonic salt solution in the 120 cases in which he applied this treatment. The indications for it are when the wound cavity has infected, infiltrated walls. It is particularly useful under war conditions, in the office surgical work of the general practitioner, at first aid stations, and in the surgical policlinic. The method is easily applied, it is inexpensive and it is effectual, he declares.

93. **Meningococcus Infection.**—Sørensen discusses the Holmen epidemic in 1917 which has already been described in these columns, p. 498. The previous report on the subject was written too exclusively from the bacteriologic standpoint, he says, and he here emphasizes the three phases of the epidemic, first the widespread catarrhal disturbances, then a mild exanthematous sickness, and then a crop of meningitis cases with petechiae and 100 per cent. mortality. The cocci found corresponded in every particular to the typical meningococcus, except that it proliferated in bouillon-agar without waiting for admixture of ascitic fluid. Sørensen says that this extra vigorous proliferating power may explain the invasion of tissues other than those to which the meningococcus generally restricts its ravages, and hence its wide proliferation permitted an exceptional development of toxins, and acute fulminating toxic action. The clinical picture resembled that of varioloid purpura, and necropsy revealed infected spleen, pneumonia, purulent pericarditis and parenchymatous degeneration of organs. He is inclined to incriminate some other factor, as the men with this fulminating type all came from a certain compartment of the school ship. The assumption that the meningococcus in question was of a special and distinct type, or that there were two diseases present, one causing the exanthem and the other the meningitis, would explain the clinical course, and would also give greater hope of effectual treatment. The epidemic was arrested as soon as the quarters affected were temporarily abandoned.

Svenska Läkaresällskapetets Handlingar, Stockholm

March 30, 1918, 44, No. 1

95 *Abdominal Injury in the Newly Born. G. Hedren.—p. 1.

96 *Intracranial Hemorrhage in the Newborn. G. Hedren.—p. 53.

97 Center of Gravity of Erect Body. C. Hesser.—p. 133.

95. **Fatal Injury of Viscera in the Newly Born.**—Hedren discusses intrapartum injuries of the liver, pancreas, suprarenals and kidneys as he has encountered them or found reports in the literature. One most important practical conclusion from his study of the subject is that fatal injury of viscera may occur with spontaneous delivery. In his examination of 1,000 cadavers of new-born infants he found two with actual rupture of the parenchyma of the liver, one with spontaneous and one with forcible delivery. The mother in the latter case was a primipara of 42; the other mother was a tertipara of 22. In both cases there was breech presentation; the delivery occurred spontaneously in the younger woman but the child succumbed during delivery; the other child lived a day. In these as also in the comparatively numerous cases he has compiled from the literature, the liver was gorged with blood but otherwise normal. The child of another woman, a secundipara of 31, died six hours after spontaneous delivery in vertex presentation and necropsy revealed rupture of the spleen. In all the cases known of intrapartum rupture of the spleen, it was found already diseased. There is only one case each on record to his knowledge of fatal rupture of the pancreas or kidney, but minute subcapsular hemorrhages in the pancreas were found comparatively often in the 1,000 cadavers of the newly born. He gives summaries further of seventeen cases of fatal intrapartum injury of intestines, and one case of hematoma in the cecum and two of rupture of vessels in the omentum. In some of the cases conditions seemed to indicate that the rupture had occurred before delivery; in some during spontaneous delivery.

Among the 1,080 newly born infant cadavers, Hedren found a pronounced hematoma in one suprarenal gland in eight cases. In four the forceps completed the delivery, and in one case version and extraction were applied. In the four other cases delivery had been spontaneous, and a number of similar cases are on record. Every factor that increases the pressure in the veins, asphyxia, disturbance in breathing, promotes further the tendency to central hemorrhage in the suprarenals. There are some cases on record in which the swinging method of artificial respiration seems to have been responsible for the hemorrhages, although in some cases they had evidently preceded the swinging. This sequence of events is

open to discussion in a case described by Hervey in which an infant died the tenth day after birth. Hemorrhages were found in the suprarenals and also in the skull, and the mother related that the child had fallen off the bed the day after its birth. Hervey ascribed all the hemorrhages to this, but the suprarenal damage may have occurred from birth trauma. Three pages of bibliography are appended.

96. **Intracranial Hemorrhage in the Newly Born.**—Hedren found intracranial hemorrhage in about 9.28 per cent. of 700 infant cadavers. The hemorrhage was restricted to the meninges in nearly 84 per cent., and cerebral hemorrhage accompanied the meningeal hemorrhage in others, bringing the total of meningeal hemorrhages to 90.7 per cent. The clinical and anatomic details of each case are given, with the bibliography on intracranial hemorrhage in the newly born. Delivery had been spontaneous in 50 of the 65 cases, and conditions in both mother and child seemed to be normal in most of the cases. In the 42 purely meningeal cases, the hemorrhage had been supratentorial in 32; infratentorial in 10, and both in 6. He ascribes great causal importance to intra-uterine disturbances in respiration and circulation, as well as to compression of the bones of the head in the birth passage. Only 3 of the children presented unmistakable evidence of inherited syphilis. In a few of the cases the mother had eclampsia. In 10 medicolegal cases, the intracranial hemorrhage was nearly always accompanied by signs of asphyxia, venous hyperemia, ecchymoses, etc. He emphasizes that injury from the birth trauma may resemble in every respect injury from certain external causes after birth. It is also important to bear in mind that these intracranial hemorrhages may occur with rapid and easy spontaneous delivery. He emphasizes also that the intracranial hemorrhage may occur during birth without fracture of bone, and hence that when a fracture or a fissure is found in the skull bones, this may have occurred after delivery. In conclusion he adds that on account of the medicolegal importance of intracranial hemorrhage, some standard procedure should be formulated and enforced for the taking out and the examination of the brain of the newly born in medicolegal cases. Hedren's two articles on hemorrhage in the newly born fill 132 pages, and each is accompanied by a full summary, in German.

Ugeskrift for Læger, Copenhagen

March 28, 1918, 80, No. 13

98 *Habitual Constipation. VI. T. E. H. Thaysen.—p. 509. Commenced in No. 12, p. 467.

99 Puzzling Cases of Extra-Uterine Pregnancy. Henrichsen.—p. 528.

98. **Dyspepsia with Habitual Constipation.**—This is Thaysen's sixth report on the clinical and roentgen study of chronic habitual constipation. The digestive disturbances for which it is responsible seem to be distinguished by developing only after the chronic constipation is under way; by the fact that the pains, the cardialgia, are experienced at once or soon after eating, and by the subsidence of the dyspepsia when the constipation is corrected. Cardialgia was noted in 73 per cent. of the women and in 35 per cent. of the men. The female stomach seems to react with ptosis more than the male stomach, while the stomach reacts with secretory disturbances more often in men than in women. Habitual constipation usually becomes installed between 15 and 20, or dates from childhood. Analysis of his cases indicates that the typical form of dyspepsia with habitual constipation may be regarded as reflex disturbances set up by the constipated colon, colodyspepsia. In 150 cases of gastric ulcer, 109 had a history of constipation but never so regular and stubborn as in the colon dyspepsia cases; men and women seem to be equally affected. In a typical case of colon dyspepsia described, the bowel functions were regulated, and regular functioning was maintained with massage of the abdomen, an abdominal band (*Neptuns Baelte*), cold sponging, and fat in the diet after the dyspepsia had subsided. Six months later the bowels were functioning spontaneously and the young woman has gained in weight and eats ordinary food, but no milk. There is still a tendency to cold hands and feet and occasionally headache.

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DUTIES OF THE DERMATOLOGIST*

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WASHINGTON, D. C.

Under ordinary circumstances it would be both easy and proper to point out many duties that confront the specialist in general and the dermatologist in particular; but in these times it seems necessary to mention only a few. Accordingly, five phases will be considered, namely, the duties of the special societies, certain duties to the patient that have not been sufficiently recognized, the need for developing more and better dermatologic clinics, the arsphenamin situation, and lastly the duties to the country.

THE WORK BEFORE DERMATOLOGISTS

For years many of us have felt that the various societies composed of specialists, as well as many of the special sections of the American Medical Association, have not fulfilled all that might be reasonably expected of them. They are rather pleasant social meetings with a sprinkling of good papers and some valuable discussion, both public and private, rather than beacons in the progress of science. Would it not be fair to ask that such societies should be the sources of authoritative information from which the general practitioner could gain help, from which the lay citizen could seek advice, or the government aid? A standing publication committee which should from time to time publish critiques or be prepared to answer proper queries would be valuable. Also it might be well to assign certain definite problems to members who are in a position to throw light on them: committee reports each year on certain important questions, such as radium treatment or the standardization of the Wassermann test might also be of extreme value. Of course the present is no time to act on such suggestions, but in the future it might be wise to consider certain of them.

DUTIES TO PATIENTS

In such a paper as this it is naturally impossible to discuss all that a specialist owes to his patients; nevertheless, one important thing must be emphasized, namely, the duty to recognize certain serious ailments that may be in the process of evolution. Those of us who have been interested in cancer propaganda have long maintained that the general practitioner, the internist and specialists in most lines have failed to note certain blemishes that might later develop into malignant conditions. Only too often does the specialist fail to realize that the condition which brings a

patient under his observation may be but one symptom of some constitutional disease; the dermatologist may treat urticaria or a so-called acute eczema without knowing that the patient has a disturbance of the vegetative nervous system that is the direct cause of the local skin condition. Pruritis may be due to some disordered mental process. One noteworthy case of intractable eczema was directly due to a feeling of scrupulosity and hence excessive bathing, the primary mental condition being due to incest committed years earlier in life. Sweaty hands are frequently due to an oversecreting thyroid; sweating feet to weak arches; chronic urticaria to focal infections, syphilis or vagotonia, as well as to faulty digestion. If each and every one of us would more frequently refer his patient to a man who made a specialty of both physical and mental diagnosis, not only would more of our patients be relieved of cutaneous afflictions, but many a valuable man would be saved from later becoming a wreck.

POSTGRADUATE INSTRUCTION IN AMERICA

There can be no question that, in the past, certain cities in Germany and Austria have been the mecca for the training of American dermatologists. It is true that too often this has been a fad rather than a necessity; and, sad to relate, many a fledgling has learned to believe that all that is dermatologically good has and must come from Teutonic sources. Possibly if he had gone a bit deeper into his subjects he would have learned that frequently his professor or privat-docent was either too conceited or too ignorant to even know of the work that had been done in America, or that he wilfully chose to disregard it.

To some of us it has always been a marvel that more of us could not see through the folly of taking too seriously the work of a man who would dare to publish a bibliography of seventy-odd names, four French, one English, none American and the remainder German. However, it is extremely probable that the future dermatologist will not care to be trained in a city from which have emanated orders to use poisonous gases, to torpedo hospital ships and to bomb hospitals. In the United States we must prepare to train dermatologists and syphilologists, for the study of syphilis is coming into its own as the result of freer discussions necessitated by the war. We should now lay our plans to develop great clinics in which students and physicians can be thoroughly trained. Our dermatologic material has been too much scattered: in each city it should be more centralized for teaching purposes, so that the student can see a wealth of material. In addition, each dispensary should have its own laboratory attached, and there should be a number of hospital beds, both for severe dermatologic cases and for intraspinal work. Until we make up our minds to have fewer and better clinics we cannot hope to

* Chairman's address, read before the Section on Dermatology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

give proper training, and it is distinctly up to the dermatologists to see to it that plans are now made.

THE ARSPIHENAMIN SITUATION

There is no physician who does not remember how we Americans have been robbed as a result of the monopoly on arspenamin (salvarsan). At present the situation is much better, thanks largely to the wisdom and foresight of one man, Jay Frank Schamberg of Philadelphia, a dermatologist. It is difficult to conceive of a treaty of peace that does not include the restoration of patent rights: when this time comes what must we pay for a drug that is many times more necessary than is diphtheria antitoxin? If we are thrown on the mercy of the German manufacturing house we need not expect prices that will enable the poor to be provided with it, and if by any chance the patent right should be assigned to the former distributors of the drug in this country, it is difficult to see how we should be any better off. As a proof of the latter point you are invited to read the testimony of Mr. Metz before Congress one year ago, when the abrogation of the patent rights on salvarsan was being discussed. Also, what guarantee should we have that a pure drug was being marketed? Certainly when a manufacturing house threatens to sue physicians for reporting unfavorable results, as the Farbwerke-Hoechst Company has done in the case of Dr. Sargent, we must believe that it is more interested in the financial than in the humanitarian side. As a public health proposition it is our duty to urge that salvarsan be specifically excluded when patent rights are being restored.

DERMATOLOGISTS IN ACTIVE SERVICE

Seven score and two years ago a great American patriot wrote, "These are the times that try men's souls." Once again do these words come home to every man of us, and each must ask himself, "What is my duty?" Many of our dermatologists have answered the question directly by entering one of the government services. Among these men are Pusey and Baum of Chicago, and Pollitzer, Fraser, Howard Fox, Fred Fox, C. M. Williams, Clark and Johnson of New York, the last of whom has recently died as the result of his devotion to duty. Still others are Wile of Ann Arbor, Dyer of New Orleans, Markley and Lingenfelter of Denver, Knowles and Gaskill of Philadelphia, Mook of St. Louis, Pudor of Portland, Sayles of Taunton, McBride and Dennie of Kansas City, Goldstein of Fort Smith, Chipman of San Francisco, and Oliver, Lee, Cheever and Howe of Boston, the last named having been killed in France. Also there are many others who have given freely of their time and strength in connection with the work of the draft boards or with local health problems. But for the rest of us, what is our duty? Certain men there are who cannot or should not offer their all. In this group may be placed those past 55 years of age, those who have some physical defect, those whose teaching or clinical positions cannot be filled, certain men in practice whose places cannot be filled, and some few who are in financial straits. Let us examine these criteria a little more closely.

Physicians over 55 are not considered eligible for the Medical Reserve Corps, and yet there are plenty of men past this age who are capable of doing hard work and who fill responsible positions at home. Many good men have been barred on physical examination because of some slight physical defect; some

at least of these men could render valuable services in certain selected capacities. We all realize that under no circumstances can the Army be burdened with physicians who may break down under stress, and a rigid physical examination is an absolute necessity. A moment's thought will make all realize that physicians are a necessity to the community, and it would indeed be a short sighted policy that would permit our medical schools to be closed or which would deprive them of too many instructors. Furthermore, our clinics and hospitals must continue to render efficient service, for the continued good health of our population will be a great asset both during this war and in the more or less unsettled times that are sure to follow it. At the same time it is questionable if we do not have too many medical schools and far too many clinics. If certain of our schools could combine for the period of the war, many instructors could be spared; and if the weaker of our clinics and dispensaries should close their doors, only good would result. In practice there are a number of men whose services cannot well be spared. Many physicians in rural districts simply cannot be replaced at the present time. Men who are the only representatives of their specialty in a wide area may be vitally necessary, and some physicians to large industrial concerns would be more than sorely missed. There is now less financial excuse would gladly give part of their time for government has passed certain new legislation, but nevertheless it is hard for a physician who has borrowed money to educate himself, and who is now paying for a house and educating his children to accept a much smaller salary.

Many physicians in the classes enumerated above would gladly give part of their time for government work. It would seem perfectly possible for the Surgeon-General's Office to arrange that in the government hospitals, camps and cantonments there should be a visiting staff of civilian physicians, who should act in precisely the same capacity that many of them now act to the great civilian hospitals. They should, of course, be assigned certain definite hours and compelled to observe them. By such an arrangement as this several things could at once be accomplished: the physicians would not feel that they were remiss in their duty, troops would secure the very best medical attention, for specialists in various lines would be at their disposal, Army physicians would secure additional expert training, the medical schools could continue their work unhampered, the civil population would not suffer, and many Army physicians would be set free for more strictly military duties. At the same time we must all appreciate the tremendous difficulties that have been associated with the expansion of the medical corps and express a word of appreciation for the excellent work that has been done; this idea that has just been elaborated is not to be viewed in the light of a criticism but rather as a suggestion that many of us believe to be well worth considering.

A MOTTO FOR THE MEDICAL PROFESSION

Lastly, let us waste no time, but let us conserve our strength. Let us keep our tempers, let us not become hysterical, let us not be led into hasty judgments even though the medical mouthpiece of the Council of National Defense continues to utter fulsome fulminations. And in deciding what to do, let us be governed by one rule: Do what will be for the greatest good of the greatest number.

RELIABILITY OF OZONE IN SWIMMING
POOL DISINFECTION *

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NEW YORK

It is now well established that the combination of refiltration and disinfection of swimming pool water constitutes the standard procedure in the sanitary control of plunge baths. It is also well known that the combined procedures of refiltration and disinfection effect reductions in the cost of maintenance which, in the long run, make the installation of expensive apparatus an actual economy. Furthermore, it is well to state that refiltration can be relied on in a properly designed system to maintain the pool water free from suspended matter, and that ozone treatment will supplement this by bleaching dissolved coloring matter and by destroying bacteria.

In diseases, bacteria are discharged from the body in pus, mucus, feces or blood. The bacteria are usually protected by these substances from the destroying activity of such natural agencies as light and drying; and probably the success obtained by the use of strong oxidizing chemicals, such as gaseous chlorine, the hypochlorites and ozone, may be attributed to the power these substances have of destroying the organic material enveloping the bacteria. Methods applied without regard to bacteria protected in this way usually fail in practical operation, even though excellent laboratory results are obtained when artificial cultures are used.

In swimming pools, in which there is always a greater load of organic matter than in the average water supply, it is of particular importance to select powerful oxidizing agents as disinfectants. Of these powerful agents we should consider the halogens and ozone.

THE HALOGENS.

In large water supplies, gaseous chlorine and the hypochlorites have in a great many cases been used with perfect success. In smaller systems they have occasionally failed, owing merely to the fact that objectionable tastes and odors were produced in the water when a sufficient quantity of chemical was used to insure sterilization. In swimming pools in which large quantities of organic matter are constantly introduced into the water, correspondingly large amounts of chemical must be added to insure thorough oxidation and adequate destruction of bacteria. For this reason it has been quite usual to find either one of two conditions obtaining in a pool in which chlorine or its compounds are used—namely, the addition of insufficient chemical, resulting in inadequate purification, or the addition of a superfluous amount with the production of tastes and odors making the water at times almost unfit for use. Consequently while from the bacterial point of view the halogens are quite efficient in pool water purification, they frequently fail in practice because they tend to reduce the patronage and therefore the usefulness of the pool.

OZONE.

The addition of a powerful oxidizing agent to pool water, in such an excess as to insure destruction of

bacteria, though leaving no objectionable trace in the water, is particularly valuable in pool disinfection. Ozone is the only economically produced chemical of which we know that can be relied on to destroy the bacteria, bleach the coloring matter, successfully attack the organic substances, and at the same time leave no objectionable substance in the water. In fact, the process thoroughly aerates the water and enhances its appearance.

There is, of course, nothing novel in the successful application of ozone to the purification of large drinking water supplies. Spalding¹ states that forty-nine large ozone plants abroad regularly deliver pure water to large municipalities. In France he cites twenty-six plants, in Roumania four, in Spain one, in South America three, in Germany seven, in Italy five, and in Russia three. The plant at St. Maur supplies the city of Paris with 24,300,000 gallons daily, the Bon Voyage plant supplies Nice with 6,480,000 gallons daily, the plant at Villefranche supplies 7,020,000 gallons daily, and the plant at Petrograd supplies 14,040,000 gallons daily, to mention only some of the largest. It is evident, therefore, that the use of ozone in pool water purification is merely another instance of its successful application.

TESTS.

The summary of a series of tests has already been set forth,² from which I quote in part:

The bacterial counts in this pool (Twenty-Third Street Bath) were so low after continuous operation of the ozone machine that it was deemed advisable to add a large number of *B. coli* to the water in order to observe the efficiency of ozone on heavily polluted water. Accordingly a mass culture of *B. coli* was emulsified in salt solution and thrown into the pool. In order to secure thorough mixing of the bacteria with the pool water and to keep the pollution high, the circulating pump was shut down between 10 a. m. and 2 p. m., a long handled brush was used to stir the water, and this, together with the agitation produced by the bathers, resulted in a uniform mix. The pool was then operated as usual and two hours later the tests were made.

ONE PART OF OZONE PER MILLION OF WATER

(NOTE.—All bacterial counts are averages of 3 or more determinations.)

Using ejector:

Bacterial count in artificially infected pool, 3,700 per cubic centimeter.

After filtration and before ozonation, 1,800 per cubic centimeter.

After ozonation, no growth in 1 cubic centimeter.

After ozonation, no growth in 3 cubic centimeter.

In addition to plating 1 c.c. of the water delivered from the ozone tower, 3 c.c. samples were plated as well. In the majority of cases no growths were obtained.

Using blower:

Pool water in artificially infected pool, 3,500 per cubic centimeter.

After filtration and before ozonation, 1,540 per cubic centimeter.

After ozonation, no growth in 1 cubic centimeter.

After ozonation, no growth in 3 cubic centimeters.

The results, using the blower, are identical with the foregoing. We conclude, therefore, that when one part per million of ozone is used, either with an ejector or with a centrifugal air blower (which delivers more air) the pool water artificially contaminated with *B. coli* is sterilized.

If one-half part ozone per million of water is used, the ejector, delivering less air than the blower, gives better results. Indeed, one-half part per million seems to be ample for average conditions.

A recent extensive series of tests was made to obtain data on which to judge the reliability of the process

* From the Research Laboratory of the New York Department of Health.

² Read before the American Association for Promoting Hygiene and Public Baths, Newark, N. J., May 15, 1918.

1. Spalding: Application of Ozone to Water Purification, N. Y. State Dept. of Health, 1913.

2. Manheimer, W. A.: The Application of Ozone to the Purification of Swimming Pools, Pub. Health Rep., 1918, 33, 267.

over an adequate period of time. These tests were made on alternate days three times a week for a period of three weeks without renewing the water. The results are set forth in the accompanying table, so as to show the uniformity obtaining:

RESULTS OF TESTS					
First Week		Second Week		Third Week	
Before Ozonation	After Ozonation	Before Ozonation	After Ozonation	Before Ozonation	After Ozonation
58	1	10,800	1	31	0
85	0	16,200	0	35	0
80	0	8,400	1	32	0
50	0	15,000	0	23	0
60	0	.....	1	36	0
7,500	0	12	0	1,600	0
5,000	0	12	0	1,700	0
4,400	0	8	1	.....	0
6,000	0	14	0	1,700	0
3,000	0*	21	0	1,500	1
12,000	0				
1,800	0	18	0	60	0
1,800	0	21	0	100	3
3,000	2	22	0	90	0
1,400	1	20	0	80	0
		39	0	80	0

* Two surface.

The attendance in this pool is exceptionally large, reaching at times 1,500 bathers a day. This necessarily causes high pollution. It will be observed that the water was delivered sterile, or nearly so, regardless of the counts before ozonation. In addition to this the water was bleached, gradually assuming a transparent blue, so that as the pool continued to be operated the appearance of the water was improved: Consequently where adequate refiltration is combined with ozone disinfection, the water may be retained in the pool for a considerable length of time, effecting a material reduction in the cost of maintenance. It should be stated, however, in designing a pool, that the capacity of the recirculation system should be proportional to the estimated attendance.

COST OF OPERATION.

The cost of operation for a 60,000-gallon pool is low. Only two items need be considered, the amount and cost of electric current, and the cost of the occasional replacement of calcium chlorid in the air dryer.

Alternating current must be supplied to the ozonator. If only a direct current is available, it must be converted into alternating current by means of a motor generator. This entails a current consumption of 2 kilowatts a day for a six-tube ozone unit (the unit to be used for a 60,000 gallon pool). The unit itself will consume only 2 kilowatts a day, so that if alternating current is available the cost of operation will be from 11 to 15 cents a day, allowing 1 cent for the replacement of calcium chlorid and figuring electric current at the rate of from 5 to 7 cents a kilowatt. If electrical current is manufactured on the premises the cost may be materially reduced below the figures stated. Where direct current must be converted into alternating current, from 10 to 14 cents (2 kilowatts) must be added to these figures.

It is obvious that the process is very economical in operation as well as reliable and automatic in control, and for these reasons is destined to wide application in the purification of swimming pools.

CONCLUSIONS.

Ozone is recommended for swimming pool purification because:

1. It is reliable as a disinfectant.

2. It is capable of purifying heavily polluted pool water.

3. It produces no objectionable substances in the water.

4. It improves the appearance and transparency of the water, permitting a longer continued use of the pool, a consequent reduction in the cost of maintenance, and a reduction in the hazard of drowning.

5. It is inexpensive in application.
- 2350 Davidson Avenue.

THE ACTION OF MIOTIC DRUGS ON EYES WITH INCOMPLETE SPHINCTER IRIDIS *

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In the literature of glaucoma and ocular injuries, there are contradictory opinions expressed on the effect of miotic drugs in cases of incomplete sphincter, especially in radial tears of the iris from contusions, leaving it a matter of conjecture whether such radial tears can be increased or diminished by the use of miotics. There is the same contradiction of opinion on the effect of mydriatics on radial tears. Regarding glaucoma, it seems generally to be assumed that the beneficial effects of the miotic drugs are due entirely to the contraction of the sphincter, and that these beneficial effects are abolished if the sphincter is not intact and functionally capable. On the other hand, it is frequently advised that treatment with miotics be given after iridectomy, in case of insufficient effect from the iridectomy, thus recognizing — or hoping — that the miotics may still be effective.

Elliott,¹ in objection to complete iridectomy in sclerocorneal trephining for glaucoma, says:

It deprives the surgeon of the power of inducing strong miosis should he require to do so.

Johnson,² on the operative treatment of glaucoma, says:

Suppose that the iridectomy has already been performed without permanently reducing the tension, what is one to do then? The ring of the inner circle of the iris has been divided and miotics will no longer act effectively.

Fuchs³ says:

Eserin . . . in many cases excites violent headache, which may lead to vomiting. These symptoms are not to be regarded as due to a general poisoning, but are caused by the marked contraction of the pupil, by which the nerves of the iris are strongly pulled upon. Hence, the symptoms are absent when marked contraction of the pupil fails to take place—e. g., in atrophy of the iris or in solutions of continuity of the sphincter (colobomata, fissures, etc.).

In the later edition, this paragraph is changed:

Eserin frequently excites severe pain in the eyes and head, painful contractions in the lids, and even nausea and vomiting. These are not symptoms of poisoning, but are the results of the great narrowing of the pupil and the contraction of the ciliary muscle, by which the ciliary nerves are pulled upon. This bad by-effect, therefore, usually is absent when,

* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.
1. Elliott: Ophthalmoscope, 1914, 12, 587.
2. Johnson: Arch. Ophth., 1914, 43, 8.
3. Fuchs: Textbook of Ophthalmology, Third American Edition, 1908, p. 308; Fifth American Edition, 1917, p. 389.

for any cause, the eserine fails to produce any marked contraction of the pupil.

Beard,⁴ writing of anterior sclerotomy with conjunctival bridge, says:

A prolapse under the existing conditions could not be adequately dealt with, and an iridectomy would be undesirable in view of the possible need of miotics at a later period.

Again, on the efficiency of iridectomy:

In the event of a relapse, it precludes the use of miotics.

Bradburne⁵ says:

This operation (basal buttonhole iridectomy), in that it leaves the pupillary border of the iris intact, allows the subsequent employment of miotics if such be deemed necessary.

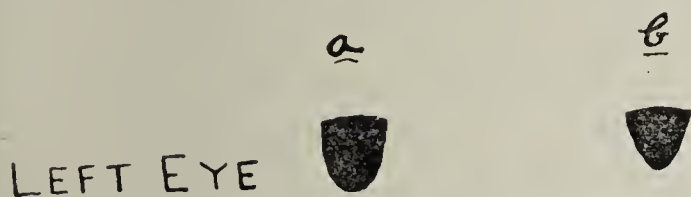


Fig. 1.—Size and shape of pupil (a) before and (b) after physostigmin.

Bernheimer,⁶ reporting a case of congenital anomaly of the iris, observed six large round indentations of the pupillary margin, and within these three or four parallel folds of iris tissue which corresponded to smaller indentations. He says:

The fact that the pupil reacted to light and contracted upon eserine, although not maximally, proved that the changes were only superficial disturbances of the arrangement of the tissue of the iris, and did not involve the sphincter.

Wuerdemann⁷ argues both ways. Under "Injuries to the Uvea from Blows":

If radial tears are seen, then atropin is contraindicated and eserine should be used to contract the pupil and draw the tears closer together.

Under "Lacerations of the Sphincter":

We would theoretically imagine that miotics would bring the torn pupillary margins together and cause healing, but such never happens. Atropin, however, is contraindicated, as its action would only tend to deepen the tear.

Under "Mydriasis and Miosis Traumatica":

If the pupil fully dilates to atropin, there has been no lesion of the dilator muscle; if contracting fully to eserine, none of the constrictor.

The accompanying illustrations show the actual size, by measurements, of pupils in three eyes before and after the use of eserine.

In the case illustrated in Figure 1, iridectomy had been done several years before for glaucoma, later extraction of the cataract was done, and still later sclerocorneal trephining, according to Elliott, all without arrest of glaucoma. In this case the tension-reducing effect of physostigmin (eserine) was demonstrated by the tonometer, which on one occasion measured the tension 39 mm. before, and 18 mm. after the use of physostigmin. That miotics can influence the tension even after iridectomy is probably generally recognized, and their use is usually advised after iridectomy.

In the case illustrated in Figure 2, iridectomy had been done on both eyes of a man, aged 20.

While measurements so small cannot be made with perfect accuracy, they show definitely a diminished size of the pupil and, especially significant, a narrowing of the coloboma. In both cases, and also in others, physostigmin has produced its other characteristic symptoms in addition to miosis—aching, spasmodic jerking pains, and spasm of accommodation in young persons. These symptoms, therefore, must be due to the action of the physostigmin on the ciliary body as much as to its action on the pupil. In this connection must be considered the question of the paralytic or relaxing effect of physostigmin on the dilator fibers of the iris, coincident with its spastic effect on the sphincter. In connection with the reduction of tension by physostigmin in an iridectomized eye is to be considered the mechanism of this change of tension, and the rôle in it of the ciliary body, since it evidently is not entirely due to the action of the sphincter. The conflicting opinions on the use of miotics and mydriatics in cases of injuries to the iris, especially radial tears involving the sphincter, are based mainly on theoretical considerations. It can be assumed that miotics, by diminishing the size of the pupil, can bring the margins of the tear together, and so promote healing, or that mydriatics, by relaxing the sphincter, can produce the same result. It can as reasonably be assumed that miotics, by exciting strong action of the sphincter, can pull the margins of the tear apart and so prevent healing, or even increase the tear; or that the same result can be brought about by the dilatation of the pupil produced by mydriatics. As a matter of clinical fact, however, it is probable that mydriatics and miotics have no power to increase or diminish the extent of the iris tears. Hence, the use of mydriatics or miotics is to be determined by other considerations. Usually mydriatics are indicated because of iritis, and

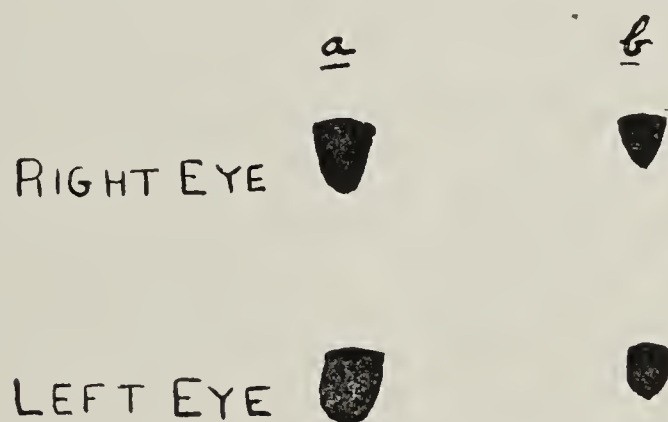


Fig. 2.—Size and shape of pupils (a) before and (b) after physostigmin.

any permanent mydriasis resulting is to be regarded as due to the injury, and not to the use of mydriatic treatment.

CONCLUSIONS

Physostigmin can produce contraction of the pupil, narrowing of the coloboma, and reduction of the glaucomatous tension in iridectomized eyes.

The contraction of the pupil and coloboma indicates that there is a relaxing effect on the radial fibers of the iris, as well as the spastic effect on the sphincter.

The action of the ciliary body is a factor in the reduction of the glaucomatous tension produced by physostigmin.

It is probable that miotics (and mydriatics) have no power to increase or diminish the extent of radial tears of the iris.

4. Beard: *Ophthalmic Surgery*, Ed. 2, 1914, pp. 637, 656.

5. Bradburne: *Ophthalmology*, 1917, **13**, 205.

6. Bernheimer: *Ophthalmology*, 1914, **10**, 306 (abstr. by Zimmermann).

7. Wuerdemann: *Injuries of the Eye*, 1912, pp. 568, 579, 580.

ABSTRACT OF DISCUSSION

COL. FRANK C. TODD, Minneapolis: Dr. Curdy especially relates this subject to the treatment of glaucoma, and calls attention to the fact that even where the sphincter has been cut, some contraction of the pupil takes place. It is well known that miotics, such as eserine, produce the maximum contraction of the pupil, and a maximum contraction of the pupil could not be produced unless two things take place, namely, a paralysis of the fibers that dilate the pupil, and a stimulation of the fibers—that is, of the sphincter—that contract the pupil. So it has this combined action. That is further confirmed by the fact that in the case of paralysis of the sphincter, the use of eserine will produce medium but not maximum contraction of the pupil, because it relaxes the dilator fibers. Then why should we not expect the same effect if the sphincter fibers are cut, when we have a coloboma? that is, a relaxation of the dilator fibers may take place.

This brings us to the practical point of the wisdom of producing a complete coloboma in the operation of trephining for glaucoma. I have thought that I have made some failures to permanently reduce tension where I have made too small an opening in the iris. Perhaps you remember that Elliot considered that iridectomy was of no value in his glaucoma operations, and when the iris did not present he was not in the habit of cutting the iris out. My experience has been that in some of those cases in which a sufficient amount of iris was not removed, the plugging of the hole might take place more readily afterward, and I have preferred to have a large coloboma than to have a very small one. But I do think that ideally the wide coloboma, produced with the Elliot operation, with the retention of the pupil, is more advantageous, if only for the fact that we can get more of a contraction of the pupil later by the use of a miotic, if that seems necessary. That is to say, if we can get a coloboma like this (illustrating by means of the blackboard), leaving intact the marginal fibers, we then have an opportunity to produce a maximum contraction of the pupil, if it seems wise, for after treatment to further reduce the tension.

DR. ROBERT J. CURDY, Kansas City, Mo.: It is true, as Dr. Todd says, the maximum contraction of the pupil cannot be produced if the sphincter is interrupted, but in the treatment of glaucoma with miotics, we are not trying to produce contraction of the pupil; we are trying to cure the glaucoma, and it is the purpose of this paper to show that miotics can be effective in the treatment of glaucoma notwithstanding the interruption of the sphincter of the iris.

Infant Mortality in the Philippines.—Sixto Y. Orosa, M.D., in an article in the November number of *Revista Filipina de Medicina y Farmacia* gives the results of his study of 334 families in Jolo, with a population of 8,287, with reference to infant care and mortality. He shows that the average family has three children, one of whom dies. With reference to feeding, out of 1,117, 924 were breast fed, 109 bottle fed and 84 given mixed feeding. Of the 924 children breast fed 632 lived, 68 per cent.; 292 died, 30 per cent. Of 109 bottle fed, 86 lived, or 78 per cent., and 23 died, or about 21 per cent. Of the 84 given mixed feed, 50 lived, or nearly 60 per cent., and 34 died, or 40 per cent. Thus, he says, notwithstanding the ignorance of the average mother, the percentage of deaths of those artificially fed was 21 or 22 per cent. as against 30 per cent. for the breast fed. The bottle fed also had less deaths than those given mixed feeding. Condensed milk is generally employed in artificial feeding. Out of 349 deaths, 165 occurred before the age of 1 month, or nearly 50 per cent.; 286 occurred before the child reached 5, or 82 per cent., and 336 deaths occurred before the child reached 15 years, or over 97 per cent. Infantile convulsions is among the chief and first causes of death of infants, and their mothers usually show signs of beriberi. The infant becomes blue and is seized with convulsions. The condition is called "alperesia." Intestinal diseases, malaria and respiratory diseases follow in order of importance as causes of death, and syphilis and malaria are important causes of abortion, of which there are many cases.

THE RELATION OF HEREDITARY EYE DEFECTS TO GENETICS AND EUGENICS*

LUCIEN HOWE, M.D.

BUFFALO

Of late years, while trying to learn something about ocular muscles, I have been confronted often by questions concerning heredity. I have found, as others doubtless have, three, four or even more persons in the same family with a similar form of heterophoria, heterotropia, predisposition to ocular fatigue, or similar abnormal muscular conditions. It seemed impossible to study these anomalies satisfactorily without first halting to learn something about that mystery which we call heredity.

It is understood that "genetics" is a general term including everything that pertains to generation. Heredity is more specific, dealing with "the organic relationship between generations." As defined by Davenport, "it is the phenomenon of the recurrence of traits in blood relatives due to the persistence of their determiners in the germ plasma." Eugenics refers, of course, to the improvement of a race by selected breeding.

It is not possible here to give any systematic account of the studies already made of hereditary eye defects, except to mention the classic work by Groenouw,¹ the interesting histories collected by Nettleship, the more recent bibliography by Loeb, with the exhaustive articles by him, or those by Libby and others. The point is that we ophthalmologists have been content thus far with reporting family histories without attempting to relate those histories to other facts, now well established by geneticists.

Meanwhile, the science of modern genetics has come into being and has developed rapidly, especially in its relation to defects of the eyes.

Davenport² includes the following conditions: degeneracy of the cornea, anomalies of iris, glaucoma, displaced lens, cataract, pigmentary degeneration of the retina, atrophy of the optic nerve, night blindness, color blindness, reduction in size of the eyeball, megalophthalmus, myopia, astigmatism, paralysis or imperfect development of the muscles of eye and lids and nystagmus.

In view of the vastness of the subject and the brevity necessary in our transactions, my objects here are to:

1. Formulate a plan by which we may relate our clinical facts to the data of genetics and eugenics.
2. Show how each ophthalmologist can contribute something to our common fund of knowledge concerning it.
3. Give the results of my own studies thus far in the form of exhibits with the presentation of the paper, and publish those results later, separately. That saves time at the meeting, and space in our transactions, but still gives credit, if any there be, to our section for priority in the work shown by the exhibits.
4. Suggest a plan which may prove practicable for preventing to some extent hereditary blindness.

* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Groenouw, in *Handbuch der gesamten Augenheilkunde*, Graefe-Saemisch, Ed. 2, Part 1, 11, 415.

2. Davenport, C. B.: *Heredity in Relation to Eugenics*, New York, Henry Holt & Co., 1911.

The plan to attain these four objects is to:

1. Bring the bibliography to date.
2. Arrange it according to diagnoses.
3. Add new family histories of such eye defects.
4. Chart certain histories reported previously only in narrative form.
5. Compare the relation of such defects with the mendelian or other principles of heredity.
6. Show the importance of a differential diagnosis between defects really hereditary and those due to infection (syphilis).
7. Suggest a plan for the prevention of hereditary blindness by sequestration, or by sterilization if the transmitter of the blindness so elects.

The reassuring statement should be made at once that it is not intended to cover all of this ground in this paper. For example, the first and second steps in the proposed plan are represented by what may be called Exhibit A. This is a bibliography in the form of a card catalogue. The literature up to 1901 was collected and arranged, according to diagnoses, by Groenouw. That list contained 324 references. Loeb published his bibliography in 1909, but as his list partly duplicated that of Groenouw, and was arranged alphabetically—not according to diagnosis—and as an assistant has found over 200 other real or supposed family histories of heredity, it seemed best to make a new list from 1901 and rearrange all according to diagnosis. That constitutes the present list of over 700 titles brought practically to date and arranged on a unified plan.

The third step is represented by Exhibit B. This is a group of twenty-four charts of new family histories of hereditary eye defects. These were obtained by examining the files at the Eugenics Record Office of the Carnegie Institution of Washington at Cold Spring Harbor, N. Y., and acknowledgment is here due to the director, Dr. Davenport, for the unusual opportunity thus afforded.

The fourth step is represented by Exhibit C. This is a collection of over thirty charts of hereditary eye defects. These histories were published in narrative form, and as such were difficult or almost useless for study or comparison. A few charts already published were also added to show good examples of a defect which is really hereditary and one which is not, and also to show when a defect is "dominant" or "recessive." The importance of this differentiation will appear later.

It is possible now only to mention these three exhibits. They will be explained in detail when published.

We come then to our fifth step. To state this in slightly technical terms, we ask, does a certain chart suggest in any degree the mendelian law of descent? If so, is the defect dominant or is it recessive? Or does the chart show an example of sex linkage, or are other principles of heredity involved? These are new terms to many of us, but in this paper we have to take for granted a knowledge of the wonderful law discovered by that extraordinary character, the monk, Gregor Johann Mendel, and also what that law means to students of genetics of today.

THE MENDELIAN LAW

An example of mendelian descent, as demonstrated in the eyes of fowls, will recall the more important points: If one fowl having a dark red iris is mated with another that has a gray or pearl colored iris, the descendants in the first generation, called technically the first filial generation, and usually indicated F_1 , will show red irises slightly mottled with pearl. That is, it happens that the red iris in poultry "dominates" almost entirely over pearl. But if members of this F_1 be bred with each other, then in the second filial generation, or F_2 , we find, on counting the offspring, that about one fourth have their irises red, one fourth of them pearl, and half have mottled eyes. If the red "domination" were complete, then the proportion would be three red eyed to one pearl; but breeding tests would show that, on the average, two thirds of those with red eyes were hybrids. If now, we inbreed these F_2 individuals, we find when a red-eyed fowl is bred with a corresponding red-eyed fowl, the progeny are all red eyed, for any number of generations. Also, when the pearl-eyed fowl is bred with a pearl-eyed fowl, the progeny are all pearl eyed for any number of generations. But when two of the intermediate

type in F_2 are inbred, the eyes of their progeny in F_3 are not all red, but their progeny in F_3 break up into one red, two mottled and one pearl, as in F_2 . When these groups in F_3 are again inbred, we find in the succeeding generation F_4 the same behavior.

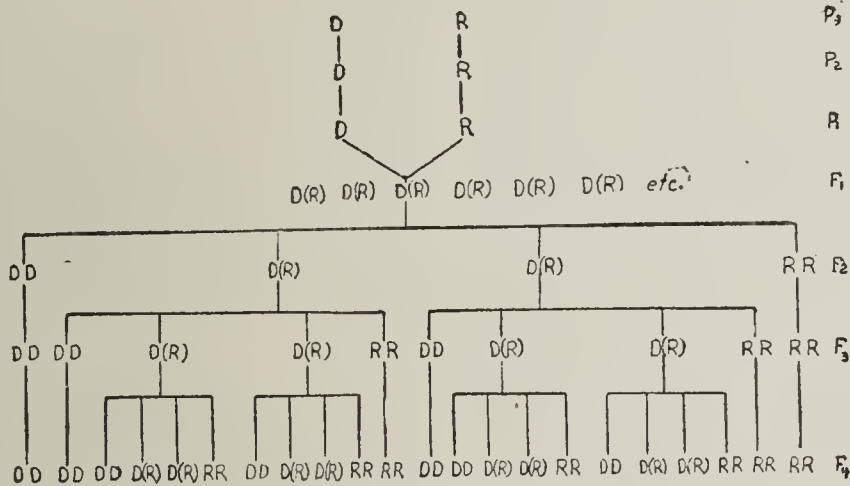
The mendelian law is usually stated briefly by letters. Thus, if we denote the dominant parent having the red iris by D, and the recessive parent

having the pearl iris by R, the offspring in F_1 is indicated by D (R), the R being in parenthesis to show that it is recessive to D. The hybrid D (R) when inbred gives offspring in F_2 in the ratio, DD + D (R) + D (R) + RR. The first DD breeds true. The RR also breeds true. But each of the two intermediate D (R)'s produce in F_3 a corresponding series of DD + D (R) + D (R) + RR.

The mendelian law is also illustrated by a diagrammatic arrangement of the letters which indicate the groups of four. As none of the published diagrams seemed to make the sequence entirely clear to me at first, I have outlined the details of Mendel's law as shown in the accompanying diagram. It may also prove of assistance to other students, even if it be rather schematic.

OTHER PRINCIPLES OF HEREDITY

Sex linkage is another principle of heredity to which attention may be called. This is the tendency which certain characteristics have to develop exclusively or predominantly in the male members of the family, especially in certain crosses. For our purpose, however, it must suffice to recall the fact that among the diseases appearing predominantly or exclusively in the male line, at least in certain families, are atrophy of the optic nerve, color blindness, night blindness and probably other defects.



Schematic outline of Mendel's law.

It is impossible in a brief statement like this to give even passing notice to other principles of heredity which are of undoubted importance in a study of eye defects. Among these may be mentioned blended and excessive inheritance, reversion, predisposition to disease, immunity, etc. But it is doubtless the case that even our present knowledge of these principles will assist us in understanding why in certain families this or that defect of the eye does appear to be dominant, and on the other hand, why in certain other families the same defect appears to be more distinctly recessive. Thus by charting the knowledge which we have thus far acquired of eye defects and comparing those charts with a knowledge of the principles of heredity, it is probable that the relation between the two will become more apparent.

APPROACH TO THE STUDY BY THE OPHTHALMOLOGIST

One of my main objects, as already stated, is to interest others, if possible, in this subject, so that they may help to solve questions that can only be hinted at here. Therefore, it is in order to indicate briefly how the study can be approached by any ophthalmologist.

As to a theoretical knowledge of heredity, it may be of assistance to mention a few books which have been found useful. Herbert's "First Principles of Heredity" gives an outline of the entire subject. Castle's "Genetics and Eugenics" is more elaborate and technical. Davenport's "Heredity in Relation to Eugenics" is especially interesting and gives a number of data relating to hereditary defects of the eye.

A short, systematic course of reading like this gives a theoretical idea of the principles of heredity sufficiently definite to enable the ophthalmologist to discern some of the relations between a given principle or line of descent and a given group of eye defects.

Theoretical knowledge is, however, second hand mental furniture. The best way to learn these principles and one vastly more interesting is to supplement the reading with at least a few experiments.

The breeding of eye defects is easier than most persons imagine. Chickens and pigeons are the best subjects for such experiments.

By advertising in the *Reliable Poultry Journal* and other trade papers, it has been possible to obtain for the parent stock more than a dozen specimens of eye defects. These included corneal irregularities, and variations in the color of the iris and in the position of the eyes and of the pupil. The different pens of chickens at a small place, known as Mendel Farm, on the lake shore near Buffalo, have proved to me a source of much interest and enlightenment.

The breeding of dogs has not been found satisfactory. Eye defects are rare, the generations slow and the litters small. For similar reasons, cats are undesirable. It is probable, however, that interesting results could be obtained by breeding white cats which have blue eyes—such cats being often deaf. This fact had been already observed by Darwin and has been the subject of breeding experiments by Dr. Graham Bell.³

The eyes of the small fruit fly, *Drosophila ampelophila*, have proved most interesting. I am indebted to Professor Morgan of Columbia for parent stock, the blind variety of which I bred through more than twelve generations.

PRACTICAL VALUE OF THE STUDY

The average reader of this paper may say that such a glance at the principles of heredity may be curious and possibly interesting, but of what practical use is it?

Of course, we never find a typical mendelian ratio in the human species, because brothers and sisters never marry. But an approach to these ratios we do find constantly, and that law furnishes an important guide, not only in recognizing heredity itself in a given family history, as distinguished from an infection, but in also indicating when the defect is dominant or recessive. In other words, this relation between genetics and ophthalmology throws light on the differential diagnosis (the next step in our study), and is very decidedly practical in connection with eugenics.

With this reassurance as to the reason for continuing, let us pass to the examination of family histories to determine whether a given defect is in reality hereditary, or whether it is due to infection from syphilis or other causes.

It would necessitate a rather long digression to show just how this differential diagnosis is made. Suffice it to say that our criterion is the technical definition of heredity given at the outset. The fact is that a very considerable proportion of defects which we all supposed formerly were hereditary are probably not hereditary, but the effect of some infection more or less obscure. An excellent example of this is a family history of aniridia reported by one of the oldest and best known members⁴ of this section. The author and all other ophthalmologists accepted this as an undoubted example of heredity, but competent geneticists now demonstrate that to be highly improbable.

Other diseases besides syphilis, or susceptibility to them, undoubtedly are transmitted from parent to offspring, and with these diseases we should include the effects of alcohol. In a word, caution is necessary in our diagnosis. We find, too, that even many of the muscular anomalies which seemed to be hereditary, and which prompted this whole study, are not hereditary after all.

Having thus collected various family histories, even those said to be hereditary, classified them, added to their number, charted them, studied the relation of genetics to these histories, and having seen the necessity of more exact diagnosis, we can now leave this imperfect sketch of the relation of eye defects to genetics, and pass to the eugenic aspect of the subject. The literature concerning this is scanty and confused. It will tend to clearer thinking to define a few terms. From the standpoint of eugenics, eye defects may be divided into two groups—the minor defects, or deformities, and major defects, or blindness.

The term "hereditary" we should also define more exactly as including two groups—one in which the recurrence of the defect is only "possible," especially when that defect is "recessive," the other in which its recurrence is "probable," especially when that defect is "dominant." Evidently, therefore, we have as many conditions to deal with as there are combinations, in pairs, of these four factors.

Still another factor enters into the problem—the personal equation of the parties to a marriage contract. For when two persons contemplate matrimony, it can usually be taken for granted that their judg-

3. Bell, Graham: Tr. Otol. Soc., 1885, 3, 478.

4. Risley, S. D.: Hereditary Aniridia, THE JOURNAL A. M. A., April 17, 1915, p. 1310.

ment has, for the time, taken wings. Professor McCready, in his lectures at the College of Physicians and Surgeons, used to say his case records showed that for various reasons he had advised one or both parties against marriage some sixty-eight times; and his records also showed that sixty-eight times the couples went almost straight to the altar.

But temporary obsessions by those who ask an opinion is no excuse for inability to advise intelligently, or, if necessary, to restrain persons from a fatal mistake. Therefore, the other four factors in our problem demand all the more careful study. While the difference between a simple deformity and blindness is evident, it is not easy to say whether the recurrence of a given defect is "possible" or "probable." Our decision, then, must be based on three groups of data: first, whether the defect is inherited as a dominant or a recessive; second, whether it is a sex-linked characteristic, and, third, whether both families show the defect.

A few illustrations will show how these four cardinal conditions in our problem may serve as the basis for an opinion by an ophthalmologist when he is called on to give advice in the case of a proposed marriage. Thus:

A. When we have to do only with a deformity, and its reappearance is doubtful, no special objection need be raised.

B. When we have to do only with a deformity, and its reappearance is probable, the parties to the marriage should both be warned of the probability of the reappearance of that defect in their offspring.

C. When we have to do with blindness, and its reappearance is doubtful, a stricter attitude toward the union can be assumed.

D. When we have to do with blindness, and its reappearance is probable, the question assumes its most serious aspect. If the family history shows that this defect is in reality dominant, then half the children on the average will develop the defect; or even if the defect is recessive, but occurs in both families, the danger is practically the same.

Another phase of the same problem is presented when a couple is already married, and with little or no history on either side of eye defect; yet in spite of that, for reasons which we do not know, one child after another, blind or partly blind, is born to these parents. This congenital blindness is in one way quite different genetically from hereditary blindness, but from the standpoint of eugenics, families with hereditary and with congenital blindness may be considered together as one group and classed as hereditary. It is desirable to appreciate how important this group is, but space permits here only the categorical statement of a few facts, which, properly presented, would fill a small volume. These facts are:

(a) The number of this group in the United States is considerable. It has been estimated at about 8,000 and upward. According to the census of 1910, the total number of blind was 52,272. Counting unavoidable and admitted errors in that census, the results of subsequent surveys, and increase of population, the National Committee for the Prevention of Blindness estimated the number of blind in 1917 at from 100,000 to 110,000. According to the data given by Best in his exhaustive and recent study of the blind in this country, the proportion of hereditary and congenital blind is considerably larger than here stated. But in

giving estimates, the minimum limit is evidently the safest.

(b) The cost also is considerable. According to statistics carefully collected in Massachusetts and elsewhere, the average cost per year of each blind person in and out of institutions is at least \$475. This gives us a total annual cost of some \$3,800,000.

(c) It is unjust to the blind to allow them to be brought into existence simply to lead miserable lives.

(d) It is unjust to taxpayers to be compelled to support them.

(e) The longer we delay action to prevent this blindness, the more difficult the problem becomes.

(f) A large part, if not all, of this misery and expense could be gradually eradicated by sequestration or by sterilization, if the transmitter of the defect preferred the latter. An idea of this plan is given by the somewhat similar one for dealing with feeble-mindedness. In 1913, laws for sterilization, under certain circumstances, had been passed in twelve states and proposed in nine others. Bulletin 10 of the Eugenics Record Office, Cold Spring Harbor, L. I., N. Y., gives a map showing the status at that time of such legislation. Where such eugenic laws have been enacted or favorably considered, probably existing laws could be properly amended or new laws passed, to prevent this form of blindness. The same bulletin gives the form of a model law for this purpose. It was prepared by committees composed of the most eminent physicians, surgeons, sociologists, students of genetics and similar experts in this country. That law could be made applicable to the prevention of hereditary blindness, but with an important difference, which makes the prevention of this form of blindness comparatively easy and inexpensive. No legal action is essential until after a marriage has been found to produce blind children, and even then sequestration of the transmitter of the defect may be substituted for sterilization. Moreover, if this sequestration is of a kindly nature, with congenial occupations suited to the intelligence and social tastes of the subject, the sense of restraint is slight, since it is reduced to the minimum. This is not theory but experience, as shown especially by the colonies for the feeble-minded established by Dr. Charles Bernstein of the State Custodial Asylum at Rome, N. Y.

WHAT ARE WE GOING TO DO ABOUT IT?

In other words, we have all this misery and expense, both of which are largely unnecessary; we have also an effective method of relief prepared by committees of our foremost experts and already well supported, in principle, by public opinion. What are we going to do about it? That is the question at last forced on ophthalmologists—especially on the Section on Ophthalmology of the American Medical Association. Shall we complacently continue to do nothing, thus retarding social advancement and even ophthalmology itself? The answer to this question involves many details, both of principle and of method, far too complicated for discussion now. But in executive session a motion will be made for the appointment of a committee to report on this subject another year. If at that time or later, some plan can be formulated for the prevention of this form of blindness, it will perhaps seem worth while for us to have directed our attention now, even in this hasty manner, to the relation of hereditary eye defects to genetics and eugenics.

ABSTRACT OF DISCUSSION

DR. HORATIO H. NEWMAN, University of Chicago: This occasion gives me an opportunity of expressing an idea that has long been at the back of my mind, that cooperation between the professional ophthalmologist and the professional genetecist might lead to far reaching results in both fields. This idea was suggested to me some years ago by a piece of genetic work which fell into my hands quite accidentally. While instructing a class in genetics at the University of Texas I dealt with night blindness as an example of one type of heredity. I made a statement that night blindness was a partially sex-limited character, appearing in every generation, but largely restricted to males.

After the class a young woman said that there was something like hereditary night-blindness in her family, but it did not follow the law stated. I found that there was quite a large family connection who were night-blind and that the defect was inherited as a sex-linked character. This led me to work out the data of optic defects for five generations of this family, which was published some years later in the *British Journal of Genetics*. The point I wish to bring out is the great difficulty that I had as a genetecist in handling that data. If I had had the cooperation of an ophthalmologist the task would have been greatly simplified. As it was I had to depend on advice kindly offered by Nettleship, advice which though meager was of the utmost value.

That, then, will bring out my point, that it would be a very valuable thing if the ophthalmologists and the genetecists could actually get together in working out some of these problems that concern these two fields.

I think I am safe in saying that nothing equals the data of ophthalmology for the study of human heredity. And particularly is that true in connection with sex-limited and sex-linked heredity. We have found in our experiments on a number of the lower animals, that some characters are inherited in a peculiar way in a sex-limited and others in a sex-linked fashion. A sex-limited character is one that is limited to the male sex, while a sex-linked character may, under certain conditions, appear in females also. The mechanism of sex-linked heredity has been worked out and may be explained by a diagram (explanation of diagram omitted). This illustrates but one of the many interesting phases of the genetics of optic defects.

DR. F. PARK LEWIS, Buffalo: Dr. Howe's paper naturally resolves itself into three distinct parts: that dealing with the mendelian law, which is a science in itself; that dealing with its application economically and socially, and the question, finally, as to what shall be done about it.

The question of the mendelian law is one of the most interesting, probably, of all topics that has come before the scientific world in a generation. Our knowledge of it dates from the beginning of the present, twentieth century, although Mendel wrote in 1881 an essay in which he demonstrated on peas the application of his law. This essay was buried in the archives of a scientific society for all the years intervening between that time and 1900, when Bateson and others, working along the same lines, brought it to the surface and found that this Austrian monk had hit on a law of heredity the importance of which can scarcely be overestimated.

Its application in ophthalmology to the development of the eye is particularly interesting, but I shall have to speak only on the economic side of it, which seems of great importance as a war measure.

The most important product now which we are raising—and we are now considering the conservation of our products—is that of our children. What is done in regard to the development of our children during the next twenty years connotes what kind of a population we shall have twenty years hence. During the last three decades there has been a very rapid decrease in the birth rate among all English speaking people, as there has been among the French, until at the beginning of the war, in 1914, the proportion had been reduced from thirty-five in a thousand in England, to about twenty. The large number of males who are taken out of active service and sent abroad will still further decrease our birth rate during these years of war.

The classes of people whose birth rate continues high as a rule are those who live under the most unsanitary conditions. In the Polish population, where it is very crowded, the average number of members in a family is eight. In what we call the better classes of people, those who are more intelligent, the average number of children in a family is but three. It has been found that where people live in four room tenement houses, the number of children who live is about thirty-five in a thousand. Where they live in three room tenement houses the proportion is about thirty in a thousand. Where they live in one room tenement houses, the number who live is still further reduced. So that the housing problem means that we are losing the productive element in our population in very large proportion, just to the degree that we decrease the sanitary conditions under which they live.

Moreover, where defects of any kind exist, such as feeble-mindedness, defects in vision or other characteristics, the grouping of people together is very apt to make those who are sufficiently closely related to have the same traits, and the possibility of perpetuating those traits, brought together, so that they are apt to marry. It happens that during the last twenty-five years I have been connected with the School for the Blind, and I have seen during those years the effect of the perpetuation of the defects of blindness in the most remarkable degree. Four generations ago two congenitally blind people married. The progeny, the result of that marriage, have been coming back to the school during those twenty-five years, until we have now had from one family, seventeen, and from another family of cousins, seventeen. Without going into the details of the economics involved, I may say that single marriage has cost the state of New York more than \$50,000 for the education and maintenance of all of these blind people.

I was interested in the case of the prevention of ophthalmia neonatorum, because of the multitude of cases that I found in the School for the Blind who were blind as the result of birth infection. The number of children that are blind as the result of congenital atrophy was greater, and always has been greater than that resulting from ophthalmia neonatorum.

DR. CLARENCE LOEB, Chicago: Assuming the correctness of the mendelian theory, we must remember that it was worked out with plants and animals, where there is more than one offspring of a single mating. In man, however, a single mating, as a rule, results in one offspring, seldom two and very infrequently three or more. I do not see that it necessarily follows that the facts in the former case, that is, where there are more than one offspring at a birth, are true in a case in which there is only one. But granting that the facts will be the same, the theory further demands that two of the same generation must mate, which never takes place in man under present circumstances. Formerly, and in the far dim past, brothers and sisters would mate, but at the present time this never takes place.

How can we assume that the mating of two strains, as in the case of the marriage of two blind, unrelated people, will have the same effect as the joining of two strains from the same source? As a matter of fact, the histories of the cases in which two blind parents, whether related or not, marry, show that the percentage of their children was no greater than when one blind and one seeing person married. Furthermore, the mating of the red sweet pea for example, with the white sweet pea, is the mating of normal characteristics, while the mating of a blind with a seeing person, for instance, a cataractous person with a seeing person, is the mating of a normal with a pathologic condition. How do we know that the theory will work out under those circumstances?

The histories of these cases show that it does not, as the percentage of children affected, whether there was more than one child from one family or not, ranges anywhere from 100 per cent to no per cent.; that is, all the children, to none of the children. There is no definite rule that can be followed. Take up a history and you are as likely to find all the children of such a marriage become blind as only one or none.

It is always possible for a theory to have exceptions, but where a theory such as Mendel's theory is applied to the inheritance of ocular conditions—and that is all I am speaking of; I am not talking about that theory as a whole—and you have so many exceptions, as the history of all the cases shows, I must say that I do not see that the mendelian theory can be applied, and that we can assume from that what the results will be as to the offspring. The only thing I can see is to collect as many cases as possible of the results of such a marriage, and from the number of children calculate what percentage is likely to become involved. If the mendelian theory were true as far as man is concerned, then as Dr. Howe suggests, instead of sterilizing the person, it would seem to me the thing to do is to allow a person who is affected to marry and then find out from his offspring which marry the ones who propagate the diseased condition, and sterilize them or prevent them from marrying and allow the other strains to continue to marry and have children.

DR. F. G. STUEBER, Lima, Ohio: It was Dr. Wiley who made the statement, that as a people, we have been giving too much attention to the breeding and raising of hogs, rather than to that of our children; but he thought that mankind should come next. Not to underestimate the other papers I regard this as one of the most important subjects, and believe it is the duty of every normal individual to contribute what he can for the betterment of the race. It is said, every child has the right to be well born, and I think it devolves on the profession and the press to enlighten the masses, the laity, believing that they will be ready to take that counsel and heed the advice.

DR. LUCIEN HOWE, Buffalo: I do not know of any brief statement more conclusive than the family histories of the pupils at the School for the Blind at Batavia, N. Y., as given by Dr. Lewis. They show the desirability of some action for the prevention of hereditary blindness.

As for objections to the mendelian theory raised by Dr. Loeb, that is for geneticists to decide. The fact is, however, that opportunities do occur for the breeding among human beings of eye conditions. For example, when one of a Northern race, from Ireland or Scandinavia, marries an Italian, we can observe the eye colors of the hybrids, and if first cousins of such crossings marry, the results can be followed in the second generation. In a similar manner opportunities are afforded occasionally for tracing serious eye defects. As far as we know, these abnormal conditions follow the same mendelian law as do other conditions which we call normal.

Through the kindness of Professor Morgan and Dr. Bridges of Columbia University, I have been furnished with stock colonies of an insect now a classic subject for experiment. The specimens with deformed eyes and the eyeless variety I have bred through a considerable number of generations. Live specimens are presented in bottles for examination.

Finally, I ought to say that I did not make personally the bibliography or the new charts from the old family histories. The work was simply supervised in my office, by my wife and my secretary, and by the secretary of the editor of the bibliography in the *American Journal of Ophthalmology*.

Follow-Up Medical Inspection.—There is a strange lack of logic in the way we take care of our industrial children as compared with our schoolchildren. Medical inspection of schoolchildren has attained a place of considerable prominence in our child welfare problems, and we have almost come to regard as beyond the pale the school district so benighted that it pays no attention to the health of its schoolchildren. . . . All sorts of safeguards have been thrown around employed children in the shape of age limits below which they may not be employed, regulation of hours, elimination from obviously dangerous occupations, such as mining—all of which undoubtedly have their part in preventing injury to the health of undeveloped children. But the physical safeguards considered indispensable up to the moment the child begins work are not heard of after the doors of industry are closed behind him.—Florence I. Taylor, *Child Labor Bulletin*, February, 1918.

Clinical Notes, Suggestions, and New Instruments

CULTIVATION OF THE MENINGOCOCCUS UNDER PARTIAL OXYGEN TENSION

A POSSIBLE EXPLANATION OF THE POOR SUCCESS OF THE USUAL CULTURAL METHODS*

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A method by which meningococcus cultures may be easily obtained in sufficient quantity for rapid agglutination has long been sought. Almost every bacteriologist has some special medium on which he relies. In many camps, primary isolation is attempted on some solid medium, such as rabbit's blood agar or sheep serum agar; in others, various liquid mediums are used.

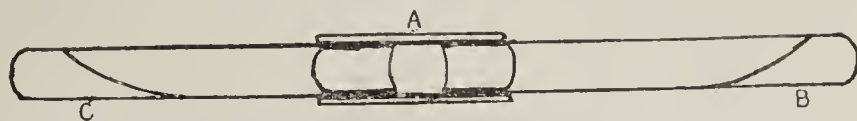


Fig. 1.—Apparatus for incubating under partial oxygen tension: A, rubber tube; B, tube with *B. subtilis* culture; C, tube with spinal fluid culture.

At this hospital it had been customary to make primary isolations from spinal fluid on solid mediums. When large amounts of fluid containing many organisms were planted, this method usually yielded a few colonies which had to be nursed along through several subcultures before rich growth was obtained. Only too often the culture was lost. Finally an enriched broth was used. A mass culture was made by pouring from 8 to 10 c.c. of spinal fluid into 100 c.c. of human serum glucose infusion broth. Usually within twenty-four hours a good growth was obtained; but when transplants were made from this broth to solid mediums, growth was meager or entirely absent. Frequent transplants had to be made to insure good growth, and many cultures were lost.¹

It occurred to me that the explanation of this phenomenon was to be found in the fact, to which attention had previously been called,² that the meningococcus is a micro-aerophil, and

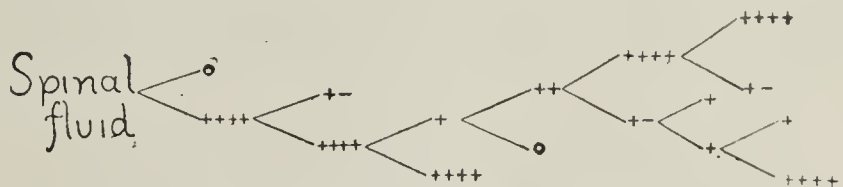


Fig. 2.—Adaptation of the meningococcus to changes in oxygen tension: Upstrokes, aerobic cultures; downstrokes, partial tension cultures; +, doubtful growth; ++++, very rich growth.

that only a few individuals are sufficiently facultative to grow under aerobic conditions. To test this idea, the following method was adopted:

Each specimen of spinal fluid was divided into two parts. One portion was poured into a bottle of glucose infusion broth; the other was centrifuged, and a loopful of the sediment was planted on each of two slants of human serum glucose infusion agar. One slant was incubated aerobically; the other was placed under partial oxygen tension by connecting the slant to a freshly inoculated agar slant of *B. subtilis* by means of rubber tubing (Fig. 1).

Confluent growth over the whole surface of the slant was usually obtained in the partial tension cultures, while only one or two scattered colonies could be found on the aerobic slant if there was any growth at all. The broth cultures grew well; most of the growth was found near the bottom of the 100 c.c. bottle that was used. Aerobic and partial tension

* From the laboratory of the base hospital, Camp Lee, Va.

1. Asnis, E. J.: Personal communication to the author.

2. Cohen, M. B., and Markle, Louis: A Method Which Greatly Facilitates the Culture of the Meningococcus, *THE JOURNAL A. M. A.*, Oct. 28, 1916, p. 1302.

transplants were made from each broth culture; partial tension growth was always rich, aerobic growth was always scant.

Figure 2 shows in graphic form the approximate adaptation of the meningococcus to changes in oxygen tension. Doubtful growth is indicated by + —; very rich growth by + + + +. The upstrokes indicate aerobic cultures, the downstrokes partial tension cultures. This chart makes these three points very clear:

- 1. Much better growth in primary cultures is obtained under partial tension conditions.
- 2. It is quite difficult to get aerobic strains from partial tension ones.
- 3. Aerobic strains when split off from partial tension ones have a tendency to remain aerobic, and do not grow at all well in lower pressures of oxygen.

For the isolation of meningococci from mixed cultures or from the nasopharynx, a very simple method of partial tension plating has been used.³ It consists briefly of two notched Petri dishes inverted over a glass tube on a glass plate and sealed to the plate with wax (Fig. 3). In one Petri dish is placed the material to be cultivated; in the other, a freshly made culture of *B. subtilis*. As this method is impracticable for meningococcus carrier work on a large scale, it is hoped that in the near future the optimum reduction in oxygen tension necessary for meningococcus culture will be measured and that simple and practical methods for such culture will be worked out.

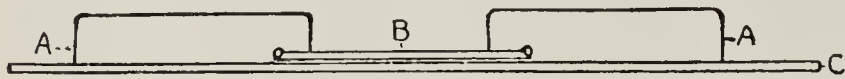


Fig. 3.—Apparatus for partial tension plating: A, A, inverted Petri dishes; B, glass tube; C, glass plate.

CONCLUSIONS

- 1. The meningococcus is a micro-aerophil, and partial oxygen tension methods of culture should be adopted for its isolation.
- 2. Relatively few meningococci are capable of aerobic growth. The growth ordinarily obtained by aerobic methods of culture consists of those organisms, which constitute the small minority of meningococci, that are capable of adaptation to full oxygen tension. This explains the statements made by many authorities, and found in many standard works on bacteriology, that large amounts of exudate must be planted to get suitable primary growth.

THE BLOOD PRESSURE IN GOUT

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The literature contains few data on the blood pressure in gout. It is reasonably well established that certain of the purin bases are hypersensitive in action. Desgrez and Dorléans¹ have shown experimentally that the injection of xanthin and of uric acid causes an increase of blood pressure. It is generally understood that in gout a high pressure is the rule with increasing hypertension during the acute attacks (pain), and in the later stages hypotension develops associated with cachexia, acidosis and cardiac weakness. The hypertension is supposed to be of some value in distinguishing between lesions of the joints, the skin and the eye, as to whether they are tuberculous or gouty in origin, on account of the fact that in tuberculosis the blood pressure is usually low.

In the past ten years I have carried out frequent blood pressure readings on four patients with classical gout, all subject to acute attacks of gout, and the results are of some interest.

The accompanying table presents the data obtained in this study.

BLOOD PRESSURE OBSERVATIONS ON FOUR PATIENTS WITH GOUT

Case No.	Year	Month	Age	Systolic Pressure	Diastolic Pressure	Clinical Findings
1	1908	2	42	130	100	No acute symptoms
	1909	3	43	140	100	No acute symptoms
	1910	1	44	190	100	Acute attacks
	1910	8	44	130	100	No acute symptoms
	1911	2	45	135	90	No acute symptoms
	1911	12	45	135	100	No acute symptoms
	1912	2	46	135	100	No acute symptoms
	1913	1	47	200	100	Acute attack
	1914	1	48	140	100	No acute symptoms
	1915	2	49	140	100	No acute symptoms
	1915	11	49	195	100	Acute attack
	1916	3	50	135	90	No acute symptoms
	1916	10	50	140	90	No acute symptoms
	1917	2	51	210	110	Acute attack
	1917	8	51	130	100	No acute symptoms
2	1910	1	44	120	90	No acute symptoms
	1910	8	44	195	100	Acute attack
	1911	2	45	130	90	No acute symptoms
	1911	10	45	120	90	No acute symptoms
	1912	3	46	120	80	No acute symptoms
	1913	4	47	215	100	Acute attack
	1914	2	48	130	90	No acute symptoms
	1915	1	49	120	85	No acute symptoms
	1915	10	49	120	80	No acute symptoms
	1916	2	50	210	100	Acute attack
	1917	1	51	130	90	No acute symptoms
	1917	11	51	220	110	Acute attack
3	1913	2	58	230	110	Acute attack
	1914	1	59	120	90	No acute symptoms
	1915	2	60	220	110	Acute attack
	1916	4	61	110	80	No acute symptoms
	1916	12	61	115	80	No acute symptoms
	1917	3	62	220	110	Acute attack
4	1917	12	62	110	80	No acute symptoms
	1913	2	60	240	120	Acute attack
	1914	1	61	110	80	No acute symptoms
	1915	1	62	110	70	No acute symptoms
	1916	2	63	230	110	Acute attack
	1917	1	64	240	120	Acute attack
	1917	10	64	110	80	No acute symptoms

A study of this table shows clearly that hypertension was not present in the cases of gout studied, except during the presence of an acute attack of gout. Between attacks the blood pressure tended to be lower rather than higher than the normal.

Jenkins Arcade.

FURTHER STUDIES ON THE PRESERVATION OF COMPLEMENT BY SODIUM ACETATE

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Sufficient time has now elapsed to convince all serologists, who have investigated the preservative properties of sodium acetate on guinea-pig complement,¹ of its value. Since Army service has interrupted my studies, I desire to submit my present data in order that investigators who have the facilities may, if so inclined, work out the interesting problems indicated. It is hardly necessary to state that any step which makes for stability and simplification of laboratory technic, no matter how simple, may, in its application, be of tremendous value. One of the greatest complications to the Wassermann technic was the unstability of complement, and it occurred to me that if anything could be found to stabilize this very essential component it would be of considerable value. I therefore set about systematically to test the chemicals at hand in my laboratory for their respective effect on blood, with particular reference to complement, and their effect on the Wassermann reaction.

Three agents were found which did not interfere with the Wassermann reaction, which had no hemolytic properties, which did not prevent hemolysis and, therefore, did not destroy complement. They were: (1) sodium acetate, C. P. (in any strength); (2) camphor crystals, and (3) 0.5 per cent. phenol (carbolic acid).

3. Cohen, M. B.: A Simple and Reliable Method of Making Partial Tension Plates, THE JOURNAL A. M. A., Jan. 12, 1918, p. 84.
1. Desgrez and Dorléans: Compt. rend Acad. d. sc., 1913, 156, 93.

1. Rhamy, B. W.: Preservation of Complement; A Preliminary Report, THE JOURNAL A. M. A., Sept. 22, 1917, p. 793.

The solutions of sodium acetate and of 0.5 per cent. phenol were made up in physiologic sodium chlorid solution (0.85 per cent.) in distilled water. I have not as yet determined whether 0.5 per cent. phenol or camphor crystals will preserve complement or, if so, whether either would act better than sodium acetate. It has been shown that a minute crystal of camphor will, by inhibiting germ growth, preserve amboceptor and stabilize its unit of strength. In passing I desire to recommend the formaldehyd method for preserving red cells.²

Ordinarily red cells kept in physiologic sodium chlorid solution in the refrigerator will begin to hemolyze in about forty-eight hours. When the formaldehyd solution (1.25 c.c. solution of formaldehyd in 1,000 c.c. physiologic sodium chlorid solution) is used, hemolysis begins in about a week. The formaldehyd must be washed out before use, as it is anticomplementary. My procedure is to take the human cells left on separating patient's serum, cover them without washing with about five volumes of the formaldehyd solution, and keep in an ice box. They are washed when needed.

For the preservation of complement I have found that sodium acetate is ideal. It has the following properties:

- (a) It has no hemolytic action.
- (b) It is not anticomplementary.
- (c) The solution can be sterilized.
- (d) Dissolved in physiologic sodium chlorid solution, it has the same hydrogen ion concentration as blood P_H 7.4.
- (e) It preserves and stabilizes complement from two to three months in the ice box, or two weeks at room temperature.
- (f) It can be used in any strength from 5 to 50 per cent. or in crystal form.
- (g) Its preservative properties are not antibacterial, and therefore must be physicochemical.
- (h) Added to whole blood in certain strengths, it prevents coagulation.
- (i) It will preserve human complement.³

In preparing complement, it is best to sever the neck arteries of the guinea-pig and obtain all the blood. As soon as the clot is well formed, it is broken up gently and centrifugalized. The serum is pipetted off and a 40 per cent. dilution of all the serum immediately made with 12 per cent. sodium acetate solution, thus preserving the full complementary strength. Placed in the ice box, it will keep until the whole amount is used up. In this dilution the final concentration of acetate is two thirds of 12, or 8 per cent.

From 10 to 12 per cent. stock solutions of sodium acetate work best for the following reasons: Sodium acetate has weak bactericidal power, so that a 50 per cent. solution keeps the serum clearer than does a 5 per cent. solution. If the serum diluted with a 5 per cent. sodium acetate solution is contaminated, it spoils rapidly, losing its complementary activity in four weeks or less in the ice box. On the other hand, although the 50 per cent. acetate solution prevents germ growth except mold, there comes a time, usually in about three weeks, when this complement solution suddenly becomes inert. (Fifty per cent. or saturated sodium acetate solution added to serum to make a 40 per cent. dilution causes a slight crystalline precipitate, the supernatant fluid containing the complement.) Using from 10 to 12 per cent. sodium acetate solution as the diluent and making a 40 per cent. dilution of the guinea-pig serum is the ideal. Such a complement solution prepared sterilely has retained its complementary activity as long as three months in the refrigerator and for two weeks at room temperature in a sunlit window in August. The loss in unit strength is gradual, about 0.02 per week. For example, a 40 per cent. acetate complement dilution, the Wassermann unit of which would be 0.1 c.c., would probably be 0.125 the second week and 0.15 the third or fourth week.

On account of the variability in hemolytic resistance of red cells,⁴ it is necessary to retitrate this complement dilution each time a new batch of cells is used. If used in this manner, sodium acetate has no deleterious effect on the Wassermann reaction. Indeed, if anything, the reactions are clearer cut with its use. In the 12 per cent. acetate complement dilution, germ growth occurs when contaminated; but my experience has been that this does not affect the complementary activity. I have many times used such a complement cloudy with bacterial growth but with comparatively strong complement unit. Further the addition of 10 per cent. Sodium Acetate to Culture Media (Dextrose agar) did not inhibit the growth of Streptococci. It is obvious, therefore, that the action by which acetate preserves complement must be in some way a physicochemical phenomenon, that is, that complement enters into a loose combination with sodium acetate.

This opens a very interesting and fertile field for investigation as to the nature of this elusive labile substance called complement, and suggests the possibility that it is an enzyme with definite chemical composition. As to the property sodium acetate has, as I have found, of preventing coagulation and at the same time not destroying complement, it may be that it would be of more value in blood transfusion than sodium citrate, which does destroy complement. It would therefore be of value to determine its toxicity, the minimum amount necessary to prevent coagulation, and whether or not the presence of complement makes blood more suitable for transfusion.

CHRONICALLY ENLARGED SPLEEN (MALARIAL?)

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HOUSTON, TEXAS

Mrs. B. T., aged 34, was one of fourteen children, ten of whom, five boys and five girls, lived to be grown. Three sisters and four brothers are now living. The father died of dysentery at the age of 68. The mother is still living, aged 68.

At the age of 10 years the patient had had a prolonged attack of fever, during which the spleen had become enlarged and dislocated downward. During this attack of fever, she had had severe constipation. Since the attack she has had many similar ones, each being accompanied by an enlargement of the spleen. Each time, after the subsidence of the temperature, the splenic enlargement decreased, but the tumor could always be felt in the hypochondrium. Ever since her first attack of fever, she has been obstinately constipated.

She was married at the age of 21, and is the mother of six children, three boys and three girls, all healthy and robust. Her husband has been dead a year. She has been in bad health her entire married life, being always worse, if not practically helpless, during her periods of gestation. During each pregnancy, she suffered severely with nausea, and pain in the left side of the abdomen.

Dr. VanNuys was called to see her, Nov. 5, 1911. The patient had been seized the night before with severe cramp-like pain in the abdomen, and diarrhea. From this time until December 7, the date of the operation, she had many attacks of severe pain in the abdomen, which were cramp-like in character, each attack leaving the abdomen increasingly tender. Her temperature ranged from 99.2 to 100.2 F. She persistently refused the advice of her physician, that an exploratory operation be performed.

During a lull between attacks, a bimanual examination was made by Drs. VanNuys and Bledsoe. This examination revealed the facts that all the pelvic landmarks were obliterated, and that the uterus was firmly fixed.

About December 1, she finally consented to an operation and was brought to Houston. On her entrance into the hospital her condition was very poor. After she had had a few days of rest, we felt justified in proceeding with the operation.

2. Jour. Lab. and Clin. Med., 1917. (Reimann, Vol. 2, p. 200.) (The preservation of erythrocytes for the Wassermann reaction.)

3. Noguchi, Hideyo: A Method of Facilitating the Serum Diagnosis of Syphilis Under War Conditions, THE JOURNAL A. M. A., April 27, 1918, p. 1252.

4. Rhamy, B. W.: Variations in Resistance of Blood Cells to Hemolysis, THE JOURNAL A. M. A., Nov. 17, 1917, p. 1728.

When the abdomen was opened a large reddish purple tumor mass was revealed, plastered over by many adhesions involving the omentum, intestine and pelvic organs. After the tumor mass had been freed from the surrounding viscera, something of its character and origin was determined. It had the appearance and physical characteristics of a cyst. A large trocar was thrust into the tumor, but the capsule was so friable that it split in many directions, allowing a thick reddish purple fluid to pour out. Further dissection revealed the fact that the tumor mass was the remains of a large spleen, the pedicle of which had become twisted, shutting off the circulation and resulting in moist gangrene of the organ.

The pedicle was ligated, as much of the tumor was removed as was possible, cigaret drainage was instituted, and the abdomen was closed. The patient's general condition was very bad when she left the table.

Microscopic examination of some of the less necrotic pieces of the tumor was made by Dr. Martha Wood, corroborating the operative diagnosis.

After three stormy days, the patient began to rally, and was able to leave the hospital and to return to her home for Christmas, although the wound continued to drain freely until January 30, since which time she has been perfectly well.

COMMENT

The location of the patient's home in a district of Texas, notorious at the time of her girlhood for the prevalence of malaria, in addition to the diagnosis of malaria given to the patient by the family physician who saw her during her first attack, leads us to the assumption that the primary enlargement of the spleen was malarial in origin.

An Error of the Wassermann Test.—A test that I have used has proved many negative results to be positive. I perform the Wassermann test exactly the same as the original test, using the four hour ice-box incubation. There is an adjustment in the use of the amboceptor. Some technicians employ twice the smallest degree of amboceptor used in the titration that produces hemolysis. Others employ as high as three and four times the smallest degree of amboceptor as a unit. Using a larger amount than the titration allows gives more negative results, some of which prove to be positive. I wish to emphasize the fact of using the smallest degree of amboceptor as a unit, along with twice the smallest degree as a unit. Cases that are negative with twice the smallest degree as a unit and are + + + + with the smallest degree as a unit should be recorded as + + + +, provided, of course, the test control and the known serum show complete hemolysis. Accordingly, any cases that show + +, + + + or + + + + are to be recorded as such. Doubtful reactions are to be excluded. My results have been very satisfactory. I have found many + + + + reactions that were reported to me as negative by reliable laboratories, and my results have proved to be correct. Once more I urge that the smallest degree of amboceptor as a unit be used with twice the smallest degree as a unit. Many well known technicians have stated that the reactions with the smallest degree of amboceptor as a unit have proved not to be "snappy." However, sometimes reactions occur that are too "snappy," which might prove to be positive if the smallest degree of amboceptor as a unit was used also. Many errors in diagnosis are made because of a false Wassermann report.—EMANUEL JACOBSON, Brooklyn.

Health Insurance.—Today, for example, we possess a mighty power to fight disease. To the wealthy class this scientific knowledge is available; to the poverty-stricken it is doled out in charity dispensaries. But for the masses of the working population—in the United States alone among the great industrial nations—such treatment is not available. Through a properly organized system of health insurance it would be possible to bring the world of medical science to the aid of the humblest wage earner.—John B. Andrews, *The Survey*.

Military Medicine and Surgery

THE EYES OF THE ARMY*

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BOSTON

When an ophthalmologist studies the new regulations for drafted and enlisted men, he is immediately confronted with the fact that men with low vision, which can be raised by glasses to the required standard in one eye, are enrolled for some form of limited military service, and at once the thought comes, How are these men to be supplied with glasses if they have none, and how are lost or broken glasses to be replaced here, and overseas?

The problems are more easily solved for this country than for abroad; but to obtain the best solution, the work here and there must be coordinated. In the early days following our country's entrance into the arena of world conflict, the Subcommittee on Ophthalmology of the General Medical Board of the Council of National Defense took up these problems, which then, owing to a higher standard of visual requirements, were less difficult than at present, and a plan was worked out for adopting a standard type of frame for all soldiers, and for the establishing of a small optical shop to be connected with a special hospital for surgery of the head to be sent overseas.

Various types of frames were experimented with and the following specifications finally adopted:

White metal, best stiff construction; 40 mm. round eye; special 0.055 inch full length cable temple $6\frac{1}{2}$ inches; split joint end piece; 0.072 eye wire.

Bridges assorted as follows: $\frac{8}{12}$ of N1 $\frac{1}{2}$ long shank; $\frac{3}{12}$ of N1 long shank; $\frac{1}{12}$ of N1 $\frac{1}{2}$ regular.

When the members of the subcommittee were commissioned in the Medical Reserve Corps, these plans were enlarged and modified to fit new conditions, and carried into effect by the ophthalmic department of the Division of Surgery of the Head in the Surgeon-General's Office.

Some of the ophthalmologists in this country have criticized the standard frames adopted, and with justice, for it would be impossible to select any type of frame that could not be criticized. The frame adopted, however, with its three variations of bridge, seemed to those studying this phase of the problem to present the fewest faults. The criticism was several times presented by ophthalmologists that the three types of bridge did not allow for enough variations; but before adopting such, a set of these frames was given to several first-class adjusting opticians, who quickly demonstrated that any fit likely to be called for could be obtained from one of the three bridges. It is true that the bridges are stiff, but this disadvantage is more than balanced by the fact that, once properly adjusted by the skilled mechanic, they are likely to remain in place. The criticism, however, most frequently sent in pertains to the round eye piece, and the disadvantage that the cylindric lenses may be turned in the frames. This complaint is best answered by calling attention to the fact that all cylindric lenses when in place will be marked in the side at a point close to the

* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

middle of the temple attachment, and this pointed out to the soldier so that he can watch for any possible shifting. If experience proves that the rim cannot be tightened sufficiently to prevent the slipping round of the lens, then it is a simple matter for the optician to

TABLE 1.—BENCH OUTFIT FOR EACH OF THE MOBILE UNITS

Solder slate	Pens and holders
Blow pipe	Protractor
Silver solder	Screw taps
Soft solder	Millimeter gage
Borax	Ajax wrench
Assorted files	Millimeter rules
Screw drivers	Lens washers
Assorted pliers	Soft solder acid
Hand drill	Camels hair brushes
Assorted screws	Reamers
Balsam	Spring punch
Alcohol lamp	Temple washers
Emery cloth	Solder burrs
Chamois strips	Hand burr machine
Assorted dowels	Solder tweezers
Lens measure	Drills Nos. 59 and 67
Hammer	Guard rivets
Anvil	Zylonnite blades
Neutralizing set	Temple tubing
Marking ink	Cork nose rests
Marking pencil	Oil stove

3 gross service frames (1 gross each of 3 bridges)

put a tiny bit of solder on the inner groove of the eye piece, and notch the lens at the proper point to fit this little projection. The critics have advocated an oval lens; but to see the tremendous disadvantage of this, one has but to consider the millions of extra

TABLE 2.—LENSES, EDGED TO FIT SERVICE FRAMES

3 dozen pairs	+ .25 sph.
3 dozen pairs	+ .50 sph.
3 dozen pairs	+ .75 sph.
3 dozen pairs	+ 1.00 sph.
3 dozen pairs	+ 1.25 sph.
3 dozen pairs	+ 1.50 sph.
3 dozen pairs	+ 1.75 sph.
3 dozen pairs	+ 2.00 sph.
3 dozen pairs	+ 2.25 sph.
3 dozen pairs	+ 2.50 sph.
1 dozen pairs	+ 2.75 sph.
1 dozen pairs	+ 3.00 sph.
1 dozen pairs	+ 3.25 sph.
1 dozen pairs	+ 3.50 sph.
1/2 dozen pairs	+ 4.00 sph.
1/2 dozen pairs	+ 4.50 sph.
1/2 dozen pairs	+ 5.00 sph.
3 dozen pairs	— .25 sph.
3 dozen pairs	— .50 sph.
3 dozen pairs	— .75 sph.
3 dozen pairs	— 1.00 sph.
3 dozen pairs	— 1.25 sph.
3 dozen pairs	— 1.50 sph.
3 dozen pairs	— 1.75 sph.
3 dozen pairs	— 2.00 sph.
3 dozen pairs	— 2.25 sph.
3 dozen pairs	— 2.50 sph.
1 dozen pairs	— 2.75 sph.
1 dozen pairs	— 3.25 sph.
1 dozen pairs	— 3.50 sph.
1/2 dozen pairs	— 4.00 sph.
1/2 dozen pairs	— 4.50 sph.
1/2 dozen pairs	— 5.00 sph.
1 dozen pairs	+ .25 cyl.
1 dozen pairs	+ .50 cyl.
1 dozen pairs	+ .75 cyl.
1 dozen pairs	+ 1.00 cyl.
1/2 dozen pairs	+ 1.25 cyl.
1/2 dozen pairs	+ 1.50 cyl.
1/2 dozen pairs	+ 1.75 cyl.
1/2 dozen pairs	+ 2.00 cyl.
1 dozen pairs	— .25 cyl.
1 dozen pairs	— .50 cyl.
1 dozen pairs	— .75 cyl.
1 dozen pairs	— 1.00 cyl.
1/2 dozen pairs	— 1.25 cyl.
1/2 dozen pairs	— 1.50 cyl.
1/2 dozen pairs	— 1.75 cyl.
1/2 dozen pairs	— 2.00 cyl.

cylinders and spherocylinders cut and edged that the optical units sent abroad would have to carry to meet all the degrees of axes called for, if frames with oval eye pieces had been adopted.

It has been decided by the Surgeon-General's Office to supply all soldiers and noncommissioned officers in this country and abroad with the glasses required. For the men in the cantonments, arrangements have been made whereby the prescription of the ophthalmic medical officers can be filled through the post exchanges and the Medical Supply Depot.

Steps were taken to have a first-class optician assigned to the special building in the various cantonments and base hospitals to assist in the adjustment of frames supplied to the soldiers through the exchanges. Many first-class opticians have been drafted or taken into the service, so that it was not difficult for the division surgeon in the various cantonments to find a qualified optician for this position.

Early in February, I received a cablegram, which had been sent by General Pershing, calling for optical units for overseas service to consist of a central optical shop, with surface grinding machines, and eight auxiliary units to establish optical centers in various locations in France. Capt. F. H. Edmonds, the Washington optician, was secured for the position of commanding officer of the units, and thirty-five

TABLE 3.—SPHEROCYLINDERS, ONE-HALF DOZEN PAIRS EACH

+ .25+ .25	+ .25+ .50	+ .25+ .75
+ .50+ .25	+ .50+ .50	+ .50+ .75
+ .75+ .25	+ .75+ .50	+ .75+ .75
+ 1.00+ .25	+ 1.00+ .50	+ 1.00+ .75
+ 1.25+ .25	+ 1.25+ .50	+ 1.25+ .75
+ 1.50+ .25	+ 1.50+ .50	+ 1.50+ .75
+ 1.75+ .25	+ 1.75+ .50	+ 1.75+ .75
+ 2.00+ .25	+ 2.00+ .50	+ 2.00+ .75
+ .25+ 1.00	+ .25+ 1.25	+ .25+ 1.50
+ .50+ 1.00	+ .50+ 1.25	+ .50+ 1.50
+ .75+ 1.00	+ .75+ 1.25	+ .75+ 1.50
+ 1.00+ 1.00	+ 1.00+ 1.25	+ 1.00+ 1.50
+ 1.25+ 1.00	+ 1.25+ 1.25	+ 1.25+ 1.50
+ 1.50+ 1.00	+ 1.50+ 1.25	+ 1.50+ 1.50
+ 1.75+ 1.00	+ 1.75+ 1.25	+ 1.75+ 1.50
+ 2.00+ 1.00	+ 2.00+ 1.25	+ 2.00+ 1.50
— .25— .25	— .25— .50	— .25— .75
— .50— .25	— .50— .50	— .50— .75
— .75— .25	— .75— .50	— .75— .75
— 1.00— .25	— 1.00— .50	— 1.00— .75
— 1.25— .25	— 1.25— .50	— 1.25— .75
— 1.50— .25	— 1.50— .50	— 1.50— .75
— 1.75— .25	— 1.75— .50	— 1.75— .75
— 2.00— .25	— 2.00— .50	— 2.00— .75
— .25— 1.00	— .25— 1.25	— .25— 1.50
— .50— 1.00	— .50— 1.25	— .50— 1.50
— .75— 1.00	— .75— 1.25	— .75— 1.50
— 1.00— 1.00	— 1.00— 1.25	— 1.00— 1.50
— 1.25— 1.00	— 1.25— 1.25	— 1.25— 1.50
— 1.50— 1.00	— 1.50— 1.25	— 1.50— 1.50
— 1.75— 1.00	— 1.75— 1.25	— 1.75— 1.50
— 2.00— 1.00	— 2.00— 1.25	— 2.00— 1.50

other first-class mechanical opticians were secured, mostly by induction into the service of registrants from different parts of the country, who were highly recommended as skilled grinders, edgers, mounters and adjusters.

Each one of the auxiliary units was provided with a full equipment of cut and edged lenses, and supplied with frames and a kit of all tools necessary for the work of putting proper glasses into the frames, adjusting the latter, and repairing any frames that might be broken or otherwise injured. It was found that all of these supplies for each auxiliary unit could be packed in three of the regulation service suit cases, thus simplifying the transportation problem. A list of supplies issued a single unit is given in the accompanying tables. Lenses of strengths not included can be obtained on order from the central shop.

For the central optical unit, a full equipment of machinery for the surfacing and edging of lenses, together with a plentiful supply of glass and blanks,

was provided. Electric motors, with all necessary belting and shafting, were, of course, included, the plan being to establish in some central location a manufacturing plant that could turn out from 150 to 200 pairs of lenses a day, and also take care of all repair work that would be likely to come in. All of the cut and edged lenses furnished for the auxiliary units, together with the equipment and machinery, were furnished by the American Optical Company of Southbridge, Mass., on record time, though this required their working nights, days and Sundays on the basis of eight hour shifts.

With this equipment and the skilled groups of men sent over, it should be possible to take care of the optical work in France with a high degree of efficiency. This is all made necessary by the fact that it is impossible to get this work done in the French shops. It is the expectation of the Surgeon-General's Office that future contingencies, as they arise along this line, can be properly cared for by enlargement of the present optical units.

OPTIC ATROPHY AND MULTIPLE PERIPHERAL NEURITIS

DEVELOPED IN THE MANUFACTURE OF EXPLOSIVES
(BINITROTOLUENE)

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AND

CHARLES E. NIXON, M.D.

MINNEAPOLIS

The great increase in the last three years in the demand for powerful explosives has not only enormously increased the number of employes in munition plants but also has doubtless added many workers who from lack of skill or from carelessness have rendered themselves more susceptible to the poisonous substances handled than would be the case with older and more experienced workers. At any rate, a large number of instances of industrial poisoning has appeared recently in such plants and a considerable literature bearing on the subject has appeared in Europe, and to a less extent in this country. Especially to be noted is the excellent article of Dr. Alice Hamilton.¹ Most of this literature is of English origin. Some contributions have appeared from German sources, particularly in reference to tetrachlorethane or dope poisoning, and in reference to benzene poisoning; but most of it is not available to use at this time. As no case of optic atrophy or of definite multiple peripheral neuritis has been reported, so far as the literature to which we have access shows, the following case may be of interest.

REPORT OF CASE

History.—J. B., man, aged 39, married, foreman in munitions factory, seen April 15, 1917, had one brother, five sisters and three children living and well. None were dead. The patient's father died at 63 of an accident. The mother died at 82 of old age. His general health had been good and he could recall no serious illness or injury. He had used very little tobacco and practically no liquor. There was no evidence of venereal disease, either by direct or indirect questioning. He had married at 35. He had worked in a munitions factory for two years, and before that as a fireman.

In the factory his work had been with trivalene, a plant name for binitrotoluene.

Present Illness.—About one year before, one year after entering the plant, he first noticed numbness and prickling in the feet; in the course of five months this gradually spread to the knees. He had no pain, but described the sensation as "like an electric tickling." At the end of the five months he was placed on outside work, and in the course of one month the numbness gradually grew less, but did not wholly disappear from the feet. After one month of other labor, he returned to his work in the trivalene plant as foreman, and in this position did not come quite so closely into contact with the trivalene as before. For five months there was no special change in his condition, but he still had the numbness in the feet. At the end of five months he returned to his former work of direct handling of the trivalene in the "sweat house." In one week the numbness had increased in the feet and legs. Directly after, early in December, his sight began to fail, objects appeared blurred, and he could not see well to read. His vision was then $\frac{20}{40}$ in the right eye and $\frac{20}{70}$ in the left eye. He was slightly cyanotic and appeared anemic. Shortly after, he noticed a little numbness in the tips of the fingers, and this had continued ever since but had not changed much. During the month of March his eyesight failed rapidly, and he quit work, April 5, 1917. At this time, vision was $\frac{20}{200}$ in each eye. Since then his sight has failed further; April 8, vision was $\frac{6}{200}$ in each eye. At present he can get about without difficulty, but he cannot make out even the largest print and cannot even make out the outline of a face. The left eye is a little worse than the right. There is no history of jaundice or gastritis and no loss of sexual, bladder or rectal control.

When asked to give the experiences of other men who worked with him, the patient stated that when foreman he had a crew of four men working under him; but as they habitually did not like the work or could not stand the fumes of the trivalene, they were constantly changing, and he is unable to describe the effect of the trivalene very accurately on them. One man worked for about six months handling the trivalene, and in that time developed a numbness and swelling of the feet so that he could not put on his shoes. He quit in the spring, worked on a farm all summer, and recovered, but did not return to the plant. One man has worked in the trivalene for eight months with no apparent ill effect. He takes no special precautions. Two or three other men who worked varying periods of time complained of numbness and tingling in their hands and feet and of difficulty in their gait, and headaches were frequent among the workers. All the men are provided with good leather gloves; but the trivalene, which is oily as they begin handling it and later turns to a crystalline substance, soon saturates their gloves so that they have little protection even over the hands.

Physical Examination.—The patient is a well developed and well nourished man, slightly pale; height 5 feet 6 inches, usual weight 156 pounds, and present weight 148 pounds. In a period of four days of observation his temperature ranged from 97 to 98.2, pulse 55 to 71, but usually about 60, and blood pressure 134 systolic and 81 diastolic. The tonsils were submerged and showed no special signs of inflammation; the teeth were badly worn, and there was a moderate degree of pyorrhea and gingivitis. The glands were not enlarged; the lungs were normal. Except for a moderate thickening of the blood vessels, the circulatory system was negative. Liver and splenic dulness were not altered, and the spleen was not palpable. There was no abdominal tenderness.

All the cranial nerves were normal except as noted below. With the right eye the patient counted fingers at 14 inches and with the left at 10 inches. The visual field was normal to rough tests except that there was some unusual dulling at the central point. The fundus showed a rather well developed atrophy with pale disk and some swelling of the veins and contraction of the arteries. The right pupil was somewhat larger than the left. The left reacted fairly and the right poorly to light, and both only fairly to distance.

1. Hamilton, Alice: Industrial Poisons Encountered in the Manufacture of Explosives, THE JOURNAL A. M. A., May 19, 1917, p. 1445.

Both had had "drops" instilled some days previously. A watch was heard in the right ear at 18 inches and in the left at twelve inches. Air conduction was better than bone in both, and the Weber test was negative. There were no subjective sounds at the time of the examination, but the patient stated that at the time he quit work he had "rumbling sounds" in both ears. Vibration sense was lost in the toes but present in the malleoli and upward. Joint sensibility was distinctly impaired in the toes. Neither sense showed any impairment in the fingers. Pain (pin prick) was usually appreciated in the fingers and in the feet and toes, but touch (cotton) was impaired in both. Tendon and muscle pain sense were normal. There was no incontinence of urine or feces, and sexual power was not impaired. Sweating was evident in the hands and feet.

The muscles were of good volume and tone, but the patient insisted that his strength was much impaired and that his legs would often give way under him. In all the tests he gave very fair responses. He complained of stiffness and of an occasional pulling up or jerking of the feet and legs, especially at night, and said that this seemed like an "electric shock." Coordination was good in the upper extremities and impaired in the lower. The patellar and abdominal reflexes were present but diminished. The Achilles, biceps, triceps, supinator, jaw, pharyngeal, palate, plantar, anal, bulbocavernosus and cremasteric reflexes were normal. There was no patellar or ankle clonus. A blood test revealed: hemoglobin, 80 per cent.; red cells, 4,900,000; white cells, 8,000: differential count: polymorphonuclears, 73.5 per cent.; small mononuclears, 19.5 per cent.; large mononuclears, 5.5 per cent.; eosinophils, 0.5 per cent.; other forms, 1 per cent. The cerebrospinal fluid was clear with no undue pressure. The Wassermann, Nonne, and gold tests and cell count were negative. The Wassermann test was also negative in the blood.

Treatment and Results.—Under treatment with laxatives and potassium iodid and sweating, the patient improved after about two months and has shown steady improvement since. In the month of February, 1918, he still complained of tingling and numbness in the toes. His vision was then $\frac{20}{40}$ in the right eye and $\frac{20}{60}$ in the left eye.

COMMENT

Binitrotoluene, known under the name of trivalene in the plant where this man worked, is the product of the second step in the nitration of toluene. When received as mononitrotoluene it is a heavy dark cherry colored oil, and in the process of the second nitration it changes to a crystalline substance looking much like brown sugar. As such it has a faint odor of bitter almonds and a bitter, acrid taste.

Like mononitrotoluene it is absorbed through the skin and mucous membranes and when so absorbed seems to have a marked transient and perhaps more or less permanent effect on the central nervous system.

In this plant, in addition to the patient here reported and those mentioned by him, there were two cases of pronounced mental aberration and one of somnolence. In the mental cases no delusions or hallucinations were manifested, but rather signs of mental dulness. The men were very quiet, with an aimless tendency to seclusion. One locked himself in an outhouse and was found only after one hour's search. He seemed stupid, could not understand or answer questions, and was mildly apprehensive. He would try to hide away, even in a room that offered no concealment, but still was docile and unafraid on contact with men. This condition persisted for about forty-eight hours, with later rapid improvement and complete recovery.

The other patient had, in addition, a marked cyanosis, with weak heart action, staggering gait and fainting. Recovery occurred within a few days.

The case of somnolence was most peculiar. The patient presented the picture of alcoholic intoxication in gait, speech and general appearance, with a very strong tendency to sleep. Not only was his muscular power diminished, but his coordination was poor. He could be got to his feet, but could not stand. With support he could with difficulty use his legs and feet, but not accurately. When lying down he would fall asleep while talking, even in the middle of a sentence. He said his mind was perfectly clear, but he could not keep awake. The knee jerks were slow in response, but increased in extent. The quadriceps could be seen to contract slowly as if in voluntary movement. He complained of marked diplopia, and occasional strabismus could be observed. The pupils were normal. The condition came on abruptly, was not more than twelve hours in development, and cleared away gradually after five or six days with final complete recovery.

Livingston-Learmonth and Cunningham,² in an article on the effects of trinitrotoluene on women workers, divide the symptoms into two classes, irritative and toxic, and the latter again into digestive, circulatory, cerebral and special. Under cerebral symptoms they say:

Drowsiness is very common and many workers describe it as a sort of drugged feeling. Depression, lassitude and apathy are common. Transient loss of memory, slight disorders of sight (blurred vision, etc.), and a certain amount of transient peripheral neuritis have been noted in several of our cases. In severe cases delirium, coma and convulsions occur toward the end.

As terminal symptoms of trinitrotoluene poisoning, Rice³ mentions delirium, light-headedness and flighty utterances, followed by a stage of coma lasting about twelve hours and ending in death.

Dr. Alice Hamilton⁴ says:

The symptoms that follow inhalation of benzol and toluol fumes or absorption of these are, in mild cases as in severe ones, the symptoms of intoxication by a substance with a special action on the central nervous system: Dizziness, confusion, transient excitement followed quickly by stupor, twitching, then exhaustion, loss of consciousness, with respiration at first rapid then slow, pulse rapid, temperature low.

She further adds:⁵

Delirium, sometimes maniacal, is not rare; tetanic convulsions with marked opisthotonus and high temperature were described in one unusual case. Three cases developed meningitis before death.

In some cases of "dope" poisoning, which is said to "act on the nervous centers," nervous symptoms have been reported. Willcox⁶ quotes Dr. Heffter and Dr. Kraus, who state that in Germany, where the "dope" contains more tetrachlorethane than the English varnishes, two types of symptoms develop: (1) gastrointestinal and hepatic symptoms, and (2) nervous symptoms. The latter group of patients suffers from tremors, headaches, pains in the limbs, numbness, "pins and needles" of the extremities, loss of knee jerks and excessive sweating.

Koelsch⁷ also noticed among the more marked cases of tetrachlorethane poisoning various nervous phe-

2. Livingston-Learmonth, Agnes, and Cunningham, Barbara M.: The Effects of Trinitrotoluene on Women Workers. *Lancet*, London, 1916, **2**, 261.

3. Rice, A.: Munition Plant Poisoning, *Am. Jour. Pub. Health*, 1917, **7**, 273.

4. Hamilton, Alice: U. S. Dept. Labor, Bureau of Labor Statistics, *Whole No. 219*, May, 1917.

5. Hamilton, Alice: *Month. Rev. Labor Statistics*, 1917, **5**, No. 2.

6. Willcox: *Lancet*, London, 1915, **1**, 544.

7. Koelsch: *München. med. Wchnschr.*, Nov. 16, 1915.

nomena, as headache, paresthesias in the extremities, tremor of the hands, and paralysis.

Benzene (benzol, C₆H₆) and its homologues, according to Lehmann,⁸ produce in man a condition resembling intoxication, dizziness, headache and gastrointestinal disturbances; after a prolonged inhalation, motor and sensory symptoms develop.

These appear to be the only descriptions in literature available to us referring to any special effect on the nervous system; but the references here to blurred vision, transient peripheral neuritis, pains in the limbs, numbness, pins and needles, loss of knee jerks, etc., suggest clearly an involvement of the peripheral nerves and possibly also of the optic nerves.

As far as possible we have excluded other sources of poisoning in our case, and the evidence appears to us sufficiently strong to classify it under the heading given. The failure to show a loss or even marked diminution of the deep reflexes of the lower extremities we believe to be due to a possible beginning involvement of the lateral columns of the cord, suggested by the jerking of the legs and the sense of stiffness.

POSTMORTEM FINDINGS IN MEASLES-BRONCHOPNEUMONIA AND OTHER ACUTE INFECTIONS *

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During the past winter, necropsies were performed in sixty-two cases at Camp Zachary Taylor, Ky. The patients were soldiers, with one exception white, native born, physically and mentally sound, in the third decade of life, most of them country bred and from the central states. This uniformity of type permits comparative study.

The pathologic observations hereinafter described will confirm and amplify the observations reported by H. L. Alexander¹ that the infections at this camp underwent a changing history from pneumococcal, to measles, to streptococcal. It is shown that with the changes of the etiologic agent there was a distinct change in the pathologic condition of the lungs, parenchymatous organs and serous surfaces. The clinical side has been presented by Fox and Hamburger.²

In the fall of 1917, the etiologic agent was the pneumococcus with its customary results. Measles appeared late in October, causing the first death, November 7, from what is considered a typical measles pneumonia, with a catarrhal or purulent bronchitis. On the advent of the streptococcus infection, causing the first death, December 13, the pathologic picture changed, the bronchitis being now hemorrhagic, the pneumonia patchy and hemorrhagic, while the causative organism began to show a predilection for serous surfaces.

The principal causes of death as determined by necropsy are given in Table 1. Complicating lesions,

occurring practically always, are not listed in this table as they are fully discussed later.

It is seen from this table that fifty-two of the sixty-two deaths were produced by acute infectious diseases, and that lesions of the lungs and meninges contributed, with one exception, all the primary lethal causes. It is a noteworthy fact that the intestinal tract was not involved in any of the infections, and no transmissible disease of it was responsible for death. This means that in this camp no typhoid, paratyphoid, dysentery, winter cholera or food poisoning and the like occurred. The ten deaths due to noninfectious diseases were mainly surgical affections or accidents not incurred in line of duty. These are not considered in this paper.

BRONCHOPNEUMONIA

Bronchopneumonia was the lesion most frequently found, thirty-five of the fifty-two cases presenting this change; in twenty-seven it was looked on as a primary cause of death.

To study more closely the effect of the various etiologic agents on the disease picture, all cases of bronchopneumonia are grouped into four classes:

- A. Following measles; the *Streptococcus hemolyticus* isolated; 3 cases.
- B. Following measles; the *Streptococcus hemolyticus* not isolated; 13 cases.
- C. Not following measles; the *Streptococcus hemolyticus* isolated; 10 cases.
- D. Not following measles; the *Streptococcus hemolyticus* not isolated; 9 cases.

The bronchopneumonia, then, was preceded by measles in sixteen instances, and not preceded by measles in nineteen cases. The streptococcus was isolated in thirteen cases, and not isolated in twenty-

TABLE 1.—CAUSES OF DEATH AS DETERMINED BY NECROPSY

Bronchopneumonia.....	27	Meningitis, meningococcic.....	5
Lobar pneumonia.....	8	Meningitis, streptococcic.....	3
Empyema, primary.....	6	Meningitis, pneumococcic.....	1
Pericarditis, primary.....	1	Meningitis, following mumps....	1
Noninfectious diseases.....		10	

two cases. In the latter group the pneumococcus was frequently found. In a small number of cases, no bacteriologic studies were made.

The points analyzed are: the time of occurrence of bronchopneumonia after the first definite symptoms of measles appeared; the duration of the bronchopneumonia from the day it was first recognized to the day of death; the type of bronchopneumonia, and the changes in the viscera. Of the latter only the pleurae, bronchi, spleen and kidneys showed constant and important alterations. The results are collected in Table 2.

TYPES OF BRONCHOPNEUMONIA

Four anatomic types of bronchopneumonia were observed. These were found with such regularity that they were classified as Types I a, I b, II and III. The first two types were mainly found in bronchopneumonia following measles; the last two in hemolytic streptococcic infection.

Type I a. The lungs are large, expanded, and very heavy. The weight of each lung ranges from 600 to 1,100 gm., the combined weight often approaching 1,500 gm. The pleural surface may be smooth and glistening, but more often is dulled and overlaid with fibrin exudate. The general surface of the lung is mottled, dusky gray-red with a distinct bluish tint. Small, ill defined areas of elevation and depression are often seen. On palpation, innumerable small, firm areas are

8. Lehmann: Arch. f. Hyg., 1911.
* From the Cantonment Laboratory, Base Hospital, Camp Zachary Taylor, Ky.
1. Alexander, H. L.: Hemolytic Streptococcus Causing Severe Infections at Camp Zachary Taylor, Ky., THE JOURNAL A. M. A., March 6, 1918, p. 775.
2. Fox, Herbert, and Hamburger, W. W.: The Streptococcus Epidemic at Camp Zachary Taylor, Ky., THE JOURNAL A. M. A., June 8, 1918, p. 1758.

felt throughout all the lobes. The lungs may be said to have a "shotlike" feel. The intervening lung tissue is boggy. The cut surface is pale bloody-red; light pressure causes the outpouring of a large amount of moderately bloodstained, frothy serum. Scattered over the entire cut surface are numberless rounded, light gray-red, definitely raised firm areas, appearing very much like large, gray miliary tubercles. They usually distinctly surround a small bronchial branch, and measure from 3 to 5 mm. in diameter. About one half to one third of the entire lung tissue is taken up by these consolidations.

The bronchial branches stand out distinctly; from many, a thick, yellow, purulent fluid exudes. The bronchial mucosa is swollen and somewhat reddened. In some instances the bronchial tubules are dilated, forming small and rather smooth-walled cylindric or globular bronchiectases. The peribronchial lymph nodes are swollen, juicy, and dark grayish red. Their cut surface is very moist and has a mottled appearance.

Type Ib. This is a later stage of the preceding process. All the various anatomic changes are more accentuated. The pleura is generally covered with soft yellow exudate. The organ is markedly distended and the combined weight of the lungs approximates 2 kg. The surface of the lung lacks definite rounded contour, showing many smaller and larger elevations, blue, reddish brown or purplish in appearance fading gradually. Subpleural punctate hemorrhages are occasionally encountered. The nodules palpated are larger than in the preceding type, but are of approximately uniform size. No large consolidated patches are felt. The anterior edges of the lung and the upper lobes may be inflated. The cut surface is moderately bloody. The general color is grayish red; innumerable well outlined, slightly, but definitely raised areas of a yellowish, grayish red or dark reddish brown surround the bronchial tubes. These consolidations vary from about 5 mm. to 1 cm. in diameter. The grayish areas are quite firm, while the yellowish patches are more or less softened. The bronchi show the same general changes as in the preceding type.

The principal features of Types Ia and Ib are, then, marked edema, the discrete character of the consolidations, *their distinct peribronchial situation* and their occurrence in all lobes. They vary in color, size and consistency, being small, firm and light gray in the earliest stages and then becoming larger, grayish red, dark red, and finally yellow and softer in appearance and consistency. The aggregate total of these areas would equal from one third to two thirds of the entire pulmonary substance, depending on the stage. A purulent bronchitis accompanies the lesions. The marked edema and the very small size of the consolidations often obscure the clinical picture of bronchopneumonia.

Type II. The pleura usually shows inflammation; empyema is often present and the lung is slightly or not at all enlarged. On palpation, various sized areas of resistance are noted. On section, the lung tissue is not nearly so moist as in types Ia and Ib. The areas of consolidation are several centimeters in diameter, of irregular contour, slightly or indefinitely raised and *not visibly peribronchial*. They vary in color from dark red to grayish yellow and often show a surrounding hemorrhagic zone. Usually the lesions are confined to one or two lobes. The bronchial branches are not unduly distinct and almost always show a deep red hemorrhagic mucosa and exude a sanguineous or sanguinopurulent fluid. The peribronchial lymph nodes are large and more reddish than in Types Ia and Ib. This type of bronchopneumonia resembles the ordinary kind seen in the necropsy room excepting the great frequency with which empyema occurs and the hemorrhagic character of the bronchitis.

Type III. Confluent bronchopneumonia or pseudolobar lobular pneumonia. A large part of a lobe is consolidated. The cut surface is moist and finely granular; the granularity being less distinct than that of lobar pneumonia. The lobes

show several distinctly different processes. While the general color is brownish red, there are areas more yellowish and others more grayish or reddish; but all fade into one another, so that the end-picture appears at first glance more homogeneous than heterogeneous. The pseudolobar pneumonia is, therefore, made up of a number of units placed so closely together that they give the appearance of a single large consolidated patch.

MEASLES-BRONCHOPNEUMONIA

Table 2 shows that nine of the sixteen cases of bronchopneumonia following measles were of Types Ia or Ib. The spleen was slightly enlarged, being about one and one half to twice its normal size and averging 225 gm. in weight. The capsule was smooth and transparent, the outside cover being bluish red. The organ was somewhat less firm than normal, the cut surface dull red, the trabeculae of usual size; the splenic follicles were prominent, a light yellowish gray, and about twice their normal size. The splenic pulp showed no gross changes. The splenic picture is, therefore, one usually termed "acute follicular splenitis."

In five cases not showing Type I bronchopneumonia, complications were present which may have influenced the character of the lung lesions. In two instances a streptococcic infection was superimposed. In others, epidemic meningitis, lobar pneumonia and erysipelas coexisted. As to the development of the bronchopneumonia after the onset of measles and as to its duration, no uniformity existed, as can be seen in Table 2. The kidneys, in a majority of cases, showed various grades of acute parenchymatous nephritis.

ETIOLOGY OF MEASLES-BRONCHOPNEUMONIA

One of the dominant symptoms of measles is bronchitis appearing early and often persisting. The cause of this bronchitis is not known, but it is reasonable to suppose that it is due to the virus of measles. In this connection, I would call attention to the recent work of Tunnicliff,³ who isolated a small anaerobic coccus from the blood in forty-two out of fifty cases of measles. In the present epidemic, hemolytic streptococci appeared in the throat in a large percentage of the cases of measles, general medical cases as well as apparently normal cases. Detailed bacteriologic figures will be given in a further paper by Levy and Alexander.⁴ The great invasive power and virulence of the streptococcus found in the present epidemic is demonstrated at necropsy by the extensive involvement of all the principal organs. It is most likely that they will readily thrive in an already pathologic field, that is, the inflamed bronchial tubes of measles. In the early postmortems, before the epidemic of streptococcus had appeared, a definite type of measles-bronchopneumonia was found, here termed Type Ia and Type Ib. The anatomic picture was essentially the same as that seen for several years in the necropsy room of the Philadelphia General Hospital by myself, and which has been described by several observers. From a study of the necropsies here, I am inclined to believe that a true measles-bronchopneumonia, caused by the virus of measles, exists. Since, however, a number of organisms, as pneumococci and streptococci, occur almost constantly in the throat, secondary invasion will take place in the bronchial system and

3. Tunnicliff, Ruth: The Cultivation of a Micrococcus from Blood in Pre-Eruptive and Eruptive Stages of Measles, *THE JOURNAL A. M. A.*, April 7, 1917, p. 1029.

4. Levy, R. L., and Alexander, H. L.: The Predisposition of Streptococcus Carriers to the Complications of Measles, *THE JOURNAL A. M. A.*, to be published.

one or another organism will be found in the bronchial branches and pulmonary lesions. If these organisms possess marked virulence and invasive powers, and if they intrude early in the disease, the anatomic picture will be determined by the invading bacteria, and the possible influence of the measles virus may be

TABLE 2.—FINDINGS IN THIRTY-FIVE CASES OF BRONCHOPNEUMONIA
A. Following measles; due to Streptococcus hemolyticus (3 cases)

No.	Days after Onset of Measles	Duration, Days	Type	Pleurae	Bronchi	Spleen	Kidney	Other Findings
18	..	4	I b	R., empyema	Acute purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	Acute fibrinous peritonitis; acute fibrinous pericarditis
34	6	25	II	Double empyema ...	Acute hemorrhagic bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
41	14	9	II	Normal	Acute hemorrhagic bronchitis	Acute hemorrhagic splenitis	Cloudy swelling	Thrombosis of left first sinus; left otitis media

B. Following measles; Streptococcus hemolyticus not isolated (13 cases)

5	4	7	I a	Normal	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
6	6	9	I b	Acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Cloudy swelling	
7	..	..	I b	Acute fibrinous pleurisy	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
11	..	4	I a	Normal	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
12	..	8	I b	R., serofibrinous pleurisy; L., acute fibrinous pleurisy	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Erysipelas
13	..	25	II	Normal	Acute catarrhal bronchitis	Acute follicular splenitis	Cloudy swelling	Acute epidemic meningitis
19	7	5	I b	L., acute fibrinous pleurisy	Acute hemorrhagic bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	
21	11	4	III	R., acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	
25	11	5	I a	R., acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Normal	
26	17	7	II	Double empyema ...	Acute hemorrhagic bronchitis	Acute diffuse splenitis with hemorrhage	Acute parenchymatous nephritis	
28	6	15	II	Normal	Acute catarrhal bronchitis	Acute diffuse splenitis	Cloudy swelling	Erysipelas, double otitis media
32	16	6	II	R., empyema	Acute hemorrhagic bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Lobar pneumonia
48	7	4	I a	L., acute fibrinous pleurisy	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	

C. Following measles; due to Streptococcus hemolyticus (10 cases)

35	..	..	II	R., empyema	Acute hemorrhagic bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Acute serofibrinous pericarditis
43	..	3	II	Normal	Acute hemorrhagic bronchitis	Acute diffuse splenitis	.....	Acute purulent meningitis, thrombosis left lateral sinus, double otitis media
43	..	9	II	L., acute serofibrinous pleurisy	Acute hemorrhagic bronchitis	Acute diffuse splenitis with hemorrhage	Cloudy swelling	Acute fibrinous pericarditis
44	..	6	II	R., empyema	Acute hemorrhagic bronchitis	Acute diffuse splenitis with hemorrhage	Acute parenchymatous nephritis	Acute fibrinous pericarditis
51	..	10	II	L., empyema	Acute hemorrhagic and purulent bronchitis	Acute follicular splenitis with hemorrhage	Acute parenchymatous nephritis	
52	..	..	II	L., acute fibrinous pleuritis	Acute hemorrhagic and purulent bronchitis	Acute hemorrhagic splenitis	Acute parenchymatous nephritis	Acute otitis media; acute left mastoiditis; acute suppurative myositis and arthritis
53	..	11	II	Normal	Acute hemorrhagic and purulent bronchitis	Acute diffuse splenitis	Cloudy swelling	Acute hemorrhagic encephalitis
57	..	4	II	R., empyema	Acute hemorrhagic and purulent bronchitis	Acute follicular splenitis with hemorrhage	Cloudy swelling	Acute pleural pericarditis
58	..	23	III	R., empyema	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Acute right mastoiditis
62	..	6	I a	Double empyema ...	Acute hemorrhagic and purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	

D. Not following measles; streptococcus not isolated (9 cases)

2	..	10	II	Acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	
4	..	4	II	Normal	Acute catarrhal bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	Acute purulent meningitis
10	..	16	II	Normal	Acute purulent bronchitis	Acute follicular splenitis	Cloudy swelling	Lobar pneumonia
15	..	4	II	Normal	Acute catarrhal bronchitis	Acute follicular splenitis	Cloudy swelling	Acute meningococcic meningitis
22	..	8	II	R., empyema	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
23	..	6	II	R., empyema	Acute purulent bronchitis	Acute follicular splenitis	Cloudy swelling	Acute pericarditis
29	..	..	II	Double acute fibrinous pleuritis	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Pyemia from self-inflicted wound
45	..	12	II	Normal	Acute catarrhal bronchitis	Acute follicular splenitis	Cloudy swelling	Acute meningococcic meningitis
60	..	8	II	Normal	Acute catarrhal bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	Acute meningitis; cause undetermined

obscured. In fact, the lesions established will be a true streptococcic or pneumococcic bronchopneumonia. If, on the other hand, the invading organisms enter the system late in the disease, are few in number, or do not possess marked virulence and invasive powers, they will influence the pathologic process slightly or not at all, and a true measles-bronchopneumonia will be produced. This explanation would readily fit our anatomic findings. I greatly regret that because of certain technical accidents, our microscopic sections have been largely unfit for study; for this reason, only the gross anatomic picture is given.

STREPTOCOCCIC BRONCHOPNEUMONIA

The majority of cases of streptococcic bronchopneumonia were of Type II. The bronchi showed hemorrhagic inflammation. Empyema occurred frequently. The spleen presented the picture of an acute splenitis often with hemorrhages, or a distinct hemorrhagic condition; it was slightly enlarged, having a smooth capsule of a slaty color or dark red. The consistency was flaccid, the cut surface pale grayish brown and often containing irregular dark red hemorrhagic areas; the follicles and trabeculae were indistinct.

Otitis media, mastoiditis, and other complications were frequently present. The mastoiditis was characterized by reddish black discolorization of the bone, which was so necrotic that it could be easily cut with a knife. Subserous hemorrhages, usually small and of pin-point size, were frequently encountered on the pleural, pericardial, renal, cerebral and hepatic surfaces. Similar hemorrhages were found in the mucosa of the renal pelvis, the stomach and the intestine. In a general way, organic changes were more widespread and of greater severity in the streptococcic infections.

BRONCHOPNEUMONIA NOT FOLLOWING MEASLES AND NOT STREPTOCOCCIC

Cases of bronchopneumonia not following measles and not streptococcic occurred usually as a complication of some other disease (Table 2). The lung picture was classified as Type II, but, as the table shows, the bronchial and visceral changes were less pronounced.

LOBAR PNEUMONIA AND COEXISTENT LOBAR AND BRONCHOPNEUMONIA

The eight cases of lobar pneumonia resemble, in every way, those usually encountered. In three, coexisting bronchopneumonia was found, in all of which the pneumococcus was isolated. One pneumonic lung presented an interesting picture. The entire right lung was consolidated; the upper and middle lobe had a grayish red cut surface, granular in appearance, from which pneumococcus cultures were made. The lower lobe possessed a distinctly more reddish appearance, and from this part hemolytic streptococci were isolated. It may be that the streptococcic and pneumococcic inflammation coexisted, or, what is more likely, the streptococcus process was superadded to the pneumococcic involvement.

EMPHYEMA

The necropsies during the past winter showed an unusually high percentage of empyema, this condition being present in 21 of 52 cases. (The term "empyema" is here used to include serofibrinous pleurisy. In the table these two stages of the same process are separated.)

Clinically, a "cold" or "sore throat" frequently preceded the empyema by a few days; then, after exertion, or without discoverable cause, the following syndrome was noted: a chill, which is described as severe and sometimes lasting for an hour followed by a cough, pain in the side, fever and dyspnea. This clinical history, with the finding of dulness in the side often lead to the diagnosis of lobar pneumonia. The roentgen ray and clinical studies showed that the empyema was of unusually rapid occurrence, often developing over night.

Table 3 shows the locations of the empyema, the condition of the lung, the organism isolated, and coexisting inflammation of the peritoneum and pericardium. It is seen that only five cases of measles were complicated by empyema; in ten instances "sore throat" or a "cold" preceded the disease. The organisms found were: hemolytic streptococcus, fourteen; pneumococcus, five; no growth, and undetermined one each. In all cases the fluid obtained at necropsy was distinctly turbid, in most cases frankly purulent. It usually was a thick, yellow and creamy liquid, in which large clumps of fibrin floated. Occasionally a greenish tint was found, and, in the streptococcic cases, a brownish, light coffee color. The quantity varied from 100 to 2,500 c.c.; this variation is in part due to previous aspiration or operation. In nine instances the right, in eight the left, in four both pleural cavities were affected. In the latter, various developmental stages could be observed; the empyema was walled off or pocketed by a tough, fibrinous adhesion between the lung and the lateral chest wall. Interlobar empyema was only once found. Sometimes only one, sometimes several pus pockets were present; a certain amount of free basal empyema usually existed. These cases were of considerable clinical interest since drainage proved difficult and occasionally a large pocket was not reached, while another was perfectly emptied. In all cases of empyema, the pleural surface was almost completely enveloped by a thick coat of yellow, soft exudate averaging from 3 to 10 mm. in thickness, and binding the lung lightly to the chest wall here and there. If the exudative process had existed for some time, organization occurred. The pleural surface then was grayish, and had a somewhat scaly, dry appearance. The exudate was much tougher and adhesion firmer; in the latter cases empyema pockets were found. This would seem to indicate that, other conditions permitting, early operations offer the best chance for complete drainage. The changes in the lung were usually those of bronchopneumonia; lobar pneumonia was found only in one case. The lung on the infected side showed compression varying in degree with the quantity of fluid present. In several instances the lung was no larger than a fist, having then a dry fleshy appearance and a tough meat feel. The cut surface was dark red, airless and dry, the bronchial branches standing out prominently because of the loss of separating tissues. More often than atelectasis of the entire lung, compression of only one lobe was found; this had the same appearance as described above. The uninvolved side showed compensatory inflation, the organ being widely distended and hypercrepitant.

In six cases no inflammatory changes were present in the lungs, and the empyema had to be looked on as primary. The lung tissue was carefully examined in these cases; and while it is conceivable that the existing atelectasis obscures the inflammatory changes,

Careful study failed to reveal any. Five of these primary empyemas were streptococcic in origin. In the other, no organism was isolated.

ACUTE PERICARDITIS

Ten instances of acute pericarditis were discovered, with one exception, in the serofibrinous or purulent stage. One case was preceded by measles, another by "rheumatism." The hemolytic streptococcus was isolated six, the pneumococcus four times (twice Type II, once Type I, once, type not determined). Lobar pneumonia existed in one of the cases, bronchopneumonia in six, and in three instances the lung did not show any inflammatory processes. In all but one patient the pericardial inflammation was associated

was almost always normal. The atheromatous lesions numbered from a very few to several dozen. They were subintimally located, and varied in consistency from hyaline firmness to definite softening. The coronaries showed distinct involvement in a considerable number of cases. Since the common causes of aortic disease, syphilis and other chronic infections, are not to be elicited in the history or necropsy findings, one is forced to consider the possibility that the present infection is the cause of the intimal changes, which speculation points out that close observation should be made of aortas in these young men coming to necropsy from acute infections. Since our patients are only in the third decade of life, the presence of aortic change is of interest.

TABLE 3.—FINDINGS IN EMPYEMA AND SEROFIBRINOUS PLEURITIS

No.	Preceding Disease	Pleurae	Lung	Organism Isolated	Remarks
12	Measles	R., serofibrinous pleurisy	R., bronchopneumonia	Pneumococcus	
16	"Cold"	L., fibrinous pleurisy	L., bronchopneumonia		
18	Measles	R., empyema	R., compress-atelectasis	Streptococcus hemolyticus	No inflammatory changes in lungs; moderate purulent bronchitis
		L., normal	L., compensatory inflation	Streptococcus hemolyticus	Acute pericarditis; acute peritonitis
		R., normal	R., bronchopneumonia		
		L., empyema	some compress-atelectasis		
22	"Cold"	R., empyema	L., bronchopneumonia	Pneumococcus	
23	.....	L., normal	R., compress-atelectasis		L., few bronchopneumonia areas; R., show none, but marked purulent bronchitis
26	Measles	R., normal	L., bronchopneumonia	Pneumococcus	Acute pericarditis
27	.....	L., empyema	R., compress-atelectasis		
		R., serofibrinous pleurisy	L., bronchopneumonia		
		L., empyema	R., compress-atelectasis		
		R., normal	L., normal	Streptococcus hemolyticus	No inflammatory changes in lungs; hemorrhagic bronchitis and tracheitis
		L., empyema	L., infarct, upper lobe; compress-atelectasis		
30	.....	R., normal	R., compensatory inflation	.....	No inflammatory changes in lungs; hemorrhagic bronchitis and tracheitis
32	Measles	L., serofibrinous pleurisy	L., compress-atelectasis		
34	Measles	R., empyema	R., bronchopneumonia	Pneumococcus	
		L., normal	L., bronchopneumonia		
		R., empyema	R., bronchopneumonia	Streptococcus hemolyticus	
		L., serofibrinous pleurisy	L., bronchopneumonia; compress-atelectasis		
35	"Cold"	R., empyema	R., bronchopneumonia; compress-atelectasis	Streptococcus hemolyticus	Acute pericarditis
		L., empyema, early	L., compensatory inflation		
37	"Sore throat"	R., serofibrinous pleurisy	R., lobar pneumonia	Pneumococcus	Acute peritonitis
38	"Rheumatism"	L., normal	L., compensatory inflation		
39	"Cold"	R., normal	R., compensatory inflation	Streptococcus hemolyticus	Acute pericarditis; no inflammatory changes in lungs
42	.....	L., empyema	L., compress-atelectasis	Streptococcus hemolyticus	No inflammatory changes in lungs
		R., normal	R., bronchopneumonia	Streptococcus hemolyticus	Acute pericarditis
		L., serofibrinous pleurisy	L., bronchopneumonia; compress-atelectasis		
44	"Sore throat"	R., empyema	R., compress-atelectasis; bronchopneumonia	Streptococcus hemolyticus	Acute pericarditis
		L., normal	L., bronchopneumonia		
9	.....	R., normal	R., compensatory inflation	Streptococcus hemolyticus	No inflammatory changes in lungs; acute pericarditis
		L., empyema	L., compress-atelectasis		
51	"Sore throat"	R., normal	R., bronchopneumonia	Streptococcus hemolyticus	
		R., empyema	L., bronchopneumonia		
57	"Cold"	R., empyema	R., bronchopneumonia	Streptococcus hemolyticus	Acute pericarditis
		L., normal	L., bronchopneumonia		
58	"Sore throat"	R., empyema	R., compress-atelectasis	Streptococcus hemolyticus	
		L., normal	L., bronchopneumonia		
62	"Cold"	R., empyema	R., bronchopneumonia	Streptococcus hemolyticus	Acute peritonitis
		L., empyema	L., bronchopneumonia		

with empyema. In one case the pericarditis was looked on as primary, since no inflammatory processes in other organs were found present. In this case hydrothorax and ascites of undetermined origin were found. The findings are grouped together in Table 4.

CHANGES IN THE CARDIOVASCULAR AND THE ABDOMINAL VISCERA

The heart, in the majority of cases of bronchopneumonia and lobar pneumonia, showed right-sided dilatation and cloudy swelling. The aorta, in an unusual percentage of instances, presented atheroma. In forty-two cases, detailed notes concerning the state of the aorta were made. In thirty of these, aortic atheroma was present in the form of elevated, yellow patches or streaks. They were situated mostly in the ascending arch, and to a less extent in the abdominal aorta and other portions of the arch. The thoracic aorta

The liver usually showed cloudy swelling. The gastro-intestinal tract presented no noteworthy changes.

MENINGITIS

Meningococcic Meningitis.—Five patients came to necropsy. The duration of the disease was 3, 3, 4, 9 and 25 days, respectively. The last patient had a recurrence of infection, since at one time his spinal fluid was clear and sterile. The pathologic picture was similar in all cases. This pia-arachnoid had a loose, edematous structure, and was moderately injected. Fine, yellow lines of perivascular purulent infiltration were seen, especially in the temporo-parietal area. A yellow, soft exudate was found chiefly on the base of the brain from the optic chiasm to the cerebellum. The upper surface of the cerebellum showed an especially heavy deposit. In one case practically the entire brain surface was covered,

in the other the exudates were largely confined to the temporoparietal lobes. The lateral ventricles contained a turbid fluid in all cases, frank pus in one, and in two instances they were distended to twice their size, forming an internal hydrocephalus. The viscera in all patients showed cloudy swelling, the spleen was slightly follicular, and the lungs in three instances showed areas of bronchopneumonia.

Pneumococcic Meningitis.—This occurred in one instance and was associated with bronchopneumonia. The anatomic picture was similar to that of meningococcic meningitis.

Streptococcic Meningitis.—In all three cases, purulent otitis and mastoiditis was the atrium of the infection.

Parts of the mastoid and petrous bone were bluish black and necrotic. The mastoid cells and internal ear contained greenish pus. The pia-arachnoidal vessels showed greater infection than in meningococcic meningitis. The exudate had a greenish tint, and was more abundant. Punctate, subpial hemorrhages were present. Thrombosis of the right lateral sinus was

pial hemorrhages were seen. The vessels in the cortex were greatly distended, and in many instances, packed with polymorphonuclear leukocytes; at many points hemorrhagic extravasations were present in the cortex.

SUMMARY

1. The large majority of deaths were due to infectious diseases.

2. Pneumococcus infection led to a small number of deaths and gave the usual picture.

3. The fatal cases of measles showed the formerly recognized type of measles-bronchopneumonia until a highly virulent and invasive streptococcus changed the character of the pathologic lesions.

4. Empyema arose as secondary to a pneumonitis, and in six cases primarily.

5. The late streptococcus infections have a strong predilection for serous surfaces.

6. Epidemic meningitis was sporadic and of the ordinary form. No cases of spotted fever were seen.

ACUTE STREPTOCOCCIC SEPSIS WITH PURULENT POLYSEROSITIS, SPLENIC TUMOR AND HEMOLYTIC JAUNDICE

PRELIMINARY NOTE

Since the writing of this report, streptococcus infections seem to have taken on a new and highly virulent form. Four postmeasles cases came to necropsy in the week of April 28, 1918. All showed the following anatomic picture: icterus, acute purulent pleuritis, pericarditis, and peritonitis, acute splenic tumor, and multiple subserous hemorrhages.

The lungs contained a few patches of bronchopneumonia. Pure cultures of hemolytic streptococcus were obtained from the heart's blood and the exudate in the pleurae, pericardial and peritoneal cavities.

The findings appear to point to an increase in the invasive powers of the streptococci, probably because of passage through a large number of hosts. A further report will be made.

TABLE 4.—FINDINGS IN TEN CASES OF ACUTE PERICARDITIS

No.	Organism Isolated	Condition of Lung	Condition of Pleura
8	Pneumococcus	Lobar pneumonia, R., L.	Acute fibrinous pleuritis, R. Empyema, L.
18	Streptococcus hemolyticus	Double bronchopneumonia	
23	Pneumococcus	Bronchopneumonia, L.	Negative (hydrothorax)
31	Pneumococcus	Negative (compensatory atelectasis)	Negative (hydrothorax)
35	Streptococcus hemolyticus	Bronchopneumonia, R., L.	Empyema, R.
38	Streptococcus hemolyticus	Negative (compensatory atelectasis)	Empyema, L.
42	Pneumococcus	Double bronchopneumonia	Empyema, L.
44	Streptococcus hemolyticus	Bronchopneumonia, L.	Empyema, R.
49	Streptococcus hemolyticus	Negative (atelectasis, L.)	Empyema, L.
57	Streptococcus hemolyticus	Double bronchopneumonia	Empyema, R.

once seen. The ventricles were overdistended in one instance, and in all cases contained semipurulent fluid. The ependyma was moderately reddened. The visceral changes were more pronounced than those of meningococcic meningitis. Parenchymatous nephritis was the principal lesion noted.

Hemorrhagic Encephalitis.—As has been stated elsewhere, punctate subserous hemorrhages were often observed in streptococcic infections. One case of bronchopneumonia was complicated with a marked hemorrhagic encephalitis. Clinically the patient developed delirium two days after the onset of the bronchopneumonia, and the neck became stiff. Lumbar puncture yielded clear spinal fluid containing a considerable number of polymorphonuclear cells.

The brain showed extensive subpial hemorrhagic extravasations, particularly over the frontal and superior parietal areas. The large veins were greatly congested. In the cut surfaces an unusual number of bleeding points were present. The cortex of the superior portion of the right frontal lobe contained an area of punctate hemorrhages about 2.5 cm. in diameter. In the cortex of the left parietal region a similar hemorrhagic area was found. The ventricles were normal in size, and contained a slightly blood-tinged fluid. The ependyma was normal in size. The internal ear and mastoid cells showed no evidences of inflammation. In microscopic sections, extensive sub-

Effect of Diets on Reproduction.—In a preliminary report (*Science*, March 1, 1918), J. R. Slonaker and T. A. Card of the Department of Physiology of Stanford University summarize their findings on the effects of omnivorous and vegetarian diets on reproduction in the albino rat. The number of pairs constantly under observation was forty, with an equal number as controls, on the same vegetarian diet as the first class, with the addition of some form of animal food. The conclusions so far reached were: The vegetarians were smaller, had less vigor, were less active, had rougher hair and a tendency to sore eyes, while the other group were the reverse in these respects. The earliest ages at which young were born to the omnivorous group was 90 days, while for the vegetarian group it was 119 days, showing that the age of sexual maturity for the former group was 59 days and for the other group 98 days. The average duration of reproductive activity in the omnivorous group was 161 days and for the vegetarian group 111 days, showing that the restricted diet not only delayed the period of reproductive activity, but also shortened it. Vegetarian pairs when they ceased to reproduce were separated and new healthy omnivorous rats mated with them. All these new matings failed to reproduce. The conclusion is that the vegetarian diet produces sterility in both sexes. Only two or three generations of the vegetarian rats could be observed before the line became extinct, forcing the conclusion that the vegetarian diet not only reduces the vitality, the growth and the ability to reproduce, but also tends to the extermination of the race.

RECONSTRUCTION AND REHABILITATION OF DISABLED SOLDIERS

REPORT OF THE SECOND MEETING OF THE SECTION ON MISCELLANEOUS TOPICS, HELD IN THE AUDITORIUM THEATER, THURSDAY, JUNE 13*

The meeting was called to order by Lieut.-Col. Harry E. Mock.

CHAIRMAN MOCK said: Canada has sent two of her most influential men in the work of reclaiming her disabled soldiers to talk to the American Medical Association and to the people of Chicago. The first, Major John S. Todd, Canada, has seen service in France and is now giving his time and service to the disabled soldiers of Canada.

The Reconstruction of the Canadian Crippled Soldiers and Results

MAJOR JOHN C. TODD said: This meeting is a good thing because our success in this war is going to depend on that which each individual of us does, and success in the war is going to be won no less overseas than right here. In order that we may do what is right it is necessary that we should be correctly informed. It is for this reason that it is a good thing that medical men especially are informing themselves of the right thing to do for disabled sailors and soldiers. Men and women are prone to believe what doctors tell them. If the doctors of this country know the right thing and go about consistently and steadily repeating it, it will not be long before an accurate public opinion is general, constant, fixed, throughout the country. Physicians especially must make Americans understand what must be done by disabled sailors and soldiers and for disabled sailors and soldiers when their war service is at an end. We are all full of sympathy toward the disabled man that comes back, but just as affection for children may be a means of doing injury to a child, so may our sympathy toward disabled men be a means of doing an injury to them.

An English officer, discharged as disabled and wounded after four years of service, complained that he found it difficult to make up his mind concerning the next meal. A civilian is accustomed to order his meals, to do everything for himself. He goes into the army. He serves for four years. During that four years everything is done for him. His meals are ordered. The hour when he should go to his meals is decided for him. What he is to eat at his meals is decided. Suddenly he is wounded, no longer fit to be a soldier. He is turned out in the world and has to unlearn that which has been taught to him with pain and distress. You must help him to unlearn. It would be bad for that man if he were given a holiday for one year without any instruction and preparation for civilian life which is to follow. It would be bad for the country.

How are men to be educated so that they may return to civilian life? The first thing is that their disabilities must be reduced to their lowest measure by all that the wisdom of medicine and surgery can do for them. They must have their disabilities made as small as they may be by the provision of appropriate artificial appliances. The men must be made fit for employment. They must be taught employments. Most of them—80 per cent. of them—will be able to go back to full time occupations and compete with normal people, but there will be some who cannot, and even for those who can compete it will be difficult to find employment. The government must provide means for giving employment to disabled men.

A pension is not a gift. It is not something that is given to disabled men for what they have done. It is a debt paid to them in order to make up to them that measure of capacity which they have lost by reason of their service. (Applause.) You had one fault in your pension law. You should put one authority in charge of your pension legislation, make him a supreme court judge, if you will, and then let no authority interfere with his decisions. That is what has been done in Canada. I am one of three pension commissioners who have the responsibility to disabled men and to the public of Canada of justly distributing pensions, and there is no authority in Canada outside of the united will of our legislature and senate who has the power to alter our decisions.

[The Hart House Training School film was then shown, and a film illustrating "Artificial Limbs in the Making," with comment by Major Todd.]

It is very necessary that the government responsible for distributing artificial limbs to disabled men should have types of limbs made by itself. The government is responsible for keeping those limbs in repair or replacing them. If it were dependent on limbs bought in commerce there would certainly be competition among individual manufacturers, and there would not be any certainty that disabled men would get absolutely the best limb which knowledge can give to them. The Canadian government therefore has established for itself types of limbs. It distributes these to men who need them and it keeps them in repair and replaces them when they are worn out.

Because there will be large numbers of men in Canada using artificial limbs and requiring repairs to them constantly during the next generation, it has been found necessary for the government to look toward training men who will be able to repair those limbs. It will be a nuisance for a man out on a farm on the prairie to send his leg in, perhaps a couple of thousand miles, to a large city in order to have it repaired. The government is training disabled men, largely in the government limb factory, in order that they may go to their communities and set up small repair shops.

These are the general principles on which the rehabilitation of disabled men must proceed. The precise manner in which these principles will apply in the United States must depend on the nature of your own problems. There are one or two things, however, which experience in France, Great Britain, Italy and Canada can teach. One of those things is this: it is necessary to place the whole business under the jurisdiction of one central administrative power.

LIEUT.-COL. JAMES BORDLEY, JR., vice chairman, then took the chair.

The Conservation and Reclamation of the Industrial Soldiers—A War Measure

LIEUT.-COL. HARRY E. MOCK said: I am here to speak to you about another soldier, the industrial soldier, the soldier of the second line of defense, the man who belongs to that great industrial army which is just as essential to the winning of this war as is the military army, and the man who becomes disabled and wounded without the glorification that comes from such wounds by securing them on the battlefield. In England and France and that portion of Belgium that is left, and the other countries, they have done everything to increase the efficiency of the industrial army in order to speed up production for the purpose of winning the war. If this is good for war time, if these things increase production to win this war, why are they not good for peace times? They answer it themselves by saying they are. Never again will the old order of things exist after this war. Therefore it behooves this country to look forward to that period of social democracy when we are bound to have exactly the same conditions here. As the first country standing out as the land of freedom, we must be the leaders in this national, social democracy; but above that the immediate need is the need of winning the war. I am going to switch now to four lantern slides which I believe will drive home the idea I want to convey better than anything else, namely, that today the need of man power to win this war must compel us to form some means of conserving our industrial army and reclaiming the disabled from that industrial army.

This is a map showing our two armies; the first line of defense is the military army, the second line of defense is the industrial army. Two years ago at Detroit there was born a new organization, of men who were practicing industrial medicine and surgery, the keynote of which is the prevention of disease and accident among the industrial employees of this country.

This is the dream [referring to another picture on the screen] of those men, human conservation, the firm foundation of production. It is done by disease prevention, by accident prevention, plant sanitation, home sanitation, physi-

* Report of special meetings held as a part of the scientific assembly at the Sixty-Ninth Annual Session of the American Medical Association.

cal selection for jobs, adequate medical and surgical care for those disabled, good wages, good food, recreation and education. As a result, we get the maximum production, by experienced, intelligent, loyal employees.

This speaks for itself [referring to another picture]. Here are the by-products from the military army. If we have 2,000,000 soldiers in Europe, and 200,000 are disabled in a year by wounds and by disease, for that is what the figures from the other countries show, 50,000 must be physically reconstructed, and 20,000 must be vocationally retrained and otherwise reclaimed. Here is the industrial army of 30,000,000, soldiers 3,000,000, disabled every year by accidents and by disease, 800,000 that should be physically reconstructed, and 200,000 that should be vocationally retrained and otherwise reclaimed. Are we doing it? Cut out the human scrap heap, salvage the disabled, conserve human life and human energy.

The Selection of New Occupations for Disabled

(Mr. T. B. Kidner read a paper on this subject which will appear in a later issue.)

LIEUT.-COL. MOCK took the chair. He said: If the people of this country could only understand how much Mr. T. B. Kidner of Canada has given to us to help us develop our plans for the care and the reclaiming of our disabled soldiers, you would come to love him just as those of us down at Washington have who have been working with him lately. When the war came Mr. Douglas C. McMurtrie dreamed great things. He went to the Red Cross and established through their help the American Red Cross Institute for cripples in New York. After he got that going he dreamed greater dreams in establishing Red Cross institutes for cripples elsewhere. They are using the civilian cripple, studying his rehabilitation, the reclaiming of the civilian cripple, with a view of developing the best means of reclaiming the crippled soldier when we have him with us.

The Results of Rehabilitation in Foreign Countries

MR. DOUGLAS C. MCMURTRIE said: When the United States entered the war the American Red Cross looked around to see what its responsibilities would be in the field of rehabilitation, and as it thought that government plans might move a little more slowly than unofficial activities, it decided to start one experimental school of reeducation. This school was established between six and nine months ago in New York City and is known as the Red Cross Institute for Crippled and Disabled Men. Its first and most important activity is its educational department, and in this department there have already been started training classes in oxy-acetylene welding, in the making of artificial limbs, in printing, in mechanical drafting and in jewelry work. The institute also maintains an employment department which has been of considerable service during the last six months. During that time it has placed 600 seriously disabled men who could not have been placed in employment through the ordinary channels. It has also carried on a research department which it is felt has been of some use. One of our first duties was to proceed to the collection of a library and the publication of a series of studies that would bring the matter quickly and easily to the attention of the people who contemplated going into similar work. As a result of the preparation, that school could without any difficulty receive tomorrow morning 100 additional pupils and be entirely ready for them. For some time there have been carried on here some excellent training classes in preparing women to do the ward occupations and the earlier work with the men who will later be vocational cases. Through the generosity of one of the citizens of Chicago, it is also probable that there will be established here in this city before long a Red Cross institute similar to the one which I have just described to you in New York. I will interrupt my remarks here to show you a film of one of the French schools of reeducation. This film illustrates the work of the school at Montpellier, which accommodates hundreds of French war cripples. At this school they are taught various trades which have been found successful in that country.

Motor mechanics is one of the most popular trades for disabled men, and our Canadian friends tell us that practically every disabled soldier wants to take up motor mechanics. The first job of the vocational officer is to persuade him not to take that course up and to find out what he is really best fitted for. However, for the men for whom it is a wise choice it offers very good employment. In choosing trades and employments we have to look to the conditions after the war. The British minister of pensions has sent out instructions that no disabled soldiers are to be

trained as automobile drivers. The reason for that is that in the present war all transportation is being done by motor trucks, and in consequence a vast army of men have been trained as chauffeurs and they have had the most remarkable experience that any one could get. After the war is over those men will come back to civilian labor and they would compete unduly with the disabled men who might be trained.

All these things may perhaps seem obvious to us, but they are certainly not obvious to the public as a whole. One of the main purposes of this meeting was to come to this audience and ask for their help in putting this principle across, in going to the public and explaining the matter and securing constructive rather than destructive cooperation. In this way we can help our disabled men to the honor of self support rather than to the ignominy of dependence. We are counting on you.

CHAIRMAN MOCK said: Since last October we have been working in Washington along two lines; one, that these men could be rehabilitated absolutely as a military proposition, and the other, that we needed the greatest possible cooperation between the military and the civilian forces to put these men back as useful units of society as civilians once more.

Mr. C. A. Prosser, of the federal Board for Vocational Education, was to be present and address you today, but at the last moment found he could not come. In his place came Mr. James P. Monroe, a business man of Boston and the vice chairman of the Board for Vocational Education.

The Federal Board for Vocational Education

MR. JAMES P. MONROE said: The federal Board for Vocational Education is made up of three members of the Cabinet, the Commissioner of Education and three lay members. We have been making a study of this subject both from the side of the industrial cripple and from the side of the war cripple ever since we were organized last July, and we have had the help not only of the Surgeon-General's Department but we have had the help of the American Red Cross through the admirable Red Cross institute in New York, to which Mr. McMurtrie has referred, and also inconceivably valuable help from the Canadian government and through such men as have appeared before you today, representing Canada. The bill which passed unanimously, when signed by the President, is the basis for action by the federal Board for Vocational Education.

The subject is, What is to become of the reconstructed soldier in civil life? We used to regard the returned crippled soldier as a pensioner. Under this new legislation and the attitude of the Surgeon-General's Office we purpose to make him a man. He used to be an object of charity. We purpose to make him an object of pride. We used to throw him on the scrap heap. We now purpose to make him one of the pillars of economic society. There is every reason and every tendency for the soldier when he finds himself more or less crippled by the war or by disease to fall into an attitude of despair and hopelessness. There will be every tendency for him to regard himself as a hero and to accept the propping up which society will be willing to give him. There will be every tendency on the part of well meaning persons to coddle him and make him soft. There is danger if he is kept too long in the process of physical rehabilitation that he will become hospitalized, and there is not a more hopeless object than a hospitalized man or woman.

Finally, there is the natural timidity of any man to take the first plunge back into industry. All those things have got to be overcome jointly by the Surgeon-General's Department and by the federal Board of Vocational Education, by the Red Cross and by all the other splendid agencies. This thing has got to be handled not on the basis of sentimentality, but on the basis of common sense. There will be the skepticism of employers, who cannot imagine a crippled man being of much use in industry. There will be the suspicion of labor, which will feel that we are going to exploit the man, on the one hand, or else that we are going to crowd our industries with cheap labor which is cheap because it is crippled. There will be, and this is one of the most serious things, there will be some day in the future hard times, when all these occupations that we may have temporarily found for the crippled man will fall like a house of cards under economic pressure, and the tendency will be to forget the debt that we owe these men and to throw them out as the first to be scrapped in industry. All those things have got to be overcome by understanding and by education of the public. The education is an entirely new field, and we have got to educate the schools and the colleges,

and especially the industries themselves all over the country, to help us in giving the right sort of vocational reeducation to these men. From the very first minute that you get hold of that man when he comes back from No Man's Land he must be encouraged to develop his initiative, and that initiative must be based first on hope, on the impression that of course he is going to have a little handicap, but on the whole he will be just as good, if not a little better fellow than he was before. It must be based on a knowledge of what is open to that man in civilian and industrial life. It must be based finally on setting before that man from the earliest possible moment, from the moment that he comes out of the ether, if possible, the idea of his working toward a definite industrial, economic and social goal.

I agree absolutely with what was said this morning, that there must be every possible opportunity for recreation and therefore there must be ample grounds; but we must not forget that while recreation is absolutely essential as a therapeutic measure, purposeful work also is an absolute essential as a therapeutic measure, and you cannot get real work that means something to the man unless you can bring him into close contact with industries. For that purpose you must have some place where there is a great variety of industries. The next essential thing, it seems to me, is that this crippled man at the very earliest date should be gotten back, as far as possible, to his old environment. In the first place, because there is no better way, in order to restore that man's normality, than to make him feel that he is just as good a man as he was before by bringing him back among his old associates and in his old vicinity. In the second place, it is necessary to enlist the social backing of the people of his home town. That is, I believe, one of the most essential things in this whole business. Therefore, I cannot see any way out of this thing except to have a great number of small restoration hospitals scattered all over the country so that the man at the earliest possible time shall be brought back into his own vicinity, and this widening out into the industries of that vicinity takes place from what you may call a local hospital.

All this work, however, will be futile unless we organize an efficient follow-up system. The men cannot be trained and turned over into an industry and then let go. We have got to have some system of follow-up to see that he really fits into that industry, to see that he does not get discouraged, to see that he is not exploited, to see that he does not, as there will be tremendous tendency among these men to do, become a rolling stone, trying first this thing and then that thing, seeking here and seeking there and each time falling down to a lower economic level. Finally, we have got to organize social agencies, such as the Red Cross, such as the local agencies, such as all sorts of things that will occur to you, to stand behind the man on the social side, to stimulate him and keep him up with that ambition which is essential, to teach him thrift, for this man is going to have a good deal of money from the government besides that which he earns, and he has got to be taught how to make that money of the most value to him. These social agencies must look after the family conditions to be sure that they are not meddling with his ambition, to be sure that they are not weighing him down with all kinds of conditions that are unnecessary, and finally to do everything they can to hold out the glad hand and to bring that man back into the normal social and economic life. That, after all, is the problem to make this man normal.

CHAIRMAN MOCK said: We were to have Mr. W. Frank Pearsons, director of the Civilian Relief Division, American Red Cross. Mr. Pearsons has just returned from France and could not come on to Chicago. We have from that same division Mr. Curtis E. Lakeman.

Social and Economic Supervision of the Disabled Soldier

MR. CURTIS E. LAKEMAN said: The American Red Cross is carrying out, in this field of reconstruction, its characteristic function of supplementing the work of the governmental authorities. Aside from research, experimental and educational work in special institutes, there are two ways in which the Red Cross is peculiarly qualified and obligated to help.

In the first place, it can influence the family to give strong moral support to the soldier under treatment and in training, just as much as to the soldier at the front.

In the second place, it can bring to the man himself the friendly service of a big brother during the whole course of his effort to fit himself for a new occupation, and until he again stands firmly on his own feet in civil life.

The Red Cross is prepared for this duty because it is already caring for the families of soldiers and sailors, sup-

porting their fighting morale by removing causes of worry about home conditions. This is being done so unostentatiously that little is known to the public of this Red Cross activity. There have already been organized throughout the United States more than 3,000 local committees known as home service sections. These are charged with the responsibility of maintaining American standards of family life among the dependents of enlisted men whenever the need of any form of assistance is made known.

It is a misconception to think of these committees as made up of women alone; least of all of those good-hearted but mistaken women whose oversentimental activities in the entertainment of returned soldiers constitute a menace to their true welfare. On the contrary, the type of trained women who lead in Red Cross Home Service gives a strong safeguard against this very danger. But also it is a first principle to place on each home service committee a doctor, a lawyer, a banker and a business man—leading local citizens who are qualified to give to dependents of soldiers practical advice as to their rights and duties under the War Risk Insurance Law, help them adjust mortgages, obtain good medical care, in a word, provide every form of helpfulness which will maintain the solidarity of the family. Here in Chicago over a hundred men are already enlisted as trained volunteers in the local home service section.

To these Red Cross committees in every city and county of the United States the government will be able to turn, in confidence that the follow-up of the disabled soldier is in competent and sympathetic hands. Whenever the man goes to a distant city for industrial training or to take up a new vocation, an experienced older brother will be ready and anxious to stand by him and talk over those personal problems which he may not wish to discuss with a government official, no matter how well equipped and conscientious the latter may be.

It is these committees, made up both of practical men of affairs and trained sympathetic women, that will bring a powerful influence to bear on the soldier through his family. The support of the family must be given the soldier at every stage of his hospital treatment, vocational training and early efforts to make his way in industry. The returned soldier has one more battle to fight for his country and his own future. Under the wise plan of the national government, the man must himself make the mental and physical effort to prepare for a new occupation, and a future of self support. On the education of the man's own will, not on military or economic compulsion, depends the success of the whole system. It is for the disabled soldier himself to decide whether he shall contribute to the economic and social stability of his family and his country, or shall degenerate into a mere pensioner or even a street beggar. There is not time, nor is it necessary to do more than suggest the enormous influence which the family can exert on that momentous decision. In advising the family what it can and should do to help the man, the Red Cross has the machinery already set up in its home service organization, and eagerly awaits every opportunity to discharge in this way its share of responsibility for the reconstruction of the disabled soldier.

Michael Dowling

The Michael Dowling film was shown. At the close of the showing of the film Mr. Dowling walked on the platform.

MR. MICHAEL DOWLING said: *Ladies and Gentlemen:* I think there is danger of too much being attempted and making it too easy for the men who come back with a leg gone or an arm gone. Now, an arm being gone is a mere bagatelle, two arms don't amount to anything, and I can assure you from personal experience that it doesn't mean anything to have both legs and both hands gone. There is just as much fun in living. I used to be able to drive a team of horses just as well as anybody and used my right arm for the usual purpose in courting. I can still handle an automobile, although I think an automobile is an unnecessary nuisance to a couple who wish to get married. What the so-called cripple needs is not charity but a chance. The fight that wants to be put up at this time is not between money and opportunity or the loss of legs or the loss of arms or eyes or other members of the body, but this is a fight between General Gorgas and general despondency. Every community and every family ought to see to it that every other member of the family pays no attention to a hunchback, never looks at a man with clubfoot as he walks down the street, especially never looks at his deformity, and never looks at a man with a peg leg or with an empty coat sleeve. It should be taught in the schools. It should be preached from the pulpits.

PROCEEDINGS OF THE CHICAGO SESSION

THE SIXTY-NINTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION,
HELD AT CHICAGO, JUNE 10-14, 1918

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, JUNE 12—MORNING

The section was called to order at 9:30 by the chairman, Dr. Lawrence Litchfield, Pittsburgh.

The secretary, Dr. James S. McLester, Birmingham, Ala., read excerpts from the by-laws regarding discussion of papers.

The chairman asked Dr. W. L. Bierring, Des Moines, and Dr. Charles F. Hoover, Cleveland, to take the places on the executive committee, for this meeting, of Drs. Thomas McCrae, Philadelphia, and Roger S. Norris, Cincinnati, who were unable to be present.

The chairman named for the nominating committee Drs. Horace D. Arnold, Boston; Willard J. Stone, Toledo, and Thomas D. Coleman, Augusta, Ga.

The chairman, Dr. Lawrence Litchfield, Pittsburgh, read the chairman's address, entitled "Glucose Intravenously as a Therapeutic Agent." No discussion.

Dr. Edward C. Rosenow, Rochester, Minn., read a paper on "Further Studies in the Treatment of Acute Poliomyelitis with Immune Horse Serum." Discussed by Drs. P. S. Roy, Washington, D. C., and Edward C. Rosenow, Rochester, Minn.

Dr. Henry A. Christian, Boston, read a paper on "Pulmonary Compression Signs Associated with Fibrinous Pericarditis." Discussed by Drs. William H. Robey, Jr., Boston; H. D. Power, San Francisco; Charles G. Jennings, Detroit; George D. Head, Minneapolis; Lawrence Litchfield, Pittsburgh; Granville N. Ryan, Des Moines, Iowa, and Henry A. Christian, Boston.

Dr. Sydney R. Miller, Baltimore, read a paper on "Ulceration of the Soft Palate Resembling Syphilitic Perforating Ulcer Due to Fusiform Bacilli and Spirillae (Vincent's Angina)." Discussed by Drs. W. H. Marshall, Camp Grant, Rockford, Ill.; Frank J. Sladen, Detroit; Henry A. Christian, Boston, and Sydney R. Miller, Baltimore.

WEDNESDAY, JUNE 12—AFTERNOON

Dr. William W. Herrick, New York, read a paper on "The Early Diagnosis and Intravenous Serum Treatment of Epidemic Cerebrospinal Meningitis." Discussed by Drs. J. B. Guthrie, New Orleans; W. L. Bierring, Des Moines, Iowa; Powhatan S. Schenck, Norfolk, Va.; F. F. Russell, Washington, D. C.; Walter W. Hamburger, Chicago, and William W. Herrick, New York.

Dr. William N. Bispham, Fort Riley, Kan., read a paper on "The Training of the Medical Officers in the Army." No discussion.

Dr. William H. Robey, Jr., Boston, read a paper on "Neuro-circulatory Asthenia." Discussed by Sir James Mackenzie, London, England, and Drs. Louis M. Warfield, Milwaukee; B. S. Oppenheimer, New York; Abraham Jacobi, New York, and William H. Robey, Jr., Boston.

Dr. Joseph H. Pratt, Boston, read a paper on "Newer Aspects of Digitalis Therapy." Discussed by Sir James Mackenzie, London, England.

The following officers were elected: chairman, Dr. Walter L. Bierring, Des Moines, Iowa; vice chairman, Dr. Charles G. Jennings, Detroit; secretary, Dr. James S. McLester, Birmingham, Ala.; delegate, Dr. George D. Head, Minneapolis.

Dr. Horace D. Arnold, Boston, read a paper on "War and Medical Education." No discussion.

FRIDAY, JUNE 14—MORNING

The following papers were read as a symposium on "Pneumonia":

Dr. Arthur A. Small, Chicago: "Unique Findings Gathered from the Observation of Eleven Hundred Cases of Pneumonia in a Base Hospital."

Dr. Joseph L. Miller, Chicago: "An Epidemic of Streptococcus Pneumonia and Empyema at Camp Dodge."

Dr. Willard J. Stone, Toledo, Ohio: "A Clinical Study of Eight Hundred Cases of Pneumonia."

Dr. James G. Cumming, Ann Arbor, Mich.: "Streptococcus Pneumonia."

Dr. William G. MacCallum, Baltimore: "The Pathology of the Pneumonia of the Army Camp."

Dr. Ralph A. Kinsella, St. Louis: "Practical Consideration of Epidemiology Drawn from a Classification of Streptococci."

These papers were discussed by Drs. William H. Welch, Baltimore; Lawrence Litchfield, Pittsburgh; F. F. Russell, Washington, D. C.; Rufus I. Cole, New York; Walter P. Bliss, New York; C. Hugh McKenna, Chicago; George F. Dick, Chicago, and Edward C. Rosenow, Rochester, Minn.

FRIDAY, JUNE 14—AFTERNOON

Dr. Clyde L. Cummer, Cleveland, read a paper on "Later Results of the Intraspinal Treatment of Cerebrospinal Syphilis, Based on Four Years' Observation." Discussed by Dr. John A. Fordyce, New York.

Dr. George H. Lathrope, Morristown, N. J., read a paper on "Relation of Mastoiditis to Acute Infectious Conditions." Discussed by Drs. John B. Potts, Omaha; Arthur A. Small, Chicago; M. E. Scott, Adel, Iowa; Abraham Zingher, New York, and George H. Lathrope, Morristown, N. J.

Dr. Llewellyn Sale, St. Louis, read a paper on "A Study of Diaphragmatic Movements in Acute Abdominal Inflammations." Discussed by Drs. J. B. Guthrie, New Orleans; F. M. Pottenger, Monrovia, Calif.; M. E. Scott, Adel, Iowa; H. N. McDonald, Minneapolis, and Llewellyn Sale, St. Louis.

The paper of Dr. Joseph A. Capps, Chicago, on "The Control of Cross Infections by Masking of Patients," was then read. Discussed by Drs. James S. McLester, Birmingham, Ala.; John Alden Lichty, Pittsburgh; H. P. Greeley, Madison, Wis.; Albert R. Trapp, Springfield, Ill.; Charles H. Lovewell, Chicago; Edward F. Wells, Chicago, and Granville N. Ryan, Des Moines.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:24 by the chairman, Dr. E. Starr Judd, Rochester, Minn.

Dr. Truman W. Brophy, Chicago, read a paper on "Congenital Cleft Palate and Harelip." Discussed by Drs. A. J. Ochsner, Chicago; Arbuthnot Lane, London, England; Charles H. Mayo, Rochester, Minn.; John B. Roberts, Philadelphia, and Truman W. Brophy, Chicago.

The following papers were read as a symposium on "The Thyroid":

Dr. Charles H. Mayo, Rochester, Minn.: "The Principles of Thyroid Surgery."

Dr. Donald Guthrie, Sayre, Pa.: "Temporary Loss of Voice Following Thyroidectomy."

Dr. Edward G. Jones, Atlanta, Ga.: "Goiter in the Southeast."

These three papers were discussed by Drs. Charles N. Dowd, New York; Arbuthnot Lane, London, England; Miles F. Porter, Fort Wayne, Ind.; Rollo C. Dugan, Ottawa, Kan.;

H. J. Stewart, Oak Park, Ill.; J. W. McDonald, Chicago; C. H. Magee, Burlington, Iowa; Edwin P. Sloan, Bloomington, Ill.; John W. Long, Greensboro, N. C.; C. H. Mayo, Rochester, Minn.; Donald Guthrie, Sayre, Pa., and Edward G. Jones, Atlanta, Ga.

Dr. Willy Meyer, New York, read a paper on "Glycophilia." Discussed by Drs. W. S. Schroyer, Chicago, and Willy Meyer, New York.

Dr. Ralph E. Morter, Milwaukee, read a paper on "End-Results in Hodgkin's Diseases." Discussed by Vincent A. Lapenta, Indianapolis; William C. MacCarthy, Rochester, Minn., and Ralph E. Morter, Milwaukee.

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. E. Starr Judd, Rochester, Minn.

Dr. Judd read the chairman's address, entitled "The Surgery of the Gallbladder and Biliary Ducts." No discussion.

Dr. J. Shelton Horsley, Richmond, Va., read a paper on "Reconstruction of the Common Duct from the Experimental Standpoint."

Dr. LeGrand Guerry, Columbia, S. C., read a paper on "Clinical Report on Reconstruction of the Common and Hepatic Ducts."

These two papers were discussed by Drs. Arthur G. Sullivan, Madison, Wis.; C. N. Davis, Chicago; L. L. McArthur, Chicago; H. O. Marcy, Boston; I. J. Straus, Chicago, and J. Shelton Horsley, Richmond, Va.

Dr. J. Earl Else, Portland, Ore., read a paper on "Rôle of the Cystic Duct in Recurring Cholecystitis." No discussion.

Dr. Edward W. Archibald, Montreal, read a paper on "The Ultimate Results in Cases of Chronic and Subacute Pancreatitis." Discussed by Drs. W. D. Haggard, Nashville, Tenn.; E. Starr Judd, Rochester, Minn.; J. Earl Else, Portland, Ore.; Rollo C. Dugan, Ottawa, Kan., and Edward W. Archibald, Montreal.

FRIDAY, JUNE 14—MORNING

The meeting was called to order at 9:30 by the chairman, Dr. E. Starr Judd, Rochester, Minn.

Dr. Hermann B. Gessner, New Orleans, read a paper on "The Therapeutics of Tetanus." Discussed by Samuel J. Meltzer, New York; A. J. Ochsner, Chicago; W. Estell Lee, Philadelphia; Carl J. Holman, Mankato, Minn.; Clark W. Brooks, Detroit, and Hermann B. Gessner, New Orleans.

The following officers were elected: chairman, Dr. John T. Bottomley, Boston; vice chairman, Dr. LeGrand Guerry, Columbia, S. C.; secretary, Dr. Eugene H. Pool, New York; acting secretary, Dr. George P. Müller, Philadelphia; delegate, Dr. Jabez N. Jackson, Kansas City, Mo.; alternate, Dr. Donald Guthrie, Sayre, Pa.

Dr. W. Estell Lee, Philadelphia, Pa., read a paper on "The Use of Dichloramin-T and Other Antiseptics in War Surgery." Discussed by Drs. Edward H. Ochsner, Chicago; Fenton B. Turck, New York, and Lee W. Estell, Philadelphia.

Dr. Frank G. Nifong, Columbia, Mo., read a paper on "The Hodgen Extension Suspension Splint and Its Exemplification in Both Civil and War Surgery." Discussed by Drs. H. D. Wood, Fayetteville, Ark.; Daniel N. Eisendrath, Chicago; F. Reder, St. Louis; C. W. More, Eveleth, Minn.; E. M. Sanders, Nashville, Tenn., and Frank G. Nifong, Columbia, Mo.

Dr. Howard W. Haggard, New Haven, Conn., read a paper on "The Fall of the Alkaline Reserve Under Surgical Conditions: Its Effects and Prevention." Discussed by Dr. Fenton B. Turck, New York, and Howard W. Haggard, New Haven, Conn.

FRIDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:30 by the chairman.

Dr. George N. Kreider, Springfield, Ill., read a paper on "Gastroptosis: Its Cause, Prevention and Cure, with Special Reference to the Duret-Rovsing Operation." Discussed by Drs. Carl E. Black, Jacksonville, Ill.; George P. Müller, Philadelphia, and George N. Kreider, Springfield, Ill.

Dr. Arthur C. Strachauer, Minneapolis, read a paper on "A New Principle in the Surgical Treatment of Brain Tumors." Discussed by Dr. L. L. McArthur, Chicago, and Arthur C. Strachauer, Minneapolis.

Dr. Walter E. Sistrunk, Jr., Rochester, Minn., read a paper on "Kondoléon's Operation." Discussed by Drs. Hubert A. Royster, Raleigh, N. C.; H. B. Gessner, New Orleans; H. R. Decker, Pittsburgh, and Walter E. Sistrunk, Jr., Rochester, Minn.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, JUNE 12—MORNING

The section was called to order at 9:30 by the chairman, Dr. Brooke M. Anspach, Philadelphia.

Dr. Anspach read the chairman's address, entitled "Enterostomy and Enterocolostomy in the Treatment of Intestinal Obstruction Following Pelvic Operations."

Dr. Anspach, in the absence of the members of the Executive Committee, appointed temporarily on this committee Drs. C. Jeff Miller, New Orleans; E. E. Montgomery, Philadelphia, and W. P. Manton, Detroit.

Dr. Alfred A. Strauss, Chicago, read a paper on "The Clinical Observations and Results of the Newer Methods of Observations in Congenital Pyloric Stenosis and Gastric and Duodenal Ulcers."

Dr. William D. Haggard, Nashville, read a paper on "Hypertrophic Pyloric Stenosis in Infancy."

These papers were discussed by Drs. Frank X. Walls, Chicago; Weller Van Hook, Chicago; I. A. Abt., Chicago; John W. Keefe, Providence, R. I.; Peter B. Salatich, New Orleans; Alfred A. Strauss, Chicago and William D. Haggard, Nashville.

Dr. Daniel N. Eisendrath, Chicago, read a paper on "The Relation of Anomalies of the Bile Ducts and Blood Vessels to Accidents in Biliary Surgery." Discussed by Drs. William D. Haggard, Nashville, Tenn.; E. E. Montgomery, Philadelphia; J. A. Attridge, Port Huron, Mich., and Daniel N. Eisendrath, Chicago.

Dr. Leigh F. Watson, Chicago, read a paper on "Goiter in Pregnancy." Discussed by Drs. James W. Markoe, New York; Charles H. Mayo, Rochester, Minn., and Leigh F. Watson, Chicago.

Dr. William J. Mayo, Rochester, Minn., contributed a paper on "Secondary Tuberculous Peritonitis." Discussed by Drs. Robert T. Morris, New York; C. A. L. Reed, Cincinnati; Daniel N. Eisendrath, Chicago; Horace G. Wetherill, Denver, and Charles H. Mayo, Rochester, Minn.

Dr. J. Riddle Goffe, New York, read a paper on "Abdominal Visceroplexy: An Original Method, with a Report of Cases." Discussed by Drs. C. A. L. Reed, Cincinnati; Nathan Rosewater, Cleveland; William T. Reynolds, Kansas City, Mo.; A. H. Aaron, Buffalo, and J. Riddle Goffe, New York.

WEDNESDAY, JUNE 12—AFTERNOON

Dr. Ira L. Hill, New York, read a paper on "Extending the Care of Pregnancy." Discussed by Drs. Wilmer Krusen, Philadelphia; J. H. Carstens, Detroit; Otto J. Stein, Chicago, and Ira L. Hill, New York.

Dr. Paul Titus, Pittsburgh, read a paper on "Uterine Inertia; Summary of a Series of Cases." Discussed by Drs. Rudolph W. Holmes, Chicago, and Paul Titus, Pittsburgh.

Dr. George W. Kosmak, New York, read a paper on "The Use and Abuse of Pituitary Solution." Discussed by Drs. J. B. De Lee, Chicago; J. L. Bubis, Cleveland; Jennings C. Litzenberg, Minneapolis; C. S. Bacon, Chicago, and W. P. Manton, Detroit.

Dr. John Young Brown, St. Louis, read a paper on "Pus in the Female Pelvis: A Surgical Retrospect."

Dr. Harry P. Ritchie, St. Paul, read a paper on "Rectal Section for Pelvic Abscess."

These two papers were discussed by Drs. J. H. Carstens, Detroit; E. E. Montgomery, Philadelphia; G. N. Thomas,

El Paso, Texas; James Mather Pfeifferberger, Alton, Ill.; Horace G. Wetherill, Denver; Peter B. Salatich, New Orleans; Robert T. Morris, New York; John Young Brown, St. Louis, and Harry P. Ritchie, St. Paul.

Dr. W. P. Manton, Detroit, read a paper on "Parotitis Following Induced Abortion in a Case of Pernicious Vomiting in Pregnancy." Discussed by Drs. E. E. Montgomery, Philadelphia; M. E. Klingler, Garrett, Ind.; Stephen E. Tracy, Philadelphia, and W. P. Manton, Detroit.

FRIDAY, JUNE 14—MORNING

Dr. Henry T. Byford, Chicago, was elected temporary chairman in the absence of Dr. Anspach, returned to the service.

Dr. John B. Deaver, Philadelphia, read a paper on "Avoidable Traumatic Abdomen." Discussed by Drs. Stephen E. Tracy, Philadelphia; Peter B. Salatich, New Orleans; Emil Novak, Baltimore; A. E. Walker, Anthony, Kan.; A. P. Butt, Davis, W. Va., and John B. Deaver, Philadelphia.

Dr. Franklin H. Martin, Chicago, spoke on "How Surgeons Can Help Win the War." Discussed by Dr. Alfred A. Strauss, Chicago, and Dr. Franklin H. Martin, Chicago.

Dr. Joseph Rilus Eastman, Indianapolis, read a paper on "The Question of Operation in Abdominal Gunshot Injuries." Discussed by Drs. Daniel N. Eisendrath, Chicago, and John Young Brown, St. Louis.

The following officers were elected: chairman, Dr. Thomas J. Watkins, Chicago; vice chairman, Dr. John W. Keefe, Providence, R. I.; secretary, Dr. Sidney A. Chalfant, Pittsburgh; delegate, Dr. F. F. Simpson, Pittsburgh.

Dr. Ira L. Hill, New York, presented for the consideration of the Section on Obstetrics, Gynecology and Abdominal Surgery a resolution "That the American Medical Association appeal to the U. S. government for the appointment of a national commission for the reduction of mortality in childbirth." This resolution was on motion adopted and referred to the delegate of the section for presentation to the House of Delegates of the American Medical Association for action. (No action by the House of Delegates at the 1918 session.)

Dr. Willard Bartlett, St. Louis, read a paper on "Treatment of Incisional Ventral Hernia by the Transplantation of Fascia Lata." Discussed by Drs. Wellen Van Hook, Chicago; Alfred A. Strauss, Chicago; C. H. Magee, Burlington, Iowa; Arthur E. Hertzler, Kansas City, Mo.; Peter B. Salatich, New Orleans; Albert Goldspohn, Chicago; S. E. Williams, Chippewa Falls, Wis.; W. P. Manton, Detroit, and Willard Bartlett, St. Louis.

Dr. John W. Keefe, Providence, R. I., read a paper on "The Use of the Rubber Roll in Abdominal Surgery." Discussed by Drs. Albert Goldspohn, Chicago; Melvin J. Locke, Bellefonte, Pa., and John W. Keefe, Providence, R. I.

Dr. Emil Novak, Baltimore, read a paper on "Infantilism and Other Hypoplastic Conditions of the Uterus." No discussion.

FRIDAY, JUNE 14—AFTERNOON

Dr. Nathaniel R. Mason, Boston, and Dr. Frank C. W. Konrad, Boston, presented a paper on "Paravertebral Anesthesia, with Report of One Hundred Cases." Discussed by Drs. Arthur E. Hertzler, Kansas City, and Dr. Frank C. W. Konrad, Boston.

Dr. Arthur E. Hertzler, Kansas City, Mo., read a paper on "The Pathology of Hemorrhagic Myomas and Their Relation to Sarcoma." Discussed by Drs. Emil Novak, Baltimore; Bertha Van Hoosen, Chicago, and Arthur E. Hertzler, Kansas City, Mo.

Dr. Edward A. Weiss, Pittsburgh, read a paper on "The Radical Treatment of Cancer of the Cervix by Igni Extirpation." Discussed by Drs. Albert Goldspohn, Chicago; George Gellhorn, St. Louis; Louis E. Schmidt, Chicago; Bertha Van Hoosen, Chicago; John W. Keefe, Providence, R. I.; J. A. Pettit, Portland, Ore.; Edward A. Weiss, Pittsburgh, and Henry P. Newman, San Diego.

Dr. George Gellhorn, St. Louis, read a paper on "The Conservation of Ovaries After Hysterectomy, with a New Tech-

nic of Extirpation of the Uterus." Discussed by Drs. Henry T. Byford, Chicago; Peter B. Salatich, New Orleans; Henry P. Newman, San Diego; C. H. Magee, Burlington, Iowa; Harvey P. Jack, Hornell, N. Y., and George Gellhorn, St. Louis.

Dr. K. I. Sanes, Pittsburgh, read a paper on "Age of Menopause: Observations Based on Statistical Data of Eight Hundred Menopause Cases." Discussed by Dr. Curtis S. Foster, Pittsburgh.

Dr. Stephen E. Tracy, Philadelphia, read a paper on "Plastic Operations in the Vagina and on the Pelvic Floor." Discussed by Drs. Henry P. Newman, San Diego; Albert Goldspohn, Chicago, and Dr. Stephen E. Tracy, Philadelphia.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, JUNE 12—MORNING

In the absence of the chairman, Dr. Alexander Duane, New York, the vice chairman, F. Phinzy Calhoun, Atlanta, Ga., presided. Dr. Edgar S. Thomson, New York, acted as secretary. The session was called to order at 9:15 by the vice chairman, who made a brief address.

The chairman's address, entitled "How May the Physical Standards of the Service Profitably Be Modified?" was read.

Dr. F. Park Lewis, Buffalo, moved that the section arrange a round table at which certain questions may be propounded and answered.

Dr. Edward Jackson, Denver, moved as a substitute that the pending motion, as well as similar suggestions, be referred to the Executive Committee. Seconded and carried.

Dr. Bulson presented the report on the Knapp Testimonial Fund Committee which, on motion duly made and seconded, was ordered received and filed.

Dr. John E. Weeks, New York, read a paper on "Disciform Keratitis." Discussed by Drs. William Zentmayer, Philadelphia; John Green, Jr., St. Louis; Arthur G. Bennett, Buffalo; Will Walter, Chicago; Edgar S. Thomson, New York; Arthur J. Bedell, Albany, N. Y.; F. Park Lewis, Buffalo; John M. Wheeler, New York; R. H. von Kotsch, Chicago; Jesse S. Wyler, Cincinnati, and John E. Weeks, New York.

Dr. Robert J. Curdy, Kansas City, Mo., read a paper on "The Action of Miotic Drugs on Eyes, with Incomplete Sphincter Iritis." Discussed by Drs. Frank C. Todd, Minneapolis, and Robert J. Curdy, Kansas City, Mo.

Dr. John M. Wheeler, New York, read a paper on "Paralysis of the Sixth Cranial Nerve, Associated with Otitis Media." Discussed by Drs. Walter H. Snyder, Toledo, Ohio; H. H. Stark, El Paso, Texas, and John M. Wheeler, New York.

Dr. Lucien Howe, Buffalo, read a paper on "The Relation of Hereditary Eye Defects to Genetics and Eugenics." Discussed by Drs. Howard H. Newman, Chicago; F. Park Lewis, Buffalo; L. M. Loeb, Chicago; F. G. Stueber, Lima, Ohio, and Lucien Howe, Buffalo.

Dr. William R. Thompson, Fort Worth, Texas, read a paper on "The Rational Etiology and Satisfactory Treatment of Dacryocystitis." Discussed by Drs. Harry W. Woodruff, Joliet, Ill.; John Green, Jr., St. Louis; Arthur E. Prince, Springfield, Ill.; Harold Gifford, Omaha; Melville Black, Denver; G. H. Mundt, Chicago, and William R. Thompson, Fort Worth, Texas.

Dr. Lucien Howe, Buffalo, presented the following resolution:

Resolved, That a committee be appointed by the chair to report what action, if any, should be recommended by this section for the prevention of inherited blindness, this committee to be composed of one ophthalmologist, one professional geneticist and one practitioner, especially conversant with the good and also with the bad effects of sterilization. The members of this committee shall have power to add to their number as they deem advisable.

Dr. Howe moved the adoption of the resolution. Seconded and carried.

Dr. Howe presented the report of the Committee on Collective Investigation Concerning Ocular Muscles and moved

the adoption of the report. On motion, duly seconded and carried, the report was adopted.

WEDNESDAY, JUNE 12—AFTERNOON

Vice Chairman Calhoun called the session to order at 2 o'clock.

The vice chairman announced that the resolution which was introduced by Dr. Lucien Howe at the preceding session called for the appointment of a committee for the prevention of inherited blindness. The chairman stated that this committee should consist of Dr. Howe, as chairman, and Drs. H. H. Laughlin and John A. Reilly, this being with the approval of the Executive Committee.

Dr. T. B. Holloway, Philadelphia, exhibited an instrument demonstrating the various forms of refraction.

Dr. George E. de Schweinitz, Philadelphia, read a paper on "Some Aspects of Military Ophthalmic Surgery."

Dr. William H. Wilder, Chicago, read a paper on "Visual Standards of the U. S. Army."

Dr. Waid E. Carson, Pittsburgh, read a paper on "Visual Standards of the U. S. Navy."

The paper of Dr. Allen Greenwood, Boston, on "The Eyes of the Army," was presented in a short summary by Dr. Hiram Woods, Baltimore.

Dr. Edward Jackson, Denver, read a paper on "Common Changes in Regular Astigmatism and Their Causes." Discussed by Drs. Arthur G. Bennett, Buffalo; William Zentmayer, Philadelphia; Joseph S. Lichtenberg, Kansas City, Mo., and Edward Jackson, Denver.

Dr. Howard S. Clark, Minneapolis, read a paper on "Maculocerebral Degeneration with Dementia." Discussed by Drs. F. Park Lewis, Buffalo; Harold Gifford, Omaha, and Edward J. Bernstein, Detroit.

FRIDAY, JUNE 14—MORNING

The section was called to order at 9:15 by Vice Chairman Calhoun.

The following officers were elected: chairman, Dr. Cassius D. Wescott, Chicago; vice chairman, Dr. Thomas B. Holloway, Philadelphia; secretary, Dr. Edgar S. Thomson, New York; delegate, Dr. Walter B. Lancaster, Boston; alternate, Dr. Edward H. Cary, Dallas, Texas.

Dr. Edward Jackson, Denver, was reelected as a member of the American Board of Ophthalmic Examination, for the term of three years beginning with the expiration of his present term, January 1.

Dr. Thomson, on behalf of the chairman of the committee, read the report of the local chairman of the Committee on Conservation of Vision.

On motion, duly seconded and carried, the report was accepted.

Dr. Hiram Woods, Baltimore, presented the report of the American Board for Ophthalmic Examination.

On motion duly seconded and carried, the report was received and filed.

The report of the Committee on Standardizing Test Cards was presented by Dr. Ewing, on behalf of the chairman, Dr. Jackson.

On motion duly seconded and carried, the report was received and filed.

The Committee on Award of the Knapp Medal had no report to make.

The next order of business was the election of a committee on Award of the Knapp Medal. The following were selected: Drs. W. H. Wilder, Chicago; Walter R. Parker, Detroit, and Arnold Knapp, New York.

In view of the serious illness of Dr. Adolf Alt, an ex-chairman of this section, Dr. Greene moved that the Section on Ophthalmology extend to Dr. Adolf Alt its greetings and best wishes for his speedy restoration to health. Seconded and carried.

Dr. Zentmayer moved that a resolution of sympathy be sent to Dr. Wescott, chairman elect of this section for the ensuing year (Dr. Wescott having been recently operated on and being still in the hospital), the resolution also

expressing the wishes of the section for his speedy recovery. Seconded and carried.

Dr. William W. Kahn, Detroit, read a paper on "Pollakiuria or Excessive Frequency of Micturition as a Functional Disturbance Due to Eyestrain." Discussed by Drs. Isaac Hartshorne, New York, and William W. Kahn, Detroit.

Drs. John Green, Jr., and William F. Hardy, St. Louis, presented a paper on "Astigmatism Against the Rule." Discussed by Drs. Walter B. Lancaster, Boston; H. B. Lemere, Omaha; William W. Kahn, Detroit; Clark W. Hawley, Chicago; Edgar S. Thomson, New York, and William F. Hardy, St. Louis.

Dr. James G. Dwyer, New York, read a paper on "Focal Infections of the Eye from the Intestinal Tract." Discussed by Drs. Edgar S. Thomson, New York; Hiram Woods, Baltimore; Harry Gradle, Chicago; Clark W. Hawley, Chicago; Walter B. Lancaster, Boston; Will Walter, Chicago, and James G. Dwyer, New York.

Dr. F. Phinzy Calhoun, Atlanta, Ga., read a paper on "Alterations in the Visual Fields Associated with Pellagra." Discussed by Drs. Edward V. L. Brown, Chicago, and F. Phinzy Calhoun, Atlanta, Ga.

Dr. Edward H. Cary, Dallas, Texas, read a paper on "A Study of the Histology and Pathology of the Superstructure of the Lid Occurring in Trachoma," with motion pictures. Discussed by Drs. Vard H. Hulen, San Francisco; C. H. Dewey, Washington, D. C.; Arthur E. Prince, Springfield, Ill., and Edward H. Cary, Dallas, Texas.

FRIDAY, JUNE 14—AFTERNOON

The section was called to order by the vice chairman.

Dr. Hunter H. Turner, Pittsburgh, read a paper on "The Etiology of Phlyctenular Ophthalmia." Discussed by Drs. Edward B. Heckel, Pittsburgh; Henry E. Goldberger, Chicago, and Hunter H. Turner, Pittsburgh.

Dr. Arthur E. Ewing, St. Louis, read a paper on "Post-ciliary Scleral Trephining for Acute Glaucoma." Discussed by Drs. William F. Hardy, St. Louis, and Arthur E. Ewing, St. Louis.

Dr. Harold Gifford, Omaha, read a paper on "The Treatment of Blood Cysts of the Orbit." The discussion on this paper by Dr. Albert E. Bulson, Fort Wayne, Ind., was read by the secretary owing to the absence of Dr. Bulson. The paper was further discussed by Dr. Harold Gifford, Omaha.

Dr. Melville Black, Denver, read a paper on "The Management of Certain Intractable Lid Conditions." Discussed by Drs. J. S. Clark, Freeport, Ill.; Oliver Tydings, Chicago, and Dr. H. B. Lemere, Omaha.

Dr. Arthur E. Prince, Springfield, Ill., read a paper on "An Operation for Cataract Especially Adapted to Cases of Intractable Sepsis of the Conjunctiva or the Lacrimal Sac."

Drs. William H. Fisher and H. D. Thornburg, Chicago, presented a paper entitled "A Method of Acquiring Cataract Technic Leading to the Smith-Indian Intracapsular."

These two papers were discussed by Drs. Louis D. Green, San Francisco; Vard H. Hulen, San Francisco; Clark W. Hawley, Chicago; John W. Wright, Columbus, Ohio; Lewis K. Beck, San Antonio, Texas; Ira E. Hoffman, Chicago; G. H. Mundt, Chicago; Arthur E. Prince, Springfield, Ill.; H. D. Thornburg, Chicago, and William A. Fisher, Chicago.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

WEDNESDAY, JUNE 12—MORNING

The section was called to order at 9:20 by the chairman, Dr. Greenfield Sluder, St. Louis.

Dr. Sluder read the chairman's address, entitled "The Specialist's Relation to the American Medical Association." Discussed by Drs. Wendell C. Phillips, New York, and George F. Cott, Buffalo.

The secretary, Dr. L. W. Dean, Iowa City, Iowa, moved that the acting chairman, Dr. Thomas Hubbard, Toledo, Ohio, appoint a committee of three on chairman's address, this committee to report at the Friday morning session. Sec-

seconded and carried. The following were appointed: Drs. William B. Chamberlin, Cleveland; George E. Shambaugh, Chicago, and J. A. Stucky, Lexington, Ky.

Dr. Chevalier Jackson, Philadelphia, read a paper on "Acromegaly of the Larynx." Discussed by Drs. William B. Chamberlin, Cleveland, and Chevalier Jackson, Philadelphia.

Dr. Thomas Hubbard, Toledo, Ohio, read a paper on "Certain Traumatic Lesions of the Esophagus." Discussed by Drs. Chevalier Jackson, Philadelphia; George F. Keiper, Lafayette, Ind.; J. A. Stucky, Lexington, Ky.; George F. Cott, Buffalo; William B. Chamberlin, Cleveland; Joseph C. Beck, Chicago; G. C. Kneidler, Pittsburgh; Eugene L. Myers, St. Louis, and Dr. Thomas Hubbard, Toledo, Ohio.

Dr. Wendell C. Phillips, New York, moved that a committee be appointed by the chairman of this section to prepare a statement recommending legislation in regard to the labeling of caustic preparations, and that this appeal be made through the Council on Pharmacy and Chemistry of the American Medical Association. Seconded and carried.

Dr. Hugh T. Patrick, Chicago, read a paper on "Indurative Headaches." Discussed by Drs. George E. Shambaugh, Chicago; H. W. Loeb, St. Louis; Oliver Tydings, Chicago; Arthur M. Corwin, Chicago; Charles D. Thomas, Peoria, Ill., and Hugh T. Patrick, Chicago.

Dr. Joseph W. Charles, St. Louis, read a paper on "Ocular Headaches." Discussed by Drs. William W. Pearson, Des Moines, Iowa; Oscar Wilkinson, Washington, D. C.; Frank Allport, Chicago, and Joseph W. Charles, St. Louis.

WEDNESDAY, JUNE 12—AFTERNOON

The section was called to order at 2:20 by the chairman, Dr. Greenfield Sluder, St. Louis.

Dr. Greenfield Sluder presented a new friction lock for a tonsil guillotine. This can be used without changing the position of the fingers or loosening the grip, and when the guillotine is shut it stays.

Dr. George W. Boot, Chicago, presented a safety pin extractor, in which the point of the pin can be drawn within a spiral.

The chairman then appointed the committee mentioned in Dr. Wendell C. Phillips' motion at the morning session, as follows: Drs. Thomas Hubbard, Toledo, Ohio; Chevalier Jackson, Philadelphia, and Hubert Arrowsmith, Brooklyn.

Dr. Wendell C. Phillips moved that this committee be approved by the section. Seconded and carried.

The paper of Dr. Harris P. Mosher, Lieutenant-Colonel, M. C., N. A., entitled "Informal Report on Activities of Section on Surgery of the Head of Surgeon-General's Office," was read.

Major Norval H. Pierce, Chicago, read a paper on "Otolaryngology in the Army Medical Service."

These two papers were discussed by Drs. Charles W. Richardson, Washington, D. C.; R. H. Fowler, New York; H. W. Loeb, St. Louis; John B. Potts, Omaha, and Norval H. Pierce, Chicago.

The chairman appointed Drs. Elmer L. Kenyon, Chicago; William B. Chamberlin, Cleveland, and Joseph A. Stucky, Lexington, Ky., a committee of three to draft suitable resolutions regarding the war work of the otolaryngologists and ophthalmologists.

The chairman appointed as the Nominating Committee Drs. George F. Cott, Buffalo; George F. Keiper, Lafayette, Ind., and Louis Ostrom, Jr., Rock Island, Ill.

Dr. J. Gordon Wilson, Chicago, read a paper on "Results of Concussion of High Explosive Shells on the Ear." Discussed by Drs. Thomas Hubbard, Toledo, Ohio; Roy W. Dunlap, Tulsa, Okla.; H. W. Loeb, St. Louis; Samuel G. Higgins, Milwaukee, and J. Gordon Wilson, Chicago.

Dr. Joseph A. Stucky, Lexington, Ky., read a paper on "Systemic Factors in the Treatment of Acute and Subacute Sinusitis." Discussed by Drs. George F. Keiper, Lafayette, Ind.; Frank R. Spencer, Boulder, Colo., and Joseph A. Stucky, Lexington, Ky.

The chairman then introduced Dr. Eugene R. Lewis of the Medical Reserve Laboratory, Field No. 1, Mineola, L. I., who gave a short talk on the work being done among the aviators.

FRIDAY, JUNE 14—MORNING

The section was called to order at 9:15 by the secretary, Dr. L. W. Dean, who announced that Dr. Greenfield Sluder had been called home. Dr. George F. Cott, Buffalo, occupied the chair.

The following officers were elected: chairman, Dr. L. W. Dean, Iowa City, Iowa; vice chairman, Dr. Eugene R. Lewis, Mineola, L. I.; secretary, Dr. William B. Chamberlin, Cleveland; delegate, Dr. George F. Keiper, Lafayette, Ind.; alternate, Dr. Frank R. Spencer, Boulder, Colo.

The Committee on Chairman's Address then made its report, which on motion, seconded and carried, was adopted.

The report of the committee to draft resolutions regarding war work was then read and, on motion seconded and carried, was adopted.

The report of the Committee on Necrology was read by Dr. W. B. Chamberlin, Cleveland. But one name was reported this year—Dr. Ephraim Fletcher Ingals, Chicago. On motion, seconded and carried, the report was accepted.

Dr. Warren B. Davis, Philadelphia, read a paper on "Anatomy of the Nasal Accessory Sinuses in Infancy and Childhood." Discussed by Drs. George E. Shambaugh, Chicago; Joseph C. Beck, Chicago; H. A. Canfield, Bradford, Pa., and Warren B. Davis, Philadelphia.

Dr. Henry H. Martin, Savannah, Ga., read a paper on "Treatment of Neuralgia of the Fifth Nerve by Injection of the Gasserian Ganglion." Discussed by Drs. Hugh T. Patrick, Chicago; Joseph C. Beck, Chicago, and Henry H. Martin, Savannah, Ga.

Dr. J. Randolph Page, New York, read a paper on "Anatomy of the Lateral Sinus: Its Connections and Anomalies." Discussed by Drs. George E. Shambaugh, Chicago, and J. Randolph Page, New York.

Dr. Jacob Braun, New York, read a paper on "The Snare-tome Operation for Enucleation of the Tonsil." Discussed by Drs. Frank R. Spencer, Boulder, Colo.; Louis Ostrom, Jr., Rock Island, Ill.; Leon A. Feinstein, St. Louis; Oliver Tydings, Chicago; H. H. Martin, Savannah, Ga.; James A. Watson, Minneapolis, and Jacob Braun, New York.

Dr. J. Leslie Davis, Philadelphia, read a paper on "Diseased Faucial Tonsils: Their Toxic, Infectious and Reflex Effects." Discussed by Dr. George F. Keiper, Lafayette, Ind.

Dr. Thomas W. Moore, Huntington, W. Va., read a paper on "The Present Status of the Operative Treatment of Chronic Frontal Sinusitis." Discussed by Drs. Frank R. Spencer, Boulder, Colo.; George E. Shambaugh, Chicago, and James J. Pattee, Pueblo, Colo.

Dr. Henry B. Lemere, Omaha, read a paper on "The Relation of the Movements of the Head and Eyes to Labyrinth Stimulation." Discussed by Drs. Joseph G. Parsons, Sioux Falls, S. D.; George W. Mackenzie, Philadelphia, and Henry B. Lemere, Omaha.

SECTION ON DISEASES OF CHILDREN

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:30 by the chairman, Dr. Laurence R. DeBuys, New Orleans.

Owing to the absence of Dr. T. C. McCleave, Oakland, Calif., delegate to the House of Delegates of the American Medical Association, the chairman appointed Dr. H. M. McClanahan, Omaha, to represent the section in the House of Delegates.

Dr. DeBuys read the chairman's address, entitled "Conservation of Child Life, a National Responsibility."

A motion was made by Dr. William Weston, Columbia, S. C., that the chairman appoint a committee of three to confer with the Surgeon-General's Office relative to the status of the pediatric men in this country.

Seconded and carried.

The chairman appointed the following committee: Dr. J. P. Sedgwick, Minneapolis, chairman; Dr. E. C. Fleischner, San Francisco, and William Weston, Columbia, S. C.

Dr. Paul Armand-De Lille, Paris, France, read a paper on "The Infant Mortality Campaign in France."

Dr. William Palmer Lucas, San Francisco, read a paper on "Medical Work Among the Civilian Population in France."

Dr. Grace L. Meigs, Washington, D. C., read a paper on "Children's Year Program for Child Conservation in War Time."

Drs. Julius P. Sedgwick and N. O. Pearce, Minneapolis, presented a paper on "A Report on Children in the War Zone," read by Dr. Pearce.

These papers were discussed by Drs. B. Raymond Hoobler, Detroit; Edgar J. Huenekens, Minneapolis; Lawrence T. Royster, Norfolk, Va.; Joseph I. Grover, Boston; Franklin N. Rogers, Manchester, N. H.; Louis H. Schwartz, New York; John A. Foote, Washington, D. C.; J. T. Christison, St. Paul; Langley Porter, San Francisco; C. F. Wahrer, Fort Madison, Iowa; Frances M. Hollingshead, Columbus, Ohio; Leroy A. Wilkes, Bridgeport, Conn.; E. C. Fleischner, San Francisco; J. P. Sedgwick, Minneapolis; Grace L. Meigs, Washington, D. C.; William Palmer Lucas, San Francisco, and Laurence R. DeBuys, New Orleans.

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:30 by the chairman.

Dr. Henry H. Yerington, San Francisco, read a paper on "Clinical Supervision of the Weil Baby During Its First Year." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa, and Louis H. Schwartz, New York.

Dr. Henry J. Gerstenberger, Cleveland, read a paper on "A Report of Three Years' Clinical Experience with the Feeding of S. A. M. (Synthetic Milk Adapted)." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; John Zahorsky, St. Louis; Isaac A. Abt, Chicago; Louis H. Schwartz, New York, and Henry J. Gerstenberger, Cleveland.

Dr. Jay I. Durand, Seattle, read a paper on "Digestion of Fat by Gastric and Intestinal Ferment." No discussion.

Dr. Jules M. Brady, St. Louis, read a paper on "Lumbar Puncture in Meningeal Hemorrhage." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; John A. Foote, Washington, D. C.; Lawrence T. Royster, Norfolk, Va., and Jules M. Brady, St. Louis.

Dr. Albert H. Beifield, Iowa City, Iowa, read a paper on "The Significance of Infection of the Accessory Sinuses of the Nose of Infants and Children." Discussed by Drs. R. N. Andrews, Mankato, Minn.; Henry J. Gerstenberger, Cleveland; John Zahorsky, St. Louis; Albert H. Beifield, Iowa City, Iowa, and Paul Armand-De Lille, Paris, France.

Dr. Langley Porter, San Francisco, read a paper on "Chorea." Discussed by Drs. Henry J. Gerstenberger, Cleveland; Henry W. Cheney, Chicago; J. T. Christison, St. Paul, and Langley Porter, San Francisco.

The committee appointed to confer with the Surgeon-Generals made its report.

Dr. E. C. Fleischner presented a resolution to be presented to the War Council as follows:

Resolved, That the War Council of the American Red Cross be asked to appropriate \$100,000 for the purpose of better child welfare work, assisting existing organizations working in child welfare work and organizing this work, when approved by the Medical Advisory Board of the American Red Cross. This sum to be expended under the direction of the said committee.

Referred to the House of Delegates with the unanimous approval of those attending the meeting. (See proceedings of the House of Delegates.)

FRIDAY, JUNE 14—MORNING

The meeting was called to order at 9:25 by the chairman.

The following officers were elected: chairman, Dr. Frank P. Gengenbach, Denver; vice chairman, Dr. Jay I. Durand, Seattle; secretary, Dr. E. C. Fleischner, San Francisco; delegate, Dr. Isaac A. Abt, Chicago; alternate, Dr. Laurence R. DeBuys, New Orleans.

Dr. Rood Taylor, Rochester, Minn., read a paper on "Treatment of Prematurity." Discussed by Drs. John Zahorsky, St. Louis; Isaac A. Abt, Chicago; Lawrence T. Royster, Norfolk, Va.; Frank C. Neff, Kansas City, Mo.; Jane Merrill Ketcham, Indianapolis; Jules M. Brady, St. Louis; Jay I. Durand, Seattle, and E. J. Huenekens, Minneapolis.

Drs. Harry Lowenburg and A. I. Rubenstone, Philadelphia, presented a paper on "Hemophilia," read by Dr. Lowenburg. Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; Abraham Jacobi, New York; Rood Taylor, Rochester, Minn., and William Weston, Columbia, S. C.

Dr. Harry M. McClanahan, Omaha, read a paper on "Intestinal Parasites in Children." Discussed by Drs. William Weston, Columbia, S. C.; C. F. Wahrer, Fort Madison, Iowa; A. H. Beifield, Iowa City, Iowa, and Harry M. McClanahan, Omaha.

Dr. Louis Fischer, New York, read a paper on "The Superior Longitudinal Sinus in Infants; Its Value in Transfusion, and for Rapid Medication; Its Adaptability in Procuring Blood for Diagnosis." Discussed by Dr. Harry Lowenburg, Philadelphia.

Dr. William Weston, Columbia, S. C., read a paper on "Purpura Abdominalis in Early Life." Discussed by Drs. John A. Foote, Washington, D. C.; Rood Taylor, Rochester, Minn.; Isaac A. Abt, Chicago; M. L. Turner, Des Moines, Iowa, and William Weston, Columbia, S. C.

Dr. Joseph I. Grover, Boston, read a paper on "Etiology and Treatment of Enuresis." Discussed by Drs. Harry Lowenburg, Philadelphia; H. M. McClanahan, Omaha; M. L. Turner, Des Moines, Iowa; O. W. Rowe, Duluth, Minn.; Franklin N. Rogers, Manchester, N. H., and Joseph I. Grover, Boston.

Dr. Lawrence T. Royster, Norfolk, Va., on behalf of the Executive Committee, presented the name of Dr. Paul Armand-De Lille, Paris, France, for recommendation by this section to honorary membership in the American Medical Association. Unanimously endorsed by the section. (Not transmitted to the House of Delegates in time for action at the 1918 session.)

FRIDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:20 by the chairman.

Dr. Edgar J. Huenekens, Minneapolis, read a paper on "Further Report on Pertussis Vaccine Controlled by the Complement Fixation Test." Discussed by Drs. J. T. Christison, St. Paul; Jay I. Durand, Seattle; E. C. Fleischner, San Francisco; Frank C. Neff, Kansas City, Mo., and Edgar J. Huenekens, Minneapolis.

Drs. Emanuel C. Fleischner and K. F. Meyer, San Francisco, presented a paper on "Cutaneous Hypersensitiveness as an Evidence of Infection, and Its Bearing on the Pathogenicity for Infants of the Bacillus Abortus-Bovinus." No discussion.

Dr. John Zahorsky, St. Louis, read a paper on "The Remote Results of Tonsillectomy in the Young." Discussed by Drs. Harry Lowenburg, Philadelphia; Isaac A. Abt, Chicago; E. C. Fleischner, San Francisco; J. P. Sedgwick, Minneapolis, and John Zahorsky, St. Louis.

Dr. Charles E. Hansel, South Bend, Ind., read a paper on "Group Medicine and Pediatrics." Discussed by Drs. R. N. Andrews, Mankato, Minn.; Franklin N. Rogers, Manchester, N. H.; Joseph I. Grover, Boston; O. W. Rowe, Duluth, Minn., and Charles E. Hansel, South Bend, Ind.

Dr. Albert J. Bell, Cincinnati, read a paper on "The Diagnostic Study of Conditions in the Throat Producing Dyspnea." No discussion.

Moved and seconded that Dr. Zahorsky be granted permission to withdraw his paper. Passed.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

WEDNESDAY, JUNE 12—MORNING

The Section was called to order at 9:15 by the chairman, Dr. Arthur D. Hirschfelder, Minneapolis. The chairman appointed as the Executive Committee Drs. J. F. Anderson, New Brunswick, N. J.; Torald Sollmann, Cleveland, and C. W. Edwards, Ann Arbor, Mich. The chairman appointed as the nominating committee Drs. Torald Sollmann, Cleveland; Cary Eggleston, New York, and W. A. Puckner, Chicago.

Dr. Hirschfelder read the chairman's address, entitled "The Teaching of Pharmacology." Discussed by Drs. Cary Eggleston, New York; Torald Sollmann, Cleveland; Fred I. Lackenback, San Francisco; Samuel J. Meltzer, New York; Bernard Fantus, Chicago, and Arthur D. Hirschfelder, Minneapolis.

The following papers were read as a symposium on "Activities Bearing on the War."

Dr. Torald Sollmann, Cleveland: "Pharmacology in the War." No discussion.

Dr. Julius Stieglitz, Chicago: "The Problem of Synthetic Drugs." Discussed by Drs. Fred I. Lackenback, San Francisco, and Samuel J. Meltzer, New York.

Dr. Alice Hamilton, Chicago: "Unsolved Problems of Industrial Poisoning in the Making of Explosives." Discussed by Drs. Walter A. Bastedo, New York; Samuel J. Meltzer, New York, and Alice Hamilton, Chicago.

Dr. William Moore, St. Paul, read a paper on "The Chemical Control of Lice." Discussed by Dr. Augustus Wadsworth, Albany, N. Y.

Dr. Bernard Fantus, Chicago, delegate to this section from the American Pharmaceutical Association, addressed the convention, asking its aid toward improving the status of the pharmacist along educational lines. No discussion.

WEDNESDAY, JUNE 12—AFTERNOON

A joint meeting was held with the Section on Pathology and Physiology.

The joint meeting was called to order by the chairman, Dr. Arthur D. Hirschfelder, Minneapolis.

The following papers were read as a symposium on "Diseases Due to Deficiencies in Nutrition":

Dr. E. V. McCollum, Baltimore: "The Vitamin Hypothesis and the Diseases Referable to Faulty Diet."

Dr. Alfred F. Hess, New York: "The Rôle of Antiscorbutics in Our Dietary."

Drs. Joseph Goldberger, G. A. Wheeler and Edgar Sydenstricker, Washington, D. C.: "Diet and Pellagra," read by Dr. Goldberger.

John R. Murlin Washington, D. C.: "Diet of the U. S. Army Soldier," by Dr. R. G. Hoskins, Chicago.

Paul Roth, Battle Creek, Mich.: "Civilian War Rations."

These five papers were discussed by Drs. V. C. Vaughan, Ann Arbor, Mich.; Gideon Wells, Chicago; E. Lyman Fiske, New York; C. W. Green; Joseph Goldberger, Washington, D. C.; Charles W. Greene Columbia, Mo.; John R. Williams, Rochester, N. Y.; E. V. McCollum, Baltimore; E. Lyman Fiske, New York; Ralph G. Mills, Seoul, Korea; William Moore, St. Paul; Arthur D. Hirschfelder, Minneapolis; Alfred F. Hess, New York; R. G. Hoskins, Chicago, and Paul Roth, Battle Creek, Mich.

Dr. Charles F. Hoover, Cleveland, read a paper on "The Therapeutic Indications for the Inhalation of Oxygen." Discussed by Dr. Arthur D. Hirschfelder, Minneapolis.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Walter A. Bastedo, New York; vice chairman, G. W. McCoy, Washington, D. C.; secretary, Dr. Cary Eggleston, New York; delegate, Dr. A. D. Hirschfelder, Minneapolis.

A paper on "The Significance of Sounds Heard During the Auditory Measurement of Blood Pressure," by Drs. Clyde Brooks, Pittsburgh, and Albert M. Bleile, Columbus, Ohio, was read by Dr. Arno B. Luckhardt, Chicago. Discussed by Drs. Henry Sewall, Denver; Arthur D. Hirschfelder, Minneapolis, and Arno B. Luckhardt, Chicago.

Dr. E. C. Kendall, Rochester, Minn., read a paper on "The Chemical Groups in the Active Constituent of the Thyroid Which Are Responsible for Its Physiologic Activity." Discussed by Drs. G. M. Jack, Buffalo; V. A. Lapenta, Indianapolis, and E. C. Kendall, Rochester, Minn.

Dr. Jacob Rosenbloom, Pittsburgh, read a paper on "Studies in a Case of Acute Mercuric Chlorid Poisoning Treated by the Newer Methods and Followed by Recovery." Discussed by Drs. Bernard Fantus, Chicago; E. C. Kendall, Rochester,

Minn.; Walter A. Bastedo, New York, and J. H. Wilms, Cincinnati.

Dr. E. L. Newcomb, Minneapolis, Minn., read a paper on "Studies on the Valuation of Digitalis." Discussed by Drs. Jacob Rosenbloom, Pittsburgh; Arthur D. Hirschfelder, Minneapolis; Cary Eggleston, New York, and E. L. Newcomb, Minneapolis.

A paper on "Clinical Studies of a Series of Cases Presenting the Phenomena of Cholesteremia," by John R. Williams, Rochester, N. Y., on motion by Dr. Torald Sollmann, seconded by Dr. Cary Eggleston, was referred to the Executive Committee.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, JUNE 12—MORNING

The section was called to order at 9:40 by the vice chairman, Dr. Francis Carter Wood, New York.

Dr. Louis B. Wilson, Rochester, Minn., chairman, was not present to read the chairman's address, entitled "Necropsies in American Hospitals." It was announced that he is remaining in France. The vice chairman delivered a brief address, referring to conversations had with the chairman regarding necropsies.

Dr. Carl C. Warden, Ann Arbor, Mich., read a paper on "The Function of Fats in Immune Reactions." Discussed by Drs. Augustus B. Wadsworth, Albany, N. Y.; Francis Carter Wood, New York; Henry Sewall, Denver, and R. B. H. Gradwohl, St. Louis.

Dr. R. B. H. Gradwohl, St. Louis, read a paper on "A New Method of Making the Gonorrheal Complement Fixation Test." Discussed by Drs. Augustus B. Wadsworth, Albany, N. Y.; J. J. Moore, Chicago; J. J. Seelman, Milwaukee, and Carl C. Warden, Ann Arbor, Mich.

Dr. V. H. Moon, Indianapolis, read a paper on "A Further Consideration of Complement Fixation in Tuberculosis." Discussed by Drs. Augustus B. Wadsworth, Albany, N. Y.; Stella M. Gardner, Chicago; J. J. Seelman, Milwaukee; H. J. Corper, Chicago; R. B. H. Gradwohl, St. Louis, and Carl C. Warden, Ann Arbor, Mich.

WEDNESDAY, JUNE 12—AFTERNOON

A joint meeting was held with the Section on Pharmacology and Therapeutics. For a report of the proceedings, see the minutes of that section.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Francis Carter Wood, New York; vice chairman, Dr. Isabella C. Herb, Chicago; secretary, Dr. J. J. Moore, Chicago; delegate, Dr. E. R. Le Count, Chicago; alternate, Dr. Howard T. Karsner, Cleveland; executive committee, Drs. Louis B. Wilson, Rochester, Minn.; F. P. Gay, Berkeley, Calif. and James Ewing, New York.

Dr. B. G. R. Williams, Paris, Ill., read a paper on "Some Observations on the Pathology of the Urine in Arteriosclerotic Kidney." No discussion.

Dr. Frank C. Mann, Rochester, Minn., read a paper on "A Further Experimental Study on Surgical Shock." Discussed by Drs. S. J. Meltzer, New York, and Isabella C. Herb, Chicago.

Dr. Henry Albert, Iowa City, Iowa, read a paper on "The Resistance of Streptococci to Germicidal Agents." Discussed by Dr. Fenton B. Turck, New York.

SECTION ON STOMATOLOGY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order by the chairman, Dr. Frederick B. Noyes, Chicago.

The chairman of the executive committee, Dr. William C. Fisher, New York, submitted the following names of applicants for Associate Fellowship as having been approved by the executive committee:

Brooks, Earl, Noblesville, Ind.
 Caughron, John R., 434 Lee Bldg., Oklahoma City.
 Goldberg, Harry A., 2 W. 86th St., New York.
 Hardy, Charles S., 364 Springfield Ave., Summit, N. J.
 Lockwood, Bradley F., Yankton, S. D.
 Perry, King S., 719 Jenkins Bldg., Pittsburgh.
 Preston, S., 504 McBain Bldg., Roanoke, Va.
 Riou, C. L., Cobb Bldg., Seattle, Wash.
 Sears, Blake A., 847 Main St., Hartford, Conn.
 Singleton, Dickson L., First National Bank Bldg., Pittsburgh.
 Webster, Fred W., 209 Richard Block, Lincoln, Neb.
 Williams, Daniel B., 76 W. Northampton St., Wilkes-Barre, Pa.
 Brown, Walter A., 328 Investment Bldg., Pomona, Calif.
 Harrison, Guy R., Professional Bldg., Richmond, Va.
 Hewitt, W. Stirling, 15th and Locust Sts., Philadelphia.
 Jaquette, William A., 235 S. 15th St., Philadelphia.
 Lotz, Harry Franklin, Joliet, Ill.
 McLean, David W., Mt. Vernon, N. Y.
 King, Otto W., Huntington, Ind.
 West, George N., Chicago.
 Bowles, Shirley W., 1616 I St. N. W., Washington, D. C.
 Newton, Thomas G., Northwestern University Dental School, Chicago.
 Dr. D. L. Singleton, Pittsburgh, was recommended by the section in 1916, but through some error his name was never presented to the House of Delegates.

It was moved by Dr. Arthur Zentler, New York, and seconded by Dr. E. S. Talbot, Chicago, that these applicants be approved. Motion carried.

Dr. W. C. Fisher, New York, then moved that the additional names that the executive committee is at this time unable to pass on be carried over until next year. Seconded by Dr. Arthur Zentler. Motion carried.

Dr. William C. Fisher, New York, brought up the following matter:

WHEREAS, In our hospitals and dispensaries we have many doctors of German and Austrian birth who have taken out no papers at all or only the first papers of American citizenship, be it

Resolved, That these men be dropped from the staffs of such hospitals and dispensaries for the period of the war.

(Not adopted by the House of Delegates but left to the several hospitals for such action as they consider best.)

Dr. Arthur Zentler moved that it be adopted by the section, seconded and carried.

Seconded and carried as amended.

Dr. Frederick B. Noyes, Chicago, read the chairman's address, entitled "Dental Lymphatic Vessels." Discussed by Drs. E. S. Talbot, Chicago; E. H. Hatton, Chicago; H. A. Potts, Chicago, and F. B. Noyes, Chicago.

Dr. William L. Clark, Philadelphia, read a paper on "An Analysis of Two Hundred Cases of Malignant Disease in the Oral Cavity Treated by Electrothermic Methods, or in Combination with Operative Surgery, Roentgen Rays or Radium."

Dr. Gordon B. New, Rochester, Minn., read a paper on "Treatment of Epithelioma of the Jaws and Cheeks, with Heat and Radium."

These two papers were discussed by Drs. A. J. Ochsner, Chicago; Bertha Van Hoosen, Chicago; Robert Abbe, New York; William L. Clark, Philadelphia, and Gordon B. New, Rochester, Minn.

The chairman appointed as a nominating committee, Drs. T. L. Gilmer, Chicago; R. H. Ivy, Philadelphia, and F. B. Moorehead, Chicago.

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order by the chairman, Dr. Frederick B. Noyes, Chicago.

Dr. Kaethe W. Dewey, Chicago, read a paper on "The Lipoids of Tumors of the Dental System." Discussed by Drs. E. H. Hatton, Chicago, Georgine Luders, Rochester, Minn.; Vida Latham, Chicago; F. B. Moorehead, Chicago, and Kaethe W. Dewey, Chicago.

Dr. Eugene S. Talbot, Chicago, read a paper on "The Genesis of Nasmyth's Membrane, the Epithelial Débris in the Peridental Membrane, and the Granular Layer of Tomes." Discussed by Drs. F. B. Noyes, Chicago; E. H. Hatton, Chicago; Martin Dewey, Chicago, and E. S. Talbot, Chicago.

Dr. Robert H. Ivy, Philadelphia, read a paper on "War Surgery." Discussed by Drs. F. B. Moorehead, Chicago;

F. B. Noyes, Chicago; E. S. Talbot, Chicago, and R. H. Ivy, Philadelphia.

FRIDAY, JUNE 14—MORNING

The meeting was called to order by the chairman, Dr. Frederick B. Noyes, Chicago.

The following officers were elected: chairman, Dr. Eugene S. Talbot, Chicago; vice chairman, Chalmers J. Lyons, Ann Arbor, Mich.; secretary, Dr. Arthur D. Black, Chicago; delegate, Dr. William C. Fisher, New York; alternate, Dr. Robert H. Ivy, Philadelphia.

Dr. T. L. Gilmer, Chicago: Just a word about our present secretary, Dr. Talbot. Dr. Talbot has been a member of this section ever since it was organized, and indeed he is one of the men who have helped to make this organization. He has worked very faithfully for all these thirty-eight years. He has always been there. There has never been any one in the section who has done one hundredth part of the work he has done. There has never been any one who has had at heart the interest of the section as Dr. Talbot has had. There is no one who has not conscientiously believed that dentistry is a part of medicine and that we ought to have a branch or section in the American Medical Association, and it is through the efforts of Dr. Talbot and a number of others that we have this section. We feel that maybe he has done a great deal more than had been expected of any one else. We feel that we cannot honor him but we want to honor the section by making him chairman this year. We will never have a better secretary, but he cannot always work and slave as he has in the past. I want to move a vote of thanks and appreciation of the wonderful work and fidelity of our secretary, Dr. E. S. Talbot.

A rising vote of thanks was given to Dr. Talbot for his work as secretary.

Dr. W. C. Fisher, New York, moved that a committee of two with Dr. T. L. Gilmer, Chicago, as chairman, be appointed to draw up a letter to be presented to Dr. Talbot at the next meeting when he takes the chair. Seconded and carried.

Dr. Edward H. Hatton, Chicago, read a paper on "Microscopic Studies of Diseased Peridental Tissues." Discussed by Drs. A. D. Black, Chicago; E. S. Talbot, Chicago; V. H. Moon, Indianapolis; F. B. Noyes, Chicago; F. B. Moorehead, Chicago, and E. H. Hatton, Chicago.

Dr. Arthur D. Black, Chicago, read a paper on "Additional Roentgenographic Studies of Infections of the Maxillary Bones." Discussed by Drs. E. S. Talbot, Chicago; T. L. Gilmer, Chicago; Arthur Zentler, New York; F. B. Moorehead, Chicago; Chalmers J. Lyons, Ann Arbor, Mich.; William C. Fisher, New York, and Arthur D. Black, Chicago.

FRIDAY, JUNE 14—AFTERNOON

The meeting was called to order by the chairman, Dr. Frederick B. Noyes, Chicago.

Dr. Arthur Zentler, New York, read a paper on "A New Surgical Procedure for Operating in Cases of Suppurative Gingivitis, with Alveolar Involvement." Discussed by Dr. George Edward Fell, New York; Thomas L. Gilmer, Chicago; Arthur D. Black, Chicago; Truman W. Brophy, Chicago; Frederick B. Moorehead, Chicago; E. S. Fuller, Dayton, Ohio, and Dr. Arthur Zentler, New York.

Dr. Chalmers J. Lyons, Ann Arbor, Mich., read a paper on "Fractures and Dislocations of the Jaws." Discussed by Drs. Thomas L. Gilmer, Chicago; Truman W. Brophy, Chicago; Arthur D. Black, Chicago; John E. Nyman, Chicago; Arthur Zentler, New York; A. W. McCullough, Pittsburgh; Frederick B. Moorehead, Chicago, and Chalmers J. Lyons, Ann Arbor, Mich.

Dr. Vida Latham, Chicago, read a paper on "Fractures of the Bones of the Face, with Complication." Discussed by Drs. Bertha Bush, Chicago; Arthur Zentler, Chicago, and Vida Latham, Chicago.

Dr. George Edward Fell, Chicago, read a paper on "Sectional Views of the Accessory Sinuses of the Human Cranium." Discussed by Drs. William Brown, Oak Park, Ill., and Dr. George Edward Fell, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order by the chairman, Dr. C. Eugene Riggs, St. Paul.

Dr. C. Eugene Riggs, St. Paul, read the chairman's address, entitled "Some Further Considerations Concerning the Treatment of Neurosyphilis."

On motion, the section declared it to be its opinion that the minimum number of units should not be less than four, and the total number of papers to be presented in the four sessions not less than twenty-five.

The chairman appointed the following members to act as a nominating committee: Drs. James H. McBride, Pasadena, Calif.; Philip Zenner, Cincinnati, and Harold N. Moyer, Chicago.

Dr. Albert E. Sterne, Indianapolis, read a paper on "The Interpretation of Negative Laboratory Findings in Syphilis, with Special Reference to Treatment." Discussed by Drs. C. R. Ball, St. Paul; Julius Grinker, Chicago; Walter Timme, New York; Elmer E. Southard, Boston; A. L. Skoog, Kansas City, Mo.; Frank P. Norbury, Jacksonville, Ill.; Francis X. Dercum, Philadelphia; G. A. Moleen, Denver; Otto G. Freyermuth, San Francisco; Tom B. Throckmorton, Des Moines; Walter F. Schaller, San Francisco; Joseph Byrne, New York; Joseph M. Aikin, Omaha, and Albert E. Sterne, Indianapolis.

In the absence of Dr. Bernard Sachs, New York, the chairman appointed Dr. Walter Timme, New York, to act on the Executive Committee.

Dr. Elmer E. Southard, Boston, read a paper on "Insanity versus Mental Disease; Duty of the General Practitioner in Psychiatric Diagnosis." No discussion.

Dr. William A. Jones, Minneapolis, read a paper on "Cerebral Edema Due to Pressure." Discussed by Drs. Frank P. Norbury, Jacksonville, Ill.; A. L. Skoog, Kansas City, Mo.; Albert E. Sterne, Indianapolis; Joseph Byrne, New York; Bayard Holmes, Chicago, and William A. Jones, Minneapolis.

Dr. Charles W. Hitchcock, Detroit, read a paper on "Carbon Monoxid Poisoning, with Report of a Case: Its Nervous and Mental Symptoms." Discussed by Drs. Joseph Byrne, New York; G. A. Moleen, Denver, and Charles W. Hitchcock, Detroit.

Dr. Francis X. Dercum, Philadelphia, read a paper on "The Visceral Symptomatology of Nervous Diseases." Discussed by Drs. Theodore Diller, Pittsburgh; Walter Timme, New York; William A. Jones, Minneapolis; Joseph Byrne, New York; C. R. Ball, St. Paul; Albert E. Sterne, Indianapolis; Otto G. Freyermuth, San Francisco; B. Lemchen, Dunning, Ill., and Francis X. Dercum, Philadelphia.

Dr. Hugh T. Patrick, Chicago, reported that a movement had been started with a view to publishing, under the auspices of the American Medical Association, a journal devoted to neurology and psychiatry, and that at the last meeting of the American Neurological Association it was suggested that a petition signed by the neurologists and psychiatrists of the United States and Canada be presented to the trustees of the Association earnestly requesting that they establish a journal of neurology and psychiatry under a plan similar to that under which the *Archives of Internal Medicine* is published. Dr. Patrick said that the petition had already been signed by over fifty neurologists and that other endorsements had been received by mail, and expressed the hope that any members of the section who had not as yet signed the petition would do so.

Dr. Theodore Diller, Pittsburgh, moved that the section give its endorsement to the project as outlined, and that Dr. Patrick be requested to see Dr. George H. Simmons, editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and inform him to this effect; also that he invite additional signatures to this petition. Seconded and carried.

WEDNESDAY, JUNE 12—AFTERNOON

Dr. Lewellys F. Barker, Baltimore, read a paper on "Nervous and Mental Symptoms in Exophthalmic Goiter." Dis-

cussed by Drs. Joseph Byrne, New York, and F. M. Pottenger, Monrovia, Calif.

Dr. Beverley R. Tucker, Richmond, Va., read a paper on "Pituitary Disturbance in Relation to the Psychoses of Adolescence." Discussed by Dr. Archibald Church, Chicago.

Dr. L. Pierce Clark, New York, read a paper on "Some Suggestions for More Accurate Mental Therapy in Epilepsy." Discussed by Drs. Archibald Church, Chicago; Meyer Solomon, Chicago; Joseph Byrne, New York, and L. Pierce Clark, New York.

Dr. Andrew L. Skoog, Kansas City, Mo., read a paper on "Pineal Gland Neoplasms, with Report of a Case Studied Clinically and Pathologically." Discussed by Drs. Beverley R. Tucker, Richmond, Va., and Andrew L. Skoog, Kansas City, Mo.

Dr. Walter F. Schaller, San Francisco, read a paper on "Prognosis in Traumatic Neurosis." Discussed by Drs. Francis X. Dercum, Philadelphia; Andrew L. Skoog, Kansas City, Mo.; Francis A. Ely, Des Moines, Iowa; Julius Grinker, Chicago; Edmund Jacobson, Chicago; C. R. Ball, St. Paul; Elmer E. Southard, Boston; G. A. Moleen, Denver; Theodore Diller, Pittsburgh; Meyer Solomon, Chicago; William A. Jones, Minneapolis; Walter Timme, New York; Charles W. Hitchcock, Detroit; Albert E. Sterne, Indianapolis; Alberta F. Moffet Greene, Kansas City, Mo., and Walter F. Schaller, San Francisco.

Dr. Frank P. Norbury, Jacksonville, Ill., read a paper on "Treatment of Toxic and Exhaustion Psychoses." Discussed by Drs. Theodore Diller, Pittsburgh; Meyer Solomon, Chicago; C. R. Woodson, St. Joseph, Mo., and Frank P. Norbury, Jacksonville, Ill.

Dr. Otto G. Freyermuth, San Francisco, read a paper on "Posterior Column Lesions Nonspecific." No discussion.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Archibald Church, Chicago; vice chairman, E. E. Southard, Boston; secretary, Charles W. Hitchcock, Detroit; delegate, Hugh T. Patrick, Chicago; alternate, W. A. Jones, Minneapolis.

Dr. Richard H. Hutchings, Major, M. R. C., U. S. Army, representative of the Office of the Surgeon-General, U. S. Army, read a paper on "Neuropsychiatry and the Mobilization." Discussed by Drs. G. A. Moleen, Denver; Alberta F. Moffet Greene, Kansas City, Mo.; Edward E. Mayer, Pittsburgh; C. R. Ball, St. Paul; Andrew W. Hoisholt, Napa, Calif.; Frank P. Norbury, Jacksonville, Ill.; H. I. Davis, Chicago; Peter Bassoe, Chicago; Lesser Kauffman, Buffalo; G. W. Hall, Chicago, and Richard H. Hutchings, Washington, D. C.

Dr. Walter Timme, New York, read a paper on "The Neuropsychiatric Personnel: The Character and Make-Up of the Members of the Neuropsychiatric Division of the Medical Reserve Corps." Discussed by Drs. Frank P. Norbury, Jacksonville, Ill.; Joseph Byrne, New York, and Walter Timme, New York.

Dr. Lawrence B. Pilsbury, Lincoln, Neb., read a paper on "The Personal Equation in Psychiatry." Discussed by Drs. William O. Krohn, Chicago; Joseph Byrne, New York; Albert E. Sterne, Indianapolis; Harold N. Moyer, Chicago; Beverley R. Tucker, Richmond, Va., and Lawrence B. Pilsbury, Lincoln, Neb.

Dr. H. Douglas Singer, Kankakee, Ill., read a paper on "The Medical Practitioner and Mental Hygiene." Discussed by Drs. Meyer Solomon, Chicago; Joseph Byrne, New York; Hugh T. Patrick, Chicago; Lulu Hunt Peters, Los Angeles; William O. Krohn, Chicago; Edward E. Mayer, Pittsburgh; C. R. Ball, St. Paul, and H. Douglas Singer, Kankakee, Ill.

Dr. Edward E. Mayer, Pittsburgh, read a paper on "Radiculitis: Its Diagnosis and Interpretation." Discussed by Drs. William A. Jones, Minneapolis; G. A. Moleen, Denver; Joseph Byrne, New York, and Edward E. Mayer, Pittsburgh.

Dr. I. Leon Meyers, Chicago, read a paper on "The Cerebellar Gait: A Pedographic Study." No discussion.

Dr. Julius Grinker, Chicago, moved that the section extend a vote of thanks to the outgoing officers, and particularly

to Secretary Hamilton, who has handled the work connected with his office during the past three years. Dr. Albert E. Sterne, Indianapolis, seconded the motion, and it was carried by rising vote.

Dr. William A. Jones, Minneapolis, said: In view of the work contributed by the medical profession, both at its annual meetings and through the efforts of the men directly connected with war activities, I move that the Transportation Committee of the American Medical Association be requested to secure reduced railroad rates to members of the Association, and particularly to those who live at a distance, and that this motion be transmitted to the secretary of the American Medical Association through the secretary of this section.

Dr. Lesser Kauffman, Buffalo, seconded this motion, which was unanimously carried.

With reference to the paper entitled "A Psychiatric Contribution to the Problem of Prison Reform," by Dr. Herman M. Adler, Chicago, it was moved by Dr. C. Eugene Riggs, St. Paul, that because of the lateness of the hour, and in view of the fact that the author was present, the paper be read by title and passed. Seconded and carried.

SECTION ON DERMATOLOGY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

The chairman appointed Dr. Ernest D. Chipman, San Francisco, to serve on the Executive Committee in the place of Dr. Howard Fox, New York, who was in active service with the Medical Reserve Corps.

Dr. Henry H. Hazen, Washington, D. C., read the chairman's address, entitled "The Duties of the Dermatologist."

The following papers were read as a symposium on "Skin Tuberculosis."

Dr. Fred Wise, New York, read the paper submitted by Dr. Sigmund S. Pollitzer, New York, on "Cutaneous Tuberculosis: a Survey."

Dr. Fred Wise, New York: "Miliary Tuberculosis of the Skin, Lichen Scrofulosum and Papulonecrotic Tuberculids."

Drs. Samuel E. Sweitzer and Henry E. Michelsen, Minneapolis: "Sarcoids and Erythema Induratum of Bazin."

Drs. John E. Lane, New Haven, Conn., and Max Scheer, New York: "Dermatoses Possibly Related to Tuberculosis."

These four papers were discussed by Drs. Joseph Zeisler, Chicago; Richard L. Sutton, Kansas City, Mo.; John A. Fordyce, New York; J. H. Stokes, Rochester, Minn.; Frederick G. Harris, Chicago; Augustus Ravogli, Cincinnati; Walter J. Heimann, New York; Everett S. Lain, Oklahoma City; Ernest D. Chipman, San Francisco; Moses Scholtz, Cincinnati; Fred Wise, New York; John E. Lane, New Haven, Conn., and Henry E. Michelsen, Minneapolis.

Dr. Meyer L. Heidingsfeld, Cincinnati, read a paper on "The Too Intensive Arsphenamin (Salvarsan) Treatment of Syphilis." Discussed by Drs. John H. Fordyce, New York; Budd C. Corbus, Chicago; J. H. McBride, Kansas City, Mo.; John E. Lane, New Haven, Conn.; Richard L. Sutton, Kansas City, Mo.; King Smith, Toronto; E. J. Trowe, Toronto; Fred Wise, New York; Joseph Zeisler, Chicago; Bernard Erdman, Indianapolis; Arthur W. Stillians, Chicago; Walter J. Heimann, New York; Henry R. Varney, Detroit, and Meyer L. Heidingsfeld, Cincinnati.

The chairman appointed the following nominating committee: Drs. John E. Lane, New Haven, Conn., Henry R. Varney, Detroit, and J. B. Shelmire, Dallas, Texas.

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

The following papers were read as a symposium on "Syphilis in Its Economic Aspects."

Drs. Wade H. Brown and Louise Pearce, New York: "Experimental Therapy in Syphilis."

Dr. William Allen Pusey, Chicago: "The Handling of the Venereal Disease Problem in the Army at the Present Time."

Dr. John A. Fordyce, New York: "The Value of Early Diagnosis and Immediate Treatment in Preventing Neurosyphilis; Its Economic Aspects."

Dr. Harry G. Irvine, Minneapolis: "Syphilis and Venereal Diseases as a Public Health Problem."

These four papers were discussed by Drs. John E. Lane, New Haven, Conn.; John H. Stokes, Rochester, Minn.; King Smith, Toronto; Abram Schuyler Clark, New York; Fred Wise, New York; James Herbert Mitchell, Chicago; Loyd Thompson, Hot Springs, Ark.; Moses Scholtz, Cincinnati; A. H. Martin, Hot Springs, Ark.; Frank Wright, Minneapolis; Walter J. Heimann, New York; Wade H. Brown, New York; William Allen Pusey, Chicago; John H. Fordyce, New York, and Harry G. Irvine, Minneapolis.

FRIDAY, JUNE 14—MORNING

The meeting was called to order at 9:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

The following officers were elected: chairman, Dr. Otto H. Foerster, Milwaukee; vice chairman, Dr. David Lieberthal, Chicago; secretary, Dr. Walter J. Heimann, New York; delegate, Dr. George MacKee, New York; alternate, Dr. Fred Wise, New York.

The following papers were read as a symposium on "Bullous Dermatoses."

Dr. Walter J. Heimann, New York: "Pemphigus: a Clinical Study."

Dr. David Lieberthal, Chicago: "Toxic and Bullous Drug Eruptions and the Bullous Erythemas."

These two papers were discussed by Drs. Henry H. Hazen, Washington, D. C.; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati; John A. Fordyce, New York; Michael L. Ravitch, Louisville, Ky.; Harry G. Irvine, Minneapolis; Jesse B. Shelmire, Dallas, Texas; Philip Frank Shaffner, Chicago; Samuel E. Sweitzer, Minneapolis; Everett S. Lain, Oklahoma City; Moses Scholtz, Cincinnati; Joseph Zeisler, Chicago; Walter J. Heimann, New York, and David Lieberthal, Chicago.

Dr. Lloyd W. Ketron, Baltimore, read a paper on "Unusual Forms of Epitheliomas of the Skin." Discussed by Drs. Henry H. Hazen, Washington, D. C.; Frederick G. Harris, Chicago; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati; L. B. Mount, Albany, N. Y.; K. A. Zurawski, Chicago, and Lloyd W. Ketron, Baltimore.

Dr. Michael L. Ravitch, Louisville, Ky., read a paper on "Further Observations Concerning Dermatoses Attributed to Focal Infections."

Dr. Ernest Dwight Chipman, San Francisco, read a paper on "The Etiology of Lichen Planus."

These two papers were discussed by Drs. Richard L. Sutton, Kansas City, Mo.; King Smith, Toronto; John E. Lane, New Haven, Conn.; Frederick G. Harris, Chicago; Moses Scholtz, Cincinnati; Everett S. Lain, Oklahoma City; David Lieberthal, Chicago; J. S. Eisenstaedt, Chicago; K. A. Zurawski, Chicago; J. H. Stokes, Rochester, Minn.; Henry H. Hazen, Washington, D. C.; Michael L. Ravitch, Louisville, Ky., and Ernest Dwight Chipman, San Francisco.

FRIDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

Dr. Edward H. Reede, Washington, D. C., read a paper on "The Rôle of the Vegetative Nervous System in Certain Diseases of the Skin." Discussed by Drs. Ernest L. McEwen, Chicago; William Allen Pusey, Chicago; Richard L. Sutton, Kansas City, Mo.; Henry J. Gerstenberger, Cleveland; J. H. Stokes, Rochester, Minn.; Loretta Joy Cummins, Boston; Augustus Ravogli, Cincinnati; B. W. Eppler, Kalamazoo, Mich.; Henry H. Hazen, Washington, D. C.; Edward H. Reede, Washington, D. C.

Drs. Richard L. Sutton, Kansas City, Mo., and Frank E. Simpson, Chicago, presented a paper on "Retention Cysts of the Mucous Membrane of the Lip." Discussed by Drs. William Allen Pusey, Chicago, and Jesse B. Shelmire, Dallas, Texas.

Drs. Jesse B. Shelmire, and James H. Black, Dallas, Texas, presented a paper on "Adenoma Sebaceum: Report

of Five Cases in One Family." Discussed by Drs. James Herbert Mitchell, Chicago; Richard L. Sutton, Kansas City, Mo., and Jesse B. Shelmire, Dallas, Texas.

Dr. Everett S. Lain, Oklahoma City, read a paper on "Dermatitis Lycopersicum Esculentum." Discussed by Drs. Arthur W. Stillians, Chicago; J. Frank Waugh, Chicago; Ernest L. McEwen, Chicago; Frederick G. Harris, Chicago; David Lieberthal, Chicago; Richard L. Sutton, Kansas City, Mo.; Robert G. Washburn, Milwaukee; Harold N. Cole, Cleveland; James Herbert Mitchell, Chicago; John E. Lane, New Haven, Conn.; William Allen Pusey, Chicago, and Everett S. Lain, Oklahoma City.

Dr. J. S. Eisenstaedt, Chicago, read a paper on "A Case of Sporotrichosis Resembling Tuberculosis of the Skin." Discussed by Drs. Frederick G. Harris, Chicago; K. A. Zurawski, Chicago; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati, and J. S. Eisenstaedt, Chicago.

The newly elected officers were inducted into office and made brief and appropriate speeches of acceptance.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:30 by the chairman, Dr. W. S. Rankin, Raleigh, N. C.

The following papers were read as a symposium on "Rural Sanitation":

Dr. W. S. Rankin, Raleigh, N. C.: "Coordinate Responsibility of Nation, State and County in Rural Sanitation." Discussed by Drs. J. W. Schereschewsky, Washington, D. C.; H. B. Hemenway, Springfield, Ill.; Otto P. Geier, Cincinnati; John N. Hurty, Indianapolis; James A. Hayne, Columbia, S. C., and W. S. Rankin, Raleigh, N. C.

Dr. John N. Hurty, Indianapolis: "State Responsibility and Aims in County Health Work." Discussed by Dr. René Sand of the Belgian Mission, on Industrial Management, Mr. F. L. Hoffman, Newark, N. J., and Dr. James A. Hayne, Columbia, S. C.

Dr. Otto P. Geier, Cincinnati, by request, made a statement on "Industrial Hygiene." Discussed by Dr. W. A. Evans, Chicago; Dr. J. W. Schereschewsky, Washington, D. C.; Major Edouard Rist, of the French Mission; Dr. William H. Welch, Lieutenant-Colonel, M. C., N. A.; Dr. Victor C. Vaughan, Colonel, M. C., N. A., and Dr. Oscar Dowling, Shreveport, La.

The following nominating committee was appointed: Dr. E. R. Kelley, Boston; Dr. Otto P. Geier, Cincinnati, and Dr. Oscar Dowling, Shreveport.

Dr. S. W. Welch, Montgomery, Ala., presented a resolution with reference to maintaining the working efficiency of the state boards of health of the several states.

The resolution was adopted.

WEDNESDAY, JUNE 12—AFTERNOON

A joint meeting was held with the Section on Orthopedic Surgery. For the proceedings, see the minutes of that section.

FRIDAY, JUNE 14—MORNING

The chairman, Dr. W. S. Rankin, Raleigh, N. C., called the meeting to order at 9:20 o'clock.

The following officers were elected: chairman, Dr. C. St. Clair Drake, Springfield, Ill.; vice chairman, Dr. J. W. Schereschewsky, Washington, D. C.; secretary, Dr. Donald B. Lowe, Akron, Ohio; delegate, Dr. W. S. Rankin, Raleigh, N. C.

The chairman then introduced Dr. Victor C. Vaughan, Colonel, M. C., N. A., as the presiding officer, owing to the military nature of the program.

The following papers were read as a symposium on "Military Hygiene and Preventive Medicine":

Dr. Rufus I. Cole, New York: "Prevention of Pneumonia."

Dr. Simon Flexner, New York: "Control of Meningitis."

Dr. Martha Wollstein, New York: "Mumps."

These three papers were discussed by Drs. Victor C. Vaughan, Ann Arbor, Mich.; Frederick F. Russell, Washington, D. C.; P. F. Armand-De Lille, Boulogne, France; William C. Rucker, Washington, D. C.; H. Gideon Wells, Chicago; H. B. Hemenway, Springfield, Ill.; Simon Flexner, New York; Martha Wollstein, New York, and Rufus I. Cole, New York.

Dr. Wilbur A. Sawyer, Berkeley, Calif., read a paper on "Venereal Disease Control in the Army." Discussed by Drs. Victor C. Vaughan, Ann Arbor, Mich.; P. S. Schenk, Norfolk, Va.; J. O. Cobb, Colonel, U. S. P. H. S., and C. St. Clair Drake, Springfield, Ill.

Dr. C. F. Gelston, engaged for a year or more in assembling and helping to take care of the civilian people who have been returned from Germany to France, made a few remarks.

SECTION ON GENITO-URINARY DISEASES

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order by the chairman of the Executive Committee, Dr. Granville MacGowan, Los Angeles, at about 9 o'clock, who stated that because of the absence of the chairman of the section in France, and the death of the vice chairman, the conduct of the meeting developed on the Executive Committee, through its chairman, and that there would be no address by the chairman.

Dr. E. Otis Smith, Cincinnati, read a paper on "Anatomic and Pathologic Study of the Posterior Urethra."

Dr. Ernest M. Watson, Buffalo, read a paper on "The Human Vesicles at Birth, with Observations in Their Fetal Development."

Dr. Granville MacGowan, Los Angeles, read a paper on "Why Trained Urologists Should Be Employed to Treat Disease Conditions of the Posterior Urethra and the Bladder Neck."

These three papers were discussed by Drs. Charles M. Harpster, Toledo, Ohio; William T. Belfield, Chicago; Bransford Lewis, St. Louis; V. G. Vecki, San Francisco; John R. Caulk, St. Louis; A. L. Wolbarst, New York; A. E. Goldstein, Baltimore, and V. D. Lespinasse, Chicago.

Drs. Loyd Thompson, Hot Springs, Ark., and Jacob Bolasny, Detroit, presented a paper on "Venereal Disease in the Thirty-Ninth Division." Discussed by Drs. F. M. McCallum, Kansas City; V. G. Vecki, San Francisco; A. L. Wolbarst, New York; John R. Caulk, St. Louis; A. E. Goldstein, Baltimore; W. J. Wallace, Oklahoma City; A. E. Mowry, Chicago; W. G. A. Schulte, Salt Lake City; William C. Quinby, Boston; E. H. Martin, Hot Springs, Ark.; Charles M. Harpster, Toledo, Ohio; Lawrence T. Price, Richmond, Va., and Granville MacGowan, Los Angeles.

WEDNESDAY, JUNE 12—AFTERNOON

Dr. Arthur L. Chute, Boston, read a paper on "Some Cases of Retention of Urine Associated with Defects of the Sacrum, Probably Spina Bifida Occulta." Discussed by Drs. J. A. Gardner, Buffalo; William F. Braasch, Rochester, Minn.; Leland Boogher, St. Louis; H. L. Kretschmer, Chicago; J. Dellinger Barney, Boston, and J. P. O'Neil, Chicago.

The chairman recounted briefly the circumstances attending the death of Dr. Martin Krotoszyner of San Francisco, and appointed as a special committee to prepare suitable obituary resolutions Drs. A. L. Wolbarst, New York; Rufus L. Rigdon, San Francisco, and J. L. Boogher, St. Louis.

The chairman announced that Dr. Arthur L. Chute, Boston, had been selected by the Executive Committee to fill the place of Dr. Hugh Cabot, Boston, on the Executive Committee during this meeting.

Dr. Henry G. Bugbee, New York, read a paper on "Renal Complications of Pregnancy from the Standpoint of the Urologist." Discussed by Drs. Herman L. Kretschmer, Chicago; John R. Caulk, St. Louis; V. D. Lespinasse, Chicago, and A. E. Goldstein, Baltimore.

A paper by Dr. Frank Hinman, San Francisco, was read on "Experimental Hydronephrosis: Repair Following Ureterocystostomy in White Rats with Complete Ureteral Obstruc-

tion." Discussed by Drs. J. Dellinger Barney, Boston; James A. Gardner, Buffalo; Henry G. Bugbee, New York, and V. D. Lespinasse, Chicago.

Dr. Anders Peterson, Rochester, Minn., read a paper on "Effect on the Kidney and Ureter Following Transplantation into the Bladder." Discussed by Drs. Granville MacGowan, Los Angeles; V. D. Lespinasse, Chicago; Arthur L. Chute, Boston; Charles M. McKenna, Chicago; Bernhard Erdman, Indianapolis, and F. C. Herrick, Cleveland.

Dr. Robert H. Herbst, Chicago, read a paper on "Acquired Stricture of the Lower End of the Ureter." Discussed by V. D. Lespinasse, Chicago; John R. Caulk, St. Louis; William M. Spitzer, Denver; Gustav Kolischer, Chicago; Bernhard Erdman, Indianapolis; J. Dellinger Barney, Boston; Arthur L. Chute, Boston, and William F. Braasch, Rochester, Minn.

FRIDAY, JUNE 14—MORNING

Drs. V. G. Vecki, San Francisco; William C. Quinby, Boston, and C. M. Harpster, Toledo, Ohio, were appointed as a nominating committee.

The following officers were elected: chairman, William F. Braasch, Rochester, Minn.; vice chairman, R. L. Rigdon, San Francisco; secretary, E. O. Smith, Cincinnati; delegate, Granville MacGowan, Los Angeles; alternate, H. G. Hamer, Indianapolis.

The address of the chairman, Dr. Edward L. Keyes, Jr., was read.

Dr. Bransford Lewis, St. Louis, read a paper on "New Instruments in Operative Cystoscopy." Discussed by Drs. William F. Braasch, Rochester, Minn., and H. L. Kretschmer, Chicago.

Dr. Oswald S. Lowsley, New York, read a paper on "Surgery and Surgical Pathology of the Human Prostate Gland." Discussed by Drs. H. L. Kretschmer, Chicago; Arthur L. Chute, Boston; V. D. Lespinasse, Chicago; W. G. A. Schulte, Salt Lake City; Bransford Lewis, St. Louis; Gustav Kolischer, Chicago; B. L. Guyatt, Binbrooke, Ont.; Granville MacGowan, Los Angeles; L. E. Schmidt, Chicago, and A. E. Goldstein, Baltimore.

Dr. James A. Gardner, Buffalo, read a paper on "The Silent Prostate." Discussed by Drs. H. L. Kretschmer, Chicago; James B. Cross, Buffalo; J. Dellinger Barney, Boston; Bernhard Erdman, Indianapolis; W. G. Schulte, Salt Lake City; Oswald S. Lowsley, New York; William C. Quinby, Boston; Gustav Kolischer, Chicago; L. E. Schmidt, Chicago; V. D. Lespinasse, Chicago, and C. M. Harpster, Toledo, Ohio.

The committee named to draft resolutions on the death of the vice chairman, Dr. Martin Krotoszyner, San Francisco, reported the following:

WHEREAS, Dr. Martin Krotoszyner was for many years one of the leading urologists of the Pacific Coast; and

WHEREAS, He stood high in the affections and respect of his confrères, both at home and throughout the nation, and was recognized as a man of honor, a friend who was loyal, a physician of scientific mind and a co-member of our society who was always enthusiastically ready to further its interests, and

WHEREAS, On the afternoon of April 20, 1918, while engaged in his office consultations he was wantonly shot to death by a man of disordered mind whose ills he had attempted to heal; and

WHEREAS, In his death his family lost a loving husband and father, his city was deprived of a public spirited citizen, and the medical profession lost one of its most sincere and untiring members; and

WHEREAS, Dr. Krotoszyner had been actively interested in the Section on Genito-Urinary Diseases of the American Medical Association since the organization of that Section, and at its meeting one year ago was elected to the office of vice chairman; therefore, be it

Resolved, That we, Fellows of the A. M. A., registered in this section hereby express our feelings of sincere sorrow at his untimely taking away and our sense of loss in his absence from our meeting, and his cooperation in our councils; and

Resolved, That we extend to his wife and family our deepest sympathy in their bereavement, and we assure them that his memory will be cherished by this section as one who stood for the highest and best ideals in medicine; and be it further

Resolved, That these resolutions be spread on the minutes of the section and become a part of its records, and that a copy be forwarded to his family.

The foregoing resolutions were adopted by rising and unanimous vote.

FRIDAY, JUNE 14—AFTERNOON

Dr. William C. Quinby, Boston, read a paper on "Treatment of Genital Tuberculosis in the Male." Discussed by Drs. J. Dellinger Barney, Boston; J. P. O'Neil, Chicago; James A. Gardner, Buffalo, and Oswald Lowsley, New York.

Dr. J. Dellinger Barney, Boston, read a paper on "Colon Bacillus Infection of the Urinary Tract."

Dr. Louis E. Schmidt, Chicago, read a paper on "The Significance of Bacteriuria."

These two papers were discussed by Drs. H. L. Kretschmer, Chicago; Granville MacGowan, Los Angeles; Oswald S. Lowsley, New York; Bransford Lewis, St. Louis; C. M. McKenna, Chicago, and C. W. Bethune, Buffalo.

Dr. Louis E. Schmidt, Chicago, moved the adoption of the following: That the membership of this section unanimously request that its name be changed to that of the Section on Urology, its scope to be the same as heretofore.

The motion carried by unanimous vote. [Not transmitted to the House of Delegates.]

Dr. Albert E. Goldstein, Baltimore, read a paper on "The Diagnostic and Prognostic Value of Blood Urea in Urology." No discussion.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, JUNE 12—MORNING

The section was called to order at 9:05 by the chairman, Dr. Albert H. Freiberg, Cincinnati. Dr. Freiberg made some announcements and appointed, as vice president pro tem., Dr. J. D. Griffith, Kansas City; and as members of the Executive Committee pro tem., Drs. Frank E. Peckham, Providence, R. I.; Arthur Steindler, Iowa City, Iowa, and A. R. Colvin, St. Paul.

Dr. Leo Mayer, New York, read a paper on "Tendon Operation Technic." Discussed by Drs. Arthur Steindler, Iowa City, Iowa; E. H. Smith, San Francisco; C. M. Jacobs, Chicago; M. A. Bernstein, Kenosha, Wis., and Leo Mayer, New York.

Dr. Walter G. Stern, Cleveland, read a paper by himself and Dr. M. E. Blahd, Cleveland, on "Cerebral Spastic Paraplegia." Discussed by Drs. George B. Packard, Denver; E. H. Smith, San Francisco; John Ridlon, Chicago, and Walter G. Stern, Cleveland.

Dr. Frank E. Peckham, Providence, R. I., read a paper on "A Further Report of the Operation for Stabilizing the Foot and Ankle in Poliomyelitis." Discussed by Drs. Walter G. Stern, Cleveland, and Frank E. Packham, Providence.

Dr. Melvin S. Henderson, Rochester, Minn., read a paper on "Loose Bodies in the Elbow Joint." Discussed by Drs. W. C. Campbell, Memphis, Tenn.; A. R. Colvin, St. Paul; A. H. Freiberg, Cincinnati; Arthur Steindler, Iowa City, Iowa; Leo Mayer, New York; C. A. Parker, Chicago; J. D. Griffith, Kansas City, Mo., and Melvin S. Henderson, Rochester, Minn.

Dr. Arthur Steindler, Iowa City, Iowa, read a paper on "Orthopedic Operations on the Hand." Discussed by Drs. John L. Porter, Chicago; J. P. Lord, Omaha; Melvin S. Henderson, Rochester, Minn.; C. M. Jacobs, Chicago, and Arthur Steindler, Iowa City, Iowa.

Dr. W. Barnett Owen, Louisville, Ky., read a paper on "Efficient Support for Sacro-Iliac Relaxation." Discussed by Drs. F. J. Gaenslen, Milwaukee; C. A. Parker, Chicago; J. P. Lord, Omaha; John L. Porter, Chicago; E. H. Smith, San Francisco, and W. Barnett Owen, Louisville, Ky.

WEDNESDAY, JUNE 12—AFTERNOON

A joint meeting was held with the Section on Preventive Medicine and Public Health.

The meeting was called to order at 2:10 by Dr. A. H. Freiberg, Cincinnati, chairman of the Section on Orthopedic Surgery. Dr. Freiberg read an announcement about draft board managers, and then surrendered the Chair to Dr. J. D. Griffith, Kansas City, Mo.

Dr. A. H. Freiberg, Cincinnati, read the chairman's address, entitled, "Military and Industrial Orthopedic Surgery."

Dr. Charles G. Farnum, Peoria, Ill., read a paper on "Modern Industrial Medicine and Surgery."

Dr. Clarence D. Selby, Toledo, Ohio, read a paper on "Conserving Industrial Man Power."

These two papers were discussed by Drs. J. W. Schereschewsky, Washington, D. C.; Charles G. Farnum, Peoria, Ill., and Clarence D. Selby, Toledo, Ohio.

Dr. Francis D. Patterson, Harrisburg, Pa., read a paper on "Reconstruction Work in Industrial and Military Life." Discussed by Drs. C. G. Farnum, Peoria, Ill.; O. P. Geier, Cincinnati; J. D. Griffith, Kansas City, Mo.; W. G. Stern, Cleveland; E. P. S. Miller, Chicago, and F. D. Patterson, Harrisburg, Pa.

Mr. Charles S. Andrus, Chicago, Ill., read a paper on "Responsibility of the Industrial Board and the Influence of the Medical Examiner." Discussed by Dr. Wilmer Krusen, Philadelphia, and Mr. C. S. Andrus, Chicago.

FRIDAY, JUNE 14—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. A. H. Freiberg, Cincinnati.

The following officers were elected: chairman, Dr. Emil S. Geist, Minneapolis; vice chairman, Dr. Benjamin P. Farrell, New York; Executive Committee, Dr. Russell A. Hibbs, New York, chairman; Dr. A. H. Freiberg, Cincinnati, and Dr. E. W. Ryerson, Chicago; delegate, Dr. John Ridlon, Chicago. The secretary, Dr. H. B. Thomas, Chicago, retains his office for two more years.

A letter from Col. Sir Robert Jones of London was read, and a motion was carried directing the secretary to write to Colonel Jones expressing appreciation and regard.

The executive session adjourned at 9:15, and the scientific program was resumed.

Dr. Robert B. Cofield, Cincinnati, read a paper on "Disinfection of the Knee Joint." Discussed by Drs. C. A. Parker, Chicago; J. P. Lord, Omaha; A. H. Freiberg, Cincinnati, and Robert B. Cofield, Cincinnati.

Dr. Leo Mayer, New York, showed the slides belonging to his paper on "Tendon Operation Technic," which was read on Wednesday morning. Discussed by Drs. A. H. Freiberg, Cincinnati, and Leo Mayer, New York.

Dr. Russell A. Hibbs, New York, presented a paper on "Final Report of Operations for Pott's Disease." Discussed by Drs. C. M. Jacobs, Chicago; W. C. Campbell, Memphis, Tenn.; F. J. Gaenslen, Milwaukee; H. B. Thomas, Chicago; Benjamin P. Farrell, New York, and R. A. Hibbs, New York.

Dr. David Silver, Pittsburgh, read a paper on "Problem of the Artificial Arm." Discussed by Drs. John Ridlon, Chicago; J. P. Lord, Omaha; Arthur Steindler, Iowa City, Iowa; Leo Mayer, New York; S. C. Baldwin, Salt Lake City, and David Silver, Pittsburgh.

Dr. Charles R. McClure, Portland, Ore., read a paper on "Isolated Disease of the Scaphoid." Discussed by Drs. W. C. Campbell, Memphis; S. C. Baldwin, Salt Lake City, and Charles R. McClure, Portland, Ore.

Dr. Robert Emmett Farr, Minneapolis, read a paper on "Illustrations and Demonstration of Bone-Holding Forceps." No discussion.

The chairman appointed Drs. J. P. Lord, Omaha, and R. B. Cofield, Cincinnati, as members of the executive committee to act in the places of Drs. A. R. Colvin and Frank E. Peckham.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Anthony Bassler, New York.

Dr. Anthony Bassler, New York, read the chairman's address.

Dr. Charles D. Aaron, Detroit, read a paper on "A Simplified Method of Aspirating Gastric Contents in Hypersensitive Patients." Discussed by Drs. M. H. Mack, Chicago; J. M. Rector, Columbus, Ohio, and J. Russell Verbrycke, Jr., Washington, D. C.

Dr. William M. Beach, Pittsburgh, read a paper on "The Subnormal Colon." Discussed by Drs. D. H. Murray, Syracuse, N. Y.; E. L. Eggleston, Battle Creek, Mich.; William H. Stauffer, St. Louis, and Nathan Rosewater, Cleveland.

Dr. Dwight Henderson Murray, Syracuse, N. Y., read a paper on "A Résumé of Eight Years' Original Research Work in the Etiology and Treatment of Pruritus Ani." Discussed by Drs. J. M. Frick, Toledo, Ohio; James A. Duncan, Toledo, Ohio; Thomas Charles Martin, Washington, D. C., and Anthony Bassler, New York.

Dr. Sidney K. Simon, New Orleans, read a paper on "The Comparative Value of Crude Ipecac and Its Alkaloids in the Treatment of Amebiasis." Discussed by Drs. Frank Smithies, Chicago; Hugo A. Freund, Detroit, and Horace W. Soper, St. Louis.

The paper of Dr. Max Einhorn, New York, on "The Importance of Detailed Examination of Drafted Men with Regard to Their Ability to Be Soldiers," was read. No discussion.

Drs. Dwight Henderson Murray, Syracuse, N. Y., William H. Stauffer, St. Louis, and William Van Valzah Hayes, New York, were appointed by the chair as a nominating committee.

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. William M. Beach, Pittsburgh; vice chairman, Dr. Frank Smithies, Chicago; secretary, Dr. Horace W. Soper, St. Louis; delegate, Dr. William Van Valzah Hayes, New York; alternate, Dr. T. Chittenden Hill, Boston; executive committee, Drs. Charles G. Stockton, Buffalo; Dwight H. Murray, Syracuse, N. Y., and Anthony Bassler, New York.

Dr. Frank Smithies, Chicago, read a paper on "Pericholecystic Adhesions: Their Importance and Clinical Recognition." Discussed by Drs. Robert T. Morris, New York; G. A. Friedman, New York; Mary E. Dunning Rose, New York; William Van Valzah Hayes, New York, and Roland Hazen, Paris, Ill.

Dr. G. A. Friedman, New York, read a paper on "The Probable Endocrinic Origin of Peptic Ulcer." Discussed by Drs. Frank C. Mann, Rochester, N. Y.; V. A. LaPenta, Indianapolis; Betram W. Sippy, Chicago, and Martin E. Rehfuß, Philadelphia.

Dr. Martin E. Rehfuß, Philadelphia, read a paper on "The Possibilities of Fractional Gastric Analysis." Discussed by Drs. William Van Valzah Hayes, New York; Frank Smithies, Chicago, and A. F. R. Andresen, Brooklyn.

Dr. Thomas Charles Martin, Washington, D. C., read a paper on "An Operation for Internal Hemorrhoids under Local Anesthesia." Discussed by Drs. Marvin H. Smith, Jacksonville, Fla.; William M. Beach, Pittsburgh; J. Rawson Pennington, Chicago; Dwight H. Murray, Syracuse, N. Y.; William H. Stauffer, St. Louis, and Charles D. Aaron, Detroit.

FRIDAY, JUNE 14—MORNING

The meeting was called to order by the chairman.

Dr. Harry B. Eisberg, New York, read a paper on "Intestinal Obstruction: Continued Studies from Surgical Research Laboratory, New York University." Discussed by Drs. Dwight Henderson Murray, Syracuse, N. Y., and James J. Moorehead, Chicago.

Dr. J. Rawson Pennington, Chicago, read a paper on "The End-Results of Operations for Cancer of the Rectum, with Suggestions for Improving Them." Discussed by Drs. Dwight Henderson Murray, Syracuse, N. Y.; William M. Beach, Pittsburgh; Charles J. Drueck, Chicago, and George E. Pfahler, Philadelphia.

Dr. George E. Pfahler, Philadelphia, read a paper on "The Importance of Complete Roentgen Study of the Gastro-Intestinal Tract and Gallbladder in All Obscure Abdominal Cases." Discussed by Drs. Bertram W. Sippy, Chicago; William Van Valzah Hayes, New York; Aloys Heinen, Chicago; J. M. Rector, Columbus, Ohio; John Guttman, New York, and Horace W. Soper, St. Louis.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 29, 1918

WAR TIME DIFFICULTIES IN PRACTICAL DIETETICS

The new adjustments of food conditions thus far experienced in American homes have been brought about by voluntary effort and economic necessities rather than by governmental procedure. There has been no attempt at compulsory rationing, such as has been attempted abroad. "The Food Administration," said Herbert C. Hoover in a recent address, "has not taken the attitude of the general in command giving orders. Our attitude to the American public has been consistent, that we should ask for service, that we should ask for self-sacrifice, that we should tell in a clear and direct way the why and wherefore of every request. . . . The Food Administration has been founded on voluntary effort. We have no desire to depart from this idea, but if we are to accomplish our purpose it must be accomplished by voluntary effort."

Even an honor system of voluntary rationing requires the application of intelligence in the readjustment of dietaries occasioned by the exclusion or reduction of certain items in the diet. The difficulties are not diminished by the fact, already demonstrated by a single year's experience, that the conditions of supply may change from month to month in such a way as to require new plans. We must almost adjust ourselves, like an army in the field, to the day's orders. If the more intelligent classes of our communities are finding that this novel necessity taxes their ingenuity, how much greater must be the perplexity among those groups less competent to meet new situations with skill and forethought. How can a solution be found?

These comments have received added force from the experience that our English allies have acquired in the conduct of the large number of hostels where, under governmental patronage, great numbers of munition workers are now fed. Catering according to custom is an impossibility in a war time canteen. The problem of satisfying the boarder and obeying the mandates of the food administration at the same time

has tried the matrons set to the tasks. The crux of the situation has been clearly stated by Miss Chrystal¹ of the Welfare and Health Section, Ministry of Munitions: "The best use of substitutes and the most economical use of food generally are matters which require a great deal of skill, and which may be beyond the powers of ordinary English cooks."

Such perplexities are assuredly not negligible. Our military authorities have begun to realize the true value of a trained army cook; the civilian armies must also be provided for. Some of the difficulties encountered in the new kind of service that hostels represent are worth mentioning because they have both psychologic and physiologic import in nutrition. Variety affects efficiency both physically in relation to digestion and psychologically. Sameness is apt to characterize institutional food, and it is not surprising that hostel catering should have the same fault. Detailed observation has led inspectors to believe that one of the secrets of successful hostel management lies in preserving the tenants' interest in their meals. It is a common experience in hostels that the nerve strain of heavy munition work produces in women a disposition to be difficult about food, and where there is little discontent it is generally found that variety of food is studied. The great difficulty is that, although monotony is resented, the workers are conservative and suspect new dishes.

The munition worker is not unlike the patient that demands a diet list from his physician. Geographic and racial peculiarities and dietary customs offer almost insurmountable obstacles to many rational innovations. Thus one hostel inspector reports that "potato dishes are being tried with considerable success. Maize has been found to be unpopular and indigestible. Suet puddings and rolls are thought by the workers to be sustaining." Not only the proper selection and cooking of food, but also suitable service is indispensable to success. And the problem of waste looms up larger as the food stores become smaller.

In the face of such emergencies it behooves the medical profession to welcome and encourage in this country the growth of a movement that is destined to bring help and stimulus in meeting these problems of the art of living. Home economics has too long been looked on as a fad. Rule of thumb methods are no longer synonymous with household arts. Witness the speedy success with which substitutive cereals have been employed in cookery throughout the United States within the past few months. From the primary schools to the colleges for women our girls are being taught the dignity of home economics and the underlying sciences. Our profession is all too slow in realizing what these newer forms of theoretical and

1. Chrystal, E. M.: Food in Hostels, National Health Insurance, Medical Research Committee, Special Report Series, No. 13, Appendix III, 1918.

vocational education actually are destined to mean, not only to the hospital or institutional dietitian and to the trained nurse, but also to the nation at large. Let us dignify the art of dietetics.

THE ORIGIN OF COLOSTRUM

The milk that female mammals secrete during the first few days after parturition, at the beginning of their period of lactation, is quite different in composition from the fluid produced at a later stage. It is known under the name of colostrum, and the colostral characteristics persist for varying periods in different species. Colostrum is a more viscid fluid than the later milk. It is richer in proteins, particularly lactalbumin, and total solids; unlike ordinary milk, it may even coagulate on being heated. Colostrum contains many cells designated as milk corpuscles, which contain nuclear material, whereas later milk is essentially free from such products. Regarding the fat content, the statistics are somewhat uncertain; but it has been reported that the colostral fat has a higher melting point and more of the lipoids, cholesterol and lecithin, than has ordinary milk.

Many students of the value of milk as a nutrient have placed emphasis on the importance of colostrum in the nutrition of the young. They believe that, owing to its comparative richness in the different types of foodstuffs, colostrum helps to avert considerable declines in body weight and retardation of growth during the earliest period of infancy. For example, in Dr. Lane-Claypon's elaborate survey of milk and its hygienic relations, the following statement appears: There is no doubt that colostrum is of primary importance to the young animal, and there is no way of replacing it. An infant deprived of the colostrum of its mother must endeavor, not always with success, to make up later the disadvantage under which it has labored at the start.¹ When it is added further that colostrum is supposed by some to have a laxative effect, the foundation for the belief of the special value of this secretory product for the first few feedings of the newly born will better be understood.

Other investigators, on the other hand, have not accepted this purely teleological explanation for the occurrence of colostrum. They believe that this product is the temporary result of the imperfect activity of the mammary glands when they start their functioning. The peculiar composition of the fluid, with its comparative richness in cellular constituents, is regarded as a natural result of the washing out of ducts hitherto inactive. Not until the pent up cell debris is discharged does a standardized type of secretion ensue, on this hypothesis. A recent decidedly unique observation, made by Hill² at the Maryland

Agricultural Experiment Station, may help to throw light on the real significance and origin of colostrum. A 4 months' old virgin doe kid spontaneously commenced to secrete milk having all characteristics, properties and chemical composition of the milk secreted by its mother and other goats under observation. At no time, from the earliest secretion of milk, was there any colostrum secreted. This would indicate that the secretion of colostrum is associated with and possibly is produced by the cessation of pregnancy, and may not occur in lactation not associated with pregnancy.

A BRITISH VIEW OF THE AMERICAN MEDICAL ASSOCIATION'S WAR ACTIVITIES

The *British Medical Journal* (June 1) comments on the editorials which appeared in *THE JOURNAL*, April 20 and 27, relative to the call of Surgeon-General Gorgas for five thousand more medical officers. Our confrère observes that the American Medical Association offered its services to the government at the time the United States entered the war just as did the British Medical Association at the beginning of the conflict, and intimates that we are going through their experience when we call only for a sufficient number of volunteers to meet immediate needs. As to this, of course the Surgeon-General is not endeavoring to supply the immediate needs, because these have been supplied; what the Surgeon-General desires is to prepare for future needs. Incidentally we might add that this need may not be far distant, judging from the outlook for rapid enlargement of our National Army.

Referring to the call of our Surgeon-General, the *British Medical Journal* says: "The American Medical Association, like the British Medical Association, has a War Committee which is taking up this call with energy and enthusiasm. The Surgeon-General desires that the five thousand shall be secured without serious hardship to any community, manufacturing concern or other civil activity, and consequently the American Medical Association has begun to investigate the conditions in all parts of the country so as to produce a survey which will 'provide a basis for accurate, intelligent, cooperative effort.'" It goes on to say that our War Committee, as did theirs, deliberated on the advisability of calling for a voluntary draft, which would mean that every physician in active practice would volunteer as a member of the Medical Reserve Corps and be subject to call. "The American Medical Association has deemed this extreme measure [that is, voluntary draft] unnecessary for the present at least. The organization of such a scheme would have afforded excellent training for the work the Association will have to face if ever it becomes necessary in America to pass a military service act in

1. Lane-Claypon, Janet E.: *Milk and Its Hygienic Relations*, London, 1916.

2. Hill, R. L.: 'The Analysis of Milk Secreted by a Suckling Doe Kid, *Jour. Biol. Chem.*, 1918, **33**, 391.

any way comparable to that which has been found necessary in Great Britain." However, attention is called to the relatively large number of medical practitioners in America as compared with the number in Great Britain.

Quoting our statement that "the time has come for every medical man under 55 years of age who is physically qualified to consider seriously for himself the question of his duty to his government," the *British Medical Journal* suggests that "no individual practitioner can possibly judge for himself the medical needs of the community in which he practices or the hardship which he himself will suffer." This fact is being recognized in the work being done by the state and county organizations. It is appreciated that even the county society, except where the county includes large centers of population and consequently a large number of physicians, is seldom qualified to pass judiciously on the question as to whether such and such a man could be spared or should offer his services. The plan now being tested out in some of the Councilor Districts of Nebraska is more likely to result in judicious conservative selection, with personal bias eliminated. There, as mentioned elsewhere in this issue, it is proposed that a committee composed of a representative from each county society in the Councilor District, with the councilor of the district acting as chairman, shall indicate those who should apply for commission and in what order, so that the quota assigned to that district will be available.

WAR GASES AND ANTIVIVISECTIONISTS

According to investigations in progress on animals at the Rockefeller Institute for Medical Research,¹ some degree of analgesia may be produced by at least three widely different war gases—chlorin, phosgen and dimethylsulphate²—and may perhaps be a property of most gases usable for military purposes. Auer, who has conducted the experiments with dimethylsulphate, has reported that in animals gassed with fumes of this compound a strong generalized analgesia is observed within a few hours after exposure to the fumes, which reaches a high degree within twenty-four hours. If the animal survives, the analgesia may still be well marked six months afterward. Furthermore, we are assured that in such animals severe operations may be performed without any anesthetic, the operation eliciting no indications or only slight indications of pain. If these experimental observations find their counterpart in the experience of the battlefield, the analgesic property may be utilizable in gassed soldiers who are also wounded and require surgical intervention.

A further possible practical outcome of the animal experiments with dimethylsulphate fumes relates to the necropsy findings of localized pulmonary edema as a result of gassing.³ The edema rarely involves the whole lung, only a certain lobe or portions of a lobe showing a striking degree of pulmonary edema. It is by no means infrequent to find one lobe fairly saturated, while the rest of the entire lung tissue is practically free from fluid.

According to Auer, this condition is due apparently to the combination of a partial or complete stenosis of a bronchus or bronchiole with inspiratory dyspnea. A marked inflammation of the respiratory passages with pseudodiphtheritic membrane formation may occur locally. Therefore during each inspiration, which is slow, labored and prolonged in the gassed animal, the capillaries of the alveolar walls are subjected to an aspirating action which facilitates or initiates the passage of a transudate into the alveolar spaces. The production of this transudate is probably also aided by a local damage of the alveolar epithelium which the war gas produces. So far as such conditions may be found in gassed soldiers, it is suggested that all inspiratory dyspnea should be ameliorated as much as possible, by tracheotomy and artificial respiration if necessary, aiming by this means to ward off pulmonary edema.

And in the meantime, while patient investigators are trying their best by animal experimentation to kindle a spark of hope for the unfortunate victims of a fiendish mode of warfare, the complacent stay-at-home "antivivisectionists" and their mouthpiece—*Life*—are doing their worst to extinguish it. Shall humanity tolerate such traitors to its cause? Speaking of this "menace of unreason as applied to problems concerning hygienic and moral measures that affect the rights of the individual and society," Joseph Jastrow, professor of psychology in the University of Wisconsin, says in a recent work on "The Psychology of Conviction":

Upon the basis of a similarly inspired opposition—and one quite as unintelligent—we have the anti-vaccinationists; and reaching to higher circles where prejudices, like other beliefs, acquire a more moralized statement, the antivivisectionists. It is gratifying to record that American conditions up to the present have not been as favorably disposed toward this propaganda of unreason as to others; yet it is possible to cite the well-known fact that a popular periodical, which ministers to the relaxations of life and stands for that sanity of view which a sense of humor so notably confers, which circulates among the more cultivated classes of society, incessantly preaches an ignorant and false crusade, brutally misrepresents the noble army of experts who are carrying the triumphs of science into the field of deepest concern to human interests, criticizes without authority and ignores the open records of achievement; while in the main stultifying its own position, it unquestionably fosters the cause of prejudice.

1. Auer, J.: Generalized Analgesia in Cats After Exposure to a War Gas (CH₃)₂SO₄. *Proc. Soc. Exper. Biol. and Med.*, 918, 15, 104.
2. Nciding: *Russk. Vrach*, 1917, 16, 397.

3. Auer, J.: Localized Pulmonary Edema in Cats After the Inhalation of a War Gas (CH₃)₂SO₄. *Proc. Soc. Exper. Biol. and Med.*, 918, 15, 106.

Current Comment

INTERN TRAINING AND STANDARDIZING OF HOSPITALS

The medical graduate who has spent a year or more as an intern in a good hospital is acknowledged to be so much better prepared for his professional career than the man without it, that this internship should be required of all medical students. The making of such a requirement rests with either the medical schools or the state licensing boards. Already eight medical schools have made the intern year mandatory for the degree, and seven state licensing boards have made it an essential qualification for a license. As the intern service becomes an essential part of the training of medical students—a requirement rather than an optional, extramural course—its character and content must be subject to regulation. Each school or state board which adopts this requirement must decide what are the essential qualifications whereby a hospital can provide a satisfactory intern training, and must prepare a list of the hospitals which, in its judgment, possess these qualifications and whose internships it will recognize. The standardization of intern training and the classification of hospitals on the basis of their facilities for intern instruction have been a part of the program of the Council on Medical Education of the American Medical Association since it first took up the work of improving the standards of medical education. The Council has already made two surveys of hospitals and published two editions of a list of those considered qualified to provide acceptable internships. It is now making a third survey and has just sent out a questionnaire to all of the hospitals of the country reporting interns. In cooperation with the Council, the state medical associations are appointing hospital committees to act in an advisory capacity as the survey progresses. Besides the collecting of this information concerning the hospitals which provide internships, and as conditions may require it, it is proposed to make inspections of certain hospitals. In this standardization of hospitals, special emphasis will be laid on the qualifications of the hospital staff, the adequacy of its equipment for modern, scientific diagnostic and therapeutic procedure, the work required of its interns, and the supervision given to that work. It is on these points chiefly that the value of the intern's training depends. The intern year must become of equal rank educationally with the previous four years of the student's medical course. The staffs of hospitals should look on their relation to the intern as that of teacher to student. Some hospitals and their staffs have long felt this responsibility and have given their interns training of high quality. In the majority, however, there will need to be something like a revolution in the hospital's conception of its duty to the intern. The hospital must recognize that while primarily it secures the aid of trained interns so as to provide adequate and proper care for the sick, and thus is better able to fulfil its duty and responsibility to the community,

actually the hospital secures the services of these interns without expense because it is presumed to give the student a quid pro quo in the form of advanced clinical instruction and experience.

THE RESPONSE OF THE MEDICAL PROFESSION

We understand that during the four weeks since the publication of the "Honor Roll" in *THE JOURNAL* (June 1), practically 2,775 physicians have made application for commission in the Medical Reserve Corps and a little less than 200 for commission in the U. S. Naval Reserve Force. Of course, a certain percentage of these will be unable to qualify. However, it shows how well the medical profession is appreciating its responsibility. The question with the large majority of physicians is, Where can I best render service? Apparently many physicians have found the correct answer.

THE HONOR ROLL

May we again call the attention of those who desire to keep the "Honor Roll" (*THE JOURNAL*, June 1) complete and up to date to the fact that this may be done by adding to it the names of those accepting commissions which now appear in *THE JOURNAL* each week. In the present issue the names of 199 physicians are recorded as having accepted commissions in the Medical Reserve Corps of the Army and 180 as having accepted commissions in the U. S. Naval Reserve Force.

ONE FORM OF VOLUNTARY SELECTIVE CONSCRIPTION OF PHYSICIANS

The problem of supplying the required number of officers for the Medical Reserve Corps, without working "serious hardships on any community, manufacturing concern, or any other civil activity," is being solved, not by any hard and fast or harsh plan, and in applying it all over the country, but by simply keeping the principle in mind and applying it where and in the manner best suited to the conditions that exist in the community. A plan workable in one state may be impracticable in another. What may be an ideal scheme in Kansas or Nebraska might be impossible in New York or New Jersey. Among those being put to a practical test is that proposed by Johnson County, Nebraska. The members of this society have agreed that those under fifty-five years of age will apply for commission in the Army or Navy and will agree to accept the commission if granted. The action of this individual society, however, was taken with the understanding that it should be obligatory only in the event of the remaining counties of the Councilor District adopting it. This, as we understand, has been done by all the counties in the District. The plan outlined calls for a committee composed of one representative from each of the county societies of the District, with the Councilor of the District acting as chairman. This committee, therefore, represents not a small community, but a definite and

sufficiently wide territory to eliminate personal prejudice or personal influence; at the same time it has a knowledge of the actual conditions existing in every part of its territory. The plan is really carrying out the principles underlying the selective service regulations. It is an ideal voluntary conscription of the medical profession by itself, one that recognizes the needs of the community and the social condition of the individual practitioner.

Medical Mobilization and the War

Personnel Changes in Expeditionary Forces

Lieut.-Col. George P. Peed, M. C., U. S. Army, who has been in command of American Red Cross Military Hospital No. 1, Neuilly, France, and who later was made medical director of all American hospitals in Paris, has been assigned to new duties involving the organization of other American military hospitals. He has been replaced as military director by Lieut.-Col. Ernest G. Bingham, M. C., U. S. Army, who will correlate the work of all the military hospitals in Paris. Colonel Bingham has been succeeded as commanding officer of the hospital in Neuilly by Major James P. Hutchinson, M. R. C., U. S. Army, medical and surgical director of the institution.

Additions and Improvements to Hospital Buildings at Army Camps

Hospitals, convalescent barracks, infirmaries and nurses' quarters added to the hospital establishment of the Army in this country during the past six months, and in the course of construction by the Construction Division of the Army, have been estimated to cost \$25,173,417.55. The following construction has been completed: A 500-bed addition to both of the hospitals at Camp Gordon and Camp Dodge, including officers' and nurses' quarters, at a cost of \$550,000; additional two-story ward convalescent barracks at Army and National Guard base hospitals, with a capacity of from 300 to 900 beds, with umbrella sheds connecting them, at a cost of \$9,179,000; two regimental infirmaries at each National Army cantonment and one regimental infirmary at each National Guard camp and remount depot, at a cost of about \$344,000; dental infirmary operating building at National Guard camps and National Army cantonments, at an estimated cost of \$912,000; a dental infirmary and an eye, ear, nose, and throat clinic at each National Guard camp at a cost of \$139,200; an additional 1,500-bed hospital at Camp Merritt, at a cost of \$1,115,000; a venereal tent hospital and additional hospital buildings at Camp Stuart, at a cost of \$220,000; a 500-bed hospital at the engineers' training camp at Belvoir, at a cost of \$1,125,000. It has been necessary also to install steam-cooking equipment in the general kitchens of hospitals on account of increased bed accommodations in National Army cantonments and National Guard camps; there have also been constructed nurses' quarters and additions to officers' quarters at a cost approximating \$1,000,000, together with wards and isolation wards for the care of female nurses. These wards are also being established at Camps Merritt, Stuart, Humphreys, Johnston, and General Hospitals No. 2 at Fort McHenry (Md.), No. 6 at Fort McPherson, No. 8 at Otisville (N. Y.), and No. 10 at Fox Hills (N. Y.), at an estimated cost of \$181,350. Sanitary accommodations have also been installed in the wards at the hospitals at National Army cantonments. Automatic fire-alarm systems have been installed in the hospitals of the National Army and National Guard camps, and at Camps Merritt, Stuart, Funston, Walter Reed General Hospital, and General Hospital No. 1 at New York, at an estimated cost of \$1,200,000. Screening is being installed in all hospitals, and steam disinfectors at the National Army and National Guard camps, as well as at Camps Johnston, Stuart, Merritt, and at General Hospital No. 3, Colonia, N. J., at a cost of \$69,721.

The following construction is in progress at the United States Army general hospitals: Additional hospital buildings in tile at the Walter Reed General Hospital, Washington,

D. C., at a cost of \$733,400; a 1,000-bed tuberculosis hospital at Denver, at a cost of \$1,720,000; a 1,000-bed hospital for the same purpose at Azalea, N. C., at an approximate cost of \$1,325,000; a 120-bed hospital at Norfolk, Va., at an approximate cost of \$205,900; a 1,500-bed hospital at United States General Hospital No. 3, Colonia, N. J., at an estimated cost of \$1,632,000; additional two-story nurses' quarters, accommodating 150 nurses, at United States General Hospital No. 6, Fort McPherson, Ga., at an approximate cost of \$88,700; a hospital for the care of blind soldiers at Rolan Park, Md., to be known as the United States General Hospital No. 7, at an estimated cost of \$140,446; a tuberculosis hospital with a capacity for 650 patients at General Hospital No. 8, Otisville, N. Y., at an estimated cost of \$957,000; a hospital which will care for 1,762 patients at Fox Hills, N. Y., at a cost of \$2,075,000; a two-story convalescent hospital at Fort Oglethorpe, Ga., at General Hospital No. 14, accommodating about 1,000 patients, at an estimated cost of \$202,200. The Lakewood Hotel and "Florence in the Pines," at Lakewood, N. J., have been leased for hospital purposes at an annual rental of \$58,500.

Changes in Personnel of British Army Medical Service in France

The Secretary of the War Office announces the retirement of Lieut.-Gen. Sir Arthur T. Sloggett as Director General, due to the fact that he has completed the period of his appointment and passed the age limit for service. Sir Arthur Sloggett is a Fellow of King's College, London, and began his army career in 1881; in 1884 he served on the Indian frontier; in 1896 he was senior medical officer of the British troops with the Dongola Expeditionary Force. He served in the Sudan in 1897-1898 in which campaign he was shot through the chest in the cardiac region; on his recovery he rendered distinguished service in South Africa. He then became P. M. O. of Home and London Districts, and of the Sixth Division in India, becoming Director-General of Medical Services in India in 1911, and Director-General A. M. S. at the War Office on June 1, 1914. He has been in France as Director-General Medical Services of the British armies in that country since October, 1914. His conspicuous success has been due to a great extent to his use of scientific methods and to his sympathy with the views of the civilian physicians who have served under him.

Sir Arthur Sloggett is to be succeeded by Major-General C. H. Burtchaell. Major-General Burtchaell graduated from the University of Dublin in 1889, entering the army in 1891. He served in the North-Western Frontier campaign in India in 1897-1898, being present at all the principal battles, and throughout the South African war, and in 1902 was appointed principal medical officer to the South African Constabulary; in 1905 he rejoined the army. In 1907 he organized the experimental scheme of sanitary training for fighting troops later adopted for the army. In 1908 he became director of the medical service work of the first medical tour held in the British Army, in 1910 becoming Assistant Director-General, Army Medical Services, War Office, having served as Assistant Director-General Medical Services in France since October, 1914. He was promoted to colonel in March, 1915, and to temporary Surgeon-General in October, 1917. He has distinguished himself in the present war, being mentioned seven times in dispatches and being awarded the C. B., the C. M. G., and the Legion of Honour. He is especially esteemed by the Dominion forces, having been associated with them for three years in the South African campaign.

COMMISSIONS ACCEPTED, MEDICAL RESERVE CORPS, U. S. ARMY

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W. C. GIBSON, Suffolk

WASHINGTON

M. G. STURGIS, Seattle

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J. A. SANDERS, Oceana

WISCONSIN

G. E. MOORE, Madison
W. E. BRADBURY, Millsville
G. M. MALKIN, Milwaukee
E. E. DOCKERY, Ripon

To Washington, D. C., for consultation, and on completion to his proper station, from Camp Shelby, Col. WILLIAM F. LEWIS. For duty in the Surgeon General's Office, from Walter Reed General Hospital, Major RAYMOND C. BULL.

The following order has been revoked: To Hoboken, N. J., for temporary duty, from Camp Cody, Lieut.-Col. JOHN B. ANDERSON.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Jackson, Columbia, S. C., for duty, from Camp Gordon, Major CABOT LULL, Jr., Birmingham. With the board examining the troops for cardiovascular diseases, from Camp A. A. Humphreys, Lieut. HENRY C. HARRIS, Birmingham.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. EDWARD L. GIBSON, Enterprise.

To Camp Lee, Petersburg, Va., for duty, from Camp Wheeler, Lieut. FRANCIS M. INGE, Mobile.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Lieut. THOMAS C. SAVAGE, Demopolis.

To Lincoln, Nebr., University of Nebraska, for duty, from Fort Riley, Lieut. RUSSELL CALLEN, Birmingham.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Williamsbridge, N. Y., for temporary duty, and on completion to Hoboken, N. J., for duty, from Fort Riley, Major WESTLEY E. DRENNEN, Birmingham.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Camp Devens, Lieut. MAC McLENDON, Marianna.

To Camp Grant, Rockford, Ill., for duty, from Camp Pike, Capt. SCOTT C. RUNNELS, Little Rock.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. NEWMAN B. BURCH, Colt.

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Lieut. CHARLES G. MINKLE, Batesville.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Oglethorpe, Lieut. MAURICE F. LAUTMAN, Hot Springs.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Pike, Lieut. FRANK L. CASTLEBERRY, Peragold.

To Cape May, N. J., base hospital, from Camp Wheeler, Lieut. WALLACE D. ROSE, Little Rock.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. JOHN S. WILSON, Plantersville; from Fort Oglethorpe, Lieut. ERNEST DARNALL, Widener.

California

To Camp Fremont, Palo Alto, Calif., base hospital, from San Francisco, Capt. WILLIAM L. ADAMS, Fresno.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Kearny, Capt. CHARLES A. WAYLAND, San Jose.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. HARVEY L. THORPE, Los Angeles.

To Camp Lewis, American Lake, Wash., for duty, Capt. DONALD W. MACKENZIE, Yermo; Lieut. ALSON A. SHUFELT, San Francisco. With the board examining the troops for cardiovascular diseases, Lieut. DONALD CASS, San Francisco.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Kearny, Capt. LIONEL D. PRINCE, San Francisco.

To Camp Pike, Little Rock, Ark., base hospital, Capt. HENRY H. LISSNER, Los Angeles.

To Camp Shelby, Hattiesburg, Miss., as orthopedic surgeon, from Chicago, Lieut. OSCAR P. STOWE, Mill Valley.

To Fort Oglethorpe for instruction, Lieuts. JOHN R. SHEA, Los Angeles; HORACE H. MCCOY, San Francisco; from Fort Riley, Capt. BERTRAM C. DAVIES, Los Angeles.

To Lakewood, N. J., for duty, from Camp Dodge, Capt. BERTNARD SMITH, Los Angeles.

To report by wire to the commanding general, western department, for assignment to duty, Lieut. WALTER R. SCROGGS, Berkeley.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Custer, Battle Creek, Mich., Capt. LAWRENCE H. HOFFMAN, San Francisco.

To San Francisco, Calif., for instruction, and on completion to Camp Kearny, Linda Vista, Calif., base hospital, Lieut. JAMES A. GUILFOIL, San Luis Obispo. On completion to their proper stations, from Camp Fremont, Lieut. CHANNING HALL, Alameda; from Camp Kearny, Capt. JOHN A. BALSLEY, Santa Monica. To Letterman General Hospital, for temporary duty, Lieuts. EDWARD R. COX, Los Angeles; CHARLES A. CRAIG, San Francisco.

To Talmadge, Calif., Mendocino State Hospital, for intensive training, Lieut. MERVYN H. HIRSCHFELD, San Francisco.

The following order has been revoked: To report by wire to the commanding general, western department, for assignment to duty, Lieut. FRED O. BUTLER, Eldridge.

Colorado

To Army Medical School for instruction, from Camp Cody, Lieut. WILLIAM D. FLEMING, Denver.

To Jackson, Barracks, La., for duty, Capt. ALBERT L. STUBBS, La. Junta.

To report to the commanding general, southern department, for duty, from Fort Sam Houston, Capt. FRED F. STOCKING, Floresta.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to his proper station, from Jefferson Barracks, Lieut. ARCHIBALD J. CHISHOLM, Antonio.

To San Francisco, Calif., for duty, from Fort Riley, Lieut. ARTHUR G. TAYLOR, Grand Junction.

Connecticut

To Camp Devens, Ayer, Mass., base hospital, Lieut. HENRY C. DIXON, Bridgeport. For duty, from Army Medical School, Lieut. HAROLD THOMAS, Hartford; from Fort Oglethorpe, Lieut. BERNARD F. GILCHRIST, New Haven.

To Camp Dix, Wrightstown, N. J., for temporary duty, from Army Medical School, Lieut. HERMAN H. HURWITZ, Hartford.

To Camp Jackson, Columbia, S. C., for duty, from Fort Sam Houston, Capt. JAMES C. WILSON, Hartford. As a member of the tuberculosis examining board, from New Haven, Lieut. MARCUS C. BECK, Bridgeport.

CORRECTION

Under "Orders to Officers of Medical Reserve Corps" in the issue of June 8 appeared the following order: To Camp Kearny, Linda Vista, Calif., base hospital, Capt. JAMES W. HOUSTIS, Los Angeles. This should have been, Capt. JAMES W. HEUSTIS.

PROMOTIONS

To colonel, M. C., N. A., Majors J. M. T. FINNEY and WILLIAM S. THAYER; to lieutenant-colonel, Majors THOMAS R. BOGGS, JAMES T. CASE, GEORGE W. GOLDTHWAITE, JAMES F. McKERNON, CHARLES H. PECK, THOMAS A. SALMON, HUGH H. YOUNG, N. ALLISON and E. L. KEYES.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, and on completion to his proper station, from Camp Hancock, Capt. EDMOND J. MELVILLE. For instruction from Camp Sevier, Lieut. HARLIN G. TUCKER; from duty as officer in the Medical Reserve Corps, Lieuts. EDWARD A. LANE, RALPH M. DEGAAFF.

To Asheville, S. C., for inspection, and on completion to his proper station, from Biltmore, Lieut.-Col. WILLIAM H. SMITH.

To Camp A. A. Humphreys, Accotink, Va., as assistant to camp surgeon, from Camp Lee, Lieut. HENRY R. WESTON.

To Camp Cody, Deming, N. M., as assistant to camp surgeon, from Fort Slocum, Major ROBERT E. PARRISH.

To Camp Custer, Battle Creek, Mich., Fort Oglethorpe and Camp Pike, Little Rock, Ark., base hospitals, and on completion to his proper station, from Camp Dodge, Lieut.-Col. FRANK C. TODD.

To Camp Grant, Rockford, Ill., as assistant to camp surgeon, from Fort Clark, Major GEORGE B. LAKE.

To Camp MacArthur, Waco, Texas, as camp surgeon, from Southern Department, Major JOHN T. AYDELOTTE.

To Camp Merritt, Hoboken, and Camp Rariton, Metuchen, N. J., for inspection, and on completion to his proper station, Lieut.-Col. FLOYD KRAMER.

To Camp Pike, Little Rock, Ark., as camp surgeon, from Charleston, Major GARFIELD L. McKINNEY.

To Cape May, N. J., base hospital, from Camp Devens, Lieut. ARTHUR H. NYLEN.

To Charleston, S. C., Hot Springs, N. C., Knoxville, and Nashville, Tenn., Huntsville, Ala., Cleveland, Ohio, and Pittsburgh, Pa., for duty, and on completion to his proper station, Lieut.-Col. JOHN A. HORNSBY. To Charleston, S. C., for duty, from Camp Greene, Major ERNEST A. GATES.

To Fort Leavenworth, Kan., Department Laboratory, for duty, from Camp Doniphan, Lieut. FREDERIC H. THORNE.

To Hoboken, N. J., for duty, from Camp Custer, Lieut.-Col. NEAL N. WOOD.

To Mineola, L. I., N. Y., Hazelhurst Field, for duty, and on completion to his proper station, Col. WILLIAM O. OWEN.

To Newport News, Va., for consultation, and on completion to his proper station, Col. PEARCE BAILEY.

To New York City for duty, and on completion to his proper station, Col. WINFORD R. SMITH, Lieut.-Col. EDWARD B. VEDDER.

To Philadelphia, Pa., University of Pennsylvania, New York City, Bellevue Hospital, and Rockefeller Institute, for inspection, and on completion to his proper station, Lieut.-Col. RAYMOND P. SULLIVAN.

To Plattsburg Barracks, N. Y., for duty, from Fort Porter, Lieut.-Col. THOMAS D. WOODSON.

To *Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. SIDNEY C. DALRYMPLE, Waterbury.
To *Mincola, L. I., N. Y.*, Hazellhurst Field, Signal Corps Aviation School, for duty, Capt. ARTHUR E. BRIDES, New Haven.
To *New Orleans, La.*, Charity Hospital, for instruction, and on completion to his proper station, from Camp Gordon, Major WILLIAM F. VERDI, New Haven.
To *Rochester Minn.*, Mayo Clinic, for instruction, and on completion to *Camp Custer*, Battle Creek, Mich., base hospital, from Fort Oglethorpe, Major HARRY M. LEE, New London.
To *Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion to *Fort McPherson, Ga.*, for temporary duty, from Fort Oglethorpe, Lieut. JAMES A. HARTEN, New Haven.
The following order has been revoked: To *Camp Jackson*, Columbia, S. C., for duty, Lieut. HYMAN A. LEVIN, New Haven.

Delaware

To *Camp Meade*, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. ROBERT D. HIGGINS, Wilmington.
To *Camp Wadsworth*, Spartanburg, S. C., for duty, Lieut. HARRY C. HICKMAN, Wilmington.
To *Fort Oglethorpe* for instruction, Capt. HARRISON W. HOWELL, Wilmington.

District of Columbia

To *Camp Zachary Taylor*, Louisville, Ky., for duty, from Walter Reed General Hospital, Major DANIEL L. BORDEN, Washington.
To *New York City*, Neurological Institute for intensive training, Lieut. DORREL G. DICKERSON, Washington.
To *Washington, D. C.*, American University, for duty, Lieut. HERBERT C. DALLWIG, Washington.

Florida

To *Camp Gordon*, Atlanta, Ga., for duty, from Fort Oglethorpe, Capt. HARRY B. McEUN, Quincy.
To *Camp Wadsworth*, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. RALPH J. GREENE, Loughridge.
To *Fort McPherson, Ga.*, for temporary duty, Capt. WILLIAM S. MANNING, Jacksonville.
To *Fort Oglethorpe* for instruction, Capt. J. BROWN WALLACE, Tampa; Lieuts. EVANS L. HUGGINS, Freeport; RAYMOND D. TOMPKINS, Jasper; JOHN C. VINSON, Tampa; from Camp Joseph E. Johnston, Lieut. ODIS G. KENDRICK, Tallahassee.

Georgia

To *Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Capt. DANIEL B. EDWARDS, Savannah.
To *Camp Jackson*, Columbia, S. C., base hospital, Lieut. MORTIMER A. EHRLICH, Bainbridge.
To *Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, Capt. SAMUEL A. CLARK, Eatonton; Lieuts. GEORGE O. ALLEN, Fargo; OLIN S. COFER, Smyrna.
To *Camp Lee*, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. THOMAS R. MOYE, Alapaha.
To *Camp Meade*, Annapolis Junction, Md., for duty, from Camp Pike, Capt. RICHARD T. O'NEIL, Atlanta; from Fort Oglethorpe, Lieut. EDWIN N. MAUER, Atlanta.
To *Camp Sevier*, Greenville, S. C., base hospital, Lieut. HARRY B. BRADFORD, Atlanta.
To *Camp Shelby*, Hattiesburg, Miss., base hospital, from Camp Gordon, Major JAMES E. PAULIN, Atlanta.
To report by wire to the Governor of the State of Georgia, as medical adviser, from Camp Hancock, Major WILLIAM C. LYLE, Augusta.
To *Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion to *Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. HAMPTON M. BARKER, Flintstone. On completion to *Williamsbridge, N. Y.*, for duty, Lieut. CHARLES E. WAITS, Atlanta.
To *San Francisco, Cal.*, for instruction, and on completion to his proper station, from Camp Cody, Capt. WILLIAM B. OREAR, Savannah.
Resignation of Lieut. CARL B. WELCH, Tifton, accepted.

Idaho

To *San Francisco, Cal.*, for instruction, and on completion to his proper station, from Camp Cody, Capt. CHARLES H. SPRAGUE, Pocatello.

Illinois

To *Army Medical School* for instruction, from Camp MacArthur, Lieut. CLIFFORD E. BORGIN, Chicago.
To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. CARL G. S. RYDIN, Chicago.
To *Camp Custer*, Battle Creek, Mich., base hospital, Capt. HAMMER C. IRWIN, Springfield. As a member of the board examining the troops for cardiovascular diseases, Capt. NEWELL C. GILBERT, Chicago. As orthopedic surgeon from Army Medical School, Lieut. RUSSELL A. GILMORE, Chicago.
To *Camp Devens*, Ayer, Mass., base hospital, Lieut. HARRY E. BUNDY, Chicago. For duty, from Fort Oglethorpe, Lieuts. LEWIS K. EASTMAN, JACOB V. KAHN, Chicago.
To *Camp Grant*, Rockford, Ill., as orthopedic surgeon, from Chicago, Lieut. MIECISLAUS H. KOSTRZEWSKI, Chicago. Base hospital, from Chicago, Lieut. HARRY S. SULLIVAN, Chicago. For duty, from Camp Custer, Lieut. HOWARD S. PERRY, Chicago.
To *Camp Greene*, Charlotte, N. C., base hospital, from Army Medical School, Lieut. FRANK X. MOCK, Chicago.
To *Camp Jackson*, Columbia, S. C., as orthopedic surgeon, from Chicago, Lieut. ELVEN J. BERKEISER, Aurora. Base hospital, Lieuts. HARRY SERED, NICHOLAS C. STAM, Chicago. For duty, from Fort Oglethorpe, Lieut. CLARENCE E. FRYBERGER, Oak Park.
To *Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, from Fort Oglethorpe, Capt. FREDERICK I. BROWN, Chicago.
To *Camp Kearny*, Linda Vista, Calif., with the board examining the command for nervous and mental diseases, from Fort Riley, Lieut. ELMER L. CROUCH, Jacksonville.
To *Camp Lee*, Petersburg, Va., for duty, from Camp Devens, Capt. JOHN G. FROST, Chicago; Lieut. FRANK E. SHIPMAN, Paris.
To *Camp Lewis*, American Lake, Wash., for duty, from Fort Riley, Lieut. EDWARD W. SIKES, Freeport.
To *Camp Meade*, Annapolis Junction, Md., for duty, from Camp Devens, Lieut. JOHN W. MARTIN, Oliver; from Fort Oglethorpe, Lieut. AMBLER C. PRUNER, Chicago.

To *Camp Pike*, Little Rock, Ark., for duty, from Fort Riley, Capt. IRA J. SCOTT, Danville; Lieuts. FRANKLIN W. PALMER, Chatsworth; OLIVER I. STATLER, Huntley.

To *Fort Leavenworth, Kan.*, for duty, Lieut. HARVEY T. LITTLE, Chicago.

To *Fort McPherson, Ga.*, for duty, Lieut. LOUIS M. GREENBURG, Chicago.

To *Fort Monroe, Va.*, for temporary duty, from Fort Riley, Capt. REUBEN J. ATWOOD, Chicago.

To *Fort Oglethorpe* as instructor, from Chicago, Major JOHN RIDLON, Chicago; from New York City, Capt. EDWARD S. BLAINE, Chicago. For instruction, Capt. ARTHUR M. PURVES, Des Plaines; CORYDON DEK. BUNDY, Sadorus; Lieuts. JAMES V. ANDERSON, STEPHEN CZAJKOWSKI, PHILIP B. GREENBERG, JAMES T. GREGORY, REUBEN C. HANCHETT, CLAUDE A. LINK, LEONARD F. SKLEBA, JAMES STEVENSON, GEORGE L. VENABLE, Chicago; ELMER E. NYSTROM, Peoria; from San Antonio, Lieut. IRVING W. STEINER, Harvey.

To *Fort Sam Houston, Texas*, for duty, from Camp Beauregard, Lieut. STEPHEN C. BRADLEY, Marshall; from Camp MacArthur, Lieut. RAYMOND E. HILLMER, La Grange.

To *Fort Screven, Ga.*, with the board examining the command for nervous and mental diseases, from Camp Shelby, Lieut. WALTER C. COOK, Peoria.

To *Lakehurst, N. J.*, for duty, from Camp Dix, Lieut. RELZA N. SHERMAN, Fairmount.

To *Lakewood, N. J.*, for temporary duty, Lieut. SAMUEL B. LEISER, Herscher.

To *New Haven, Conn.*, for duty, Lieuts. OSCAR COHEN, Joliet; JAMES M. MORAN, JACOB SCHLESINGER, Oak Forest.

To *Philadelphia, Pa.*, Medical Arts Building, for instruction, from New York City, Lieut. RAYMOND E. DAVIES, Chicago.

To *Plattsburg Barracks, N. Y.*, for duty, from Lakewood, Major DANIEL A. K. STEELE, Chicago.

To *Rochester, Minn.*, Mayo Clinic, for instruction, and on completion to *Camp Gordon*, Atlanta, Ga., base hospital, Lieut. GEORGE D. J. GRIFFIN, Chicago. On completion to his proper station, from Camp Grant, Lieut. JOHN M. BERGER, Chicago.

To *Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion to *Camp Gordon*, Atlanta, Ga., base hospital, Lieut. PAUL E. GREENLEAF, Bloomington.

To *San Diego, Calif.*, Signal Corps Aviation School, for duty, from San Francisco, Capt. FRANK A. STOCKDALE, Coal City.

To *San Francisco, Calif.*, Letterman General Hospital, for temporary duty, from Camp Fremont, Lieut. FRANK J. SCHICK, Chicago.

To *Washington, D. C.*, for duty in the Surgeon-General's Office, from Camp Travis, Lieut. EUGENE S. TALBOT, Chicago.

Resignation of Lieut. ALONZO T. GRIFFIN, Centralia, accepted.
The following order has been revoked: To *Camp Colt*, Gettysburg, Pa., for duty, Lieut. MORRIS B. KARATZ, Chicago.

Indiana

To *Camp Lee*, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. JOHN F. DOWNING, Yorktown.

To *Camp Travis*, Fort Sam Houston, Texas, for duty, Lieut. GEORGE M. COOK, Mooresville.

To *Fort Benjamin Harrison, Ind.*, for duty, Capt. MALACHI P. COMBS, Terre Haute; from Camp Dix, Capt. GEORGE C. VAN MATER, Peru.

To *Fort Oglethorpe* for instruction, Capt. GEORGE H. VAN KIRK, Kentland; Lieuts. OLIVER M. JOHNSON, Kokomo; JOSEPH A. STOECKINGER, Mishawaka.

To *Fort Sam Houston, Texas*, for duty, from Camp Beauregard, Capt. JAMES A. WORK, JR., Elkhart.

To *Fort Warren, Mass.*, for duty, Capt. LUKE P. V. WILLIAMS, Whiteland, Lieut. WILLIAM T. FISHER, Shelbyville.

To *Hoboken, N. J.*, for duty, from Camp Meade, Lieuts. HERMAN H. GICK, Indianapolis; OLIVER E. GRIEST, Lafayette.

To *Jackson Barracks, La.*, for duty, Lieut. MORA S. BULIA, Richmond.

To *San Francisco, Calif.*, for instruction, and on completion to his proper station, from Camp Cody, Capt. BUDD VAN SWERINGEN, Fort Wayne.

Iowa

To *Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. HARRY J. SCHOTT, Sioux City.

To *Camp Forrest*, Chickamauga Park, Ga., for duty, Capt. ERIE D. TOMPKINS, Clarion.

To *Camp Jackson*, Columbia, S. C., for duty, from Dansville, Lieut. MILTON A. GIVEN, Des Moines.

To *Camp Lee*, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. CALVIN W. HARNED, Des Moines. For duty, from Fort Riley, Lieut. JOHN R. CHRISTENSEN, Eagle Grove.

To *Camp Lewis*, American Lake, Wash., for duty, from Douglas, Lieut. ARTHUR L. DRUET, Larchwood.

To *Camp Meade*, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Capt. GEORGE R. HILL, Charter Oak.

To *Camp Pike*, Little Rock, Ark., as orthopedic surgeon, from Boston, Capt. EARL D. McCLEAN, Oskaloosa. For duty, Lieut. RAYMOND L. LATCHEM, Walnut.

To *Fort Leavenworth, Kan.*, for duty, Lieut. DAVID M. NYQUIST, Eldora.

To *Fort Oglethorpe* for instruction, Capt. NELSON McP. WHITEHILL, Boone; ERIE D. TOMPKINS, Clarion.

To *Hoboken, N. J.*, for duty, Lieut. CHESTER H. JOHNSON, Cherokee; from Camp Grant, Lieut. ELLIOTT S. STRONG, Iowa City.

Kansas

To *Camp Dodge*, Des Moines, Ia., base hospital, from Fort Riley, Lieut. FRANCIS J. MOFFATT, Clyde.

To *Camp Gordon*, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. LOT D. MABIE, Kansas City.

To *Camp Jackson*, Columbia, S. C., base hospital, from Fort Riley, Lieut. GUY A. FINNEY, Wamego.

To *Camp Pike*, Little Rock, Ark., for duty, Lieuts. JAMES A. FULTON, Kansas City, JOHN R. CRAWFORD, Tonganoxie.

To *Camp Zachary Taylor*, Louisville, Ky., base hospital, Capt. GORDON M. GAFFORD, Kinsley.

To *Fort Oglethorpe* for instruction, Lieuts. EDWARD D. RODDA, Arma; WILLIAM O. WHITAKER, Wichita.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Dodge, Des Moines, Ia., base hospital, Lieut. FREDERICK P. MANN, Valley Falls.

To San Francisco, Calif., for duty, from Fort Riley, Capt. LEONARD S. STEADMAN, Junction City.

Kentucky

To Camp Holabird, Colgate, Md., for duty, from Camp Beauregard, Major PHILIP H. STEWART, Paducah.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. BERTON M. BROWN, Quicksand.

To Camp Lee, Petersburg, Va., for duty, from Camp Sheridan, Capt. GUY P. GRIGSBY, Louisville; from Fort Oglethorpe, Capt. SIDNEY J. ANDERSON, Midway; Lieut. THOMAS H. NELSON, Covington.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. OLIVER P. HENRY, Kildan.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. TRAVIS D. RUDD, Hopkinsville.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieut. EARL J. EVERSOLE, Simpsonville; from Fort Oglethorpe, Lieut. EDGAR C. HAWKINS, Emmett.

To Fort Bayard, N. H., for temporary duty, from Fort Monroe, Capt. JAMES R. PEABODY, Louisville.

To Fort Benjamin Harrison, Ind., for duty, Lieut. WILLIAM M. EWING, Cave City.

To Fort Oglethorpe for instruction, Capt. JOHN KING FREEMAN, Louisville.

To Fort Thomas, Ky., with the board examining the command for nervous and mental diseases, Lieut. AVONIA E. KISER, Paris.

To Lakewood, N. J., for temporary duty, Lieut. JOSEPH C. MONNIER, Louisville.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Dodge, Des Moines, Ia., base hospital, from Fort Oglethorpe, Lieut. DAVID H. BUSH, Mt. Sterling.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Bellevue Hospital, for further instruction, and on completion to his proper station, from Camp Logan, Major JOHN H. BLACKBURN, Bowling Green.

Louisiana

To Camp Sherman, Chillicothe, Ohio, as member of the board examining the command for tuberculosis, from Camp Shelby, Lieut. EWELL A. KLEINPETER, Thibodaux.

To Fort Oglethorpe for instruction, Lieut. ALBERT S. COOPER, Mansfield. For instruction in orthopedic surgery, from Washington, Capt. JOHN T. O'FERRALL, New Orleans.

To report to the commanding general, Philippine Department, for duty, from Camp Shelby, Lieut. HENRY C. LOCHTE, New Orleans.

The following order has been revoked: To Fort Oglethorpe for instruction, Capt. SAMUEL J. BAKER, Madisonville.

Maine

To Fort Oglethorpe for instruction, Lieut. LOREN F. CARTER, Bangor.

To Fort Warren, Mass., for duty, Lieut. LEO F. HALL, Lewiston.

To Markleton, Pa., for duty, from Camp Sevier, Lieut. CHARLES B. SYLVESTER, Harrison.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Dodge, Capt. HORACE K. RICHARDSON, Bradford.

Maryland

To Aberdeen, Md., for duty, from Camp Jackson, Lieut. JAY H. STIER, Perryman.

To Army Medical School for instruction, from Camp Wheeler, Lieut. CLARENCE M. REDDIG, Baltimore.

To Camp Grant, Rockford, Ill., base hospital, Lieut. JAMES J. CHISOLM, Baltimore.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. EARL H. DOEGE, Baltimore; from Camp Bowie, Lieut. HOWARD L. WHEELER, Baltimore.

To Camp Lee, Petersburg, Va., base hospital, Lieut. VINCENT T. SHIPLEY, Baltimore; HENRY B. RICHARDSON, Windsor Hills.

To Fort McPherson, Ga., for duty, Lieut. FRANKLIN C. BLEDER, Baltimore.

To Fort Oglethorpe for instruction, Lieut. GEORGE G. E. CROSS, CHARLES S. NEISTADT, Baltimore; WILLIAM C. CHANEY, Chaney; from Camp A. A. Humphreys, Lieut. JOSEPH E. NORRIS, Baltimore.

To Fort Sam Houston, Texas, for duty, from Fort Thomas, Lieut. HENRY E. AUSTIN, Baltimore; from New York City, Capt. FRANK N. HOFFMEIER, Hagerstown.

To New Haven, Conn., for duty, Lieut. PAUL W. CHRISTMAN, ALBERT EISENBERG, Baltimore.

To New York City, Cornell Medical College, for instruction, and on completion to his proper station, from Army Medical School, Major HOWARD E. ASHBURY, Baltimore.

Massachusetts

To Boston, Mass., for consultation, and on completion to his proper station, from Walter Reed General Hospital, Major FREDERIC J. COTTON, Boston. Harvard Graduate School of Medicine, for instruction, Lieut. ARMIN KLEIN, Boston.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. GEORGE A. CLARK, Holyoke; from Chicago, Capt. CLARENCE H. DOBSON, Conway.

To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Lieut. CARL BEARSE, Boston. To examine the command for nervous and mental diseases, from Camp Shelby, Lieut. FRANCIS S. CALDICOTT, Milford.

To Camp Lee, Petersburg, Va., base hospital, from Surgeon-General's Office, Lieut. FREDERIC B. M. CADY, Cambridge. For duty, from Camp Devens, Lieut. WILLIAM J. DILLON, Springfield.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. JAMES M. McTIERNAN, Quincy.

To Camp Upton, L. I., N. Y., with the board examining the command for nervous and mental diseases, Capt. HANSOM A. GREENE, Palmer.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Capt. JAMES R. TORBERT, Boston.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Oglethorpe, Capt. ERNEST B. YOUNG, Boston. For duty, from Camp Lee, Lieut. EARLE H. MacMICHAEL, Malden.

To Fort McHenry, Md., for duty, from Fort H. G. Wright, Capt. FRANK A. DAVIS, Boston.

To Fort McPherson, Ga., for duty, Lieut. FREDERICK PARKER, JR., Bedford.

To Fort Oglethorpe for instruction, Capt. ALFRED C. SMITH, Brockton; GEORGE H. MAXFIELD, Chelsea; Lieut. CARL C. PERSONS, Maynard.

To Fort Sam Houston, Texas, for duty, from Camp Beauregard, Capt. CHARLES F. CANEDY, Greenfield.

To Hoboken, N. J., for duty, from Army Medical School, Capt. ARTHUR M. WORTHINGTON, Dedham; from Camp Devens, Lieut. WILLIAM A. MONCRIEFF, New Bedford.

To Lakewood, N. J., for duty, from the Surgeon-General's Office, Major FRANCIS W. PEABODY, Cambridge; from Camp Gordon, Lieut. THOMAS McC. MABON, Boston. For temporary duty, Lieut. JOSEPH T. WEARN, Boston.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Devens, Ayer, Mass., base hospital, Capt. JOHN HOMANS, Brookline. On completion to Camp Upton, L. I., N. Y., base hospital, from Fort Oglethorpe, Lieut. EDWARD H. EWING, Stoughton.

To Washington, D. C., for consultation, and on completion to Boston, Mass., for duty, and on completion to Cape May, N. J., base hospital, from Cape May, Capt. HARRY P. CAHILL, Boston. For temporary duty, and on completion to the inactive list, from Camp Meade, Major SAMUEL J. MIXTER, Boston.

The following order has been revoked: To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HARRY A. WALKER, Somerville.

Michigan

To Baltimore, Md., Curtis Bay, for duty, from Fort Oglethorpe, Lieut. JOHN K. BURNS, JR., Detroit.

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Army Medical School, Lieut. ROBERT H. BAKER, Ann Arbor. Base hospital, Lieut. ROLAND S. CRON, Ann Arbor. For duty, Lieut. LEROY E. HULL, Detroit.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. DANIEL R. DONOVAN, Detroit.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Capt. HUGH McD. BEEBE, Ann Arbor.

To Camp Grant, Rockford, Ill., for duty, from Camp Dodge, Lieut. GROVER C. WOOD, Detroit.

To Camp Greene, Charlotte, N. C., as a member of the board examining the commands for tuberculosis, from Camp Shelby, Lieut. JOHN J. MILLER, Berlin.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. GORDON H. YEO, Big Rapids.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. WILLIAM J. KANE, Detroit.

To Camp Lee, Petersburg, Va., for duty, Lieut. JAMES M. SEVERSON, Detroit.

To Camp Meade, Annapolis Junction, Md., for duty, Capt. FLOYD W. CLEMENTS, Detroit.

To Camp Pike, Little Rock, Ark., for duty, Lieut. LEON J. GIBSON, Bay City.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. RAYMOND D. SLEIGHT, Battle Creek.

To Camp Wheeler, Macon, Ga., with the board examining the command for cardiovascular diseases, from Camp Sevier, Lieut. CHARLES E. LEMMON, Detroit.

To Cape May, N. J., base hospital, from Fort Oglethorpe, Lieut. WILLIAM R. McCLURE, Detroit.

To Hoboken, N. J., for temporary duty, from New York City, Capt. EUGENE B. STEBBINS, Ironwood.

To Ithaca, N. Y., Cornell University, for duty, from Mount Clemens, Capt. ROBERT V. GALLAGHER, Battle Creek.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. THOMAS E. HACKETT, Jackson.

Minnesota

To Camp Dodge, Des Moines, Ia., as a member of the board examining the troops for cardiovascular diseases, Lieut. MORSE J. SHAPIRO, Minneapolis.

To Camp Grant, Rockford, Ill., for duty, from Jefferson Barracks, Capt. EARL H. MARCUM, Bemidji; from duty as a contract surgeon, Capt. RALPH E. MORRIS, Minneapolis.

To Camp Jackson, Columbia, S. C., for duty, from Camp Sherman, Lieut. ADOLPH E. DETUNCO, Preston.

To Camp Kearny, Linda Vista, Calif., with the board examining the command for nervous and mental diseases, from Fort Riley, Lieut. ABRAHAM F. STRICKLER, Sleepy Eye.

To Camp McClellan, Anniston, Ala., base hospital, from New York City, Lieut. PAUL S. EPPERSON, Siwabik.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Lee, Lieut. CARL C. COWIN, Minneapolis; from Camp Sherman, Lieut. JOHN J. DONOVAN, Litchfield.

To Fort Oglethorpe for instruction, Capt. THOMAS E. FLINN, Redwood Falls; Lieut. BERNARD N. SOROSE, Detroit; THOMAS J. TRUTNA, Silver Lake; HAROLD E. HALLSICK, St. Paul.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Lieut. DELPHIN W. KOHLER, Albany; from Camp Meade, Capt. WILLIAM V. LINDSAY, Winona.

To Fort Sheridan, Ill., as orthopedic surgeon, from Fort Oglethorpe, Capt. JAMES A. McLAUGHLIN, Minneapolis.

To Minneapolis, Minn., for duty, Capt. RALPH ST. J. FERRY, Minneapolis.

To Portland, Ore., Yeon Building, for duty, Lieut. ARTHUR A. WOHLRABE, Mankato.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to his proper station, from Camp Dodge, Capt. FRANK M. MANSON, Worthington. On completion to Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. JOHN B. DOYLE, St. Paul.

The following order has been revoked: To Camp Greene, Charlotte, N. C., base hospital, from Hoboken, Lieut. JOSEPH C. MICHAEL, St. Paul.

Mississippi

To Fort Oglethorpe for instruction, Capt. JOHN R. KITTRELL, Laurel; Lieut. CARL A. DAY, Bentonis; JESSE R. STAMPER, Decatur; ROBERT GOING, Vicksburg.

To the inactive list, from Camp Hancock, Lieut. FRANK S. HILL, Grenada.

Missouri

To Army Medical School for instruction, Lieut. BENJAMIN W. LEWIS, St. Louis.

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Chicago, Lieut. LEON V. URBANOWSKI, St. Louis. Base hospital, from Kansas City, Capt. CALVIN L. COOPER, Kansas City.

To Camp Devens, Ayer, Mass., base hospital, Lieuts. HUGH G. McKAY, Bangor; WILBUR K. BROWN, St. Louis.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Wheeler, Lieut. WILLIAM F. MITCHELL, St. Louis.

To Camp Grant, Rockford, Ill., for duty, from Camp Custer, Lieut. FRED E. DARGATZ, Kansas City.

To Camp Jackson, Columbia, S. C., as orthopedic surgeon, from Chicago, Lieut. CHARLES F. DAVIS, Kansas City. Base hospital Lieuts. DAVID P. FERRIS, ALEXANDER C. KIRBY, St. Louis; from Camp Sherman, Capt. ORRIL L. E. SUGGETT, St. Louis.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Capt. OTTO L. MUENCH, Washington; Lieut. GOUGH H. TARR, Coplar; GEORGE B. PENNINGTON, West Walton.

To Camp McClellan, Anniston, Ala., base hospital, Capt. FRANK McD. DENSLOW, Kansas City.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. ALVIN H. DIEHR, St. Charles; from Fort Oglethorpe, Lieut. ERNEST M. McKENZIE, St. Louis.

To Fort McPherson, Ga., for duty, Capt. WILLIAM P. GLENNON, St. Louis.

To Fort Oglethorpe for instruction, Capt. CHARLES A. STONE, St. Louis; Lieuts. EZRA L. MEADS, Bennetts Mill; GERHARD KAEMMERLING, Joplin; NATHAN ZOGLIN, Kansas City; KENNETH C. PEACOCK, St. Louis; GEORGE W. ELDERS, Ware.

To Fort Riley as a member of the board examining the troops for cardiovascular diseases, Lieut. FRED B. KYGER, Kansas City.

To Fort Sam Houston, Texas, for duty, from Camp Shelby, Lieut. LOGAN L. LATHAM, Latham; from Camp Travis, Capt. JOHN S. WEAVER, Kansas City.

To Hoboken, N. J., for duty, from Camp Wadsworth, Capt. MOYER S. FLEISHER, St. Louis.

To Moberly, Mo., for duty, and on completion to his proper station, from St. Louis, Major WILLIAM J. LUEDDE, St. Louis.

To New Haven, Conn., for duty, Lieut. HOLLIS S. THOMAS, Kansas City.

To Orono, Maine, for temporary duty in connection with the examination of drafted troops at the University of Maine, and on completion to his proper station, from Camp Devens, Lieut. EDWARD X. LINK, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Greene, Capt. CHARLES H. HECKER, St. Louis.

Resignation of Lieut. CHARLES E. WOODY, Springfield, accepted.

Montana

To Camp Doniphan, Fort Sill, Okla., from Fort Logan, Lieut. JOHN J. TOBINSKI, Missoula.

To Camp Joseph E. Johnston, Jacksonville, Fla. as orthopedic surgeon, from New York City, Lieut. EARL S. PORTER, Moore.

To Camp Kearny, Linda Vista, Calif., base hospital, Lieut. JOHN L. TREACY, Helena.

To Camp Lewis, American Lake, Wash., for duty, Capt. WILLIAM G. RICHARDS, Billings.

To report by wire to the commanding general, for assignment to duty, Major FRANCIS J. ADAMS, Great Falls.

Nebraska

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. CHARLES W. WAY, Wahoo.

To Camp Lee, Petersburg, Va., with the board examining the troops for tuberculosis, from Camp Sevier, Lieut. TORRENCE C. MOYER, Lincoln.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. DANIEL W. JONES, Omaha.

To Camp Travis, Fort Sam Houston, Texas, as orthopedic surgeon from Chicago, Lieut. LESTER K. STRATE, Sutton.

To Chicago, Ill., Northwestern University, Medical School for instruction, from Fort Riley, Capt. FRANK L. FRINK, Newman Grove.

To Fort Des Moines, Ia., base hospital from Camp Pike, Lieut. WILLIAM R. PETERS, Stanton.

To Fort Oglethorpe for instruction, Lieuts. EARL C. MONTGOMERY, ARTHUR J. ROSS, Omaha.

Nevada

To Camp Lewis, American Lake, Wash., for duty, Lieut. CLAUDE H. CHURCH, Tenepah.

New Hampshire

To Camp Forrest, Chickamauga Park, for duty, from Philadelphia, Lieut. MELVIN P. BADGER, Manchester.

To Camp Shelby, Hattiesburg, Miss., base hospital, from New York City, Lieut. RALPH S. PERKINS, Exeter.

To Fort Oglethorpe for instruction, Lieut. ALBERT P. MULVANY, Nashua.

To Jefferson Barracks, Mo., as a member of the board examining the command for nervous and mental diseases, Lieut. LOUIS O. S. WALLACE, Concord.

New Jersey

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOSEPH D. LATHAM, Atlantic City; from Mount Clemens, Lieut. IRVING S. INGBEA, Secaucus. For duty, from Camp Dix, Lieut. BROOKE DODSON, Penn's Grove; from Camp Shelby, Lieut. FRANK J. McLOUGHLIN, Jersey City.

To Camp Lee, Petersburg, Va., for duty, from Camp Dix, Capt. THOMAS A. CLAY, Paterson.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. BENJAMIN J. SILVERSTEIN, Newark.

To Cape May, N. J., base hospital, from Camp Dix, Capt. ELLERY N. PECK, Boonton.

To Edgewood, Md., base hospital, Lieut. JOHN J. MACDONALD, Jersey City.

To Fort Oglethorpe for instruction, Capt. JOHN A. HOLLAND, Montclair; Lieuts. MAURICE CHESLER, Atlantic City; THOMAS L. CALDRONEY, DONALD A. CURTIS, Hackensack; FREDERICK H. VON HOPE, Orange; GEORGE E. GALLAWAY, Rahway.

To Fort Riley as a member of the board examining the command for tuberculosis, from Camp Sheridan, Lieut. HOWARD S. SMITH, Newark.

To Fort Sam Houston, Texas, for instruction, and on completion to his proper station, from Camp Logan, Lieut. THOMAS W. HARVEY, Jr., Orange.

To Fort Warren, Mass., for duty, Lieut. WILLIAM R. TILTON, South Amboy.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. GEORGE F. MURMANE, Passaic.

To Lincoln, Neb., University of Nebraska, for duty, from Fort Oglethorpe, Capt. ABIJAH O. BUCK, Elizabeth.

To Medford, Mass., Tufts Medical College, to make physical examinations and give medical attention to the drafted men enrolled at this institution, from Fort Oglethorpe, Lieut. ABRAHAM G. REINFELD, Newark.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. WILLIAM RAIM, Jersey City.

The following orders have been revoked: *To Chicago*, Ill., for instruction, from Fort Oglethorpe, Lieut. ALEXANDER J. McRAE, Upper Montclair. *To Fort Oglethorpe* for duty, Lieut. ADFUR E. MAINES, Jersey City. *To Takoma Park*, D. C., to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion to his proper station, from Army Medical School, Lieut. THOMAS W. CONNOLLY, Jersey City.

New Mexico

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Lieut. ROBERT T. LUCAS, Carrizozo.

To Fort Oglethorpe for instruction, Lieut. GEORGE V. HACKNEY, Magdalena.

New York

To Army Medical School for instruction, Lieuts. GEORGE P. McNEILL, Jr., WALTER VAN O. MOORE, New York; from Fort Sam Houston, Lieut. ROBERT BOGAN, New York; from Fort Slocum, Lieut. JOHN L. HEMSTEAD, Albany.

To Biltmore, N. C., for temporary duty, Lieut. LYMAN H. WHEELER, Lockport.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Capt. JOSEPH L. BENDELL, Albany.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Pike, Capt. RAE W. WHIDDEN, New York. For duty, from Camp Devens, Lieut. JAMES F. DOUGHERTY, Brooklyn; from Camp Upton, Capt. FREDERIC N. WILSON, New York; Lieuts. ARTHUR C. SMITH, Elmira; IRA W. LIVERMORE, Gowanda; from Chanute Field, Lieut. LINN V. H. REED; from New York, Lieut. BERNARD S. STRAIT, Penn Yan.

To Camp Doniphan, Fort Sill, Okla., for duty, from Fort Logan, Lieut. GEORGE W. BATT, Kennedy.

To Camp Gordon, Atlanta, Ga., with the board examining the command for nervous and mental diseases, from Camp Hancock, Capt. EMIL ALTMAN, New York; Lieut. DANIEL J. SWAN, Flushing.

To Camp Grant, Rockford, Ill., for duty, from New York, Lieut. CALVIN B. WITTER, Schenectady.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ABRAHAM KARDINER, JEROME L. KOHN, WILLIAM C. MACDONALD, New York. For duty, from Camp Bowie, Lieut. SAMUEL W. HAUSMAN, Odensburg; from Camp Gordon, Lieut. HARRY GOLDMANN, Long Island City; from Camp Meade, Lieut. HAROLD J. McDONALD, Buffalo. With the board examining the troops for cardiovascular diseases, from Camp A. A. Humphreys, Lieut. JOHN L. BYRNES, Hudson Falls.

To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Lieut. GEORGE E. BLUE, New York. To examine the command for nervous and mental diseases, from Camp Shelby, Lieut. HYMAN HERSHBERG, New York.

To Camp Lee, Petersburg, Va., for duty, from Camp Dodge, Lieut. JOSEPH L. McGOLDRICK, Brooklyn; from Fort McPherson, Lieut. WILLIAM P. McCROSSIN, New York; from Fort Oglethorpe, Lieut. DANIEL P. GILLESPIE, New York.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. ETHELBERG A. CALLAGHAN, Brooklyn. For duty, Lieut. ABRAHAM LEIBOVITZ, New York; from Camp Wadsworth, Lieut. THOMAS J. LUBY, New York.

To Camp Raritan, Metuchen, N. J., for duty, from Fort Oglethorpe, Lieut. THOMAS M. CALLADINE, Perry.

To Camp Sevier, Greenville, S. C., for duty, from Camp Jackson, Capt. ARTHUR M. GREENWOOD, New York.

To Camp Sheridan, Montgomery, Ala., base hospital, Capt. THOMAS H. CURTIN, New York.

To Camp Sherman, Chillicothe, Ohio, as a member of the board examining the command for tuberculosis, from Fort Riley, Lieut. CARL G. FROST, Buffalo.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieut. MATTHEW A. LIOTTA, New York; from Fort Myer, Lieut. BENJAMIN RABBINER, Brooklyn; from Fort Oglethorpe, Lieut. HAROLD MacM. JOHNSON, Friendship.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Capt. JOHN C. HOWARD, Blackwell's Island; from Fort Screven, Lieut. PERCY L. DODGE, Poughkeepsie.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Walter Reed General Hospital, Capt. MAURICE B. BARNETTE, Watertown.

To Cape May, N. J., base hospital, Capt. LEE M. FRANCIS, Buffalo; from Camp Beauregard, Lieut. JAMES C. SULLIVAN, Buffalo.

To Fort Benjamin Harrison with the board examining the troops for tuberculosis, from New Haven, Lieuts. MORRIS A. SAGOWITZ, EDWIN F. SAMPSON, New York.

To Fort Leavenworth, Kansas, for duty, Lieut. DANIEL JUNG, Buffalo.

To Fort McHenry, Md., base hospital, from Newport News, Lieut. JAMES D. MILLER, New York.

To Fort McPherson, Ga., for duty, from Mineola, Capt. THEODORE S. WEST, Yonkers.

To Fort Myer, Va., for duty, Capt. EDWARD B. FINCH, New York.

To Fort Oglethorpe for instruction, Lieuts. RAY H. BECHTELL, Blackwell's Island; JULIUS RYBACK, ALFRED R. STEPHANY, WALTER F. WATTON, Brooklyn; FRANCIS M. KUJAWA, Buffalo; HERMAN H. JAMES, HAROLD H. JOY, WILLIS W. LASHER, HAROLD W. NIELSON, JOHN C. O'NEILL, JAMES W. SMITH, DONALD J. TILTON, WILLIAM W. TRACEY, AARON WEINBERG, New York; CLYDE L. McNEIL, Poughkeepsie; FRANCIS J. ROBINSON, Rochester; WILLIAM W. WOGLOM, Rome; HERMAN E. OAK, South Onondaga.

To Fort Porter, N. Y., for duty, from Camp Devens, Capt. CLARENCE H. MACKAY, Lancaster.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Lieut. RAYMOND T. POTTER, Ellenville.

To Fort Thomas, Ky., for investigation, and on completion to his proper station, Major RICHARD H. HUTCHINGS, Ogdensburg.

To Hoboken, N. J., base hospital, Lieut. MAURICE A. BARNARD, Rochester. For duty, Lieut. LEO SIMTBAUM, Brooklyn; from Fort Oglethorpe, Lieuts. WILLIAM LIEBERMAN, Jamaica; ALFA V. SALOMON, CHARLES O. TERESI, New York.

To Lakewood, N. J., for temporary duty, Lieuts. SAMUEL KAHN, JOHN J. H. KEATING, DANIEL SCHULTKEIS, New York.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, for duty, Lieut. ROBERT BURLINGTON, New York.

To New Haven, Conn., for duty, Lieuts. JOHN J. RANDALL, Albany; JAMES H. STYGALL, Buffalo; BERNARD R. KELLEY, HARRY J. SEIFF, New York.

To Newport News, Va., with the board examining the command for nervous and mental diseases, Lieut. ABRAHAM C. SILVERMAN, Syracuse.

To Rockefeller Institute for instruction in bacteriology, and on completion to Army Medical School, for duty, Lieut. JOHN R. HOLDERNESS, New York. For instruction in the treatment of infected wounds, and on completion to Camp Custer, Battle Creek, Mich., base hospital, Lieut. EDWARD J. HYLAND, Jamaica. On completion to Camp Devens, Ayer, Mass., base hospital, Lieut. WILLIAM J. GALVIN, Oswego. On completion to Camp Sevier, Greenville, S. C., base hospital, Capt. THOMAS A. KENYON, New York. On completion to Fort McPherson, Ga., for temporary duty, Lieut. ALEXANDER A. BERSIN, Brooklyn. On completion to Walter Reed General Hospital for temporary duty, Capt. FRANK E. BROWN, Brooklyn; Lieut. FRANK B. ORR, New York.

To Washington, D. C., for temporary duty, and on completion to his proper station, from Army Medical School, Lieuts. ROBERT A. CORBIN, New York; BENJAMIN J. SLATER, Rochester.

The following orders have been revoked: To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. PORTER A. STEELE, Buffalo. To Fort Oglethorpe for instruction, Lieuts. JULIUS RYBACK, WALTER F. WATTON, Brooklyn. To Newport News, Va., for duty, Lieut. PHILIP B. BREGMAN, New York. To Philadelphia, Pa., University Hospital, and on completion to Camp Greene, Charlotte, N. C., base hospital, Capt. GEORGE W. CONTERNO, New York.

North Carolina

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. STEPHEN J. HAWES, Dover.

To Camp Lee, Petersburg, Va., for duty, Capt. PARKS McC. KING, Charlotte; from Fort Oglethorpe, Capt. BENJAMIN K. HAYS, Oxford; CLARENCE LAF. WILSON, Lenoir.

To Camp Wadsworth, Spartanburg, S. C., for duty, Capt. VANN McK. LONG, Winston-Salem.

To Fort Bayard, N. M., for duty, from Camp Beauregard, Lieut. RANDOLPH E. WATTS, Oriental.

To Fort Oglethorpe for instruction, Lieut. ROWLAND McN. LANCASTER, St. Pauls.

To Fort Sam Houston, Texas, for duty, from Camp Sevier, Lieut. HUGH A. THOMPSON, Raleigh.

To New Haven, Conn., for duty, Capt. THOMAS P. CHEESBOROUGH, Asheville.

North Dakota

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. EDMUND C. STUCKE, Garrison.

To Camp Lee, Petersburg, Va., for duty, Capt. MORELAND R. IRBY, Lankin.

To Camp Lewis, American Lake, Wash., base hospital, from Portland, Lieut. WILLIAM P. BALDWIN, Castleton.

To Fort Oglethorpe for instruction, from Fort Des Moines, Lieut. EDWIN L. GOSS, Carrington.

To Fort Riley, base hospital, from New York, Lieut. JOHN R. PENCE, Minot.

The following order has been revoked: To Portland, Ore., for duty, from Camp Greene, Lieut. HARLEY D. NEWBY, Parker.

Ohio

To Camp Devens, Ayer, Mass., base hospital, Lieut. RUDOLPH J. GIESELER, Cincinnati. For duty, from Fort Oglethorpe, Lieuts. WILLIAM L. FOX, Akron; FRANCIS E. DENMAN, Dayton.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Major WILLIAM H. LEET, Conneaut.

To Camp Gordon, Atlanta, Ga., with the board examining the command for cardiovascular diseases, Lieut. HIRAM B. WEISS, Cincinnati.

To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, from Camp Beauregard, Lieut. CLYDE H. CHASE, Cleveland.

To Camp Sherman, Chillicothe, Ohio, base hospital, Major CLARENCE KING, Avondale.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. HAROLD E. FRUTH, Muscatine.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Wadsworth, Lieut. DONALD DEC. SLURA, La Rue.

To Cape May, N. J., base hospital, from Camp Beauregard, Lieut. SAMUEL ZIELONKA, Cincinnati; from Camp Grant, Capt. JOSEPH E. PIRRUNG, Cincinnati.

To Chicago, Ill., Northwestern University, for instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

To Fort Benjamin Harrison for duty, from Fort Oglethorpe, Capt. DANIEL C. MOOR, Toledo.

To Fort Des Moines, Iowa, for duty, from Camp Grant, Major FREDERICK C. HERRICK, Cleveland.

To Fort Oglethorpe for instruction, Capt. ALVA E. SNYDER, Bryon; OWEN C. REES, Toledo; Lieuts. FRED K. READ, Akron; JOHN EUGENE TALBOTT, Alger; BARRON JOHNS, FRANK J. SAUER, Cincinnati; LESTER W. KRAUSS, VASCO E. M. OSORIA, Cleveland; FRANK E. MILLER, Wauseon; WALLACE A. ORT, Springfield; WALTER I. JENKINS, St. Paris; MARK C. HOUSTON, Urbana.

To Newport News, Va., for temporary duty, from Army Medical School, Lieut. CLARENCE W. BETZNER, Cincinnati.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Grant, Rockford, Ill., base hospital, Lieut. LORIN G. SHEETS, Cleveland.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Major FRED FLETCHER, Columbus.

Oklahoma

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Chicago, Lieut. WALTER E. KOPPENBRINK, Bartlesville.

To Camp Jackson, Columbia, S. C., for duty, Lieut. CLIFFORD B. MANDEVILLE, Bartlesville.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. DAVID A. BEARD, Westville.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Des Moines, Capt. LEWIS E. EMANUEL, Chickasha.

To Camp Pike, Little Rock, Ark., for duty, Capt. HARRY E. BREESE, Henryette; VIRGIL H. BARTON, McAlester.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. EDWARD F. STROUD, Tulsa.

To Fort Oglethorpe for instruction, Lieuts. ARTHUR E. HALE, Alva; HENRY S. DRUMMOND, Hailyville; ARTHUR F. HOBES, Hinton; CHARLES C. SHAW, WILL C. WHIT, McAlester; CARL L. McCALLUM, Sapulpa; VICTOR M. GORE, Taloga; RALPH A. WORKMAN, Woodward.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Major ROBERT M. HOWARD, Oklahoma City.

To Jackson Barracks, La., for duty, Lieut. HAROLD C. BRADLEY, Oklahoma City.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Gordon, Atlanta, Ga., base hospital, Capt. HORACE REED, Oklahoma City.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Greene, Charlotte, N. C., base hospital, Capt. JOHN H. WHITE, Muskogee.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, Lieut. FRANK P. FIREY, Portland. For duty, Capt. CYLDE T. HOCKETT, Enterprise; Lieuts. ROBERT W. STEARNS, Medford; JOHN W. McCOLLOM, Portland; RUDOLPH E. KLEINSORGE, Silverton.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Des Moines, Lieut. RICHARD F. JAMES, Portland.

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Lieut. SAM F. LEFEVRE, Bridal Veil.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Lewis, Capt. EUGENE W. ROCKEY, Oswego.

To Fort Oglethorpe for instruction, Capt. CLARENCE J. McCUSKER, Portland.

Pennsylvania

To Army Medical School for instruction, Lieuts. WHITMAN C. McCONNELL, Erie; GEORGE M. UNDERWOOD, Philadelphia; from Camp McClellan, Lieut. GEORGE A. BROWN, Philadelphia; from Camp Pike, Lieut. JOHN M. WELCH, Philadelphia. On completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Gordon, Lieut. JOHN P. MAUS, Philadelphia.

To Camp A. A. Humphreys, Accotink, Pa., base hospital, from Army Medical School, Lieut. ROBERT D. SPENCER, Philadelphia; FRED B. HARRINGTON, Pittsburgh. For duty, from Camp Wadsworth, Capt. SIGMAN L. GANS, Philadelphia.

To Camp Devens, Ayer, Mass., base hospital, Lieuts. FRANK D. LEVY, Philadelphia; HAROLD F. MOFFITT, Pittsburgh.

To Camp Dix, Wrightstown, N. J., base hospital, from Rockefeller Institute, Lieut. DAVID B. HAWKINS, Philadelphia. For duty, from Camp Meade, Capt. HARRY S. CARMANY, Philadelphia.

To Camp Dodge, Des Moines, Iowa, as orthopedic surgeon, Lieut. AUSTIN L. CORT, Wilson.

To Camp Grant, Rockford, Ill., for duty, from Camp Dodge, Lieut. JOHN P. DUGGAN, Pittsburgh; from Camp Jackson, Lieut. WILLIAM M. DONOVAN, Philadelphia. With the board examining the troops for cardiovascular diseases, from Jefferson Barracks, Lieut. THOMAS G. JENNY, Pittsburgh.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. WALTER R. LIVINGSTON, Philadelphia; OWEN H. BINKLEY, HARRY A. HOLLAND, JAMES S. LOGAN, JAMES M. MILLER, Pittsburgh.

For duty, from Camp Cody, Lieut. LOUIS S. WEAVER, York; from Camp Sevier, Capt. ARTHUR E. DAVIS, Scranton. With the board examining the troops for cardiovascular diseases, from Lakewood, Major EDWARD H. GOODMAN, Philadelphia.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. ALBERT T. RANSOME, Philadelphia.

To Camp Sevier, Greenville, S. C., for temporary duty, from Army Medical School, Lieut. FRANCIS B. KING, Lansdowne.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Jackson, Lieut. FRANCIS V. LAURENT, Pittsburgh. With the board examining the troops for cardiovascular diseases, from Fort Thomas, Ky., Capt. JOSEPH H. BARACH, Pittsburgh.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieuts. JOSEPH H. WATSON, Jeanette; MAJOR H. JOSEPH, Philadelphia; from Fort Oglethorpe, Capt. EDWARD L. DAVIS, Berwick; Lieut. HENRY N. SCHOLL, Kulpville.

To Dover, N. J., for duty, from Williamsbridge, Lieut. JOHN J. KOLSKI, Donora.

To Fort Benjamin Harrison, with the board examining the troops for tuberculosis, from New Haven, Lieut. JULIUS H. GOLDSTEIN, Pittsburgh.

To Fort Clark, Texas, for duty, from Fort Oglethorpe, Lieut. BOYD W. SCHAFFNER, Ellwood.

To Fort McPherson, Ga., for duty, Capt. SAMUEL D. INGHAM, Huntington Valley.

To Fort Oglethorpe for instruction, Capt. LU VAN L. BROWN, Castle Shannon; GEORGE W. SMELTZ, Markleton; MADISON U. STONEMAN, Pittsburgh; Lieuts. HERBERT S. McKINSTRY, North Wales; JOSEPH V. BURNS, Coaldale; LOUIS J. LIVINGOOD, Philadelphia; RALPH J. ASKIN, SAMUEL H. KELLER, JOHN R. MORGAN, NORMAN O. OSCHSENHIRT, BYRON E. SHAW, Pittsburgh; ROY L. LANGDON, Willow Grove; from Camp A. A. Humphreys, Lieut. JULIUS A. BLASSER, Philadelphia; from Camp Meade, FRANCIS L. ALEXITIS, Wilkes-Barre; from Pittsburgh, Lieut. NICHOLAS G. L. SHILLITO.

To Fort Sam Houston, Texas, for duty, from Camp Sevier, Lieut. JOHN W. THOMPSON, Selinsgrove.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieuts. ALEXANDER W. SPEARS, Grindstone; CHARLES H. WOLFE, Pittsburgh; from New York City, Major EVAN W. MEREDITH, Pittsburgh.

To Lakehurst, N. J., for duty, from Camp Leach, Lieut. MICHAEL M. WOLFE, Philadelphia.

To Lakewood, N. J., for duty, Lieuts. WILLIAM D. STROUD, Philadelphia; MORRIS FIRSHMAN, Pittsburgh; from Camp Gordon, Lieut. LESLIE N. GAY, Shamokin.

To Lonoke, Ark., Eberts Field, for duty, from Camp Jackson, Capt. HARRISON A. GREAVES, Philadelphia.

To New York City, Neurological Institute, for intensive training, Lieuts. HENRY B. MIKELBERY, ABRAHAM M. ORNSTEIN, Philadelphia.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion to Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. GORSHON GINSBURG, Philadelphia.

To report to the commanding general, Philippine Department, for duty, from Camp Shelby, Capt. WILLIAM RUOFF, Philadelphia.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Dodge, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Capt. HARRY A. SPANGLER, Carlisle.

To Rockefeller Institute for instruction, and on completion to Fort Oglethorpe, from New York City, Lieut. JOHN D. DONNELLY, Philadelphia. For instruction in laboratory work, from Camp Logan, Lieut. THEODORE MELNICK, Philadelphia. For instruction in the treatment of infected wounds, and on completion to Camp Meade, Annapolis Junction, Md., base hospital, Lieut. EDWARD S. DILLON, Philadelphia. On completion to Walter Reed General Hospital for temporary duty, Lieut. EDWARD N. HAGIN, Sharon.

To West Lafayette, Ind., Purdue University, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion to his proper station, from Fort Oglethorpe, Capt. HARRY BRADY, Masontown.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ADOLPH H. FRIEDMAN, Philadelphia.

Porto Rico

To Camp Las Casas, San Juan, P. R., for duty, Capt. ALBERT G. MEHRHOF, Guayama; Lieut. LOUIS P. DAME, San Juan; from Camp Colt, Lieut. MANUEL DIAZ GARCIS, Barceloneta.

Rhode Island

To Fort Oglethorpe for instruction, Lieut. THOMAS S. FLYNN, Woonsocket.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School for duty, Capt. WILLIAM G. DWINNELL, Providence.

The following order has been revoked: To Cape May, N. J., base hospital, Lieut. FREDERICK N. BIGELOW, Providence.

South Carolina

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieut. RALPH K. FOSTER, Timmonsville; from Fort Myer, Lieut. WILLIAM E. WHITESIDE, Greenville.

To Fort Oglethorpe for instruction, Lieut. JAMES E. DOUGLASS, Winnsboro.

South Dakota

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. LAWRENCE J. BROOKMAN, Vermilion.

To Camp Custer, Battle Creek, Mich., base hospital, from Milwaukee, Lieut. CARL N. HARRIS, Wilmot.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Grant, Rockford, Ill., base hospital, Lieut. ARTHUR F. GROVE, Dell Rapids.

Tennessee

To Boston, Mass., Franklin Union Institute, for duty, from Fort Oglethorpe, Capt. THOMAS E. P. CHAMBERS, Cleveland.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. YOURA S. BROWN, Halls.

To Camp Lee, Petersburg, Va., for duty, Lieut. BENJAMIN J. COGDILL, Vestal; from Fort Oglethorpe, Lieut. JOHN H. HUFF, Sevierville.

To Camp Pike, Little Rock, Ark., with the board examining the command for cardiovascular diseases, Capt. OVAL N. BRYAN, Nashville.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieuts. LEROY S. McMULLEN, Knoxville; WALTER L. BOSWELL, Macon; from Fort Oglethorpe, Lieut. CHESTER A. SKELTON, St. Eline.

To Fort Oglethorpe for instruction, Capt. JOHN J. McSWAIN, Paris; Lieuts. SPENCER B. McCLARY, Benton; GEORGE T. WILHEM, Memphis.

To Indianapolis, Ind., to give medical attention to drafted men, from Fort Oglethorpe, Lieut. WILLIAM T. BUCK, Henderson.

To Waynesville, N. C., for duty, from Camp Sevier, Lieut. JOHN O. WOODS, Newport.

Texas

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Capt. HOWARD R. DUDGEON, Waco.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Logan, Capt. WALTER C. JOHNSON, Pharr; from Camp Travis, Capt. BERNARD F. SMITH, San Antonio.

To Camp Jackson, Columbia, S. C., base hospital, from San Antonio, Lieut. EDWARD B. JONES, Jacksonville.

To Camp Kearny, Linda Vista, Calif., base hospital, from Camp Logan, Capt. EUGENE R. CARPENTER, El Paso.

To Camp MacArthur, Waco, Texas, base hospital, Lieut. SCOTT C. APPLEWHITE, San Antonio.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Cody, Lieut. ERNEST H. HAMILTON, Kilgore.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Lieuts. THOMAS C. BREWER, Dallas; CARROL L. MOORE, Houston. With the board examining the troops for cardiovascular diseases, Lieut. DAVID W. CARTER, Jr., Georgetown.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Crane, Capt. GEORGE C. BRUNNELLE, El Paso.

To Fort Leavenworth, Kan., for duty, Capt. WILBUR F. THOMSON, Beaumont; Lieut. GEORGE C. KINDLEY, Dallas.

To Fort Oglethorpe for duty, from Fort McPherson, Lieut. CLARENCE R. MILLER, San Angelo. For instruction, Major FREDERICK O. WAAGE, El Paso; Capt. JASPER GRIMES, J. BOYD SWONGER, Beaumont; JAMES S. WHEELER, Coryell; JAMES P. GIBBS, Houston; Lieuts. OSCAR H. MAYO, Belton; JOHN W. MACUNE, Hillsboro; SIMM H. MOORE, HARRY K. MORRISON, EDWARD

C. MURRAY, Houston; JOHN W. BLAKE, Rosenberg; WILLIAM S. HANSON, WILLIAM B. URMSTON, San Antonio.

To Fort Riley, base hospital, Lieut. ROGER A. THARP, Austin.

To Fort Sam Houston, Texas, base hospital, from Camp Bowie, Major JAMES G. FLYNN, Fort Crockett; from Camp Beauregard, Lieut. COLEMAN J. CARTER, Oakwoods.

To Montgomery, Ala., Signal Corps Aviation School, for duty, from Mineola, Capt. ROBERT A. TRUMBULL, Dallas.

To New York City, Bellevue Hospital, for instruction, and on completion to Camp Meade, Annapolis Junction, Md., base hospital, Major HERSCHEL F. CONNELLY, Waco.

Utah

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. CHARLES E. BRAIN, Salt Lake City.

To Fort Logan, Colo., for duty, from Fort H. G. Wright, Lieut. GEORGE W. CLARKE, Springville.

Vermont

To Camp Kearny, Linda Vista, Calif., with the board examining the command for nervous and mental diseases, from San Francisco, Capt. SIDNEY M. BUNKER, Burlington.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. JAMES L. LOVEJOY, Manchester Depot. To Fort McPherson, Ga., for duty, Lieut. HAROLD F. TAYLOR, Burlington.

To Fort Oglethorpe for instruction, Lieut. DAVID R. BROWN, Lindoville.

To Indianapolis, Ind., to give medical attention to the drafted men, from Fort Oglethorpe, Capt. NICHOLAS DELEHANTY, Rutland.

Virginia

To Camp Jackson, Columbia, S. C., for duty, from Camp Zachary Taylor, Lieut. SAMUEL P. OAST, Portsmouth.

To Camp Lee, Petersburg, Va., base hospital, Lieut. MATHIAS GROVE-HAGEN, Richmond. For duty, from Fort Oglethorpe, Lieut. CLAY M. EASTER, Chincoteague Island.

To Camp MacArthur, Waco, Texas, with the board examining the command for nervous and mental diseases, from Camp Gordon, Lieut. JAMES A. MERIWETHER, Holcombs Rock.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Lee, Capt. HENRY S. STERN, Richmond.

To Fort Oglethorpe for instruction, Capt. HARRY WALL, Claremont; Lieut. WILLIAM I. LAUGHON, Richmond.

To Hoboken, N. J., for temporary duty, from Camp Meade, Lieut. ROBERT S. PRESTON, Richmond.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, from Fort Oglethorpe, Capt. LEWIS M. ALLEN, Gaylord.

Washington

To Alcatraz, Calif., for duty, from Camp Fremont, Capt. FRANK H. COLLINS, Goldendale.

To Camp Lewis, American Lake, Wash., as a member of the board examining the command for tuberculosis, Lieut. CHARLES D. HUNTER, Tacoma.

To Fort Sam Houston, Texas, for duty, from Camp Sheridan, Lieut. WALTER A. BURG, Uniontown.

To Hoboken, N. J., base hospital, from Fort Lawton, Major CHARLES A. BETTS, Fort Lawton.

To Rock Island, Ill., for duty, from Fort Riley, Lieut. LEGRAND SPAULDING, Kennewick.

To San Francisco, Calif., for instruction, and on completion to his proper station, from Camp Lewis, Capt. HENRY H. SLATER, Deer Park.

West Virginia

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Pike, Capt. EMERSON MEGRAILL, Wheeling.

To Camp Greene, Charlotte, N. C., base hospital, Lieut. CHARLES F. MAHOOD, Alderson; ROBERT J. WILKINSON, Huntington.

To Camp Lee, Petersburg, Va., base hospital, Lieut. ROBERT J. WILKINSON, Huntington. With the board examining the troops for tuberculosis, from Camp Sevier, Lieut. FERDINAND W. WIEHE, Wheeling.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Capt. WILLIAM C. COVEY, Pemberton.

To Fort Oglethorpe for instruction, Lieuts. ETLEY P. SMITH, Barracksville; CARTER S. FLEMING, CLAUDE M. VAUGHAN, Fairmont; JOHN H. HOSKINS, Lillybrook; LUSIUS LAMAR, Minnehaha Springs; from Army Medical School, Lieut. JOHN E. MILLER, Widen.

To Fort Porter, N. Y., for duty, Capt. CHARLES A. BARLOW, Beverley.

Wisconsin

To Camp Dix, Wrightstown, N. J., for duty, Lieut. JUSTUS SUTHERLAND, Brodhead.

To Camp Grant, Rockford, Ill., for duty, from Camp Logan, Capt. ALBERT G. JENNER, Milwaukee.

To Camp Jackson, Columbia, S. C., for duty, Lieut. HENRY H. AINSWORTH, Madison; from Camp Dodge, Lieut. THOMAS C. CLARKE, Oconto.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Sherman, Lieut. WILLIAM N. MOORE, Appleton.

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Capt. GEORGE W. FIFIELD, Janesville.

To Fort Oglethorpe for instruction, Lieuts. LEO. A. HOFFMAN, Campbellsport; RALPH B. QUINN, Darlington; LAUREL E. YOU-MAN, Mukwonago; CHARLES C. DAVIN, New Richmond; DE WAYNE TOWNSEND, Oconomowoc; from Fort Myer, Lieut. CLARENCE N. SONNENBURG, Sheboygan.

To Lakewood, N. J., for temporary duty, Lieut. EUGENE A. GATTERDAM, La Crosse.

To report to the commanding general, Philippine Department, for duty, from Camp Cody, Capt. GEORGE A. BADING, Milwaukee.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Sheridan, Montgomery, Ala., base hospital, Lieut. GEORGE M. SMITH, Chippewa Falls. On completion to Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. ANTHONY H. LOOZE, Brodhead.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Sevier, Greenville, S. C., base hospital, Capt. THOMAS F. SHINNICK, Beloit.

Wyoming

To Camp Fremont, Palo Alto, Calif., as orthopedic surgeon, from Chicago, Lieut. ROBERT H. SANDERS, Kemmerer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Service Flag Unfurled.—At the meeting of the Vermilion County Medical Society, at Danville, June 4, a service flag bearing seventeen stars was dedicated. The principal address was delivered by Dr. Elmer B. Cooley, Danville, formerly president of the Illinois State Medical Society.

Continuous Term for Medical School.—The University of Illinois College of Medicine, announces that, beginning June 3, it will be operated on the quadrimester system of three terms of four months each per calendar year. The courses will be so arranged that the students may enter the school at the beginning of any of the three terms.

Women's Club Election.—At the annual meeting of the Medical Women's Club, June 19, the following officers were elected: president, Dr. May Cushman Rice; vice presidents, Drs. Katherine B. Rich and Clara Jacobson; secretary, Dr. Grace H. Campbell; treasurer, Dr. Ione F. Beem, and editor of the *Bulletin*, Dr. Sadie Bay Adair, all of Chicago.

Chicago

Annual Meeting of Physicians' Club.—At the annual meeting of the Physicians' Club of Chicago the following officers were elected: chairman, A. A. O'Neill; secretary, V. D. Lespinasse; treasurer, H. W. Cheney; directors, E. J. Doering, D. N. Eisendrath, O. W. McMichael and A. M. Corwin. The closing function of the year was a banquet in honor of Major-General Gorgas, at which representatives of the various departments of the Army were speakers.

Extending Infant Welfare Work.—Four new infant welfare stations will be established in Chicago as the result of the money-raising campaign during the recent baby week, when \$67,000 was raised, \$2,000 more than the goal set. Heretofore, only children under 2 years have been cared for at the stations, but it is hoped that the resources will soon allow an extension of the work to include children under 6 years. There are now twenty-two infant welfare stations. The increase will make the number twenty-six.

INDIANA

Ground Broken for Medical School.—The first ground was broken for the new \$238,000 building of the Indiana University School of Medicine, on the ground of the Robert W. Long Hospital, Indianapolis, June 17, by Governor Goodrich, who also made the principal address.

Personal.—Dr. Marcus Ravdin, Evansville, has presented Indiana University with a gold medal to be given annually to the student of the medical department who attains the greatest proficiency during his four years' course.—Dr. Herman G. Morgan, secretary of the Indianapolis Board of Health, has been appointed superintendent of the city hospital, succeeding Dr. Thomas L. Sullivan, who has entered military service.

MAINE

Personal.—Dr. Leverett D. Bristol, Augusta, commissioner of the state department of health, has been designated as chairman of the state committee of the American Society for the Control of Cancer.

New State Officers.—At the annual meeting of the Maine Medical Association held in Portland, June 4 to 6, the following officers were elected: president, Dr. George H. Coombs, Waldoboro; vice presidents, Drs. John Sturgis, Auburn, and Charles W. Bell, Strong; secretary-treasurer, Dr. Bertram L. Bryant, Bangor, and councilor delegates, Drs. John F. Thompson, Portland; Ernest V. Call, Lewiston; Byron F. Barker, Bath; Oliver W. Turner, Augusta; Walter N. Miner, Calais, and Charles H. Burgess, Bangor.

MARYLAND

Fifth Case of Infantile Paralysis.—The health department announced recently that a suspect under observation for the past week had developed a genuine case of infantile paralysis.

The patient is a Polish infant, 2 years old, living near the waterfront in southeast Baltimore. The child has paralysis of the right shoulder and weakness in the right leg. It is a mild attack and the fifth case of the disease to be reported in the city this year.

Flag Raising at U. S. Army General Hospital No. 7.—A flag donated by the workmen engaged in the construction of the new buildings at the U. S. Army General Hospital No. 7, Evergreen, Baltimore, which is for the treatment and training of soldiers blinded in service, was raised during the past week on the observation tower commanding a view of the grounds. Capt. Francis E. Chunev, a member of the hospital staff, supervised the arrangements.

Personal.—Dr. C. Frank Jones, health warden of the fifteenth ward is convalescent after an operation performed at St. Joseph's Hospital a short time ago.—Mrs. Agnes C. Hartridge, formerly superintendent of nurses at University Hospital, Augusta, Ga., has been placed in charge of the admitting office at Johns Hopkins Hospital, succeeding Dr. William C. Leavenworth, who has been given supervision of the hospital dispensary. Dr. Leavenworth in his turn succeeded Dr. L. Palmer Holmes, New York City, who has entered military service.—Dr. Cornelius De Weese, Laurel, was acquitted, June 6, of criminal blame in connection with the death of Ambler McManus, Marlboro, who died as the result of injuries sustained when he was struck by an automobile driven by Dr. De Weese.—Dr. Edward P. Smith, for five years general superintendent of the Mercy Hospital, has resigned and will engage in practice in Baltimore.—The health department has appointed Dr. William Dew assistant supervisor of pasteurization in place of Dr. Claude van Bibber, resigned.—Dr. George A. Fleming, Baltimore, was exonerated by the coroner from all blame in the death of James B. Loane, who was struck by an automobile driven by Dr. Fleming and so severely injured that he died before reaching the Franklin Square Hospital.

MICHIGAN

New Society Officers.—At the annual meeting of the Wayne County Medical Society, held in Detroit, Dr. John L. Bell was elected president; Dr. Walter J. Wilson, Jr., vice president, and Dr. Raymond C. Andries, secretary.

Damages for Typhoid.—Damages amounting to \$50,462 were granted to members of the Detroit Commandery, No. 1, K. T., and members of their families, on account of sickness caused by drinking polluted water from the Sault Ste. Marie River during a cruise on the steamship South American, in June, 1915.

Tuberculosis Farm for Detroit.—Dr. James W. Inches, health officer of Detroit, proposes to purchase a large tract of land suitable for farming and the erection of a large infirmary and a number of cottages for the treatment of cases of incipient tuberculosis. The proposed institution will cost about \$1,000,000.

Personal.—Dr. Vinton J. Rickerd, Charlotte, is reported to be seriously ill with septicemia due to an infected wound of the finger.—Dr. Wayne J. Atwell, instructor in anatomy in the University of Michigan, Ann Arbor, has been appointed professor of anatomy in the University of Buffalo.—Dr. M. N. Nielson, Calumet, has been appointed oculist for the Middle Range Railroad.

To Study Sanatoriums.—Drs. Francis Duffield, Detroit; James W. Inches, St. Clair, and Albert M. Wehenkel of the Detroit Board of Health, and William B. Stratton have gone to Boston to attend the meeting of the National Tuberculosis Association and also to study sanatorium plans and investigate methods of handling the tuberculosis problem. For this work the Detroit City Council has made an appropriation of \$2,000.

College Half a Century Old.—The Detroit College of Medicine and Surgery has completed fifty years of work and in celebration thereof, clinics were held, June 5 and 6, at the various hospitals in Detroit. Dr. John B. Deaver, Philadelphia, gave a surgical clinic at Harper Hospital, and Dr. Bertram W. Sippy, Chicago, a clinic on "Peptic Ulcer." On the evening of June 6, the annual smoker and vaudeville entertainment of the college was held.

MINNESOTA

War Chest for Hennepin County.—At a meeting of the Hennepin County Medical Society, May 27, seventy-five members of the society voted to contribute to a fund of at

least \$35,000 a year, to be devoted to the uses of dependents of members of the society who have entered military service. Sixty members are at present in war service.

Personal.—Dr. Benjamin F. Simon has been appointed health commissioner of St. Paul, succeeding Dr. Justus O'Hage. —Dr. G. M. Palmer, Bemidji, left for France, June 13, where he will do field work for the national Y. M. C. A. —Dr. Andrew W. Hilger, St. Paul, was operated on, June 3, in St. Joseph's Hospital and is reported to be doing well. —Dr. Charles H. Hunter, Minneapolis, is ill with nephritis at the Eitel Hospital, Minneapolis. —Dr. Pearl M. Hall, Minneapolis, has succeeded Dr. George W. Beach as superintendent of the Walker State Tuberculosis Sanatorium. —Dr. Albert J. Chesley, Minneapolis, has gone to France to assist in epidemiological work under the auspices of the American Red Cross. —Mr. Wallace G. Nye has been appointed permanent manager of the Minneapolis City Hospital.

MISSOURI

Personal.—Dr. Buford M. Colby, assistant physician at State Hospital No. 2, St. Joseph, has accepted the position of superintendent of the General Hospital at Kansas City. —Dr. Paul E. Coil of Mexico has purchased a residence in that city, which will be remodeled and adapted to hospital uses. The plans call for accommodations for fourteen patients with modern equipment throughout. The hospital will be opened about July 15.

NEW YORK

State Health Officers Meet.—The annual conference of state health officers met in Saratoga, June 25, 26 and 27. Among the speakers were Surg.-Gen. William C. Gorgas, Miss Julia Lathrop, chief of the federal Children's Bureau; Col. Simon Flexner, Dr. Rufus I. Cole, Major Alexander Lambert, Dr. John A. Fordyce, Dr. Livingston Ferrand and Dr. S. Josephine Baker.

Personal.—Dr. Stephen A. Brown, Westfield, who was shot in the jaw by Joseph J. Johnson, was discharged recovered from the Brooks Memorial Hospital, June 12. —Dr. Ledra Heazlit, Auburn, was caught between his automobile and a doorway of his garage, June 9, fracturing his right hip. —Dr. Roy H. Wixson has been appointed president; Dr. Harry C. Dumville, vice president, and Dr. George D. Stilson, secretary, of the Niagara Falls Academy of Medicine.

New York City

Conditions of Doctorate Degree.—Columbia University announces that after September of this year the degree of doctor of medicine will be conferred by the Columbia University College of Physicians and Surgeons only on men who have had one full year of service in a hospital under faculty supervision, in addition to four years in a medical school.

Personal.—Dr. Walter B. James, president of the New York Academy of Medicine, has been elected a trustee of Columbia University for a term of six years. —Dr. William H. Pierson, Brooklyn, has been elected president of the medical board of the Cumberland State Hospital. —Dr. Benjamin T. Terry, Brooklyn, has been appointed professor of pathology in Vanderbilt University, Nashville, Tenn., succeeding Dr. James W. Joblin, who has accepted an appointment at Columbia University.

Red Cross Money for Medical Research.—The war council of the American Red Cross announces that it has received a request from Cleveland H. Dodge, who subscribed \$1,000,000 and various smaller amounts during the second Red Cross drive, that \$250,000 of this sum be set aside for medical research work. In his letter to the American Red Cross, Mr. Dodge expresses himself as much impressed by the work done in ascertaining the methods of transmission of trench fever, and he directs that the foregoing sum be applied to a "thorough-going conduct of medical research designed to ascertain methods for the prevention and cure of diseases to which our soldiers and sailors may be exposed."

President Wilson Petitioned to Aid Hospitals.—A special meeting of the hospital conference of the city of New York met at the New York Hospital, June 17, to discuss ways and means of meeting the shortage of help of all kinds in the hospitals of this city and of the nation as a whole. Dr. Sigismund S. Goldwater brought out the fact that if the suggestion of a one-year intern course were adopted, on a basis of one intern to every twenty-five patients, there would be immediate need for 10,000 interns. Resolutions were

adopted asking President Wilson to halt the further disruption of hospital organizations. A set of resolutions embodying a scheme to protect the hospitals and their personnel was drafted for presentation to Congress.

OHIO

New Venereal Disease Regulations.—New regulations regarding the control of venereal diseases in the state have been filed with the state department of health and will become effective, July 1. They require every case to be reported to the state board within twenty-four hours of diagnosis by physicians and dentists, with the name of the patient and various details, including the source of the infection, if possible. The patient is to be quarantined whenever the state commissioner of health considers quarantine necessary. Medical examination may be required of all persons "reasonably suspected of having venereal disease." This includes all prostitutes and persons associating with them. Cooperation of local health officials in the repression of prostitution is to be secured to the greatest possible extent.

PENNSYLVANIA

Personal.—While driving an automobile ambulance containing two convalescent soldiers into Philadelphia, Dr. Clifford B. Lull, West Scranton, attached to the Jefferson Ambulance Unit, rescued two women from an overturned and burning automobile.

Philadelphia

Class Banquet.—The fortieth anniversary banquet of the class of 1878, Medical Department of the University of Pennsylvania, was recently held at the University Club. Out of a graduating class of 128, there are 61 living.

Visit of British Medical Men.—The British medical deputation, touring this country to assist in the development of the Medical Reserve Corps, and consisting of Sir James Mackenzie, Sir William Arbuthnot Lane and Col. Herbert Bruce, were the guests of honor of the local medical societies at a reception in the ballroom of the Bellevue-Stratford Hotel, June 24.

Personal.—Dr. Elmer H. Funk has been appointed medical director of Jefferson Hospital Unit No. 28, which will soon leave for France. —Dr. Joseph Leidy has offered to be one of the 100 citizens to give \$1,000 each to establish an endowment for the maintenance of military training in the high schools of the city. —Dr. Joseph S. Neff, Narberth, formerly director of health and charities, has been named by Governor Brumbaugh a member of the advisory board of the state department of health to succeed the late Senator Daniel Gerberich of Lebanon.

RHODE ISLAND

Personal.—Dr. A. J. Giggers, Providence, bacteriologist of the Rhode Island State Department of Health, has been appointed city bacteriologist of Rochester, N. Y.

State Society Meeting.—At the annual meeting of the Rhode Island Medical Society held in Providence, June 4 to 6, under the presidency of Dr. John Champlin, Westerly, the following officers were elected: president, Dr. Gardner T. Swarts, Providence; vice presidents, Drs. John M. Peters and Jesse E. Mowry; secretary, Dr. James W. Leech, Providence (reelected), and treasurer, Dr. Winthrop A. Risk.

UTAH

Appropriation for Social Disease Dispensary.—The city commission of Salt Lake City has voted an appropriation of \$5,400 to defray the cost of the municipal dispensary to be established by the health department for the treatment of venereal diseases.

Personal.—Dr. Frank M. McHugh, Salt Lake City, suffered a severe scalp wound, and Dr. W. P. Skindale suffered contusions in a collision between a street car and an automobile in which they were riding, May 10. —Dr. Ephraim G. Hughes, Provo, has been appointed surgeon and consultant to the State Mental Hospital.

WASHINGTON

New County Officers.—At the annual meeting of the Lincoln County Medical Association, held in Harrington, June 2, Dr. Lee Ganson, Odessa, was elected president; Dr. Rufus

P. Moore, Davenport, vice president, and Dr. Joseph E. Bitter, Sprague, secretary-treasurer.

Medical Women Elect Officers.—At the annual meeting of the Medical Women's Club of Seattle, June 3, the following officers were elected: president, Dr. Sarah A. Kendall; vice president, Dr. Ada Collison; secretary, Dr. Mary D. Skinner, and treasurer, Dr. Mariette M. Armstrong.

Personal.—Dr. John R. Neely, Spokane, has been elected first assistant health officer, and Dr. David H. Ransom, Clarkston, second assistant city health officer of Spokane.—Dr. John W. Mowell, Olympia, chief medical adviser for the state of Washington, is ill with pneumonia at the base hospital at Camp Lewis.

WISCONSIN

Sanatorium Notes.—A fresh air camp for children suffering from tuberculosis has been opened near Neenah, with fifteen children in attendance.—The Jefferson County Board of Supervisors has appropriated \$50,000 for a county tuberculosis sanatorium.

Personal.—Dr. William P. Barrett, Milwaukee, who was seriously injured in an automobile accident on the Cedarburg Road, June 9, is improving under treatment at the Emergency Hospital.—Dr. Gustave Windesheim has been reelected president, and Dr. George H. Ripley, vice chairman of the Kenosha Board of Health.

CANADA

Entire Class Volunteers.—At the convocation of the Western University, London, Ont., the entire graduating class in medicine appeared in uniform, as every member had volunteered to enter the Canadian Army Medical Corps for service at the front.

Medical Council Election.—At the concluding session of the medical council of Canada, held in Ottawa, June 12, it was decided that the next annual meeting should be held in Ottawa, on the third Tuesday in June, 1919. The following officers were elected: honorary president, Sir Thomas J. Roddick, Montreal (reelected); president, Dr. R. Eden Walker, New Westminster, B. C.; vice president, Dr. James C. Connell, Kingston, Ont.; registrar, Dr. Robert H. W. Powell, Ottawa, Ont. (reelected); general council, T. H. Chrysler, K. C., Ottawa, Ont.; auditor, G. L. Blatch, T. C. A., Ottawa, Ont.; executive committee, the honorary president, president and vice president, and Drs. Emmanuel P. Lachapelle, Montreal; Hon. Robert S. Thornton, Winnipeg, Manit.; Walter W. White, St. John's, N. B.; Hon. Reginald H. Brett, Edmonton, Alta., and Alexander MacNeill, Summerside, P. E. I.

Personal.—Dr. Charles J. C. O. Hastings, medical health officer of Toronto, delivered an address before the Alumni Association of the University of Buffalo, June 8, on "Influence of the War on Public Health Problems."—Lieut.-Col. William G. Anglin, Kingston, has been appointed registrar of man power in Kingston.—Dr. James D. Curtis, for two years medical officer for the workman's compensation board, Toronto, has returned to St. Catherine and has resumed practice.—Dr. Thomas E. Case, Dungannon, Ont., has been elected a member of the Ontario legislature by acclamation.—Lieut.-Col. Thomas M. Leask, C. A. M. C., Moose Jaw, Sask., has received the D. S. O.—Col. Herbert A. Bruce and Sir Arbuthnot Lane were given a dinner at the York Club, Toronto, the evening of Monday, June 17. Afterward, they addressed the members of the Toronto Academy of Medicine on war problems, especially on their mission to the United States. Sir James Mackenzie was unable to be present.—Lieut.-Col. Henry R. Casgrain, Windsor, Ont., is still in command of No. 8 Canadian Hospital at St. Cloud, France.—Dr. Helen MacMurchy, Toronto, has been elected president of the Women's Canadian Club, Toronto.—Col. Alexander Primrose, Toronto, is mentioned as professor of surgery in the University of Toronto, in case there should be a reorganization of the medical staff.—Lieut.-Col. George G. Nasmith, C. M. G., of the department of health, Toronto, has been presented with a diploma in public health by the University of Toronto.—Surg.-Gen. George A. Sterling Ryerson, Toronto, on his western trip to the Pacific Coast, was detained several weeks in Seattle by the serious illness of his wife.—Sir James A. Grant, Ottawa, is the only living member of the medical council of Ontario of 1866. He has been present at almost every meeting of the council in the last fifty-one years. He is also the only living member of the first Canadian Parliament at Confederation in 1867.—Dr. Alvin M. Warner, Vancouver, B. C., has been mentioned in

dispatches from East Africa. Captain Warner gave up his practice early in 1916 to join the R. A. M. C. He was given command of the Blue Carrier Hospital and has built it up to an institution of 1,200 beds.

GENERAL

Surgeon-General Receives Degree.—Surg.-Gen. William C. Braisted, U. S. Navy, while in Chicago attending the meeting of the American Medical Association, had conferred on him the degree of Doctor of Science, by the Northwestern University, Evanston, Ill. -

New Medico-Psychologic Officers.—At the annual meeting of the American Medico-Psychological Association in Chicago, June 5 to 7, under the presidency of James V. Anglin, St. Johns, N. B., the following officers were elected: president, Dr. Elmer E. Southard, Boston; vice president, Dr. Henry C. Eyman, Massillon, Ohio; secretary-treasurer, Dr. Arthur P. Herring, Baltimore, and auditor, Dr. Joseph C. Clark, Sykesville, Md.

Bequests and Donations.—The following bequests and donations have recently been announced:

Michael Reese Hospital, Chicago, \$20,000, by the will of Joseph Schaffner.

Methodist Hospital and Deaconess Home, Indianapolis, \$50,000, by the will of Charles W. Fairbanks, Indianapolis.

Medical Department, University of Pennsylvania, \$50,000 for the founding of a chair of gynecology, by the will of Dr. William C. Goodell.

Middlebury (Conn.) College, \$50,000 for the building of a hospital, a donation by Mr. William H. Porter, New York City.

Climatologists Elect Officers.—The American Climatological and Clinical Association, at its thirty-fifth annual convention held in Boston, June 5 to 6, elected the following officers: Dr. Guy Hinsdale, Hot Springs, Va., president; Drs. Joseph H. Pratt, Boston, and Hugh M. Kinghorn, Saranac Lake, N. Y., vice presidents; Dr. Arthur K. Stone, Boston, secretary-treasurer, and Dr. William D. Robinson, Philadelphia, recording secretary.

Surgeons Elect Officers.—At the annual meeting of the American Surgical Association, held in Cincinnati, June 6 to 8, under the presidency of Dr. Thomas W. Huntington, San Francisco, the following officers were elected: president, Dr. Lewis S. Pilcher, Brooklyn; vice presidents, Drs. George W. Crile and Edward Martin, Philadelphia; secretary, Dr. John H. Gibbon, Philadelphia; assistant secretary, Dr. Francis T. Stewart, Philadelphia; treasurer, Dr. Charles H. Peck, and assistant treasurer, Dr. Charles N. Dowd, New York City.

Federal Aid and Extension of Rural Sanitation.—At the sixteenth annual conference of state and territorial health authorities with the United States Public Health Service, Washington, D. C., June 3 and 4, resolutions were adopted reciting the need of rural sanitation and endorsing federal aid extension. The U. S. Public Health Service was urged to persist in securing legislation to this end, with the assistance of state health organizations. A federal system of supervision of the health of war industrial centers was advocated. Arkansas was commended for its compulsory vaccination law. The Chamberlain-Kahn bill for the suppression of venereal diseases among the civilian population, as well as in the military forces, was endorsed. A committee was recommended to study and report on sewage disposal in unsewered communities, and the authorities were called on to ascertain and make a statement of the number of members of the medical profession, sanitary engineers and graduate nurses taken from public health work by military needs, and the number that will probably be taken from such work. A committee of five was selected to confer with the committee on sanitary policy under war conditions.

FOREIGN

Prize for Research on Arsphenamin (Salvarsan).—The Academia de Ciencias Medicas of Bilbao, in northern Spain, offers two prizes of 250 pesetas each for the best work on arsphenamin and its derivatives, their production and chemical differentiation, and pharmacologic research on them and on methods of making them in Spain. Competition is open only to Spanish physicians, pharmacists, veterinarians and dentists, and the works must be in the hands of the secretary before Aug. 1, 1918. Address, Secretario general, C. Mendaza, Bilbao.

Netherlands Hospital Unit in France.—On the occasion of his leaving for return to the Netherlands, Dr. L. van den Steen, who has been at the head of the Netherlands ambulance at Pré Catalan, Paris, was presented with a bronze

medal by the Netherlands colony in Paris, with much ceremony. The French government also presented him with the Cross of the Legion of Honor in recognition of his devoted services for such a long time. The *palmes académiques* were also conferred on his wife. His place as chief of the ambulance has been taken by Dr. A. E. Vermey, who has been at the hospital since the first of the year.

Honors Asked for Medical Men in Austria.—The *Nederlandsch Tijdschrift* relates that in the lower house of the Austrian parliament an appeal recently was made to the authorities to arrange for more appropriate recognition of the difficult and dangerous work accomplished by the members of the medical corps of the army. Some of the deputies emphasized that many hundreds have died or been weakened by infectious diseases or have been held war prisoners for years. No provisions, however, have been made for decorating them for conspicuous gallantry beyond the same distinctions granted to nurses, officers' wives and court lackeys. The deputies demanded that the medical officers should be placed on the same plane in this respect as other military officers.

Medical Care for Refugees in France.—The *Progrès Médical* gives the text of a recent official notice which provides that army physicians and surgeons and the mobilized civilian medical men are to care for refugees in their respective districts when called on to do so by the prefect of the place when the local civilian force of physicians is inadequate to attend them. No fees are to be asked or accepted. Parties of refugees in barracks, improvised hospitals, etc., come under the provisions of this notice. The chief of the regional army medical department is to furnish the medical personnel at the request of the prefect. The medicines and dressings used are to be supplied by the usual provisions for care of the indigent. If they are provided by the army medical department, the latter will be reimbursed by the state department of the interior.

Death of Pozzi.—The cable brings the tragic news that Professor Pozzi of Paris, aged 72, was recently shot by a man—probably demented. Prof. Jean Samuel Pozzi was well known in this country, as he was a prominent figure at international medical gatherings, and what he had to say on gynecology and abdominal surgery was authoritative. He had been president of the Société de Chirurgie, d'Anthropologie and de Gynécologie, and presided at many medical congresses besides taking a prominent part in national legislation as senator, as member of the conseil de surveillance of the Assistance publique. He founded the *Revue de Gynécologie et de Chirurgie abdominale* in 1897, and his *Traité de Gynécologie* has been translated into five languages at least. Besides a love of travel, he was interested in archeology, and was vice president of the French society for archeologic research.

Deaths in the Profession Abroad.—G. J. G. Minderop, a prominent physician of Rotterdam, aged 84.—B. Sommer, professor of dermatology at the University of Buenos Aires; delegate from Argentina in various international medical and specialist gatherings; secretary of the international conference on leprosy at Berlin in 1897, and for a time chief of the Asistencia Publica of Buenos Aires and member of the city council.—P. Gomez of Bogota, Colombia, who helped to lay the foundation for the prophylaxis and treatment of epidemic diseases in Colombia, aged 74.—J. G. del Castillo, medical inspector of the Argentine navy into which he introduced vaccination against typhoid and obligatory prophylaxis against venereal disease.—R. Frias, professor of surgery at the University of Lisbon, aged 65.—Perrin de la Touche, professor of physiology at the medical school at Rennes and lately director of the school, also a son, grandson and great grandson of physicians.—The *Nederlandsch Tijdschrift* mentions the death of the surgeon, F. Riedinger, at Würzburg, aged 73; of the pediatricist Ganghofner of Prague, aged 75; of the neurologist Lewandowsky of Berlin, who succumbed to typhus, and of the ophthalmologist, S. Bernheimer of Innsbruck.

CORRECTION

Body of Colonel Reno Not Recovered.—Some time ago THE JOURNAL printed a statement to the effect that the body of Col. W. W. Reno, reported lost at sea, had been recovered. The statement was taken from a newspaper item. We find on investigation that the newspaper item was in error, and that, although thorough search has been made, the body of Colonel Reno has not been found.

LONDON LETTER

LONDON, May 28, 1918.

The Bombing of British Hospitals

German "thoroughness" has left no possible atrocity undone in this war, and attacks on the Red Cross by sea and land have become a commonplace. But for sheer fiendishness the recent bombing of a large group of hospitals in France may be regarded as the climax. The hospital tents cover a great area of ground, and the Germans are perfectly well aware of the character of the place; the entire absence of concealment makes it a mark which no airman could possibly miss. Bombs dropped from any height in any wind must land somewhere among the attendants' quarters or the tents occupied by the wounded. On a Sunday night two separate squadrons, numbering together more than a score of machines, dropped bombs which caused many casualties to patients, sisters and medical officers far exceeding those of a London raid. Taught by experience that the Red Cross is no protection against German barbarity, the authorities had provided shelters to which the sisters could have gone for refuge; but as the cots were filled with helpless wounded, many hundreds of whom could not be moved, they refused to leave their patients and did their best to keep up their courage. Many paid for their devotion with their lives. Some of the German machines came down low, and the raiders raked the hospital tents and attendants' quarters with their machine guns. The captain of one machine, formerly employed in the German diplomatic service, was brought down wounded. He tried at first to excuse himself by saying he saw no Red Cross. Challenged with the fact that he knew he was attacking hospitals he endeavored to plead that they should not be placed near railways and if they were they must take the consequences. But apart from the fact that hospitals must be near railways for the transport of patients, the raiders in this case did not attack the railway but deliberately bombed the hospital.

Physicians for the Army

New regulations have been made relating to applications for the exemption of physicians from army service. A special medical tribunal is to be appointed which can refer applications to local professional committees to report on them. As in the past, applications concerning members of the staffs of London hospitals will be referred to a special committee of reference. When the circumstances of each locality are under review, notification will be sent by the Minister of National Service to each physician affected, informing him of the time in which he may apply for exemption from military service. There is a special provision under which an exemption shall be subject to the condition that the physician shall undertake such professional service as the government may deem best in the national interests. This provision has been made because the demand for physicians for military and civil service is so great that only by a careful distribution of the available physicians can the requirements of the country be met.

An Index of Military Medical Officers

A card index of all medical officers whether regular, retired, special reserve, territorial, or holding temporary commissions, has been in existence for some time and is now being extended and completed. It has been found of great utility. Medical officers are asked to furnish particulars as to age, medical school, qualifications, hospital and other appointments, such as that of health officers, and to give information as to any special training, research work or publications. They also have to furnish information as to how they have been employed during the war. These particulars are transferred to index cards which are kept at the director general's office. When an officer is posted to an expeditionary force or command a duplicate is forwarded to the headquarters of the force where it may be added to, or form the basis of, what may be called a local card index. The blanks filled in by the medical officers after being used for the purpose of the card index will be passed on after classification to a series of specialist committees, who will grade the officers according to the extent and nature of their experience. Thus, for example, an officer who has undertaken or directed independent researches will be put in Grade 1, from which selection will be made for higher appointments, such as director of the military laboratory. An officer with less experience, who has shown himself capable of research under supervision, will be placed in Grade 2 and eligible

for similar employment in military laboratories. Officers trained in bacteriology, but who have not yet done research work, will be placed in Grade 3 and employed as assistants in military laboratories. The same principle will apply to other specialties.

A Hospital Alleged to Be a "Nuisance"

An unusual case has been heard in the High Court of Justice in which the proprietors of a house in Newport brought an action to restrain the defendants from using it as a hospital for surgical tuberculosis, on the grounds that this would be a "nuisance." One of the covenants in the lease was that no noisy, noisome or offensive trade or business was to be carried on. The plaintiffs alleged that tuberculosis is an infectious disease and the hospital a source of danger to the neighborhood. For the defendants a large mass of expert evidence was given that the hospital would not be a source of danger to the neighborhood and that there was no risk of infection to those in its immediate vicinity. The judge, Mr. Justice Eve, therefore decided that the hospital was not a nuisance. He found as to the sights that it was not proved that "every detail of the dressing of the patients was visible to inhabitants of neighboring houses." As to noise, it had been exaggerated, and, like the sights, could not reasonably be said to amount to anything that was noisome or offensive, though he could well understand that it might now and again be distressing and even annoying. As to smells, the case on the disinfectants, in his opinion, came to nothing, and as the alleged smell from the burning of dressings and bandages was not mentioned until the trial, when the defendants had no opportunity of investigating the matter, he should not allow that to be substituted for the complaint in the pleading. The hospital was in no sense a danger to the neighborhood and there was nothing in the way in which it was conducted that could properly be said to be noisome or offensive.

Precautions Against the Spread of Malaria in England

In a previous letter to THE JOURNAL some cases were related in which soldiers suffering from malaria had, through the medium of mosquitoes, been a source of infection. This danger from the return of infected soldiers from abroad has been apprehended by the War Office for some time. Early in 1917 it was decided to concentrate infected soldiers in eight special malaria hospitals under the control of medical officers experienced in the disease. Col. Sir Ronald Ross has now issued a memorandum on the subject. Indigenous cases of malaria began to appear in England last summer. The first series consisted of five or six cases of benign tertian in the Aldershot district among the troops. Then some civil and military cases were reported in other districts. Civilian health officers were communicated with and worked in conjunction with the military authorities. General instructions for the treatment of malaria patients, both in hospital and outside, were issued broadcast by the War Office. According to these, all malaria patients were given 60 grains of quinin weekly, and were provided with additional bottles of quinin tablets in order to prevent relapses of fever and the spread of the disease from malaria carriers to healthy persons. Simultaneously, all malaria patients in places where mosquitoes abounded were collected in sheds protected against the entry of the insects, when they were not sent to special malaria hospitals. The patients in the malaria hospitals were similarly protected when necessary. Much work was done in the way of clearing and oiling pools and watercourses. For military reasons it was not found possible altogether to keep old cases of malaria out of all districts where anophelines abound, but it is thought that protection from mosquito bites with persistent dosing with quinin will suffice to check the spread of malaria from the military cases in such localities. In Sir Ronald Ross' opinion the anophelines are comparatively so scarce in most parts of Britain as to render the danger of spread of malaria a negligible quantity, except only at a few spots where the insects are more numerous. Nevertheless special precautions are being taken even in places where no indigenous cases are known to have occurred. Several medical officers have been engaged in moving about among the most dangerous areas in order to supervise the measures that are being taken to inspect local conditions and to instruct local authorities, both civil and military. Sir Ronald Ross himself inspected most of the dangerous localities, and experienced entomologists have made surveys in them. A general system has been adopted for the immediate notification of all cases of malaria entering the United Kingdom from abroad, for

the purpose of recording where such patients disembark and where they go when on leave or are stationed when on duty or in hospital. Health officers are informed when all such patients enter their districts, and the subsequent career of these persons is watched and a regular monthly report sent in by medical officers of all units and hospitals in the United Kingdom. These reports are collected and tabulated and studied. Up to the present no cases of indigenous malaria have been reported during the present year. Former foci of malaria in England are under minute supervision, and if new foci develop, experts will be sent to deal with the matter forthwith.

American Hospital in Ireland

A spacious dwelling house, with a large area of land attached, not far from Queenstown, has been acquired by the American naval authorities as a hospital for men in American naval vessels employed on this side of the Atlantic. Wooden dormitories to accommodate 250 sick men will be added to the present building. These dormitories will be built in America in sections and brought over to the hospital, which will be staffed by the American Red Cross.

PARIS LETTER

PARIS, May 23, 1918.

Tumors of Traumatic Origin

Prof. J. L. Faure recently directed attention to tumors of traumatic origin of which Dr. Vitrac of Libourne had reported two interesting cases. One of the patients was a soldier who had been wounded, April 3, 1917, by a large shell fragment which entered the external aspect of the thigh, below the great trochanter. The fragment was arrested in the popliteal region without having wounded any of the vessels or nerves. The projectile was extracted after a very free dissection, and the patient was later evacuated. April 29, much suppuration was present; but by the middle of June, cicatrization was complete. Toward the end of the month there was noted a swelling, about the size of a nut, very hard, but not painful or tender. Naturally, it was regarded as an inflammatory mass, but little by little it took on all the characteristics of a malignant tumor. Various treatments, including specific, were resorted to, but all met with failure. The tumor continued to increase in size until it measured 18 cm. in length and from 6 to 8 centimeters in width. It was extirpated, Sept. 21, 1917. The lower pole of the tumor was encapsulated, but the upper pole was separated with difficulty from the muscles, which were more or less degenerated and lardaceous. Recovery was uneventful. The enlarged glands in Scarpa's triangle reacted favorably to radiotherapy. Histologic examination of the tumor showed it to be an angiosarcoma.

The second case was that of a mounted artilleryman who, March 10, 1916, had his left thigh pressed severely against the trunk of a tree. He was in the hospital for a month, nothing more than the ordinary signs of a contusion being found as the result of his accident. He returned to duty and had no further inconvenience until September, 1917, when he noticed a mass on the antero-external surface of his thigh. This mass slowly increased in size and also became painful. The man was operated on, March 1, 1918. The tumor was firmly adherent to the surrounding tissues and extended down to the periosteum of the femur. It was removed with great difficulty, and much bleeding was present. The tumor was of about the size of an orange. Histologic examination showed that it was an encapsulated sarcoma with much telangiectasis.

These two observations seem to prove that a sarcomatous tumor, if the diagnosis was correct, may be caused by trauma. These cases occur too often for the fact to be doubted. Faure saw a woman recently who had received a severe blow on the breast in an automobile accident. The skin was severely contused and sloughed; a scar several centimeters square formed. Several months afterward an elongated movable mass was noted under the cicatrix with all the characteristics of a benign tumor. It has not been possible to determine its exact nature because the patient has refused operation; but today, three and a half years later, the tumor is still there and growing larger.

In the discussion that followed, Broca stated that there is no scientific proof of the traumatic origin of tumors, and that in all these cases the germ of the tumor had probably been present but dormant. Mauclore said that a distinction must be made between malignant and benign tumors. A trauma is often the evident cause of an osteoma, but he did not believe that that was the case in the production of a

sarcoma. Kirmisson admitted that a trauma can, in some cases, act as a sort of stimulant or impulse to a latent neoplasm, which would not have taken on active growth except as the result of the accident. Thiéry said that in spite of the real importance of this subject, one can accept more easily the relationship of trauma with a number of other affections of unknown etiology (appendicitis, so-called local tuberculosis, tumor). Too little attention is paid, to begin with, to establishing the actual, distinct, important or probable occurrence of the trauma at the exact point where the neoplasm develops. More rigorous investigation would often show the unfoundedness of the patient's statements, even when there is no question of his sincerity. The tumor may not have developed on the precise spot that was traumatized. Thiéry does not know of a single case in which he has been able to establish even a probable relationship between the trauma and the appearance of the tumor (not including epithelial degenerations of cicatrices, of burns, etc.). Chaput cited a case of trauma of the right iliac fossa by a wagon pole, which, in the course of a few weeks, was followed by the appearance of a sarcoma to which the patient, a young man, succumbed quickly. From the point of view of industrial accidents, responsibility is admitted when the occurrence of a severe trauma is established. Arrou saw a young girl who had received a trauma of the thigh, and in a few weeks a tumor, having all the appearances of a sarcoma, appeared. When that tumor was examined in the laboratory it was found to be merely an inflammatory mass.

National Headquarters for Rehabilitation of Crippled and Disabled Soldiers

The institution of this service was mentioned in a previous letter (THE JOURNAL, June 1, 1918, p. 1784). The members of the committee in charge of this work have been appointed for a period of three years. They consist of representatives of the ministry of work, of commerce, agriculture, marine, finance, public instruction and of the colonies. One of the representatives of the ministry of war is Dr. Jeanbrau, surgeon-major, of Montpellier, chief of the section of the professional reeducation of the disabled. Drs. Rieffel and Camus of Paris and several directors of the schools of reeducation are also members of the committee.

War Archives and Museum at Val-de-Grâce

Two years ago the undersecretary of state for the Service de Santé militaire ordered that the medical and surgical archives of the war be deposited in the Ecole d'application de médecine et de pharmacie militaire du Val-de-Grâce. This is situated on the rue Saint Jacques, Paris. Previously made collections and the libraries of the Ecole du Val-de-Grâce and other establishments constitute a most important educational aid, the further extension of which must be foreseen. In order to facilitate the growth and development of this institution, it has been decided to unite, in the form of autonomous establishments, the various services heretofore under the jurisdiction of the undersecretary of state of the Service de Santé militaire. The new establishment will be known as the musée du Val-de-Grâce, comprising the collection of the archives and documents of war, the central library of the Service de Santé militaire, and the archives of military medicine and pharmacy, so that all the services will be placed under the jurisdiction of the musée directors by order of the minister of war. The director of the Ecole d'application de médecine et de pharmacie militaire du Val-de-Grâce, will be *ex officio* in charge of the whole as the representative of the state war department.

Decoration of the Legion of Honor Awarded to Civilian Physicians for Devoted Services in War Time

The cross of the Legion of Honor (grade of officer) has been awarded to Dr. Langlet, mayor of Reims. Dr. Samsoen, municipal councilor of Hazebrouck, department du Nord, and Dr. Hoel of Reims have been made chevaliers of the Legion for heroic services rendered to the civilian population during the bombardments of Reims.

Promotions in the Auxiliary Medical Service

The undersecretary of state for the Service de Santé militaire has decreed that all physicians connected with the service auxiliaire, whether of the grade of médecin auxiliaire or not, shall be recommended for the grade of médecin aide-major of the second class, temporarily, if they have not yet made the request. These promotions will become effective automatically, provided the applicants have shown professional aptitude (*certificat de visite et de contre-visite* testify-

ing to physical fitness for light medical service, for instance, in the hospitals of the *zone des étapes*), and that they will give the guarantees demanded of all officers.

Refugee Trains

One of the three societies composing the French Red Cross, the Société de secours aux blessés militaires, which has been administering to the needs of the reconstructed villages, has come to the assistance of the population of these villages when, on invasion by the enemy, they had to abandon their homes again. A service was organized at once to accompany the refugees on the transport trains. These trains which sometimes are in transit for day and night, are supplied with food by the nurses at the railroad depots where food is prepared in advance. Two nurses accompany each train until it reaches its destination. During the transit they give the occupants all the care which they need; they distribute milk to the children, give the sick warm drinks, soups and warm clothing. Each train is provided with a first aid box and a small pharmacy. Up to the first of May, thirty trips had already been made by sixty nurses of the society.

Personal

In its session of May 14, the Académie de médecine elected Dr. Theodore Tuffier a member of the section on surgical pathology, and Dr. Patein a member of the section on pharmacy. Dr. Patein is chief pharmacist of the Lariboisière hospital, and was formerly president of the Société de pharmacie and of the Société de thérapeutique.

Marriages

LIEUT. HAROLD LINHOFF BRERETON, M. R. C., U. S. Army, Emmetsburg Iowa, on duty at Camp Dix, N. J., to Miss Isabel Catherine Bayne of Fergus, Ont., formerly superintendent of nurses at the L. L. Culver, Union Hospital, Crawfordsville, Ind., at Brooklyn, N. Y., April 23.

ASST. SURG. CARL JAMES ROBERTSON, U. S. N. R. F., Litchfield, Minn., on duty at Great Lakes, Ill., to Miss Marjorie Kohl of Wayne, Nebraska, at Evanston, Ill., May 22.

LIEUT. LAWRENCE DAVID ENLOE, M. R. C., U. S. Army, Jefferson City, Mo.; on duty at Camp Pike, Ark., to Miss Dorothy Agee of Jefferson City, at St. Louis, June 4.

LIEUT. JOHN ANDREW SAARI, M. R. C., U. S. Army, Eveleth, Minn., on duty at Fort Lee, Va., to Miss Allie Miettinen of Brookston, Minn., in Chicago, June 1.

LIEUT. WALTER LELAND RICHARDS, M. C., U. S. Army, Pocomoke City, Md., on duty at Camp Greenleaf, Ga., to Miss Edith Coleman of Baltimore, June 8.

LIEUT. WILBUR CARTER, M. R. C., U. S. Army, Sherman, Texas, on duty at Fort Riley, Kan., to Miss Gladys Wolfe of Sherman Texas, April 8.

ASST. SURG. NOEL CARLYSLE ICE, U. S. P. H. S., of Cleveland, on duty at Nitro, W. Va., to Miss Zelma Jockisch of Beardstown, Ill., June 1.

CAPT. ROBERT ANTHONY KILDUFF, M. R. C., U. S. Army, Chester, Pa., on duty at Camp Meade, Md., to Miss Adelaide Long, June 12.

LIEUT. CHARLES HENRY REINHARDT, M. R. C., U. S. Army, to Mrs. Mary Baker, both of Chicago, at Newport News, Va., April 13.

ASST. SURG. HARVEY ROSS McALLISTER, U. S. Navy, Washington, D. C., to Miss Edith Lulu Sooy of Alameda, Calif., May 23.

P. A. SURG. FRANK HALDANE HAIGLER, U. S. Navy, Washington, D. C., to Miss Maybelle Hefferlin of Portland, Ore., June 11.

CAPT. HENRY EDWARD MELENEY, M. R. C., U. S. Army, Brooklyn, to Miss Elsie Genevra Todd of Springfield, Mass., June 12.

LIEUT. WALTER DARROW BAYARD, M. R. C., U. S. Army, Fargo, N. D., to Miss Myrtle Baker of Chicago, recently.

CHARLES CARTER CRANMER, New York City, to Miss Ada Hortense Van Giesen of Hackensack, N. J., June 27.

LIEUT. FRANK NEVIN OGDEN, M. R. C., U. S. Army, to Miss Ellen Price McCarty, both of Baltimore, June 13.

WILLIAM WARREN STEVENSON, Chicago, to Miss Caroline E. Pretzlaff, at Sibley, Ill., June 10.

Deaths

Major Eugene Wilson Caldwell, M. R. C., U. S. Army, New York City; University and Bellevue Hospital, Medical College, 1905; aged 44; a Fellow of the American Medical Association; a member of the American Roentgen Ray Association, and its president in 1907 to 1909; a member of the New York Academy of Medicine; who for more than twenty years had devoted his time almost exclusively to experimental work with the roentgen rays and their practical application



Died in the Service
IN FRANCE

LIEUT. ABNER P. H. SAGE, M. R. C.,
U. S. ARMY, 1889-1918

in diagnosis; the inventor of the Caldwell liquid interrupter, and many other appliances used with the roentgen ray; visiting physician to the roentgen department of the Presbyterian Hospital, New York City; director of the Edward N. Gibbs Memorial X-Ray Laboratory, Bellevue Medical College; author of a standard textbook and of many monographs on the roentgen rays and telephony; died in Roosevelt Hospital, New York City, June 20, from burns sustained the day before while making roentgen-ray experiments.

Thomas Cook Stellwagon, Media, Pa.; University of Pennsylvania, Philadelphia, 1868; aged 76; a Fellow of the American Medical Association; a graduate of the Pennsylvania Dental College in 1861; and for nearly half a century a dentist of Philadelphia; for many years professor of physiology in the Philadelphia Dental College, and in the Medico-Chirurgical College of Philadelphia, and one of the founders of the latter institution; a veteran of the Civil War, in which he served in the Navy; died at his home, June 7.

Ernest Varian Scribner, Worcester, Mass.; Bowdoin Medical School, Brunswick and Portland, Me.; aged 62; a Fellow of the American Medical Association; a member of the American Medico-Psychological Association; for thirty-seven years a member of the staff of the Grafton and Worcester State hospitals, and assistant superintendent and superintendent of both institutions; an alienist of high rank; for six years superintendent of the Worcester State Hospital; died at his home, June 14.

George Edward Swift, Hudson, N. Y.; Albany (N. Y.) Medical College, 1884; aged 58; a member of the Medical Society of the State of New York; health officer of Hudson and Columbia County for several terms, and visiting physician to the Hudson Hospital; second lieutenant in the National Guard of the State of New York for five years; died in the Hudson Hospital, May 31, eleven days after an operation for appendicitis.

William Summer Clark, Los Angeles; Central College of Physicians and Surgeons, Indianapolis, 1881; aged 62; a Fellow of the American Medical Association; chairman of the tree-planting committee of the Los Angeles City Club; and prominent as a civic worker; was killed in an automobile accident near Compton, Calif., June 4.

Lieut. William Louis Miller, M. R. C., U. S. Army, Saginaw, Mich.; University of Oregon, Portland, 1915; aged 28; a Fellow of the American Medical Association; a registered pharmacist; on duty with Ambulance Company No. 128, Sanitary Train No. 107, Thirty-Second Division, American E. F. in France; was killed, May 28.

Valentine Mott, New York City; Bellevue Hospital Medical College, 1878; aged 65; a Fellow of the American Medical

Association; attending surgeon, outdoor department, Bellevue Hospital; one of the earliest exponents of the Pasteur prophylactic treatment for hydrophobia; died in New York City, June 20, from angina pectoris.

James Livingston Wilgus, Chicago; Medical College of Indiana, Indianapolis, 1896; a Fellow of the American Medical Association; while driving in his automobile, over a level crossing near Grand Beach, Mich., was struck by a Michigan Central train, June 7, and died from his injuries a few hours later in a hospital at South Bend.

Charles Perkins Cook, Churchtown, N. Y.; New York Homeopathic Medical College, New York City, 1868; aged 73; for thirty years physician to the Hudson Orphan Asylum; for several years health officer of the city and once assistant surgeon-general of the state; died at the home of his son in Brookline, Mass., May 28.

Lieut. David Mays Vogt, M. R. C., U. S. Army, Newmans-town, Pa.; University of Pennsylvania, Philadelphia; aged 32; on duty at Picatinny Arsenal, Dover; was injured by the overturning of his automobile near Millburn, N. J., and died in the Overbrook Hospital, Summit, N. J., May 30, from his injuries.

Major Woods Walker Lynch, M. R. C., U. S. Army, Midland, Texas; University of Texas, Galveston, 1899; aged 45; on duty at Base Hospital, Camp Sheridan, Montgomery, Ala.; formerly a Fellow of the American Medical Association; a member of the State Medical Association of Texas; died, June 9.

William Vestus Balch, Galway, N. Y.; College of Physicians and Surgeons in the City of New York, 1871; aged 68; health officer of Saratoga County; vice president of the board of managers of the Homestead Sanatorium and the Saratoga County Tuberculosis Hospital; died at his home, June 5.

Michael Gramling Salley, Orangeburg, S. C.; University of Maryland, Baltimore, 1872; aged 68; formerly a Fellow of the American Medical Association; a member of the South Carolina Medical Association; died at the home of his daughter in Columbia, S. C., June 9, from angina pectoris.

Charles Herbert Williams, Boston; Harvard Medical School, 1874; aged 67; a Fellow of the American Medical Association, and a member of the American Ophthalmological Society; a well known specialist on diseases of the eye; died at his home in Cambridge, June 9, from heart disease.

Lieut. Abner Potts Hubert Sage, M. R. C., U. S. Army, Memphis, Tenn.; Jefferson Medical College, 1913; aged 29; a member of the Tennessee State Medical Association; on duty with a British field ambulance in France; died, May 30, from wounds received in action.

John William Harris, Eugene, Ore.; Willamette University, Salem, Ore., 1884;



Died in the Service
IN FRANCE

LIEUT. WILLIAM L. MILLER, M. R. C.,
U. S. ARMY, 1890-1918

aged 64; formerly a member of the Oregon State Medical Association; was found dead, June 7, in Hendricks Park, near Eugene. His death is believed to have been due to exhaustion.

John Merritt, Brooklyn; Long Island College Hospital, Brooklyn, 1875; aged 72; for several years attending physician at the Sheltering Arms Day Nursery, Brooklyn; died at his home, March 9, from senile debility.

Orlando Benedict Mayer, Newberry, S. C.; Medical College of South Carolina, Charleston, 1874; aged 64; formerly a Fellow of the American Medical Association; died recently.

Henry R. Watts, Baltimore; University of Maryland, Baltimore, 1864; aged 75; a veteran of the Civil War, in which he served in the Navy, afterward appraiser in the Baltimore Custom House; for twenty years a pharmacist; died at his home, May 24.

Leo Joseph Flanagan, South San Francisco, Calif.; Georgetown University, Washington, D. C., 1911; aged 32; formerly a member of the Medical Society of the State of California; died in St. Mary's Hospital, San Francisco, June 11, from pneumonia.

Gilbert Emanuel Anderson, North Bend, Ore.; Barnes Medical College, St. Louis, 1911; aged 36; a member of the Oregon State Medical Association; died at his home, June 10, from septicemia, following an infected wound of the thumb.

Robert Graham Ralston, Cowansville, Pa.; Jefferson Medical College, 1860; aged 88; a member of the Medical Society of the State of Pennsylvania; for fifty-seven years a practitioner of Cowansville; died at his home, May 23.

Edwin G. Cowperthwaite, Philadelphia; Hahnemann Medical College, Philadelphia, 1895; aged 44; for several years a member of the staff of the eye dispensary of the Hahnemann Hospital, Philadelphia; died at his home, June 11.

Cleveland James Shambaugh, Cherry Valley, Ill.; Bennett Medical College, Chicago, 1911; aged 32; who was overcome by heat, June 16, committed suicide by cutting his throat in a garage in Cherry Valley, June 17.

Lieut. Charles Francis Butler, M. R. C., U. S. Army, Pittsburgh; Medico-Chirurgical College of Philadelphia, 1915; aged 23; a member of the Medical Society of the State of Pennsylvania; died, June 4.

Frederick Weygandt, Brooklyn; College of Physicians and Surgeons in the City of New York, 1875; aged 70; formerly a member of the Medical Society of the State of New York; died at his home, June 12.

Joseph J. Back, Newport, Ky.; Medical College of Ohio, Cincinnati, 1902; aged 39; formerly a member of the Kentucky State Medical Association; died at his home, June 9, from tuberculosis.

William S. Town, Rockford, N. Y.; University of Buffalo, N. Y., 1880; aged 64; health officer of Niagara County, and of the town of Cambria; died at the home of his brother in Newfane, June 8.

Adelaide Eliza Thomas, Florence, Mont.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1896; aged 77; died in Carleton, Mont.; June 10, from cerebral hemorrhage.

John Edwin Urqhart, Ashfield, Mass.; University of Maryland, Baltimore, 1883; aged 58; a Fellow of the American Medical Association; died at his home, June 14, from cerebral hemorrhage.

Lewis Edward Harvie, Danville, Va.; Medical College of Virginia, Richmond, 1867; aged 75; a member of the Medical Society of Virginia; a Confederate veteran; died at his home, recently.

Kenney N. Miller, Houston, Texas; University of Louisville, Ky., 1884; aged 58; a Fellow of the American Medical Association; died at his home, June 13, from heart disease.

Carl Louis Muller, Nevada City, Calif.; Jefferson Medical College, 1888; aged 56; a Fellow of the American Medical Association; died in a hospital in San Francisco, June 11.

William C. Kelly, Flint, Mich.; Milwaukee (Wis.) Medical College, 1897; aged 61; a member of the Michigan State Medical Society; died at his home, June 8.

Donat F. Racicot, Biddeford, Me. (license, Maine, Act of 1895); aged 59; a practitioner for more than twenty-five years; died at his home, June 13.

Thomas Banter Hopper, Jersey City, N. J.; Bellevue Hospital Medical College, 1891; aged 52; died at his home, April 8, from pneumonia.

Neal Baker Dean, Alexander City, Ala.; Tulane University, New Orleans, 1905; aged 34; died at his home, May 9, from bronchopneumonia.

Howell Cobb Davies, Youngstown, Ohio; University of Pittsburgh, 1897; aged 42; died at his home, June 9, from pernicious anemia.

Stephen W. Gerrow, New Paltz, N. Y.; Castleton (Vt.) Medical College, 1856; aged 83; died at his home, June 13.

James Roderich Berwick, Methuen, Mass.; Dartmouth Medical School, Hanover, N. H., 1899; died suddenly, June 1.

A. N. Snoddy, Dayton, Ind.; Medical College of Ohio, Cincinnati, 1859; aged 84; died at his home, June 12.

Correspondence

UNRIGHTEOUS PROFITS IN PATENTED PRODUCTS

To the Editor:—In line with Dr. Bevan's address in regard to leaving German scientists and preparations alone and using American, I will state that "Aspirin Bayer" decreased in price from \$8.80 to \$4.40 per thousand at the time their patent expired, about eighteen months ago. The foregoing were prices I paid at that time, being a retail druggist. Physicians, not druggists, paid more. They were charging \$4.40 per thousand above legitimate profit or they would not have reduced the price that amount when their protection expired. I wonder how many millions of these \$4.40 went to help the kaiser.

The government should protect a patentee (if not a Hun) but should not allow him to collect cost plus a legitimate profit and then double the charge.

C. H. HARRIS, M.D., New Paris, Ohio.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SERVICE FLAG—SALUTING THE COLORS

To the Editor:—1. Is the service flag intended for the Army and Navy service and their branches, the fighting men and the necessary men connected with each service aside from the fighting men, or does it also include Red Cross nurses? 2. Can you give me any information relative to the method of saluting the colors and of responding to the national air?

M. BACHMAN, M.D., Lake Park, Iowa.

ANSWER.—1. The service flag is displayed for those in the active service of the Army or the Navy of the country; Red Cross nurses on active duty with the fighting forces should be included.

2. Existing regulations governing the Army provide that when officers and enlisted men pass the national flag they will render homage as follows: If in civilian dress and covered, they will uncover, holding their head-dress opposite their left shoulder with their right hand; if uncovered, they will salute with the right-hand salute. Whenever the national air is played at any place where persons belonging to the military or naval service are present, all officers and enlisted men not in formation are required to stand at attention, facing toward the music, except when the flag is being lowered at sunset, on which occasion they are required to face toward the flag. If in civilian dress and uncovered, they should stand and salute at the first note of the air, retaining the position of salute until the last note of the air is played. If in civilian dress and covered, they are required to stand and uncover at the first note of the air, holding the head-dress opposite the left shoulder until the last note is played. In inclement weather only the head-dress may be held slightly raised. There are no laws on this subject governing the conduct of civilians, but unwritten law and excellent custom suggest that civilians act with equal courtesy toward the national colors and anthem.

THE THOMPSON MALTED FOOD STOCK PLAN

To the Editor:—About the middle of March a good many medical men here were induced to buy stock in Thompson's Malted Milk Co. of Waukesha, Wis. I bought to the amount of \$45 cash. Others bought more and some less—the stock certificate sent me was for thirty shares at \$1.50 per share.

The party who sold the stock was in town for at least two days. He told me that he was just out of New Orleans and had sold every doctor (not surgeons) of prominence in the place, gave the names and amount of stock taken and claimed that he had remained there while letters, etc., as to his reliability and that of the T. M. M. Co. was investigated. Said that he had cheerfully invited this investigation, etc.; said the Mayos used the malted milk exclusively in their hospital in Rochester; that the U. S. government had a big order for all the product they could get and preferred it to Horlick's or any other milk. Said that

as soon as the doctors, who were preferred, bought stock it would be offered to the drug stores. None was offered to any here I am told.

I told him I did not like the scheme as it did not look all right to me, but that I'd take a few shares, but wanted to know just what the stock was going to pay—I couldn't pin him down to exact figures, but he said I could not possibly lose and would have a nice little side-line that would come in very handy as the company had no debts and had paid for its plant and was selling stock in this manner, interesting doctors instead of advertising in the medical journals. By doctor's owning stock they would recommend this milk as it was the best and purest anyway. He never did say just how much the stock would pay, but said that there was no possible way for an investor to lose any money.

Do you know anything about this company? The man who sold us the stock said that it would be in every drug store here right away. I haven't yet seen any.

R. L. RANDOLPH, M.D., Alexandria, La.

ANSWER.—Seven years ago physicians were told of the glowing prospects that might follow an investment in the Thompson's Malted Food concern; we have yet to hear of any dividends being paid. The Thompson Malted Food Company was discussed in the Propaganda Department, Oct. 24, 1914; it was again discussed in the Correspondence Department, April 28, 1917. A reprint of both these articles will be sent on receipt of a two-cent stamp.

THE BABINSKI TEST

To the Editor:—1. Who is, or was, Babinski? 2. What is the Babinski test?

HENRY KETCHAM, Dallas, S. D.

ANSWER.—1. Joseph François Felix Babinski was born, Nov. 17, 1857, of Polish parents. He was graduated in medicine in 1885, and in 1890 was appointed physician to the Hôpitaux de Paris. He is noted for his original studies on the subject of brain diseases and the diagnosis and treatment of vertigo. He is a French neurologist and is living at the present time.

2. The Babinski phenomenon consists of a stimulation of the sole of the foot producing extension of the hallux (great toe) instead of flexion. The normal plantar reflex is one of flexion of the great toe, while Babinski's plantar reflex is one of extension. Sometimes, in testing for Babinski's sign, in addition to extension of the hallux, a fanlike spreading out of the toes is observed—*phénomène d'éventail*. The presence of the reflex indicates a disordered and usually degenerated condition involving the pyramidal tract. It is, therefore, of value in differentiating between functional and organic nervous diseases.

COMMUTATION AND INSURANCE IN NAVY AS WELL AS IN ARMY

To the Editor:—1. Do officers in the Navy receive commutation the same as officers in the Army? 2. Are Naval officers allowed to carry government insurance at the same rate, etc., as officers in the Army? 3. Where do I report for examination? Please omit my name.

ANSWER.—1. Yes.
2. Yes.
3. You may write to the Office of the Surgeon-General of the Navy, or to THE JOURNAL office, requesting an application blank, which may be forwarded to the Surgeon-General of the Navy accompanied by a request for examination before the nearest examiner.

PHYSICIANS INVITED TO CONTRIBUTE INFORMATION ON HAY-FEVER RESORTS

To the Editor:—In order to furnish reliable information to the large number of inquirers, we are preparing a list of places in various parts of the country where hay-fever subjects may find temporary relief. Physicians are therefore requested to assist in this work by sending a list of places, in their state, having the reputation of being free—or relatively free—of hay-fever.

The United States Department of Agriculture and the members of our botanical department are preparing a list of localities in relation to hay-fever from a botanic standpoint, but the report of physicians on this subject will aid greatly in establishing, for the benefit of the medical profession and the public generally, definite information on this subject.

WILLIAM SCHEPPEGRELL, M.D., Audubon Building, New Orleans, President, American Hay-Fever Prevention Association.

To Arrest Paroxysmal Tachycardia.—According to a German writer, cited by *Hospitalstidende*, tickling the palate and throat, until vomiting is induced, will arrest an attack of paroxysmal tachycardia.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

- ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capitol, Montgomery.
- ARIZONA: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.
- COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.
- CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.
- DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.
- MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.
- MASSACHUSETTS: Boston, July 9-11. Sec., Dr. W. P. Bowers, Rm. 501-1 Beacon St., Boston.
- NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.
- OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.
- OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.
- PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Mr. N. C. Schaeffer, State Capitol, Harrisburg.
- RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.
- SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.
- UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.
- WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.
- WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New York March Examination

Mr. George M. Wiley, director, Examinations and Inspections Division, reports the written examination held at New York, March, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 123 candidates examined, 115 passed and 8 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Licensed
Harvard University.....	(1918)		2
Columbia University.....	(1918)		40
Fordham University.....	(1918)		40
New York Homeo. Med. Coll. and Flower Hosp.....	(1918)		4
University and Bellevue Hosp. Med. College.....	(1918)		29
FAILED			
Columbia University.....	(1918)		3
Fordham University.....	(1918)		3
New York Homeo. Med. Coll. and Flower Hosp.....	(1918)		1
University and Bellevue Hosp. Med. College.....	(1918)		1

Nevada May Examination

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 6-8, 1918. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. One candidate was examined, who passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College	(1913)		93.4
LICENSED THROUGH RECIPROCITY			
College	Year Grad.	Reciprocity with	
Georgia College of Eclec. Med. and Surg.	(1899)		Texas
Rush Medical College	(1903)		Illinois
Barnes Medical College	(1893)		Missouri
Dartmouth Medical School	(1899)		Maine
Temple University	(1914)		Penna.

Iowa Reciprocity Report

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 12 candidates were licensed through reciprocity at the meeting held May 1, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Beunett Medical College	(1914)		Illinois
Chicago College of Med. and Surg.	(1909)		Illinois; Nebraska
Chicago Medical College	(1877)		Wisconsin

Hering Medical College	(1907)	Illinois
National Medical University	(1902)	New Mexico
Northwestern University	(1914)	Illinois
Maryland Medical College	(1912)	New Hamp.
John A. Creighton Medical College	(1915)	Nebraska
Ohio Medical University	(1907)	Ohio
Jefferson Medical College	(1916)	Wisconsin

Medicolegal

Liability of Company and Physician Under Contract for Medical Services

(*Gloss-Sheffield Steel & Iron Co. et al. v. Taylor (Ala.)*, 77 So. R. 79)

The Court of Appeals of Alabama affirms a judgment for \$300 damages in favor of the plaintiff, Mrs. Taylor, and against the defendants, the company and the "company doctor," who were sued jointly of alleged failure to render medical services to the plaintiff. The court says that it appeared that the company deducted 75 cents each month from the wages of its unmarried employees, and \$1 each month from the wages of its married employees, and in consideration of this amount the company obligated itself, in the case of a married man, to render, in case of illness, medical services to him, his wife, and family. The "company doctor" was employed by the company to render medical services to its employees, and their wives and families, under this agreement. February 9, the company deducted \$1 from the wages of the plaintiff's husband, 90 cents being paid to the physician, and 10 cents being retained by the company. March 5, the plaintiff was taken ill, and the physician was repeatedly requested, on the 5th, 6th and 7th, to visit her, but each time refused to do so, though, acting on Mr. Taylor's statement of the nature of his wife's malady, he furnished some medicine or phenolated petrolatum and codein tablets to Mr. Taylor to be administered to his wife, stating that it was unnecessary to make a professional call. On the evening of the 7th, Mr. Taylor called in another physician. It developed that Mrs. Taylor was suffering from an abscess, and by the 10th, when the defendant physician did call on her, had so far recovered as not to be in need of the services of a physician, the abscess having burst. The defendant admitted having told Mrs. Taylor's sister that he would treat Mrs. Taylor if she would take her to her house; that he would not go to Mr. Taylor's house to see her; that he did not want to have anything to do with a man that would take a case away from him and take another physician without consulting him. This was before March 9.

The court holds that the husband was under a legal duty to provide medical services and attention for his wife, when needed, so far as his ability would permit; and his contract with the defendant to render such services to her was a contract for her benefit, and the breach of it gave her the right to maintain an action therefor in her own name, either for the breach of the contract or for the negligent failure, if such there was, to perform the duty arising out of the agreement. After the defendants had entered into the agreement, it was not permissible for them to refuse to perform their part thereof, because the husband exercised his right to call in another physician. The husband was under no duty to notify the company doctor that he would call in another physician, and he was under no duty to employ only such physician as was acceptable to the professional taste of the company doctor. When the defendants entered into a valid contract to render professional services to Mrs. Taylor up to March 9, as the evidence tended to show they did, the law required them to perform their contract, and render such professional services as might be required of them up to that time, and their nonperformance could not be excused because other professional skill was obtained without their consent, unless it appeared that the additional physician materially interfered with the defendants in the discharge of their duty. It was urged that there could be no recovery in this case because a contract made by a husband for medical services to his wife is a contract made for the benefit of the husband, since he is under a legal duty to provide medical services for his wife in case of illness, and therefore the

wife is only incidentally benefited by such a contract. But the fact that the husband was under such legal duty was one reason why the wife was entitled to maintain this action in her own name. The contract had for its purpose the preservation of the wife's life and health by placing at her disposal the professional skill and services of the company doctor. The benefit to her was direct and substantial. This court would find it difficult to hold otherwise, and at the same time maintain its self-respect.

The court cannot say that the damages awarded were excessive.

Value of Services Is Question for Jury

(*Young v. Lichtenberg (N. Y.)*, 168 N. Y. Supp. 616)

The Supreme Court of New York, Appellate Term, First Department, which reverses a judgment obtained by the plaintiff, a physician, says that he brought this action against the defendant for the value of medical services rendered to the defendant at his request. The plaintiff testified at the trial as to his services and as to their reasonable value. His testimony was not contradicted. At the close of the testimony the defendant moved to dismiss the complaint, and his motion was denied. The plaintiff thereupon moved for the direction of a verdict, and the court directed one in his favor for \$157, the amount demanded in the complaint and which the plaintiff had testified was the reasonable value of the services rendered. Thereafter the defendant asked to go to the jury on the question of fact involved in the determination of the value of the services. This motion was denied. The defendant's request to go to the jury on the question of fact was not made too late, and the only serious question presented by this appeal was whether, in view of the fact that the plaintiff's testimony as to the value of his services was uncontradicted, there was any question of fact that the jury could determine. It was conceded that, in actions brought by attorneys for the value of professional services, the jury must assess the value of such services, even when there is no contradiction of the testimony adduced by the plaintiff as to the value of his services. Even though no case was cited in which the same rule has been announced by any court of this state in regard to services rendered by a physician, this court can see no possible distinction in principle as to the conclusiveness of expert opinion in regard to the value of professional services, in actions brought to recover for services rendered as an attorney and in actions brought to recover for services rendered as a physician. It follows that the judgment for the plaintiff should be reversed, and a new trial ordered, with \$30 costs to the defendant to abide the event.

"Surgeon Not Liable for Sponges Being Left in Patient" —Standard of Diligence

(*Cassingham v. Berry (Okla.)*, 168 Pac. R. 1020)

The Supreme Court of Oklahoma was reported in the Medicolegal Department of THE JOURNAL, Sept. 4, 1915, under the quoted heading, as having, in *Cassingham et al. v. Berry*, affirmed a judgment in favor of the defendant, and denied a rehearing, the action being one against a surgeon for having, as was alleged, negligently left gauze sponges in the body of the plaintiffs' mother, on whom the defendant had operated for the removal of the ovaries, which alleged negligence, it was charged, resulted in the death of the patient.

Now, on a rehearing, the court says that the one question involved in this case on which it has had misgivings was the doctrine that the degree of diligence that the law imposes on the surgeon is reasonable or ordinary care. The court earnestly requested and hoped that counsel in the argument on rehearing would give the court light on this question. But counsel did not cite, nor has the court been able to find, an instance in which the courts of law impose any standard of diligence on any one, other than reasonable and ordinary care. It is true this is a relative term. What would be reasonable and ordinary care under some conditions would be negligence under others. The importance, delicacy, hazard and moment of the undertaking all enter into the question as to what, under the circumstances, amounts to reasonable and ordinary care, and is a question of fact for the jury.

In the case at bar the evidence was that the defendant before beginning the operation counted the sponges to a trained nurse, who had been furnished by the husband of the patient, and repeatedly admonished her to keep an accurate count of the number of sponges inserted into the cavity, and did all he could to impress on her the importance of her accurately counting the number of sponges taken from the cavity, to insure that none that had been inserted remained in the cavity, and that, before closing the cavity, he asked the nurse if she had counted the sponges, and if all that had been inserted had been taken out of the cavity, and she assured him that she had counted them, and that they had all been taken out. It was also in evidence that this was an approved method, used by many leading surgeons, of keeping track of the number of sponges used in an abdominal operation.

And, under the law on diligence and the facts in this case, the court adheres to the opinion originally filed. All the justices concur.

The syllabus by the court says: The law imposes but one standard of diligence, and that is reasonable and ordinary care. This, however, is a relative term; and what would be reasonable and ordinary care under some conditions would amount to negligence under others. The importance, delicacy, hazard and moment of the undertaking all enter into the question as to what, under the circumstances, amounts to reasonable and ordinary care.

Remedy Where Board Revokes Certificate

(*Knoop v. State Board of Health (R. I.), 102 Atl. R. 609*)

The Supreme Court of Rhode Island dismisses a writ of certiorari—a writ to call up records or for review that was issued on a petition therefor. The court says the writ was sought for the purpose of quashing a record setting out the action of the members of the state board of health, whereby the certificate authorizing the petitioner to practice medicine and surgery in that state was revoked on the finding of the board that the petitioner had been guilty of gross unprofessional conduct and conduct making him an unfit person to practice medicine in the state. From the allegations of the petition it appeared, among other things, that the board served notice on him to appear before it on a certain date, and show cause why his certificate should not be revoked, and on or about said date gave him a bill of particulars in which it was alleged that he had been dispensing and distributing narcotic drugs in violation of the Harrison act, and in the United States District Court for the District of Rhode Island he had pleaded *nolo contendere* (I do not wish to contend) to an indictment found against him for violation of said act, and thereupon had been sentenced to pay a fine of \$100; also that he had violated the provisions of the state statute by illegally prescribing various narcotic drugs, etc. In his brief the petitioner stated that he brought his petition for a writ of certiorari solely because the remedy which was open to him by way of appeal was utterly inadequate, because not only would he have to bear the burden of the cost of an appeal, but he must be without compensation and redress for what he styled the wrongful and summary procedure of the state board of health, and that his situation presented just such a case of unusual hardship as should appeal to the discretionary powers of this court for relief by certiorari.

Assuming, simply for the purpose of this discussion, that the contention of the petitioner was sound that the record of the indictment above referred to was not proper or adequate evidence to support the decision of the board, this court is of the opinion that the appropriate remedy of the petitioner was by appeal, and that no such exceptional case of hardship was presented as to warrant a review of the proceedings by certiorari. From the transcript of the testimony taken in the proceedings before the board of health, which was used by the parties to the hearing before this court on the motion and petition, it appeared that there was other evidence in addition to the record of the indictment produced before the board. It was true that the board apparently based its decision on the record of the plea of *nolo contendere* and sentence thereon; nevertheless there was other evidence pre-

sented to the board which was relevant to the issue, and in proceedings under the statute the remedy provided by appeal was simple and adequate; and this court cannot review by certiorari the question as to the adequacy of the evidence.

As the appeal vacates the proceedings before the board, so far as results go, the case on such appeal comes before this court for a trial on the merits of the case *de novo* (anew), and the fact that such trial may impose some additional expense on the petitioner does not differentiate this case from the ordinary case in which appeal is taken from the decision of an inferior tribunal which is claimed to be erroneous.

Society Proceedings

COMING MEETINGS

American Academy of Ophth. and Oto-Laryn., Denver, Aug. 6-8.
American Ophthalmological Society, New London, Conn., July 9-10.
Idaho State Medical Association, Seattle, July 17-19.
Montana Medical Association, Butte, July 10-11.
Washington State Medical Association, July 10.
Wyoming State Medical Society, Casper, Aug. 7.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

*One Hundred and Twelfth Annual Meeting, held at Albany,
May 21-23, 1918*

(Concluded from page 1977)

Etiology of Nephritis

DR. CHARLES JACK HUNT, Clifton Springs: A group of nephritics, without other etiologic factor than bacterial toxins that formed chronic foci, were studied by recognized renal functional tests under control diet both before and after removal of discoverable foci. Culture study revealed the *Streptococcus mucosus* as the principal pathogenic organism. Other bacterial forms, in the order of frequency, were a diphtheroid organism, *Bacillus mitis*, *Streptococcus candidus*, *Streptococcus viridans*, and the pneumococcus.

DISCUSSION

DR. CHARLES G. STOCKTON, Buffalo: These cases are due primarily either to infection alone or to a mixture of infection and metabolic defect. I have seen rather acute types of nephritis, with marked metabolic disturbances following infection, the infection producing anasarca and cerebral symptoms of a grave character, yet I have seen those disturbances pass off without any apparent after-effect on the kidney. I have in mind a woman who went through a gestation safely, who at one time seemed to be a hopeless nephritic. In her case I feel convinced that the reason for relief was the removal of the tonsils and subsequently the careful regulation of diet and studies of the blood.

Pathology of Nephritis

DR. HERBERT U. WILLIAMS, Buffalo: The pathology of nephritis is in a rather confused state. The old classification of nephritis is simple, but it has been modified considerably in the course of time to secure a more exact classification, and nearly every one divides nephritis now into tubular and glomerular. The chronic form of glomerular nephritis is held by many to be identical with chronic interstitial nephritis. There is great difficulty in separating these from the arteriosclerotic kidney, which resembles it closely in many cases. It is exceedingly difficult to draw a hard and fast line between the different types of nephritis not only clinically but also anatomically. To be perfectly safe, one should call every case of nephritis diffuse. The epithelium of the tubules undergoes postmortem changes. The kidney of a normal subject which has had time to undergo postmortem changes frequently shows alterations that are quite difficult to differentiate from what is normally called cloudy swelling. The epithelium of the convoluted tubules is exceedingly sensitive, and in various conditions of bacterial toxemia or in

poisoning by metals and other agencies there are marked degenerative changes in the epithelial cells. Albuminous degeneration of the epithelial cells, fatty degeneration and desquamation are seen frequently in this class of cases. It is seen in mercuric chlorid poisoning, in the acute toxemias like diphtheria and septicemia, in acute yellow atrophy of the liver, and so on. In many cases there are clear evidences of inflammation in the form of exudation into the tubules, and frequently leukocytes in and around them, and sometimes blood. Many of these cases show alterations in the glomeruli at the same time. The moderately pure type of this form of nephritis is more common than glomerular nephritis. There is a tendency to attribute the granular contracted kidney to earlier attacks of glomerular nephritis. The formation of new fibrous tissue in a kidney leading to chronic interstitial nephritis seems more and more to be attributed to the formation of fibrous tissue in response to a loss of substance rather than as a result of irritation.

We are not able at present to connect the pathologic anatomy very closely with changes in function. The classification of nephritis into glomerular, tubular, the late glomerular, the chronic interstitial, and the arteriosclerotic types is quite generally adopted, and the most interesting point is that of determining the relation of focal infection to glomerular nephritis by finding that it is caused by bacterial emboli and not entirely through the agency of toxins. Finally, a number of very high authorities are of the opinion that granular contracted kidney is closely connected with the arteriosclerotic kidney, and hard to distinguish from the latter, very largely the late results of an earlier glomerular nephritis, and possibly repeated attacks of glomerular nephritis. Mallory says that a patient who recovers from his toxemia and from his acute attack may suffer almost equally from the reparative changes that occur in the kidney.

Treatment of Chronic Nephritis

DR. JOHN R. WILLIAMS, Rochester: The most common type of kidney disease seen is that occurring in the middle aged adult who complains of some or all of the following symptoms: tiring easily, occipital headache, shortness of breath, high blood pressure, and little or no physical evidence of kidney disturbance except frequent and excessive urination at night. The blood is commonly low in urea, creatinin and phosphates. The blood sugar may be high. Edema is usually not present. Death is caused rarely by uremia, and more often by cerebral hemorrhage or failing heart. This is the well known cardiorenal type.

The next most frequently seen type is the middle-aged or even younger adult who may have pronounced eye symptoms, edema, low or high blood pressure, very little kidney reserve, urine loaded with albumin and casts, blood containing two or three times the normal amount of urine, a high blood sugar, increased blood creatinin, and phosphate retention. Death is commonly preceded by convulsions and the phenomena of uremia.

The last and much less frequently seen type is that of the young or middle-aged adult in whom the chief findings are edema, weakness, pallor, and not albuminuria, blood urea, and low sugar, perhaps lower than normal. The cholesterol content of the blood may be increased greatly; edema may or may not be influenced by the salt content of the diet. The functional capacity of the kidney is fairly normal to the usual clinical tests. The patient suffers very little headache or from other symptoms commonly seen in kidney failure.

The first and one of the most important steps in the treatment of any type of kidney disease is to rid the body of all focal infections. In the treatment of the cardiorenal type, if the patient is not harboring infection, the most important measure is rest, both mental and physical. If the patient has a good functional kidney capacity, he should be put on a low, simple, general diet. All chemical irritants and foods containing quantities of animal extractives, bacteria and bacterial products should be excluded from the diet. The patient should be allowed to have some meat and eggs. In severe cases of the second type the best measure

is to put the patient at rest and give him a limited milk and fluid diet, as suggested by Karrel. I prescribe for the first few days 1 quart of milk, 1 pint of water, and either another pint of lime water or some salt of calcium, either the carbonate or the lactate, in half gram doses, several times daily. The tincture of iron or ferrous carbonate, in liberal doses, is also given. In the third type the diet should be more liberal and should contain a large amount of protein. As many as from 8 to 10 ounces of meat may be very helpful. Fluids should be restricted. If there is evidence of salt retention, its use should be curtailed; otherwise it may be sparingly permitted.

DISCUSSION

DR. A. F. CHASE, New York: Weakness, anemia, and deficiency of the blood can be overcome by large amounts of eggs, meat and albumin. I do not give a large protein diet owing to the number of cases of mixed types. In the interstitial type of nephritis, in which there is considerable retention of products of nitrogen metabolism in the blood, one should give a low protein diet to maintain body strength. There has been great danger in giving too low a diet. The pendulum has swung too far in efforts to eradicate sugar quickly from the urine and by lowering the amount of protein in the blood too quickly. For this reason I do not agree with Dr. Williams in giving too low a diet because one must consider the patient's body strength. There is a distinct advantage in giving mineral salts. A patient with interstitial nephritis should take a large vegetable diet, with an ample amount of mineral salts in the right proportion to overcome the tendency to anemia. In this type of cases profound anemia is not given sufficient attention. The reason the general practitioner does not give heavy vegetables in nephritis is that the patient will not take them; but one can give an intelligent patient vegetables if they are puréed, mashed thoroughly and put through a colander. In this way one can make use of a large variety of vegetables. I give calcium in adequate quantities to eliminate phosphates.

DR. A. A. JONES, Buffalo: In discussing the pathology of nephritis we should bear in mind the changes that occur in the kidney in cases classified clinically as purely interstitial, purely cardiorenal, or purely parenchymatous. Some years ago we were apt to disregard the glomerular element in chronic nephritis and to look on the cardiorenal cases as primarily interstitial cases. The glomeruli do not suffer early from the changes occurring around the tubules. The interstitial changes follow cellular changes in the glomeruli, and there is destruction of many of the glomeruli before an abundant interstitial new formation occurs. In the treatment one should include careful consideration of the causes of the disease if they can be discovered, so that focal infections should receive attention as carefully as dietary regulations.

CAPT. THOMAS W. JENKINS, Albany: We have had several cases of acute nephritis among the soldiers. One patient, who died following an attack of mumps, had only albuminuria. The kidneys did not show any marked change. In one case that interested me more than any other the patient was a man who, through intensive training for a commission, became ill after paratyphoid inoculation and developed one of the worst cases of nephritis I have ever seen. His urine was loaded with epithelium, and he died in the second week of illness.

DR. ALBERT E. LARKIN, Syracuse: Many of these patients are affected in more than one part of the kidney, and for that reason each case demands individual treatment. It is difficult to lay down any hard and fast rules of treatment. All are agreed that the best treatment for them is the same as for arteriosclerosis, namely, prevention.

DR. JOSEPH R. WISEMAN, Syracuse: The work of Dr. Hunt is particularly praiseworthy. In those cases in which a streptococcus was found, Dr. Hunt thinks that the tonsil is a dangerous one and should be taken out, and according to his case reports he has obtained excellent results, although one now and then sees patients with chronic nephritis and diseased tonsils in whom the removal of the tonsils is not followed by improvement.

DR. HERBERT E. SPERRY, Rochester: I should like to ask how often nephritis is caused by syphilis.

DR. WEINSTEIN, New York: I have always been under the impression that nephritis, like a degenerative process in any other organ, is due to some infection. In two or three generations of one family one will find that the offspring are apt to suffer from nephritis as if there was a specific liability of some particular tissue to disease. With regard to diet, I have put patients on a rather low protein diet and am never afraid of the color of meat. I allow a patient to have good steak or poultry, provided it is not taken in excessive quantity. The Karrel diet is a well established therapeutic procedure in cases of nephritis with edema. In cases with high blood pressure one should not forget to employ digitalis.

DR. ALBERT A. EPSTEIN, New York: There is a uniformity of opinion regarding the renal type of disease in which the disturbances are purely metabolic. There is no reason why the renal function should not be concomitant with the metabolic disorder, so that there are cases in which there are mixed conditions. In such cases the method of treatment must be somewhat different from the one set down originally.

DR. HERBERT U. WILLIAMS, Buffalo: In cases of congenital syphilis the body is found riddled with organisms and gummas in the kidney. In regard to focal infections, one method of great value would be to examine the urine for long periods for organisms.

Prognosis of Surgical Tuberculosis of Kidney

DR. WILLIAM F. BRAASCH, Rochester, Minn.: In considering nephrectomy for early unilateral tuberculosis, the factors to be considered are age, sex, coincident tuberculosis in other organs or tissues, the duration of the symptoms, the severity of the infection of the urinary tract, and whether there is or is not bilateral involvement. Renal tuberculosis occurs from 25 to 40 years of age. Beyond the age of 60 or 70 years renal tuberculosis is of rare occurrence. We have operated on three patients up to 10 years of age. In the meantime, we have seen forty cases in children up to 10 years of age, not operated on because renal tuberculosis in children is very frequently a part of a general tuberculosis. The children on whom we have operated were seen early, and tuberculosis was not found present elsewhere. It is customary not to operate on children at once, because the majority of patients sooner or later show other evidences of tuberculosis and their resisting power will be low.

The time to operate is between 25 and 40 years of age, as the mortality increases steadily with the advance in years. The greatest mortality occurs in patients from 50 to 70 years of age. The lowest mortality from operative intervention occurs in patients from 15 to 20. The influence of complications on the mortality is important. The majority of patients have evidences of tuberculosis in other organs of the body. In only 5 per cent. was the renal tuberculosis complicated by acute pulmonary tuberculosis. Ninety per cent. of the cases of renal tuberculosis had evidences of an old pulmonary tuberculosis. Of the cases of pulmonary tuberculosis complicated by renal tuberculosis, twenty-one in number, 40 per cent. terminated fatally, which is twice as high as the mortality from renal tuberculosis uncomplicated by pulmonary tuberculosis. However, if we had not operated on patients with both pulmonary and renal tuberculosis, they all would have died. It is inconceivable to think of a spontaneous cure of renal and pulmonary tuberculosis.

The removal of the epididymis when enlarged or markedly inflamed, with secondary infection, is unquestionably advisable following nephrectomy. It is our experience at the Mayo Clinic that the caseating kidney offers a much better prognosis and much less mortality than miliary tuberculosis. In miliary tuberculosis scattered over the surface of the kidney the mortality is almost twice as high as it is when caseation is present.

DR. BENJAMIN S. BARRINGER, New York: It is essential not to operate on the kidney without the previous use of the cystoscope. The fact that one often sees enormous vessels of the kidney and comparatively infrequently notices hydro-

nephrosis shows there is something wrong with the anomalous vessel theory.

DR. ERNEST WATSON, Buffalo: The pyelogram is the only measure we can rely on with any certainty in making an absolute diagnosis in these cases, particularly if they do not show evidence of infection. Oftentimes a dilated ureter and dilated kidney pelvis will not give evidence without examination of the ureters.

DR. GEORGE STARK, Syracuse: I recall sixty cases of renal colic with hydronephrosis in which symptoms disappeared following dilatation. In cases of pyelitis one can bring about more cures by dilating and irrigating the pelvis of the kidney than by lavage alone.

DR. WOLF, New York: Tuberculous kidney is operable in the early stage, and the prognosis is excellent. I recall two such cases, one of which was a case of bilateral tuberculosis which I saw two years ago. The other was a large cystic kidney in which pressure on the right side was demonstrated, and the cystoscope showed a purulent secretion. I removed the kidney in the case of bilateral tuberculosis, and two years after the operation the girl was healthy. Cystitis is an early and a late symptom. It is the last symptom to disappear in tuberculosis of the urinary tract.

DR. JOSEPH F. SHEARS, New York: Stricture of the ureter is more common than most practitioners admit and is probably a cause of hydronephrosis.

Trench Fever

MAJOR ALEXANDER LAMBERT, New York: Commissioner Murphy early last summer informed me that it was his desire I should build up as good and scientific an organization as it was possible to do. He formed a research committee. He obtained an appropriation of \$100,000 and said we could use as much of this amount as in our judgment seemed best, without restrictions, and asked us to decide on what was best to be done. He obtained the cooperation of the Medical Corps of the British Army and of the French Army, and the three Medical Corps met every month as a research medical society. They have given to the American, British and French surgeons their best experience and ideas, and have placed our men in a position to go on with research work in medicine and surgery in 1918. Otherwise we should have had to work out and struggle over the same problems that the French and British have done before. This cooperation has been of the greatest help, and is one of the best things we could have done to solidify the Medical Corps and give aid to the army and surgeons that need it.

As to trench fever, its transmission and origin have been solved. Trench fever is a curious break-bone fever that has a sharp, shooting temperature. The temperature rises to 103 and 104 F., with aches of an intense character in the insertion of the muscles, and then it drops. Again, it rises for four or five days and takes on the character of a regular recurring fever. It cannot be told, except by blood cultures, from the recurrent infectious fever of Weil. No organism has been found for it. You cannot transmit it to any animal. We experimented with everything up to monkeys and were unable to produce the fever. We realized that we must ask for volunteers, and a curious thing is that some of the men who worked with General Gorgas in Cuba in connection with yellow fever and were volunteers there were with us. Colonel Ireland, who was on the research committee, worked out the line of research in conjunction with General Wood, and Colonel McCoy was chief of staff. Colonel Ireland took the necessary orders, asked for volunteers, and of the 500 men who offered to go, sixty were accepted, and within six weeks from that time, through experimental work, it was found that trench fever was transmitted by the bites of body lice. They worked with the body lice in the trenches and worked with the lice they secured from London. Trench fever was the cause of 10 per cent. of the English army in the last year being on the sick list when these men ought to have been in the trenches. No man dies of the fever, but it disables him for two or three months. This discovery has solved the question, and it saves from 8 to 10 per cent. of the active force. This the Red Cross has succeeded in doing.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

June, 1918, 15, No. 6

- 1 *Methods Used in a Class for Undernourished Children. C. H. Smith, New York.—p. 373.
- 2 Infant Feeding: Calcium in Its Relation to Absorption of Fatty Acids. A. W. Bosworth, H. I. Bowditch and L. A. Giblin, Boston.—p. 397.
- 3 Nutrition and Growth of Newborn Infants. W. R. Ramsey and A. G. Alley, St. Paul.—p. 408.
- 4 Evidence that Summer Diarrhea is an Infectious Enteritis. J. Zahorsky, St. Louis.—p. 413.
- 5 Lymphatic Disease in Children Simulating Appendicitis; Report of Cases. H. deB. Barss, Ann Arbor, Mich.—p. 421.

1. **Methods Used for Undernourished Children.**—During the past few years attention has been repeatedly called to the fact that a large number of children in this country are undernourished. Nov. 1, 1916, a nutrition class was started in the outpatient department of Bellevue Hospital as an experiment to determine how much could be done to improve the nutrition of undernourished children when handled in large numbers. The methods used in this class have been worked out in the children's tuberculosis class and other classes at the Vanderbilt Clinic. The general plan which has been kept in mind has been to make a careful diagnosis, to correct remediable physical defects, to determine and correct any economic factors that have a bearing on the case, and to try to improve the hygiene and diet of the child by every possible means. A printed slip with directions as to the general care of the child and a diet list are given to every mother. At the first visit the attention of the mother and child is called to the food exhibit, as an aid to impressing on their minds the elements of a proper diet. The visual impression made on the mother and child adds tremendously to the significance of the printed list of goods given out on the diet list. Class talks are given frequently to groups of mothers. Mothers are urged to return once a week. In extreme cases, especially when there is marked anorexia, a complete rest cure is given. Weight charts are used for every child. A photograph is taken of every child in the class, and is pasted on the back of the weight chart. Home record sheets are used for the purpose of having the child or mother record what happens to the child each day. An analysis of 110 cases has been made to determine the results of the class experiment. It has been possible to make 57 per cent. of the children gain at 1.7 times the average rate for their ages, and 22 per cent. at about the average rate, or a total of 79 per cent. who have gained at or better than the average rate. Of the remaining 21 per cent., there is one or more easily ascertained reasons for the failure in every case. These results have been obtained under the most adverse circumstances. The problem of infant mortality has been solved in large part by means of classes for teaching mothers the care and feeding of infants.

American Journal of Medical Sciences, Philadelphia

June, 1918, 155, No. 555

- 6 *Sensitized Vaccines in Prophylaxis and Treatment of Infections. R. L. Cecil, New York.—p. 781.
- 7 Character Study of Hemiplegic Epileptic. L. P. Clark, New York.—p. 796.
- 8 *Fractional Estimation of Gastric Contents: Effects of Antacid Medication on Gastric Acidity and Secretion. B. B. Crohn, New York.—p. 801.
- 9 Relapsing Fever Endemic in Colorado. J. J. Waring, Denver.—p. 819.
- 10 *Vaccine for Treatment of Bronchial Asthma; Report of Twenty Cases. J. M. Hutcheson and S. W. Budd, Richmond, Va.—p. 826.
- 11 *Atmospheric Air in Upper Digestive Tract. J. L. Kantor, New York.—p. 829.
- 12 Vital Stains and Central Nervous System. L. J. Pollock and W. T. Cluney, Chicago.—p. 857.

- 13 *Circulatory Reactions to Graduated Work in Normal People and in Those with Cardiac Insufficiency. T. B. Barringer, Jr., New York.—p. 864.
- 14 Perforated Gastric and Duodenal Ulcer. Statistical Report of Fifty-Nine Cases. F. J. Scully, Chicago.—p. 874.

6. **Sensitized Vaccines in Infections.**—Cecil employed sensitized vaccines in a series of forty-seven cases, which include twenty cases of prophylactic vaccination against typhoid and twenty-seven cases of therapeutic vaccination against gonococcus, streptococcus, *Staphylococcus aureus* and tuberculous infections. The sensitized typhoid vaccine produces a somewhat milder reaction than ordinary typhoid vaccine, and probably gives just as high an immunity. At the present time, however, the evidence for its superiority is not sufficient to justify the substitution of sensitized for ordinary vaccine in practice. In the various infections treated with sensitized vaccines the results were, as a rule, no better than would have been expected with ordinary vaccine. It happened that in a few instances recovery followed the administration of sensitized vaccine after treatment with ordinary vaccine had failed. This may have been due to the fact that larger doses could be employed without untoward symptoms. The chief objection to the general use of sensitized vaccines is the increased labor and time necessary for their preparation. At the present time it would seem desirable to limit their use to the treatment of infections in which there is hypersensitivity to ordinary vaccines or in which the latter have proved inefficacious.

8. **Effects of Antacid Medication on Gastric Secretion.**—Crohn believes that the use of fractional doses of the alkalis distributed over the course of digestion is the most efficient and physiologic method for the employment of these agencies; for this purpose magnesium oxid is the most dependable and best suited salt. Based on these studies it seems very questionable whether prolonged use of the alkalis leads to any permanent diminution of the acid secretion of the stomach; in fact, it is as likely that the opposite effect is produced. A lasting relief of hyperacidity is not to be sought in antacid medication, nor in olive oil or atropin. It is more likely to be found in the proper regulation of diet and restriction of dietary errors as well as in the general control of the hygiene and manner of living of each individual patient under professional care.

10. **Vaccine for Bronchial Asthma.**—Certain observations of the writers, derived from the study of a considerable number of cases of asthma, have strongly suggested the possibility of the presence of the specific protein in the bronchial secretions of the patient himself, and also that this protein may be recovered in suitable form for use in bringing about immunity. The vaccine the authors use is made in the following manner: 1 c.c. of washed sputum is incubated in 10 c.c. of broth and 1 or 2 drops of guinea-pig serum for a period of forty-eight hours. At the expiration of that time the culture is standardized and killed by heat of 60 C. for a period of two hours. Further decomposition is prevented by adding phenol until a 1 per cent. solution results. This is cultured out to insure sterility of suspension. The vaccine is then diluted with normal saline until each cubic centimeter of the suspension contains 500,000,000 to 1,000,000,000 organisms. The initial dose is 5 minims and each subsequent dose is increased by 1 minim. The authors do not increase beyond 15 minims, although they may continue the treatment several weeks after this amount has been reached.

The effect of this plan of treatment has been observed in twenty cases of typical bronchial asthma. In twelve of these cases complete relief from attacks was experienced after from one to five injections of the vaccine and this relief has persisted up to the present time. The longest period of freedom from symptoms is sixteen months, the shortest six weeks. In five cases distinct improvement has been noted either in the frequency of the seizures, their severity, or their duration. In three of these cases improvement occurred only after a second vaccine had been made and administered at shorter intervals than the first. In two cases no effect at all was produced. One of these patients was an elderly man with emphysematous lungs and a history of asthma extending over twenty years. Asthma in the other case had followed injury

to the chest and roentgen-ray examination revealed ununited fractures of several ribs. In one case administration of the vaccine seemed to increase the intensity of the paroxysms, a result which appeared to be explained by the fact that too long a time was allowed to elapse between injections.

11. Atmospheric Air in Upper Digestive Tract.—The results of his study have convinced Kantor that in general, gaseous accumulations in the upper digestive tract have atmospheric air as their basis. This air is introduced by ordinary swallowing or by an adaptation of the swallowing mechanism known as gulping. The differences between the swallowing of air and that of food depend to a large extent on the influence of gravity. As a result the swallowing mechanism shows certain peculiarities which are described in this paper. By means of fluoroscopic observations it can be demonstrated that the so-called swallowing sounds are produced by the entry of air into the stomach. A close study of the mechanism of deglutition based on a review of the literature and on original roentgen-ray observations shows the advantage of describing the complete act of swallowing as consisting of three instead of the classic two periods. These three periods are the buccopharyngeal, the esophageal and the cardiogastric.

13. Graduated Work in Cardiac Insufficiency.—Barringer claims that the occurrence of a delayed rise in systolic blood pressure after work indicates that the preceding work has either overtaxed or is on the point of overtaxing the heart's reserve power. The presence of a delayed rise can be determined by the infrequent method of plotting the pressure curve with almost as much certainty as by the frequent method. Experiments on normal people and on patients with cardiac insufficiency showed that no definite relation existed between the time required for the pulse rate to return to normal and the condition of the cardiac reserve power.

Arkansas Medical Society Journal, Little Rock

May, 1918, **14**, No. 12

- 15 Case Records for General Practitioner. S. W. Douglass, Eudora.—p. 237.
- 16 Early Diagnosis and Treatment of Tabes Dorsalis. L. Thompson, Hot Springs.—p. 239.

Boston Medical and Surgical Journal

May 30, 1918, **178**, No. 22

- 17 Roentgenology in American Army. F. Wheatley, Jr., North Abington.—p. 727.
 - 18 Physician and Psychology. J. D. Taylor, East Boston.—p. 730.
 - 19 Renal and Ureteral Stone. B. Tenney, Boston.—p. 731.
 - 20 Mobilization of Knee Joint in Suspension Traction Treatment of Fracture of Femoral Shaft. G. A. Moore, Brockton.—p. 736.
- June 6, 1918, **178**, No. 23
- 21 Congenital Pyloric Stenosis. W. E. Ladd, Boston.—p. 767.
 - 22 *Clinical Study of One Hundred and Fifty Cases of Bronchial Asthma. F. M. Rackemann, Boston.—p. 770.
 - 23 Control of Communicable Diseases. D. M. Lewis, New Haven, Conn.—p. 772.
 - 24 Idiopathic Epilepsy. E. A. Tracy, Boston.—p. 775. To be continued.

22. Clinical Study of Bronchial Asthma.—One hundred and fifty cases of asthma were studied by Rackemann. The object of study was threefold: 1. To discover the cause of asthma or to identify the offending foreign protein in each patient. 2. To separate the patients having the same cause of asthma into groups. 3. To see whether there was one or more symptom or sign present in each patient and not present in normal nonasthmatic persons which might indicate a fundamental disturbance of anatomy or physiology in these patients as a group.

Each patient was studied by taking a very careful history, by making a complete physical examination, including chest, roentgenograms, special examination of the nose and throat by experts, electrocardiogram, and blood smears when necessary. In addition, skin tests, were made in a large proportion of the patients. Water-clear, sterile solutions of various protein substances were diluted so that each contained the same quantity of total nitrogen per cubic centimeter. These solutions were then injected intradermally. In normal nonasthmatic persons and in certain asthmatics, there was no result showing that the solutions were not irritating. Certain asthmatics gave positive tests. These consisted of a typical urticarial wheal surrounded by a zone of bright erythema,

which appeared within ten minutes and was evident for perhaps forty-five minutes or even longer. From the history and skin tests, it has been possible to group 80 per cent. of the patients.

Twenty-eight per cent. of the cases had extrinsic asthma, while almost twice the number, or 53 per cent., had intrinsic asthma. Of the extrinsic cases twenty-four gave a definite history of aggravation of asthma during the summer months, and all but five gave a positive skin test to extracts of one or more pollens. In about half of all these cases the asthma ceases abruptly with the first frost. Sixteen cases gave a positive skin test to horse dander protein and gave histories at least compatible with, and often too obvious of, susceptibility to horses. Twenty-one other patients gave a positive skin test to horse dander protein but are not classed as horse asthmatics because there is nothing in their history or in their daily life which made it seem reasonable or even possible that horse dust or horse "emanation" might cause their asthma. Only two cases in this particular series gave a history of violent susceptibility to food.

Of the intrinsic cases in five derangement of the gastrointestinal tract seemed to be a possible cause. In twenty-four cases the attacks of asthma came on only after a "cold" and recurred only at relatively long intervals. Winter asthma and chronic bronchitis are included in thirty cases of emphysema. Tuberculosis was found in six cases. Ten cases were associated with pregnancy (2), with catamenia (2), with enlarged bronchial lymph nodes (3), with lordosis (1), with obscure circulatory disturbances (2). One hundred and eighty-four differential blood smears made in 123 cases have shown a relatively constant eosinophilia averaging about 5 per cent., but there has appeared no significant difference between the eosinophilia in cases of extrinsic from that in cases of intrinsic asthma, nor any significant difference in the counts made during and between the asthmatic attacks in either divisions.

Cleveland Medical Journal

May, 1918, **17**, No. 5

- 25 William Beaumont, Pioneer Physiologist of North America. T. L. Patterson, Kingston, Ont.—p. 287.
- 26 Double Recurrent and Bilateral Tubal Pregnancies—Analysis of Literature and Personal Cases. A. P. Heineck, Chicago.—p. 306.
- 27 Case of Postoperative Obstruction. A. G. S. Louis, Cleveland.—p. 319.

Journal of Cutaneous Diseases, Chicago

May, 1918, **36**, No. 5

- 28 Ossification in Case of Scleroderma. S. Pollitzer, New York.—p. 271.
- 29 *New Form of Punctiform Keratoderma. S. I. Matsumoto, Japan.—p. 280.
- 30 Varioliform Macular Atrophy of Skin—Hitherto Unrecognized and Undescribed Atrophic Affection of Skin. M. L. Heidingsfeld, Cincinnati.—p. 285.
- 31 *Titration of Complement for Its Power to Combine in Syphilitic System. A. W. Stillians, Chicago.—p. 289.

29. Punctiform Keratoderma.—Matsumoto reports a peculiar type of punctiform keratoderma existing on the palms occurring in a girl, aged 19. On the palmar surface of the hands and fingers, strictly confined to the flexures of the joints, there were numerous miliary, horny, punctiform efflorescences, yellowish or light brownish in hue, from pin-point to poppy seed in size. The primary lesions were minute, slightly elevated, at times scarcely visible papules, oval or roundish in shape, showing a slight degree of hyperkeratosis. They usually appeared isolated, but some coalesced to form irregularly shaped eruptions and often showed slight desquamation in the center, so that some were slightly cupped at the summit. But a comedolike horny plug or central conical plug was never seen. The palms showed no hyperidrosis. Diffuse keratosis was not present. No dilated sweat orifices were noticed; neither was an excentric growth of the lesion demonstrable. The distribution and arrangement of the lesions was quite peculiar and exhibited on both hands a well marked symmetry. The soles were intact. The eruption appeared early in her childhood (before she was 5 years of age), but the patient was unable to give the exact date of its outbreak and course, as there was no subjective symptom. The disease ran an extremely slow course, was beyond doubt. No hereditary taint was ascertainable. The patient was afflicted,

furthermore, with so-called tuberculids on the ears, and the extensor surfaces of the elbows and knees.

31. Estimating Value of Wassermann Reaction.—Stillians claims that the use of a mixture of glycerinized strong positive serums; titrated with each set of Wassermann tests as a positive control, gives an accurate idea of the strength of the Wassermann reaction. Titration of complement against the combination of antigen with a fraction of the titer of this positive control gives valuable information as to the combining power of complement in the syphilitic system. By the use of this method of titration, variations in strength of the Wassermann reaction can be minimized. Old complement is apt to lose its power to combine in the syphilitic system before its hemolytic value fails. Such variations are detected and estimated by the new method of titration.

Journal of Urology, Baltimore

April, 1918, 2, No. 2

- 32 War Nephritis. P. Ameuille.—p. 51.
- 33 *Urinary Antisepsis: Studies of Antiseptic Properties and Renal Excretion of Compounds Related to Phenolsulphonephthalein. E. G. Davis and E. C. White, Baltimore.—p. 107.
- 34 Developmental Stages of Human Seminal Vesicles. E. M. Watson, Baltimore.—p. 129.
- 35 *Effects of Thorium and Other Substances on Renal Parenchyma when Retained. J. E. Burns and P. B. Hopkins, Baltimore.—p. 145.

33. Urinary Antisepsis.—The ideal internal urinary antiseptic must be a drug which is chemically stable, nontoxic and nonirritating to the urinary tract; which is antiseptic in high dilution in urine, regardless of the reaction of the latter; and which is eliminated unchanged in high percentage by the kidney. Davis and White claim that there is no such drug known. A consideration of the properties possessed by phenolsulphonephthalein, however, shows that this compound comes very close to filling all above requirements. The property possessed by phenolsulphonephthalein, by virtue of which is it so rapidly eliminated by the kidney, is by no means limited to this compound. Several other more or less closely related compounds show the same striking "renal affinity," and might also be of value in testing renal function were it not that phenolsulphonephthalein itself is so nearly ideal for this purpose. Compounds of the xanthone class, that is, phthaleins (though not necessarily sulphonephthaleins) in which there is an oxygen atom linking the two phenol groups, show a similar remarkable "renal affinity." The bromination of these compounds, both sulphonephthaleins and xanthenes, almost completely prevents the excretion, but chlorination merely diminishes the excretion. Iodination prevents excretion or gives rise to elimination of the substance in a modified form. It has been possible to establish a certain relationship between chemical structure and renal excretion, and to predict, with a reasonable amount of accuracy, which drugs will and which will not be excreted. The synthesis of germicidal compounds, very closely related to the types excreted, has been accomplished; one of these compounds, rhodamin, was excreted and would have been satisfactory but for the interfering action of the urine; another compound "mercury fluorescein," has been found to be rapidly excreted and to produce germicidal urine. The authors hope that their experiments may call attention to the inadequacy of the urinary antiseptics in general use, and stimulate interest in the possibilities offered by synthetic chemistry. The investigation in being continued and the properties of various related compounds are being studied.

35. Effects of Thorium on Renal Parenchyma.—Burns and Hopkins found that thorium solution retained in the renal pelvis has no damaging effect whatsoever on the renal parenchyma. Cortical abscesses and pyelitis are due to the presence of infection and not to the retained solution. The cortical changes after the introduction of thorium solution are purely pressure phenomena and are the same as after either simple ligation of the ureter or the introduction of sterile water or normal salt solution into the renal pelvis. Collargol retained in the renal pelvis causes not only great damage to the kidney itself but systemic poisoning most often resulting in death. Ligation of the ureter either alone or after the

injection of some solution causes hydronephrosis. The size of the hydronephrosis depends entirely on the development of the compensatory collateral capsular circulation.

Kentucky Medical Journal, Bowling Green

June, 1918, 16, No. 6

- 36 Border Line Tonsils. W. B. McClure, Lexington.—p. 229.
- 37 Acute Intestinal Obstruction. G. A. Hendon, Louisville.—p. 232.
- 38 Diagnosis and Treatment of Trachoma. G. F. Doyle, Winchester.—p. 238.
- 39 Gunshot Wounds of Abdomen. D. W. Barrow, Lexington.—p. 243.
- 40 Gunshot Wounds in Civil Life with Treatment. W. Bach, Jackson.—p. 246.
- 41 Epistaxis, Cause and Treatment. W. J. Thomason, Newport.—p. 249.
- 42 Venereal Disease Clinic. S. Graves, Louisville.—p. 251.
- 43 What Physicians Who Are Not Accepted in Medical Reserve Corps Can Do. M. Pennington, Mount Vernon.—p. 258.
- 44 Talipes. J. A. Davis, Covington.—p. 260.
- 45 Radium; Some of Its Therapeutic Uses. L. Frank and L. W. Frank, Louisville.—p. 263.
- 46 Hypothyroidism. F. C. Askenstedt, Louisville.—p. 268.
- 47 Celiohysterotomy for Puerperal Eclampsia and Placenta Previa. W. H. Taulbee, Maysville.—p. 270.
- 48 Surgical Complications of Typhoid. R. L. Woodard, Hopkinsville.—p. 272.

Medical Record, New York

June 8, 1918, 93, No. 23

- 49 Biographic Sketch of Four Physicians of Napoleonic Era. P. E. Bechet, New York.—p. 969.
- 50 Low Diastolic and High Pulse Pressure in Three Cases of Aneurysm of Aorta. C. E. Stewart, Battle Creek, Mich.—p. 972.
- 51 Weak Feet in Children. J. Grossman, New York.—p. 974.
- 52 Localizing Posterior Gonorrheal Urethritis. H. J. Millstone, Chicago.—p. 979.
- 53 Eugenics: Its Relation to Mental Diseases. J. J. Kindred, Astoria, L. I.—p. 981.

Nebraska State Medical Journal, Norfolk

May, 1918, 3, No. 5

- 54 Precancerous Conditions of Breast. M. G. Wohl, Omaha.—p. 153.
- 55 Tuberculosis in Children. F. Clarke, Omaha.—p. 158.
- 56 Changes Necessary to Future Practice of Medicine. C. A. Roeder, Omaha.—p. 160.

Neurological Bulletin, New York

May, 1918, 1, No. 5

- 57 Case of Double Primary Athetosis. M. A. Starr, New York.—p. 205.
- 58 *Case of Myxosarcoma of Temporal Bone with Extension into Posterior Cranial Fossa Presenting Unusual Symptoms. C. A. Elsberg, New York.—p. 207.
- 59 Ruptured Aneurysm of Right Middle Cerebral Artery. C. A. Elsberg, New York.—p. 210.
- 60 Borderline Psychiatry. S. R. Leahy, New York.—p. 212.
- 61 Social Maladjustment, Compulsion Neurosis in Young Man Turning Serious Activities of Life Into Bizarre Distortions. F. M. Hallock, New York.—p. 219.
- 62 Morphology of Gray Matter in Brain Stem of Vertebrates. R. Hoyt, New York.—p. 227.

58. Myxosarcoma of Temporal Bone.—Three years ago Elsberg's patient developed a large swelling in the left submaxillary region. A mass of glands were removed which was said to have been of a chronic inflammatory nature. After the operation she noticed that the left angle of her mouth "drooped" more than it had ever done before. She recovered satisfactorily from the operation and did not have any new symptoms until September, 1916. About one and a half years prior to making this report, after a severe mental shock, the patient began to have frequently headaches and attacks of dizziness. The headaches recurred very frequently and were uninfluenced by treatment. On the basis of the symptoms present at this time the diagnosis of a tumor in the left cerebellopontine angle was made, and the patient was operated on. The dura over the cerebellum was exposed by a typical bilateral suboccipital craniotomy. As soon as the dura covering the lower part of the left hemisphere was exposed by the removal of the occipital bone, considerable yellow gelatinous material began to extrude from the left posterior fossa, and after the dura had been depressed, the left posterior fossa was found to be entirely filled by this material. Considerable of the gelatinous matter was removed with a spoon. There was some bleeding from the jelly-like substance, and it was evident that the entire side of the fossa

was filled up by the mass. The wound was closed in the usual manner. The pathologist reported that the tumor was a myxosarcoma.

Aside from the rarity of this form of tumor in this location, the symptoms and clinical signs presented by the patient were of extraordinary interest and most confusing. In each attack of illness the left side of the body, and especially cranial nerves on the left side, were affected. An attack of smallpox followed by otitis, left behind a paralysis and atrophy of the left side of the tongue and diminished hearing of the left ear. A postpartum attack—probably one of cerebral embolism—added a paresis of the left side of the face and a weakness of the left arm with paralysis of the left cord. After the removal of glands from the left side of the neck, a branch of the left facial nerve was found to be completely paralyzed (*ramus marginalis mandibulae*). Finally, the patient developed symptoms which were clearly referable to the left lobe of the cerebellum and the left posterior fossa—ataxia, nystagmus, adiadochokinesis, hypesthesia over the distribution of the left trigeminus, complete paralysis of the left facial, complete nerve deafness in the left ear and loss of the normal caloric reactions on that side.

New York Medical Journal

June 8, 1918, 107, No. 23

- 63 Pneumonia and Its Treatment. S. S. Cohen, Philadelphia.—p. 1057.
- 64 Self Treatment. E. E. Smith, New York.—p. 1063.
- 65 Treatment of Feeble-minded. W. B. Cornell, New York.—p. 1067.
- 66 Acute Infectious Jaundice (*Spirochetosis Icterohemorrhagica*). C. Herrman, New York.—p. 1068.
- 67 Antitoxin Dose in Diphtheria. A. J. M. Treacy, Philadelphia.—p. 1071.
- 68 Fluoroscopy in Diagnosis of Chest Conditions. A. F. Holding and M. Greenwald, New York.—p. 1072.
- 69 Transplantation of Mucous Membrane of Mouth for Various Diseases and Burns of Cornea. R. C. R. Denig, New York.—p. 1074.
- 70 Plea for Modified Sluder Operation. I. Grushlaw, New York.—p. 1075.
- 71 Bloodless Tonsillectomy. P. V. Winslow, New York.—p. 1077.
- 72 Surgical Treatment of Penetrating Wounds of Thorax. H. M. W. Gray, Aberdeen, Scotland.—p. 1078.
- 73 Rehabilitation of Rejected. W. H. Sheldon, New York.—p. 1081.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 18, 1918, 1, No. 2994

- 1 *Intravenous Injection in Wound Shock. W. M. Bayliss.—p. 553.
- 2 Ten Thousand Recruits with Doubtful Heart Conditions. S. R. Wells.—p. 556.
- 3 Epidemic Poliomyelitis; Report of Cases. C. H. Melland.—p. 559.
- 4 Nephelometric Estimation of Quinin in Blood and Urine. I. J. Lipkin and W. Ramsden.—p. 560.
- 5 *Sterilization of Skin and Other Surfaces by Mixture of Crystal Violet and Brilliant Green. V. Bonney and C. H. Browning.—p. 562.

1. **Intravenous Injection in Wound Shock.**—The general practical conclusion to be drawn from Bayliss' lecture is that the main factor in the successful treatment of wound shock is to ensure an adequate supply of blood—that is, of oxygen—to vital organs, especially to the nerve centers. This is most simply done by intravenous injection of gum solution, which does not appear to be, in most cases, inferior to blood. When very great hemorrhage has occurred, it would seem reasonable that blood transfusion should be preferred. A solution of gum arabic of 6 per cent. strength has been found, both in the case of wounded men and in lower animals, to maintain blood pressure indefinitely. It does not leave the blood vessels. Gum is quite innocuous, even in a volume equal to one half of the total blood volume, or an injection of more than a liter and a half in man. It produces no hemolysis or agglutination in man and does not increase the viscosity of the blood. Since it contains no protein, anaphylaxis in case of a later injection would not be expected, and, tested on guinea-pigs, was found not to occur. Gum is chemically a very inert substance and is not foreign to animal metabolism. It consists of derivatives of

galactose and of arabinose. Galactose is a natural sugar present in milk. Arabinose appears in the urine in pentosuria and appears to arise from galactose by removal of carbon dioxid (Neuberg). Since commercial products contain small amounts of calcium and potassium salts, there is no need to add them. All that is necessary is the addition of 0.9 per cent. of sodium chlorid, and tap water may be used. The solution must be filtered through flannel or other convenient medium and then sterilized. A strength of 6 per cent. is probably the best for routine use. In practice, even 3 per cent. has been found greatly superior to saline solutions, but it is clear that its osmotic pressure is not the optimal one.

If the use of sodium bicarbonate is thought necessary, it is best given by stomach or rectum. But it has not yet been demonstrated that the symptoms relieved by bicarbonate would not be more effectively cured by raising the blood pressure. In principle it would seem to be a mistake to reduce the slight increase of acidity in the blood, since this is of value in stimulating the respiratory center, and there is no evidence that the slight increase of hydrogen ion concentration which is present in some cases of acidosis, but not always, is in any degree harmful in itself.

5. **Sterilization of Skin With Crystal Violet and Brilliant Green.**—The method which Bonney and Browning have employed as a routine for the last two and a half years, is as follows: The solution contains 1 per cent. of a mixture of equal parts of crystal violet and brilliant green dissolved in equal parts of alcohol and water. (The powder is dissolved in the undiluted spirit first of all and the water then added.) Six hours before the operation (except in certain cases) the solution is painted over the skin of the operation area; a compress of lint soaked in the same and covered by a sheet of waterproof batiste is then applied and kept in position by a binder or bandage. This compress is removed on the operating table and no further painting done. The result is that the skin is stained an intense violet black; the staining remains unchanged throughout the operation and, indeed, for a week or two afterward. This prolonged application of the antiseptic produces no irritation of the skin, or of more sensitive surfaces such as the vulva and vagina. The theoretical advantages of an antiseptic capable of being applied in such concentration and over such a period are obvious. The epithelial squames throughout the entire thickness of this layer become permeated with the dyes. Should a squame become detached and conveyed into the wound it carries with it a definite amount of a potent but practically nonirritating antiseptic, and the skin surface exposed is not merely initially sterilized, but remains antiseptic throughout the operation. The clinical results accord with the theoretical. The very marked superiority of violet green over the commonly used iodine was strikingly demonstrated in bacteriologic experiments.

Journal of Laryngology, Rhinology and Otology, London

May, 1918, 33, No. 5

- 6 Intrinsic Cancer of Larynx and Operation of Laryngofissure. I. Moore.—p. 129. To be continued.
- 7 New Symptom of Labyrinth Fistula. S. H. Mygind.—p. 143.

Lancet, London

May 11, 1918, 1, No. 4941

- 8 Teaching and Training in Hygiene. H. R. Kenwood.—p. 663.
- 9 *Tachycardia: Occurrence in Enteric and Other Fevers. H. F. Marris.—p. 667.
- 10 Splints for Use in Arm, Ankle and Leg Injuries. W. Pearson.—p. 670.
- 11 Liquid Tight Closure and Treatment of Wounds. W. H. Taylor and N. B. Taylor.—p. 671.
- 12 Bladder Drainage and Irrigation. J. MacMunn.—p. 672.
- 13 *Fistula in Ano. F. S. Edwards.—p. 673.

9. **Tachycardia.**—A large number of cases belonging to the enteric group of fevers examined by Marris were characterized during the febrile period by a relatively slow heart rate; some developed tachycardia gradually during convalescence, a few abruptly, while the minority were conspicuous by the presence of rapid heart action throughout the disease. The cardiovascular system was repeatedly examined. In some cases the tachycardia was cardiac in origin; in some

toxic in origin. In a third group it was a vasomotor tachycardia and in a fourth group it was a postural or atonic variety of tachycardia. In a series of 650 cases of the enteric group of fevers tachycardia of sufficient degree to attract attention was observed in 75 cases; 5 of these were judged to be cardiac in origin, 40 were due to vasomotor instability, 10 were of the postural variety, and the remainder presented features suggestive of Groups 2 and 3. During the course of this investigation similar observations were carried out on the cases of tachycardia occurring in other febrile disorders. In the fatal cases, such as diphtheria, cerebrospinal meningitis, miliary tuberculosis, scarlet fever, the tachycardia was found to be of the cardiac variety. The majority of the nonfatal cases belonged to the vasomotor group and occurred during the convalescence of such diseases as diphtheria, scarlet fever, trench fever, influenza and pyrexias of obscure origin. A few of the postural variety were encountered in obscure febrile disorders with gastro-intestinal signs and symptoms.

13. Fistula in Ano.—In Edwards' opinion the failures are due to one of three reasons. First and foremost, the topography of the fistula is not thoroughly recognized and thus a part of the fistula's track escapes division. Second, caries of the coccyx, or even of the ischium, is a not infrequent cause of a persisting fistula, and unless this is discovered and dealt with a cure is impossible. Third, tubercle; but although a certain small proportion of fistulas are tuberculous, it is astonishing how readily healing takes place after operation in the majority. When it does not the operation wound remains open and gaping, but the fistula as such may no longer exist.

Medical Journal of Australia, Sydney

April 27, 1918, **1**, No. 17

14 Practice of Anesthetics. E. H. Embley.—p. 341. To be continued.

15 Applied Comparative Anatomy. W. C. MacKenzie.—p. 344.

May 4, 1918, **1**, No. 18

16 Agglutination After Administration of Typhoid and Paratyphoid Vaccines. W. K. Inglis.—p. 363. To be continued.

17 Practice of Anesthetics. E. H. Embley.—p. 366. To be continued.

May 11, 1918, **1**, No. 19

18 Agglutination after Administration of Typhoid and Paratyphoid Vaccines. W. K. Inglis.—p. 383. To be continued.

19 Practice of Anesthetics. E. H. Embley.—p. 387. To be continued.

20 Prevention of Diphtheria. F. R. Legge.—p. 391.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 15, 1918, **42**, No. 10

21 *Black Pleurisy. L. Galliard.—p. 266.

22 *Walled-Off Spinal Meningitis. E. Leroy and J. Paraf.—p. 270.

23 Wounds of Cauda Equina. G. Guillaud and J. A. Barré.—p. 272.

24 *Valvular Disease in Soldiers. P. Lafosse.—p. 283.

25 *Functional Heart Disturbances in Soldiers. A. Clerc and P. Aimé.—p. 290.

26 *Epididymitis with Meningitis and Influenza. Beaussart.—p. 294.

21. Black Pleurisy.—The case reported teaches that the discovery of black blood in the pleura means an old hemothorax and that infection is probably already installed.

22. Walled-Off Meningitis.—Necropsy showed that the ventricles were intact, which explained the negative results of puncture trephining of the ventricles in the case of meningitis in a man of 42. The spinal cavity had evidently become partitioned off from the skull cavities, but this partitioning was much lower down. In future, before puncturing the ventricle, Leroy intends to puncture the spinal cavity in the thoracic or neck region.

24. Valvular Disease and Active Service.—Lafosse reviewing his experience with forty-seven cases of valvular disease in soldiers, comments on the surprising tolerance of the men with valvular disease. Thirty-nine of them are doing excellent work in the way of limited service; only 8 have been invalided. Josué stated that he has examined 2,419 men with valvular disease. He restricts to the auxiliary or limited service those who have never had any disturbance from their well compensated valvular trouble. With slight transient disturbance after physical effort, he advises the auxiliary

service in the same way except that he specifies that the man must be kept under medical supervision and must not do heavy work. With a tendency to dyspnea, fatigue, etc., which will probably yield to repose and treatment, the man should be temporarily invalided. With any disturbances more than the above, discharge from the army is imperative. Laubry said that in passing judgment on valvular disease—other things being equal—the age over 35, recurring infectious diseases, narrow chest, dilatation of the heart, or persisting anomalies in the arterial pressure turned the scale in favor of permanent invaliding of the men. He does not pay much heed to functional tests. His early zeal in saving men with valvular disease for limited service has been gradually dampened by the unfavorable issue in certain cases, as the exigencies even of the limited service impose a strain at times on the men, and the specialist cannot follow them about.

25. Functional Heart Disturbances.—Clerc and Aimé remark that a serious obstacle to the recovery of men with functional heart disturbances is often found in the men's conviction that they have organic heart disease; possibly they have been so informed by some physician. In 88 of these purely functional cases, the label had been mitral insufficiency (13); endocarditis (8); myocarditis (4), or aortic lesions (2), besides a number called merely "heart disease," but Clerc and Aimé were unable to detect any organic lesion. These divergencies are due, they say, to the exaggerated importance ascribed by some to a few fleeting extrasystoles or respiratory arrhythmia, or misinterpretation of the inorganic murmurs which were found in 58 per cent. of the men. They reiterate that a murmur, the organic character of which is not evident, does not, in itself alone, testify to a valvular lesion. In deciding whether the man is fit for duty, they lay great stress on the general state of the strength, as the strength of the heart is often only the reflection of this. They stress further the response to repose.

26. Orchi-Epididymitis with Meningitis and Influenza.—Beaussart has noticed that infectious diseases later are liable to cause meningeal reactions when the person has passed through meningitis at any time. In a case described, bilateral orchi-epididymitis developed in the course of meningitis and again, a year later, in the course of influenza with severe meningitic symptoms.

Journal de Chirurgie, Paris

May, 1918, **14**, No. 4

27 *Trench Foot. V. Raymond and J. Parisot.—p. 329.

28 Puncture of Brain after War Wounds. C. Villandre.—p. 364.

27. Trench Foot.—Raymond and Parisot have found several varieties of fungus in the local lesions, blood and organs with trench foot, and they have been able to reproduce with them similar lesions in animals. Some induce, alone, similar lesions; others require the predisposing influence of wet and cold. Trench foot therefore is the result of infection of the organism by mycelian molds in the soil, which become parasites and acquire pathogenic properties under the influence of stagnation in cold water. Treatment based on this assumption has cured 99.6 per cent. of the men without loss of tissue. In prophylaxis, the main thing is to keep the feet dry; when this is not possible, to soap them well with a medicated soap—100 gm. sodium borate and 25 gm. pulverized camphor in 1,000 gm. soft potash soap. The feet and shoes are dusted with talcum containing 2.5 per cent. camphor. Greasing with grease containing 2.5 per cent. camphor may also be useful, but the main reliance is on the soaping, repeated as often as possible when conditions invite trench foot. Among the 2,861 cases in one ambulance, only 5 per cent. of the 1,098 blacks and 5 per cent. of the 242 Arabs suffered any loss of tissue, and only 0.04 per cent. of the 1,521 French soldiers. The article is accompanied with 28 illustrations or case charts.

Presse Médicale, Paris

May 2, 1918, **26**, No. 25

29 *Primary Suture of War Wounds. G. Gross.—p. 225.

30 *Chronic Enteritis and Coprology. R. Goiffon.—p. 227.

31 Treatment of Furunculosis with Lappa. R. Burnier.—p. 229.

29. Primary Suture of War Wounds.—Gross' ambulance cares only for the more severely wounded, and since the system of primary suture has been systematically applied, the mortality has fallen to 10 per cent. He reiterates that every war wound which does not contain the streptococcus should be sutured as the routine measure. The wounds with the streptococcus look differently; the man's face is thin and drawn, the pulse fast, and there is no appetite. The aspect of the ward with streptococcus cases is quite different from that in other wards. It is indispensable, he emphasizes, to isolate the wounded who present the streptococcus, as this is the only infection to be feared from the standpoint of early suture. Experience is confirming more and more that anaerobes are unable to proliferate in a living body unless they find devitalized tissues with one or more aerobes. With ordinary aerobes, the process is localized; with the staphylococcus it slowly spreads, but with the streptococcus it spreads rapidly and may assume a fulminating form. As soon as the devitalized tissue has all been excised, he sutures at once while waiting for the bacteriologic findings. If ordinary aerobes are found, he leaves the suture unmolested. With the staphylococcus, he keeps a special watch over the wound to see if slow putrid infection is becoming installed, cutting a thread or two at need. If the streptococcus is found, he removes the suture at once, opens up the wound anew, and by successive clearing out of devitalized tissues combats the putrid fermentation. The anaerobes do not start trouble until about the thirtieth hour, but the bacteriologic findings are available by the sixth hour. When the primary suture was not made, he sutures the second or third day with ordinary aerobes. With the staphylococcus he waits for its regression, from the fifth to the eighth day. With the streptococcus, he waits for the spontaneous vaccination of the organism. This occurs on an average the twenty-first day, but may be earlier. It is manifested by a drop in the temperature, but does not become definite until there is no longer any general reaction or the streptococcus has entirely disappeared. In Gross' experience 78.3 per cent. of the wounds were sutured at once, and 88.8 per cent. of the sutured wounds healed by primary intention.

30. Chronic Enteritis.—Goiffon insists on the importance of examination of the stools as the indispensable aid to clinical and roentgen study of every case of inflammation in the small intestine, disease of the liver and pancreas, chronic disease of the cecum, fermentation diarrhea, mucous colitis, left colitis and sigmoiditis, intestinal ulceration, and every case of colitis of parasitic origin; also for determination of the enteric origin of certain forms of gastric dyspepsia, and of the gastric origin of certain forms of enteritis, and in differentiation of factitious and of unrecognized bowel trouble. Each of these groups he defines and describes, insisting on the importance from the military standpoint of prompt diagnosis and treatment. In wartime we must cure quickly or return the man to civilian life.

Clinica Chirurgica, Milan

May, 1918, 25, No. 3

- 32 *Correction of Paralytic Talipes. A. Guaccero.—p. 449.
- 33 *War Wounds of Bladder. G. Mioni.—p. 473.
- 34 War Wounds of Knee. G. Razzaboni.—p. 486.
- 35 War Wounds of Skull. M. Sertorio.—p. 500.
- 36 *Reinfusion of Extravasated Blood. R. Alessandri.—p. 504.

32. Tendon Plastics to Correct Paralytic Talipes.—Guaccero refers to paralytic deformity in the domain of the external popliteal nerve left by poliomyelitis. He has done a plastic operation of the kind on tendons in thirteen cases of severe equinus varus. Healing was by primary intention in all and the outcome has been extremely satisfactory in eleven of the cases. The ultimate results in the other two cases are not known. He utilizes the gastrocnemius and soleus by joining them to the tendons of the paralyzed antagonist muscles. By this means the foot is brought to some extent under muscular control and is held in an approximately normal position. He exposes and slits the Achilles tendon into three strips, shortens the dorsal flexor tendon, and draws one strip of the Achilles tendon through to the dorsum of the

foot, and then reconstructs the Achilles tendon with what is left, as he explains with illustrations.

33. War Wounds of the Bladder.—Mioni relates that he has seen only five cases of wounds of the bladder amenable to treatment among the 4,500 wounded soldiers that have passed through his field hospital. The others with bladder wounds succumbed to associated wounds. He found packing the bladder with gauze useful in arresting hemorrhage.

36. Reinfusion of Extravasated Blood.—Alessandri quotes Kreuter's case in which a liter of blood from the ruptured liver was injected into a vein in the arm. Over 2 liters of blood had been taken from the abdominal cavity and the blood had stood outside the organism for a half hour before the infusion. The immediate results were surprisingly good, but there were other wounds which soon proved fatal. Elmendorf has also reported a similar case, reinjecting the blood drawn from a hemothorax, and the man recovered. Cases are on record in which obstetricians have successfully reinjected blood from the hemorrhage with extra-uterine pregnancy. The blood in all these cases seems to have been defibrinated; it did not display any pyrogenic property. The blood from a wound of the liver, spleen, lungs, kidneys, heart or large vessels may be regarded as practically sterile. Even if it does contain some germs, the blood itself injected with them is the most effectual means to combat them. Of course, perforation of the bowel or the presence of a foreign body, scrap of clothing, etc., would enhance the danger, and unfortunately these conditions predominate with war wounds. But the successes reported by Thies and Lichtenstein with tubal abortion hemorrhage have demonstrated that theoretic preconceptions need not render one too timid.

Policlinico, Rome

May 5, 1918, 25, No. 18

- 37 *Peritonsillar Abscess. G. Bilancio=i.—p. 413.
- 38 *Lesion of Nasal Septum in Cocain Addicts. G. Turtur.—p. 417.
- 39 War Wounds of Recurrent Nerve. C. Chiri.—p. 419.

37. Peritonsillar Abscess.—Bilancioni remarks that phlegmons close to the tonsil are rather frequent in soldiers, so that he has had opportunity to study quite a number of them. He has become convinced that the Killian, Lemaitre and Ruault technics do not answer the purpose of radical treatment so well as to cut out the upper half, at least, of the tonsil. This ensures complete drainage; the lower portion of the tonsil can be left unmolested. The anatomic conditions do not favor extension of the phlegmon downward, while the conditions around the upper part of the tonsil invite retention of pus. This is the cause of the frequent relapses with other technics.

38. Nasal Lesion in Cocain Addicts.—Turtur has found necrotic ulceration of the septum common among those who snuff cocain. It develops early, within two or three months, and often entails perforation. This is liable to be attributed to some constitutional disease if the addiction is not known, and recruits have been rejected on this account alone, the history of the cases not being brought out clearly enough to explain matters.

Brazil-Medico, Rio de Janeiro

Feb. 23, 1918, 32, No. 8

- 40 Eugregarina Parasites of Brazilian Arthropods. II. C. F. Pinto.—p. 57.
- 41 Medicolegal Study of Lesions of the Hymen. O. Freire.—p. 57.
- 42 Physiology and Pathology of Menstruation. J. Adeodato.—p. 73.
- 43 Ciliated Protozoa Found in Mammals. G. Hasselmann.—p. 81.
- 44 *Medicolegal Study of Epinephrin Content of Suprarenals. O. Sampaio.—p. 81. To be continued.

44. Epinephrin Content of Suprarenals in Sudden Death.—Sampaio writes from the Instituto Rodrigues at Bahia to describe tests made of the epinephrin content of the suprarenals as a means of estimating whether or not death had occurred suddenly. He has modified the technic devised by Cavidalli and Leocini for the purpose, using a colorimeter arrangement, with potassium chromate.

Cronica Medica, Lima, Peru

March, 1918, 35, No. 657

- 45 *Serotherapy for Vomiting of Pregnancy. R. F. Melgar.—p. 65.
46 Arteriosclerosis and Angina Pectoris of Alcoholic Origin. E. Odriozola.—p. 71.
47 Geographic Distribution of Leishmaniasis in America. E. Escomel.—p. 76. Continuation.

45. **Serotherapy for Uncontrollable Vomiting of Pregnancy.**—Melgar reviews the scanty literature on the treatment of the uncontrollable vomiting of pregnancy by subcutaneous injection of serum from another pregnant woman. A number of striking cases have been reported by Mayer and Linser, Fieux and others, and Melgar adds two more to the list. He injected 10 c.c. of serum from a healthy pregnant woman, near term, following with a second or third injection of 15 or 20 c.c. at two or three day intervals. One patient was a primipara of 22, the other had borne several children, and in both the vomiting had persisted rebellious to all other measures. The improvement was pronounced in a few hours. The pulse grew slower, the vomiting less severe and less frequent, and disappeared completely by the third day. Melgar cites further three cases published by Freund, Fieux and Udaeta in which normal horse serum cured a dermatitis or incoercible vomiting in a pregnant woman, but he had no success in the one case in which he used horse serum.

Siglo Medico, Madrid

March 23, 1918, 65, No. 3354

- 48 Suggestions for Reform in Medical Education. V. Prieto.—p. 221.
49 *Typhus in Portugal. V. M. Cortezo.—p. 225. To be continued.

March 30, 1918, 65, No. 3355

- 50 *Trauma of the Eye. E. Wieden.—p. 242.
51 First Known Case of Beriberi in Spain. F. F. Martinez.—p. 245.
52 Climate in Treatment of Pulmonary Tuberculosis. G. Trivino.—p. 248.
53 Extraneous Modifications in Syphilitic Papule, Sicilia.—p. 249.

49. **Typhus in Portugal.**—Dr. V. M. Cortezo was sent recently by the Spanish government as a member of a commission to investigate what the Portuguese authorities are doing in stamping out the epidemic of typhus at Oporto, in north-western Portugal. The disease is not confined to the poorer classes. There was a fatal case in the hotel where the commission was lodging. Cortezo's report extols the hospital arrangements and the work of the Portuguese public health service in general, but the war and other recent circumstances have brought conditions of extreme poverty to the towns investigated. Of Oporto, Cortezo says: "There are few cities that can compare with this in respect to its receptibility for an epidemic of the kind. Poverty and pauperism, with all the evils in their train, grip the population, without food, without clothing, with detestable alimentation and without habits of cleanliness. About a third of the populace live in small, walled-in communities, promiscuously with domestic animals. These groups of dwellings without ventilation or light are called *ilhas*, probably from the Latin *insula*." In one of these *ilhas* he saw twenty-three persons sick with typhus, without care of any kind till they were rushed to the hospital. As Portugal is small and there is much traffic throughout, the disease soon spread to other points, notwithstanding the efforts of Ricardo Jorge, chief of the public health service. Several cases have developed among the physicians and subordinates of this service, but none have proved fatal. The nurses to care for the sick are recruited from those who have recovered from the disease. The mortality was only 10 per cent. at the time of his visit, but later reports from Vigo newspapers, as cited by the *Siglo Medico*, state that on a recent Sunday there were 100 new cases and all proved fatal. There were 400 sick in the hospital when Cortezo visited it. He was impressed with the nonsusceptibility of infants; mothers nursed their babies throughout the disease and the infants did not contract it. The hospital service is supplemented by convalescents' homes, one of which, with capacity for 200 patients, is in an outlying suburb. The commission emphasizes the necessity for a sanitary convention between Portugal and Spain as there is constant intercourse between the two countries, many workmen crossing the international bridge to their daily work.

50. **Trauma of the Eye.**—Wieden discusses what the practitioner should and should not do when called in case of trauma of the eye. In the majority of cases in rural districts of loss of vision from a simple erosion of the cornea or slight penetration of a scrap of dirt or stone or vegetable fiber, vision might have been saved if it had not been for infection of the lacrimal passages prior to the accident. The warmth, moisture and darkness enhance the virulence of germs in the obstructed lacrimal duct and in the lacrimal gland, and infection soon spreads to one or both eyes. On compressing the region of the lacrimal duct, a mucous or purulent fluid may exude from the lacrimal point or the sac forms a small tumor, like a cyst, the relaxed walls having lost their elasticity. Injection into the lacrimal point of physiologic salt solution, colored with methylene blue, or instillation of a 5 per cent. solution of a silver preparation will show whether the lacrimal duct is permeable, after the nostrils have been plugged with cotton, the head bent forward. The upper surface of the cotton will show the stain.

Wieden reiterates impressively the importance of every affection of the lacrimal passages as liable to doom to blindness in case of casual and otherwise harmless injury of the eye. Physicians everywhere should be on the lookout for lacrimal trouble, and educate the public in the peculiar dangers of even slight injuries of the eyes with infection installed in the lacrimal sac. When the lacrimal duct is freely permeable, the physician can soothe the pain by instillation of a few drops of a 2 per cent. solution of cocaine, having the eye kept closed for a few minutes, then rinsing freely with physiologic saline or a weak antiseptic to clear out all foreign particles, concluding by applying petrolatum with a little boric acid and methylene blue. This lubricates and isolates the eye, and a dressing is then applied. The treatment after this belongs to the specialist. When the lacrimal duct was found obstructed, he always obtained good results from instillation of a few drops of optochin, as this has a specific action on the pneumococcus, the microbe usually responsible for lacrimal infection. When this drug is not available, he instills a 0.5 per cent. solution of zinc sulphate, and applies medicated petrolatum, but refrains on principle from bandaging the eye, as the secretions should have free outlet. He recalls to the practitioner that a magnifying glass is very useful in examining the eye for foreign particles.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

April 6, 1918, 1, No. 14

- 54 Electrocardiogram Varies with Speed of Impulse. S. de Boer.—p. 928.
55 *Convalescence Eosinophilia. D. Klinkert.—p. 941.
56 History of Medicine in the Netherlands. D. Schoute.—p. 945.
57 *Urticaria from Muscular Exertion. G. A. Prins.—p. 952.

55. **Nature of Anaphylaxis and Convalescence Eosinophilia.**—Klinkert remarks that the eosinophil count seems to run the same course in all infectious diseases. The eosinophils grow less in numbers as the disease progresses, until the acme has been reached and passed. Then they increase in numbers until the eosinophil count is above normal, and this post-crisis eosinophilia persists for some time after convalescence. He recalls that local eosinophilia accompanies the secretion of digestive ferments, and this suggests a connection between the normal digestion of food and the parenteral digestion of the invading bacteria. Convalescence eosinophilia may thus be regarded as an index of the secretion of ferments destined to digest the bacteria. The secretion of the gastro-intestinal digestive ferments is under the control of the autonomic nervous system, and the secretion of the ferments to digest the bacteria is likewise under the control of this nervous system. This plausible assumption is confirmed by the phenomena of anaphylactic shock. This shock is not the result of the circulation of the toxic split products of the albumin antigen, but these products circulating in the blood irritate the autonomic nervous system. This irritation is gradual and remains latent until the sudden introduction of a new unit of antigen upsets the precarious balance, and the anaphylaxis phenomena develop. Anaphy-

laxis is a cumulative toxic action from antigen. On account of the suddenness of the nervous discharge, the ferments are unable to aid efficiently in time. The anaphylactic shock may be defined as the baneful artificial caricature of the normal crisis. The eosinophilia in both is the index of the irritated condition of the autonomic nervous system. Postfebrile bradycardia may also be regarded as a phenomenon on the part of this nervous system.

Further testimony in this line is offered by recent research (Hirschstein, 1917) which has apparently demonstrated that when gastric juice and intestinal juice are formed under the influence of the vagus nervous system, a large amount of uric acid is formed at the same time. There is probably a similar formation of uric acid when specific immunity ferments are secreted under the influence of the autonomic nervous system. The urine in pneumonia on the day of the crisis contains an abnormally large proportion of uric acid. This has hitherto been ascribed to the destruction of leukocytes during resorption of the pneumonic exudate. But Klinkert thinks that this increased uric acid content is connected with the secretion of the specific antibodies. It is observed with other infectious diseases as well, at the turn for the better. In a case of typhoid, for example, the uric acid content of the urine jumped from 0.790 to 1.031 gm. at defervescence; in a case of pneumonia, from 0.815 to 1.495 gm. This increased uric acid content and the eosinophilia are thus, each of them, a phenomenon indicating the onset of convalescence. There is no retention of uric acid during fever; in fact, fever and hyperuricacidemia exclude each other. But as the temperature drops, uric acid accumulates in the blood, and is thrown off in the urine. In conclusion he reiterates the close analogy between the normal food-digestion process, with its secretion of digestive ferments, accompanied by eosinophilia and formation of uric acid, and the immunization process, with its specific secretion of ferments, its convalescence eosinophilia, and the uric acid output at the crisis. The participation of the autonomic nervous system in both processes sustains the assumption that gout can be regarded likewise as a neurosis of this system. This assumption is given a solid basis by the development of true gout in joints during convalescence from pneumonia and other infectious diseases.

57. Urticaria After Muscular Exercise.—Prins' patient is a girl of 15 who develops typical itching urticaria regularly after a dancing lesson and also after running or other muscular exercise. Dermographism is pronounced, as also a tendency to orthostatic albuminuria. No cause for the urticaria can be discovered unless it can be ascribed to toxic action from poisons generated in the muscles during muscular exercise. He ordered complete abstention from dancing and other exercise, and gave phosphorus and cod liver oil or calcium and tonics. The tendency to urticaria was thus broken up, and after the end of six months the restrictions were removed, without return of the urticaria, except one mild attack after hard running one hot day. He has since encountered a second case. This is in a physician and an emotional factor, besides the muscular effort, is evident in this case.

Ugeskrift for Læger, Copenhagen

April 18, 1918, **80**, No. 16

58 *The Vitamins. E. Madsen.—p. 613.

April 25, 1918, **80**, No. 17

59 Indications for Colloidal Silver. H. I. Bing.—p. 653.

60 *Case of Anaphylaxis. Kjelgaard.—p. 657.

61 *Duplicate Cases. O. Hamburger.—p. 658.

58. The Vitamins.—Among the practical points emphasized by Madsen is that a lactating woman must have food rich in vitamins. The lack of them may be responsible for certain pregnancy disturbances, uncontrollable vomiting, distaste for food, etc. As rachitis develops predominantly in the artificially fed, the lack of vitamins in the cow's milk or their destruction by boiling the milk, seems a plausible factor in rachitis. We do not know yet whether the scarlet fever virus, for example, survives moderate pasteurization. If the milk has to be sterilized during an epidemic, provision should

always be made for supplying vitamins in some other form, meat juice for young infants; potato purée, or egg yolk for older children. In digestive troubles we must beware of not letting the diet get too poor in vitamins, as a diet that makes little demands on the digestive organs is generally poor in vitamins. Desiccation also destroys vitamins in fruit, vegetables, etc. This explains why an antidiarrheic diet keeps the patient so languid. The tea, rice water, etc., are peculiarly poor in vitamins, and special measures are necessary to correct this. A surplus of vitamins reduces the calory demand. Tagaki found that the men in the Japanese fleet gained in weight when the rations were modified to include more vitamins although it represented fewer calories. In the Danish prisons, when the bread ration was reduced and barley porridge given instead, the men gained in weight. Barley is richer in vitamins than rye and wheat.

Madsen warns that a lack of appetite is often the first symptom from a deficit in vitamins. He thinks there is much to suggest that a vitamin deficit is a factor in chlorosis anemia, neurasthenia, vasomotor disturbances, etc. In fevers, convalescence, etc., the necessity for an ample vitamin supply is imperative. It is possible that the mysterious benefit from cod liver oil may be due to an exceptional vitamin content. The commercial infant foods on the market are completely free from vitamins, and they must be added from some other source. In institutions where the food is cooked in large portions at a time, there is liable to be a deficit in vitamins.

There is no doubt, he adds, that beriberi occurs much more commonly in all countries than has been hitherto appreciated, but it is not recognized, as no one looks for it outside the tropics. The war edema without albuminuria may be a rudimentary form of beriberi. It is possible that this may be true also of many cases of peripheral neuritis and heart weakness. Among the peculiarly vitamin-rich foods he lists butter and cheese, egg yolk, raw meat and fresh meat juice and soup. Steamed meat and fish retain their vitamins better than when boiled. Meat extracts are free from vitamins. In grains they occur in a series with rice at the lowest and barley at the highest point; in rice the vitamin occurs only in the hull, in barley in both hull and kernel. The finer the flour is bolted, the less the proportion of vitamins in it. Legumes and potatoes are rich in vitamins, but they pass mostly into the water in which they are boiled, so this water should be used in the preparation of the food. Dried and cooked vegetables have no vitamins. Fresh fruit is rich in vitamins, and in the acid fruits they seem to be especially thermostable. It is still undecided whether wine and oil contain vitamins.

60. Anaphylaxis.—Kjelgaard remarks that when one has been giving diphtheria antitoxin for thirty years without the slightest by-effects or complications, an injection of antitoxin seems a very harmless intervention. But a recent experience has upset this belief in him. Seven years ago he gave himself a preventive injection after a child had coughed false membranes into his face, and recently he took another injection for the same reason, some of the membrane tissue having got into his eye. The sixth day intensely itching urticaria developed, preventing sleep, and the face, lips and throat swelled, the pulse became imperceptible, and deep breathing was impossible. There were pains in the eye as if an insect had got in the eye. As these symptoms subsided, pains and tenderness developed in joints and tendons, with fleeting contractures. The symptoms gradually wore off in the course of ten or twelve days leaving merely lassitude in the legs. The dose of antitoxin was 4,000 units; it was supposed to be four months old. The patient injected just before himself showed no symptoms from the injection except slight local urticaria.

61. Duplicate Cases.—Hamburger describes four pairs of unusual cases which occurred in close sequence, and the experience with the first gave the clue to successful treatment in the twin case, especially with actinomycosis. The patient in this second case seemed to have merely pneumonia except for a tender point on one rib and this swelled a little. The surgeon was rather skeptical when called on to open this small tumor, but this revealed typical actinomycosis.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1918

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

- Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 1.50 yen. Tokyo.
- American Journal of Anatomy. Bi-m. \$7.50. 36th St. and Woodland Ave., Philadelphia.
- American Journal of Diseases of Children. M. \$3. American Medical Association, 535 N. Dearborn St., Chicago.
- American Journal of Insanity. Q. \$5. Johns Hopkins Press, Baltimore.
- American Journal of the Medical Sciences. M. \$5. Lea & Febiger, 706 Sansom St., Philadelphia.
- American Journal of Obstetrics and Diseases of Women and Children. M. \$5. William Wood & Co., 51 Fifth Ave., New York.
- American Journal of Ophthalmology. M. \$10. 7 W. Madison St., Chicago.
- American Journal of Orthopedic Surgery. M. \$4. 126 Massachusetts Ave., Boston.
- American Journal of Physiology. M. \$5. Johns Hopkins Medical School, Baltimore.
- American Journal of Public Health. M. \$3. 126 Massachusetts Ave., Boston.
- American Journal of Roentgenology. M. \$5. 69 E. 59th St., New York.
- American Journal of Syphilis. Q. \$5. C. V. Mosby Co., St. Louis.
- American Review of Tuberculosis. M. \$3. 2419 Greenmount Ave., Baltimore.
- Anales de la Facultad de medicina, Montevideo. Bi-m. \$2. Montevideo.
- Anales de la Facultad de medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.
- Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
- Annales de médecine. M. 23 francs. Paris.
- Annali d'igiene. M. 20 lire. Rome.
- Annals of Medical History. Q. \$6. Paul B. Hoeber, 67 E. 59th St., New York.
- Annals of Surgery. M. \$6. J. B. Lippincott Co., 227 S. 6th St., Philadelphia.
- Annals of Tropical Medicine and Parasitology. Q. \$5. Liverpool.
- Archives of Diagnosis. Q. \$2. Rebman Co., 141 W. 36th St., New York.
- Archives of Internal Medicine. M. \$4. American Medical Association, 535 N. Dearborn St., Chicago.
- Archives des maladies de l'appareil digestif et de la nutrition. M. 14 francs. Paris.
- Archives des maladies du cœur, des vaisseaux et du sang. M. 17 francs. Paris.
- Archives médicales belges. M. 18 francs. Paris.
- Archives de médecine des enfants. M. 18 francs. Paris.
- Archives de médecine et de pharmacie militaires. M. 40 francs. Paris.
- Archives mensuelles d'obstétrique et de gynécologie. M. 25 francs. Paris.
- Archives of Ophthalmology. Bi-m. \$5. G. P. Putnam's Sons, 2 W. 45th St., New York.
- Archives of Pediatrics. M. \$3. E. B. Treat & Co., 45 E. 17th St., New York.
- Archives of Radiology and Electrotherapy. M. \$5. London.
- Archivos españoles de pediatria. M. 18 pesetas. Madrid.
- Boletín de la asociación médica de Puerto Rico. Q. San Juan, Porto Rico.
- Bollettino dell'istituto sieroterapico milanese. Milan.
- Boston Medical and Surgical Journal. W. \$5. 126 Massachusetts Ave., Boston.
- Brain. Irregular. \$4. London.
- Brazil-medico. W. 20 milreis. Rio de Janeiro.
- Bristol Medical and Chirurgical Journal. M. 6s. Bristol.
- British Journal of Children's Diseases. Q. \$5. London.
- British Journal of Surgery. Q. \$6.50. William Wood & Company, 51 11th Ave., New York.
- British Journal of Tuberculosis. Q. \$1.25. G. E. Stechert & Co., 151 W. 25th St., New York.
- British Medical Journal. W. \$10. London.
- Bulletin de l'Académie de médecine. W. 20 francs. Paris.
- Bulletin of the Canadian Army Medical Corps. Ottawa.
- Bulletin of the Johns Hopkins Hospital. M. \$3. Baltimore.
- Bulletin of the Lying-in Hospital of the City of New York. Irregular. \$1. 23 E. 93d St., New York.
- Bulletin of the Naval Medical Association of Japan. Irregular. Tokyo.
- Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 28 francs. Paris.
- California State Journal of Medicine. M. \$1. Butler Bldg., San Francisco.
- Canadian Medical Association Journal. M. \$5. 386 Victoria St., Toronto.
- Chirurgia clinica. M. 45 lire. Milan.
- Chirurgia degli organi di movimento. Bi-m. 35 lire. Bologna.
- Cleveland Medical Journal. M. \$2. 2318 Prospect Ave., Cleveland.
- Colorado Medicine. M. \$2. Metropolitan Bldg., Denver.
- Correspondenz-Blatt für schweizer Aerzte. W. 22 francs. Basel.
- Cronica medica. Semi-m. 6 soles. Lima, Peru.
- Crónica médico-quirúrgica de la Habana. M. 4 pesos. Havana.
- Delaware State Medical Journal. M. \$1. Wilmington.
- Dublin Journal of Medical Science. M. \$5.
- Edinburgh Medical Journal. M. \$6.
- Escuela Médico-Militar. M. \$4. Mexico City.
- Gaceta médica de Carácas. Semi-m. 16 bolívares. Carácas, Venezuela.
- Gaceta médica de México. Irregular. \$6. Mexico City.
- Gann. Irregular. Tokyo.
- Gazzetta degli ospedali e delle cliniche. Semi-w. 25 francs. Milan.
- Glasgow Medical Journal. M. \$5.
- Grèce médicale. Semi-m. 12 francs. Athens.
- Hospitalstidende. W. 27.5 kronen. Copenhagen.
- Hygiea. M. \$5. Stockholm.
- Illinois Medical Journal. M. \$2. 3338 Ogden Ave., Chicago.
- Indian Journal of Medical Research. Q. 10s. Calcutta.
- Indian Medical Gazette. M. \$5. Calcutta.
- Journal of Abnormal Psychology. Bi-m. \$4. R. G. Badger, 194 Boylston St., Boston.
- Journal of the American Medical Association. W. \$5. 535 N. Dearborn St., Chicago.
- Journal of the Arkansas Medical Society. M. \$1. Boyle Bldg., Little Rock, Ark.
- Journal of Bacteriology. Bi-m. \$5. Williams & Wilkins Company, Baltimore.
- Journal of Biological Chemistry. M. \$3. 2419 Greenmount Ave., Baltimore.
- Journal of Cancer Research. Q. \$5. Williams & Wilkins Company, Baltimore.
- Journal de chirurgie. M. 44 francs. Paris.
- Journal of Cutaneous Diseases. M. \$5. 7 W. Madison St., Chicago.
- Journal of Experimental Medicine. M. \$5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
- Journal of the Florida Medical Association. M. \$1.50. P. O. Box 136, Jacksonville, Fla.
- Journal of Immunology. Bi-m. \$5. Williams & Wilkins Company, Baltimore.
- Journal of the Indiana State Medical Association. M. \$2. 406 W. Berry St., Fort Wayne, Ind.
- Journal of Infectious Diseases. M. \$5. 629 S. Wood St., Chicago.
- Journal of Iowa State Medical Society. M. \$2. Des Moines.
- Journal of Kansas Medical Society. M. \$2. 303 Commerce Bldg., Topeka, Kan.
- Journal of Laboratory and Clinical Medicine. M. \$3. C. V. Mosby Company, St. Louis.
- Journal of Laryngology, Rhinology and Otology. M. \$5. London.
- Journal of Maine Medical Association. M. \$2. Portland, Maine.
- Journal of Medical Association of Georgia. M. \$1. Lamar Bldg., Augusta, Ga.
- Journal of Medical Research. Bi-m. \$4. 240 Longwood Ave., Boston.
- Journal of Medical Society of New Jersey. M. \$2. 12 Cone St., Orange, N. J.
- Journal de médecine de Bordeaux. M. 15 francs.

- *Journal de médecine de Paris. M. 10 francs. Paris.
 Journal of Michigan State Medical Society. M. \$3.50. Power's Theatre Bldg., Grand Rapids, Mich.
 Journal of Missouri State Medical Association. M. \$2. 3517 Pine St., St. Louis.
 Journal of Nervous and Mental Diseases. M. \$8. 64 W. 56th St., New York.
 Journal of Oklahoma State Medical Association. M. \$2. Muskogee.
 Journal of Parasitology. Q. \$2. Urbana, Ill.
 Journal of Pathology and Bacteriology. Q. \$5.50. Cambridge, England.
 Journal of Pharmacology and Experimental Therapeutics. M. \$5. 2419 Greenmount Ave., Baltimore.
 Journal de radiologie et d'électrologie. M. 28 francs. Paris.
 Journal of South Carolina Medical Association. M. \$2. Greenville, S. C.
 Journal of State Medicine. M. 2 shillings. London.
 Journal of Tennessee State Medical Association. M. \$2. 601 Cedar St., Nashville, Tenn.
 Journal of Tropical Medicine and Hygiene. Semi-m. \$5. London.
 Journal d'urologie médicale et chirurgicale. M. 42 francs. Paris.
 Journal of Urology. Bi-m. \$5. Williams & Wilkins Co., Baltimore.
 Journal-Lancet. Semi-m. \$2. 839 Lumber Exchange, Minneapolis.
 Kentucky Medical Journal. M. \$2. State and Twelfth Sts., Bowling Green, Ky.
 Kitasato Archives of Experimental Medicine. Twice a year. 60 cents. Tokyo.
 Lancet. W. \$10. London.
 Laryngoscope. M. \$5. 3858 Westminister Place, St. Louis.
 Lyon chirurgical. M. 25 francs.
 Lyon médical. M. 15 francs.
 Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
 Medical Journal of Australia. W. 6 d. Sydney.
 Medical Record. W. \$5. W. Wood & Co., 51 Fifth Ave., New York.
 Medicina Ibera. W. 25 pesetas. Madrid.
 Medicine and Surgery. M. \$4. Medicine and Surgery Publishing Co., Metropolitan Bldg., St. Louis.
 Mental Hygiene. Q. \$2. National Committee for Mental Hygiene, 50 Union Square, New York City.
 Military Surgeon. M. \$3.50. Army Medical Museum, Washington, D. C.
 Minnesota Medicine. M. \$2. Lowry Bldg., St. Paul.
 Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
 Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
 Modern Hospital. M. \$3. Metropolitan Bldg., St. Louis.
 National Medical Journal of China. \$2. Shanghai.
 Nebraska State Medical Journal. M. \$2.00. 468 Brandeis Bldg., Omaha.
 Nederlandsch Tijdschrift voor Geneeskunde. W. 10.50 florins. Amsterdam.
 Neurological Bulletin. M. \$3. 69 E. 59th St., New York.
 New Mexico Medical Journal. M. \$2. P. O. 23, Las Cruces, N. M.
 New Orleans Medical and Surgical Journal. M. \$2. 1551 Canal St., New Orleans.
 New York Medical Journal. W. \$5. A. R. Elliott Publishing Co., 66 W. Broadway, New York.
 New York State Journal of Medicine. M. \$1. 17 W. 43d St., New York.
 Norsk Magazin for Lægevidenskaben. M. \$5. Christiania.
 Northwest Medicine. M. \$2. Cobb Bldg., Seattle, Wash.
 Nourrisson. Bi-m. 14 francs. Paris.
 Ohio State Medical Journal. M. \$2. Physician's Bldg., Columbus.
 Paris médical. W. 16 francs.
 Pediatria. M. 20 lire. Naples.
 Pennsylvania Medical Journal. M. \$2. Athens, Pa.
 Philippine Journal of Science. Irregular. \$3. Manila, P. I.
 Policlinico. W. 32 lire. Rome.
 Practitioner. M. \$6.50. London.
 Prensa médica argentina. Semi-m. 25 francs. Buenos Aires.
 Presse médicale. Semi-w. 15 francs. Paris.
 Progrès médical. W. 12 francs. Paris.
 Psychiatric Bulletin. Q. \$2. New York State Hospital Commission, Albany.
 Public Health Journal. M. \$2. York Publishing Co., 169 Bay St., Toronto.
 Quarterly Journal of Medicine. \$6.50. London.
 Repertorio de medicina y cirugía. M. \$3. Bogotá, Colombia.
 Revista clinica. Q. \$1. Medellin.
 Revista de la Asociación médica argentina. M. Buenos Aires.
 Revista de medicina y cirugía de la Habana. Semi-m. \$4.50. Havana.
 Revista de medicina y cirugía prácticas. W. 30 pesetas. Madrid.
 Revista dos Cursos. Irregular. Porto Alegre.
 Revista médica cubana. M. Havana.
 Revista médica de Yucatán. M. 6 pesos. Mérida, Mexico.
 Revista médica del Rosario. Bi-m. 10 pesos. Rosario, Argentina.
 Revista médica del Uruguay. M. 30 francs. Montevideo.
 Revista medico-cirúrgica do Brazil. M. 10 milreis. Rio de Janeiro.
 Revista sud-americana de endocrinología, inmunología y quimioterapia. M. \$5. Buenos Aires.
 Revue de chirurgie. M. 33 francs. Paris.
 *Revue de médecine. M. 23 francs. Paris.
 Revue médicale de la Suisse romande. M. 14 francs. Geneva.
 Rhode Island Medical Journal. M. \$2. Providence.
 Riforma medica. W. 35.50 lire. Naples.
 Rivista critica di clinica medica. W. 16 lire. Florence.
 Rivista di clinica pediatrica. M. 18 lire. Florence.
 Russkiy Vrach. W. 13 rubles. Petrograd.
 Schweizer Archives für Neurologie und Psychiatrie. Irregular. Price varies. Zurich.
 Sei-I-Kwai Medical Journal. M. \$2. Tokio.
 Semana médica. W. \$5. Buenos Aires.
 Siglo médica. W. 20 pesetas. Madrid.
 Social Hygiene. Q. \$2. 2419 Greenmount Ave., Baltimore.
 Southern Medical Journal. M. \$3. 807 Empire Bldg., Birmingham, Ala.
 Southwest Journal of Medicine and Surgery. M. \$1. El Reno, Okla.
 Southwestern Medicine. M. \$2. El Paso, Texas.
 Surgery, Gynecology and Obstetrics with International Abstract of Surgery. M. \$10. Surgical Publishing Co., 30 N. Michigan Ave., Chicago.
 Svenska Läkaresällskapets Handlingar. Q. 7.50 kronor. Stockholm.
 Texas State Journal of Medicine. M. \$2.50. Western National Bank Bldg., Fort Worth, Tex.
 Tumori. Bi-m. 25 lire. Rome.
 Ugeskrift for Læger. W. 20 kronor. Copenhagen.
 United States Naval Medical Bulletin. Q. \$1. Washington, D. C.
 Upsala Läkareförenings Förhandlingar. Irregular. 10 kronor.
 Vermont Medicine. M. \$1. Rutland, Vt.
 Vida nueva. M. 3 pesos. Havana.
 Washington Medical Annals. Bi-m. \$1. 2114 18th St., N. W., Washington, D. C.
 West Virginia Medical Journal. M. \$1.50. Huntington, W. Va.
 Wisconsin Medical Journal. M. \$2. Goldsmith Bldg., Milwaukee.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. *Cannot be loaned.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association."

The name of the author follows the subject entry in brackets. The figures in parentheses refer to the paragraph in the Current Medical Literature Department, the number following to the page in THE JOURNAL.

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- A.—Association.
 Acad.—Academy.
 Am.—American.
 Coll.—College.
 Conf.—Conference.
 Cong.—Congress.
 Conv.—Convention.
 Dist.—District.
 Hosp.—Hospital.
 Internat.—International.
 M.—Medical or Medicine.
 Nat.—National.
 Phar.—Pharmaceutical.
 Phys.—Physician.
 Ry.—Railway.
 S.—Society.
 Surg.—Surgical, Surgeon or Surgery.
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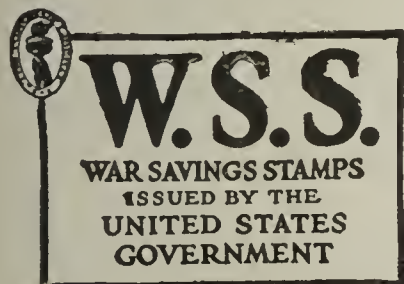
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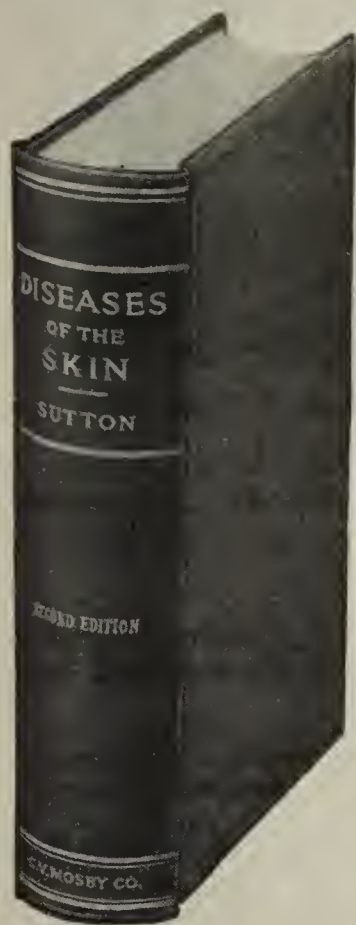
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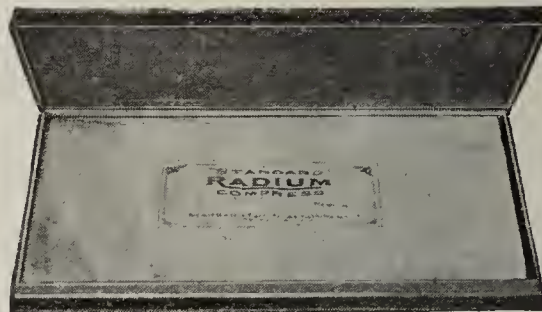
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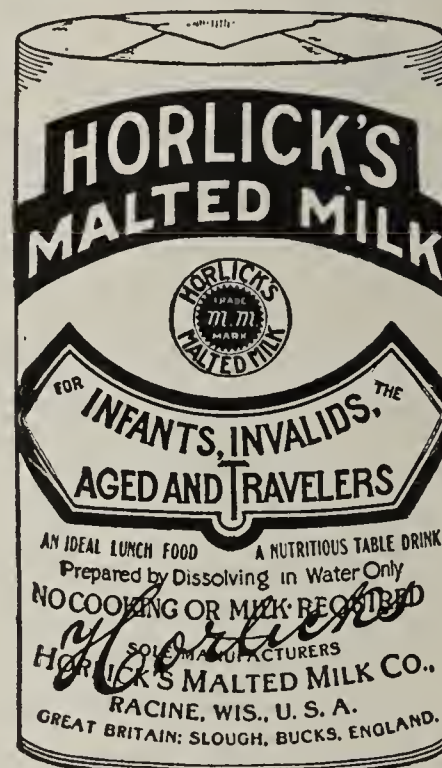
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For application blanks address THOMAS K. ROBERTSON, Superintendent, 218 Second Avenue, New York City.

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Mich. Appointment of house physicians. The service is of twelve months' duration with residence in the hospital. Applications must be made before May 1, 1918. Application blanks can be obtained from the superintendent of the hospital or will be sent by mail. Capacity of hospital, 350 beds. Number of patients treated during the year 1917, 5,391; surgical cases, 2,634 (operations, 3,553); obstetrical cases, 1,076; medical and pediatrics, 1,681. By this report some idea can be obtained of the opportunities offered. Walter E. Welz, M.D., Committee on Interns.

(Continued on next page)

Tonics and Sedatives

With a hold-up man you have a choice—"Your money OR your life"—But Kaiser Bill permits no voice—"Your money AND your life."

—O—

ACCORDING TO REGULATIONS

Guard—Who goes there?

Pompous Colonel—Fool!

Guard—Advance, fool, and give the counter-sign.

—O—

THE ALIEN ENEMY

A grocer who lost his German assistant when the war broke out engaged in his place a small boy. Two or three days later the grocer was very much surprised to find the following mysterious words chalked on a biscuit box:

"Puff, puff—draw up—puff—draw up, draw up."

He began to worry lest his late assistant had been a spy, but the new clerk allayed his fears.

"It's all right, sir," said the boy. "Don't worry! That's only the Marseillaise on the harmonica."

—O—

OH! EUCLID!!

The following are taken from a series on "Euclid in the Army" in a British hospital publication:

"All regimental sergeant majors are equal to anything, but the side of any three sergeant majors, taken together, is less than that of any three brigadier generals taken at random."

"A major has the shortest temper between two meals."

—O—

A lazy man can always find time to attend a mass meeting of the unemployed.

—O—

A REAL SHERLOCKESS

A lady advertised for a man to work in her garden, and two men applied for the job. While she was interviewing them on the lawn she noticed that her mother, on the piazza, was making signs to her to choose the shorter of the two men, which she finally did.

When the ladies were alone the daughter said, "Why did you signal me to choose the shorter man, mother? The other had a much better face."

"Face!" cried the old lady. "When you pick a man to work in your garden you want to go by his overalls. If they're patched on his knees, you want him; if they're patched on the seat, you don't."—Boston Transcript.

—O—

Camouflage

Dr. Anna Reznikov, osteopathic physician, has returned from a trip through the middle west and again resumed her practice at her office on Sullivan street. While in the Mississippi valley she took a post graduate course in the lying-in hospital, at Kirksville, Missouri. She took this post graduate course under the instruction of Dr. De-Lee, professor in obstetrics.—Miami (Ariz.) Silver Belt.

—O—

BESIDES PURGATORY

Tommy (writing)—O Bill! 'Ow many h'ells in o'enzollern?

Bill—Two h'ells same as in 'ell.

—O—

WORSE THAN IT SOUNDED

Mrs. Schwartz was trying to overcome the effects of too much corned beef and cabbage by vigorous calisthenics. Her instructor, observing that she was very warm, apologized for counting too rapidly and said, sympathetically: "Why, Mrs. Schwartz, you are all perspiration."

"Und svet, too," gasped Mrs. Schwartz.

(Continued on next page)

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is essential in laboratory practice. It is only logical to assume that an institution that has been honored by the confidence of the profession to a point where it is taking care of the laboratory problems of hundreds of professional men, must be using standardized methods. That's exactly what we are doing. No method is used that is not sanctioned by proper authority. Every test, every report, is carefully scrutinized by our Director. We *feel* our responsibility.

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Literature and samples free to physicians.

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(Continued from preceding page)

WANTED—AT CORNELL UNIVERSITY, Ithaca, N. Y., a man as medical adviser and examiner of students; work physical examinations and diagnosis. Apply to Dr. A. T. Kerr, Ithaca, N. Y. A

PHYSICIANS WANTED

WANTED — PHYSICIAN TO TAKE charge of \$3,500 unopposed village and country practice, eastern Indiana; established 18 years; drugs and office equipment optional; army service. Add. 3903 E, % AMA.

WANTED — YOUNG DOCTOR, MARRIED or single, to serve at plant of large manufacturing corporation in Pennsylvania; free house rent, attractive compensation; privilege of practicing in adjacent territory; replies treated confidentially. Add. Room 1611, Lexington Bldg., Baltimore, Md. C

WANTED—A RESIDENT FELLOW IN THE Department of Genito-Urinary Diseases and Syphilis (60-bed service); vacancy to be filled at once; salary, \$600 a year and maintenance; must be a hospital graduate with surgical training and candidates not subject to military service preferred. Add. H. H. Morton, M.D., 32 Schermerhorn St., Brooklyn, N. Y. C

WANTED — PHYSICIAN — AN A NO. 1 opening for a good physician in a small North Dakota town; a man who can do some surgery preferred; plenty of work to do; no practice nor property has to be purchased to get in; if interested write at once before the place is taken. Add. 3974 C, % AMA.

WANTED—PHYSICIAN — GOOD LOCA- tion open for practicing physician in North Dakota town of 500; 3 neighboring towns have no doctor; big territory; doctor that was here gone to army. For particulars write the E. M. & F. Drug Co. or Commercial Club, Tioga, N. Dak. C

WANTED — FOR FIELD WORK BY A southern state board of health an energetic and capable young physician, graduate of a Class A college; salary \$2,100 and traveling expenses. Add. 3975 C, % AMA.

WANTED — PHYSICIAN FOR CONTRACT mining practice in West Virginia; salary \$175 per month and supplies furnished; splendid prospect for promotion; state age, experience and give full personal description first letter. Add. 4023 C, % AMA.

WANTED—SENIOR PHYSICIAN FOR TU- berculosis institution with 160 beds; state qualifications; salary \$1,200 per year with maintenance. Add. M. I. Marshak, M.D., Supt., Edgewater, Colo. C

WANTED — DOCTOR WHO IS EXEMPT from military service for place on medical staff; permanent position; modern hospital; salary \$175 month, board and room; must be single. Add. 4018 C, % AMA.

WANTED — RESIDENT ORTHOPEDIST, scientific after-care work, poliomyelitis; modern hospital; 80 patients; moderate salary; seaside location. Apply by letter, stating qualifications, to Arthur E. Wakeman, General Secretary, Brooklyn Children's Aid Society, 72 Schermerhorn St., Brooklyn, N. Y. C

WANTED — RESIDENT PHYSICIAN, Stony Wold Sanatorium, Lake Kashaqua, New York, Adirondacks, for treatment of tuberculosis; routine work; salary \$50 a month with maintenance; reference required. Add. Dr. M. F. Lent, Medical Director. C

WANTED—EXPERT ELECTROTHERAPEU- tist and roentgenologist, especially former; office work; beginning salary, \$150 per month. Add. 3920 C, % AMA.

WANTED — BACTERIOLOGIST AND chemist for city board of health; must be a competent man; salary \$2,000-\$2,400; give reference in reply. Add. 4007 C, % AMA.

WANTED — PATHOLOGIST, BANGOR State Hospital for the Insane; beginning salary \$1,300, with maintenance. Add. P. T. Haskell, M.D., Superintendent, Bangor, Maine.

WANTED—A PHYSICIAN AT THE WIS- consin State Tuberculosis Sanatorium, Statesan, Wis. For particulars add. the Superintendent. C

WANTED — WOMAN RESIDENT PHYSI- cian for a small hospital in a state institution for girls, with a large genito-urinary clinic. Apply Box 101, Lancaster, Mass. C

(Continued on next page)

TONICS AND SEDATIVES

(Continued from preceding page)

A New Extension Institute

Old Dr. Fries has returned to his old neighborhood where he has purchased a house and fitted up an office at 437 Fifty-seventh Street, near the Fifty-eighth Street subway station, and one block from Third Avenue and Fifth Avenue surface cars and elevated station on Fifty-eighth Street and Third Avenue.

He will attend mostly to his old patients, charging them \$6.00 per annum, or rather 50 cents per month, or \$1.00 for ordinary calls, and they will have the privilege of buying the book "How to Live" or his Tonic Tablets at 50 cents each.

He will examine them, teaching them "How to Live," correcting their faults so as to increase their vitality, giving them a better resisting power to disease so they will live longer and be more free from disease.—*Private Circular.*

—O—
IT TASTES LIKE EVERYTHING

Seaman—"Is that hash they have so often at mess hard to make?"

Mess Attendant—They don't make it; it accumulates."

—O—

CACOETHES SCRIBENDI

If all the trees in all the woods were men,

And each and every blade of grass a pen;

If every leaf on every shrub and tree

Turned to a sheet of foolscap; every sea

Were changed to ink, and all earth's living tribes

Had nothing else to do but act as scribes,

And for ten thousand ages, day and night,

The human race should write, and write, and write,

Till all the pens and paper were used up,

And the huge inkstand was an empty cup,

Still would the scriblers clustered round its brink

Call for more pens, more paper, and more ink.

—*Oliver Wendell Holmes.*

—O—

BIOLOGICALLY SPEAKING

"Do you know that there'll be no horticulture or agriculture if the German nation is beaten?"

"Why is that?"

"Because there'll be no germin-a-tion!"

—O—

SOME SPEED

"Rastus, what are you going to do if you get wounded 'over there?'"

"Well, boss, A'h don' reckon to get wounded.

If that first bullet don't hit me all of the othahs is gwine to fall short."

—O—

WHAT THE LOCAL BOARDS GET

The following affidavit was submitted to a local board to prove a claim for dependency because of illness:

ASEPTIZONE FOR DISEASES OF WOMEN
ASEPTIZONE STOMACH REMEDY
ASEPTIZONE CATARRH
REMEDY

THE ASEPTIZONE COMPANY

Chicago, March 23rd, 1918.

To whom it may concern:

This is to certify that Mrs. Z— E— S— has been sick a long time with Bronchial trouble and bleeding arteries and has been treating with Aseptizone since August, 1917.

Yours Respectfully,

ASEPTIZONE COMPANY.

Per Lydia Menter.

(Continued on next page)

TONICS AND SEDATIVES

(Continued from preceding page)

Concerning Botulism

AMERICAN MEDICAL ASSOCIATION,
CHICAGO.

Dear Sir:—Now as to the infection, I myself am stricken with this not understood mysterious affliction. I received the infection in an open cut while taking care of a sick horse the veterinaries call the disease cereberitis I have taken treatment from seven Doctors, and am no better. the above mentioned Disease, has been the torment of all the veterinaries for the last 30 years, Laboratories test's of blood negative, of Urine great Nerve waste no Bacterine can be isolated except those that are natral in all bodys, only they are out of place, Colon & Stophylococcus Bacillus are in the urine, which should not be. I have done extensive experementing, on rabbits, since I am afflicted and Dr's can do nothing for me, rabbits enocolated from Urine die in 6 to 15 days. and find the cause is active moldy hay having a gasy acid smell to it. so it is a established fact in my mind it is a form a Basilus Botulinus about the same as Botulism in Man. now as to the rest of the cases they received it from me as near as I can figure it out it is this way while I was very low with the acute form, the feces & Urine were throwed out back of the barn and the chickens got a-holt of it, later some of the chicken were killed & eaten and they alltook down with the same affliction, its acts like typhoid, Malaria & Colic Appendicitis all put together the disease eats very small punctures through the tissues, one doctor thinks it is spotted fever at any rate it proves to be caused by Moldy hay find a small sample enclosed, note the black punctures on it. It distorys the Nerves of all the Vital internal organs, congesting them with a tough yellowish tinted plegm with small pictures scattered all throug here and there, the Liver is engorged and a brownish gray color with small brass colored spots scattered all over it, the internal Organs Blood veins & spinal cord, lining look inflated with a sort of a Peritnoitis, Enteritis, Phlebitis, Pyelitis & Cereberitis, is as near as I can discribe it from all the animals I have cut open for examination.

I have a book of your publication by Victor C. Vaughan and he claims "an effective antioxin has been prepared and used for Buto-
lism."

God if I only knew where to get it, its the only hope I have left for us all I have just about done every thing only to fail, repeatedly with this horrible disease, I would certainly like to try Bacillus Botulinus Antitoxin before I give up.

Yours Very truly

A. B. C.

P. S. Horses & Cattle here are constantly dieing with this peculiar infection, in spite of everything that can be done.

His Ailment Was Puerpera

DANVILLE, Ill., March 26.—Jacob Ludwig, age sixty-four, a resident of this county for fifty years, is dead at his home near Collison, after a short illness. His ailment was puerpera hemorrhagia, a disease whercin the blood exudes from the skin.—Indianapolis News.

ABSOLUTE LOGIC

The following conversation was heard by a colonel as he strolled past a barn in which a detachment of Uncle Sam's chocolate soldiers were billeted: "What you do 'bout dat insurance, Hennerly? I done got a fousand i'on men on mah life."

"Fousand! Ah done put all mah pay up fo' ten fousand dollah's worth."

"You all mus' be cra-a-azy, Hennerly!"

"Jes you think it ovah, Spoht! Which one of us you s'pose dey'll sen' ovah de top fus'?"

Medical Proverbs—X

An ancient Italian proverb says "He that would heal a wound must not handle it"—but that was before the Carrel-Dakin treatment.



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(Continued from preceding page)

WANTED—MONTANA — INTERNIST FOR a period of one year to take charge of the medical work of a firm of physicians during the absence of the internist who expects to be absent one year in France; must be competent to do x-ray and gastro-intestinal diagnosis and general medical work; will pay \$250 to \$300 per month to right man; send full particulars in first letter, stating when available, salary expected, references, hospital experience, etc. Add. 3980 C, % AMA.

WANTED—PHYSICIAN NOT SUBJECT TO draft, with ability in surgery and gynecology and successful experience in general practice, to take over long established 11 years' active practice; health only reason for retiring; introduction to hospitals and patients will give good practice at once; must rent home with office, \$60 per month; medicines, instruments, furniture, automobile for sale; cash or percentage; centrally located, Brooklyn, N. Y. Add. 3994 C, % AMA.

WANTED — PHYSICIAN FOR HIGH- grade practice in large new 10-story fireproof Chicago apartment home building, Sheridan Road locality; all told, 171 furnished apartments under one roof; occupants permanent; physician's suite, first floor, includes waiting room, office, living room, kitchenette, etc.; excellent opportunity for quality patronage; ready May 1. Fredric C. Skillman, Rector Bldg., Chicago.

WANTED—DURING ABSENCE OF PATH- ologist in France, physician for general pathology in hospital, 95 beds; one resident physician; two hours from New York; maintenance and salary, with privilege of outside work; state qualifications, experience, age, religion, nationality. Supt. St. Luke's Hospital, Newburgh, N. Y.

INTERNS WANTED

WANTED—INTERN AT BAYONNE HOS- pital and Dispensary, Bayonne, N. J.; 100-bed general hospital; service one year, general with all specialties; large dispensary, very active accident and surgery service; salary \$25 per month and maintenance.

(Continued on next page)

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We desire to confer and cooperate with physicians and surgeons, assuring them adequate amounts of Radium to meet their patients' requirements.

Books Received

Books received are acknowledged in this column, and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

TREATISE ON APPLIED ANALYTICAL CHEMISTRY. Methods and Standards for the Chemical Analysis of the Principal Industrial and Food Products. By Prof. Vittorio Villavecchia, Director of the Chemical Laboratories of the Italian Customs. With the Collaboration of G. Fabris, G. Rossi, R. Belasio, A. Bianchi, G. Silvestri, F. Barboni, G. Armani, G. Bosco, and A. Capelli. Translated by Thomas H. Pope, B.Sc., A.C.G.I., F.I.C., University of Birmingham. Vol. I. Cloth. Price, \$6. Pp. 475, with 58 illustrations. Philadelphia: P. Blakiston's Son & Co., 1918.

THE SPLEEN AND ANÆMIA. Experimental and Clinical Studies. By Richard Mills Pearce, M.D., Sc.D., Professor of Research Medicine, with the assistance of Edward Bell Krumhaar, M.D., Ph.D., Assistant Professor of Research Medicine, and Charles Harrison Frazier, M.D., Sc.D., Professor of Clinical Surgery, University of Pennsylvania. Cloth. Price, \$5. Pp. 419, with 16 illustrations. Philadelphia: J. B. Lippincott Company, 1918.

THE HUMAN MECHANISM. Its Physiology and Hygiene and the Sanitation of Its Surroundings. By Theodore Hough, Professor of Physiology, University of Virginia, and William T. Sedgwick, Professor of Biology and Public Health, Massachusetts Institute of Technology. Revised edition. Cloth. Price, \$2. Pp. 572, with 167 illustrations. Boston: Ginn & Co., 1918.

STREAM POLLUTION. A Digest of Judicial Decisions and a Compilation of Legislation Relating to the Subject. By Stanley D. Montgomery and Prof. Earle B. Phelps, U.S. Public Health Service. Treasury Department, United States Public Health Service. Public Health Bulletin No. 87. Paper. Price, 30 cents. Pp. 408. Washington: Government Printing Office, 1918.

HANDBOOK OF OPERATIVE SURGERY. By William Ireland de C. Wheeler, B.A., M.D., F.R.C.S.I. With an Introduction by Surg.-Gen. Sir Alfred Keogh, G.C.B. Third edition. Cloth. Price, \$3.50. Pp. 364, with 226 illustrations. New York: William Wood & Co., 1918.

BLOOD TRANSFUSION, HEMORRHAGE AND THE ANÆMIAS. By Bertram M. Bernheim, A.B., M.D., F.A.C.G., Instructor in Clinical Surgery, The Johns Hopkins University. Cloth. Price, \$4. Pp. 259. Philadelphia: J. B. Lippincott Company, 1917.

NURSING ETHICS: A LECTURE. By T. Percy C. Kirkpatrick, M.D., Fellow and Registrar of the Royal College of Physicians of Ireland. Second Impression. Paper. Price, 35 cents. net. Pp. 38. Dublin: University Press, 1917.

MINOR MALADIES AND THEIR TREATMENT. By Leonard Williams, M.D., Physician to the French Hospital. Fourth edition. Cloth. Price, \$2.75. Pp. 402. New York: William Wood & Co., 1918.

LOS FENÓMENOS BIOLÓGICOS ANTE LA FILOSOFÍA. Por el Dr. Nicolás Rodríguez 1 Abaytua. Paper. Price, 5 pesetas. Pp. 251. Madrid: Imprenta y Librería de Nicolás Moya, 1918.

STUDIES IN THE ANATOMY AND SURGERY OF THE NOSE AND EAR. By Adam E. Smith, M.D. Cloth. Price, \$4. Pp. 157, with 45 illustrations. New York: Paul B. Hoeber, 1918.

NINE HUMOROUS TALES. By Anton Chekhov. Translated by Isaac Goldberg and Henry T. Schnitkind. Boards. Price, 25 cents. Pp. 60. Boston: The Stratford Company, 1918.

TWENTY-FOURTH ANNUAL REPORT OF THE CHIEF STATE FACTORY INSPECTOR OF ILLINOIS FOR THE YEAR JULY 1, 1916, TO JUNE 30, 1917. Paper.

NEW YORK STATE HOSPITAL COMMISSION. Twenty-Eighth Annual Report. Cloth. 1917.

(Continued from preceding page)

WANTED—INTERNS—AT THE WOMAN'S Hospital, New York City; unusual opportunity for intensive training in gynecological and abdominal surgery; also obstetrics; term of service one year, with residence in the hospital; examination to be held May 1 and 2; successful candidates to report for duty June 1; two vacancies to be filled every four months; applicants who have had a previous hospital training and who are not subject to military call will be given the preference. For further information add. with credentials, Dr. Dougal Bissell, 219 W. 79th St., New York City. D

WANTED—INTERNS—DETROIT RECEIVING Hospital, 140 beds; large emergency medical and surgical service; \$25 per month and maintenance; service 1 year; diplomas given. Add. applications to Superintendent Receiving Hospital, Detroit, Mich. D

WANTED—INTERN—BABIES HOSPITAL—Six twelve months' elective service; 80 beds; salary and maintenance; laboratory experience necessary; hospital experience desirable. St. Christopher Hospital, Brooklyn, N. Y. D

WANTED—A MAN INTERN FAMILIAR with routine laboratory work and anesthesiology; must be graduate of A1 school; good salary. Add. 3906 D, % AMA.

LOCUM TENENS WANTED

WANTED—DOCTOR—REGISTRATION not absolutely necessary; one other doctor here; South Dakota practice; \$4,500 year general practice; large field; county seat town; take place for duration of war; get all receipts; nothing to buy; references wanted; house equipped for living if desired; rich country; population 1,500; wanted immediately. Add. or wire 1519, F. V. Kniest, Bee Bldg., Omaha, Neb. F

WANTED—PHYSICIAN TO TAKE charge of practices of two physicians now in army; north shore Chicago suburb, high class clientage; physician must be A1 man and able to come by May 1 or before; excellent opportunity to continue well-established practices. Add. 3944 F, % AMA.

WANTED—EX-INTERN FOR LOCUM TENENS, may be permanent; competent to do routine laboratory work and assist in surgery; salary \$125 per month; maintenance in hospital. Add. R. W. Van Deventer, M.D., Wellington, Kan. F

WANTED—LOCUM TENENS DOCTOR (Protestant) to take place for one year; Illinois town; established 21 years; practice above \$4,000 year; population 1,000; one other physician in active practice; prosperous people; ready for work immediately. Add. 1493, F. V. Kniest, Bee Bldg., Omaha, Neb. F

LABORATORY TECHNICIANS WANTED

WANTED—AN X-RAY AND LABORATORY man to take charge of a thoroughly equipped, modern laboratory; must be able to do all x-ray and laboratory work; position open May 1; give experience, qualifications and references in first letter. Add. 4004 V, % AMA.

WANTED—LABORATORY TECHNICIAN— Good position for man of ability; one that is competent to do all sorts of clinical laboratory work; intelligent man of good personality; M.D. preferred. Add. 4015 V, % AMA.

WANTED—AN EXPERIENCED LABORATORY technician who is capable of doing routine laboratory work, Wassermann, tissue diagnosis, etc.; state age, experience, religion, etc. Agatha Hospital, Clinton, Iowa. V

WANTED—A WOMAN EXPERIENCED IN routine laboratory work, capable of doing tissue diagnosis, etc. Westmoreland Hospital, Greensburg, Pa. V

SEE MY ADVERTISEMENT UNDER LAB- oratory for sale. This is an excellent opportunity to establish yourself. L. A. Thunig, M.D., 1069 Bergen St., Brooklyn, N. Y. V

NURSES WANTED

WANTED—GRADUATE NURSE, ASSIST in anesthesia, to superintend, take charge; also have training school; laboratory work desired, but not essential. Add. Columbia Hospital, Columbia, Miss. T

(Continued on next page)

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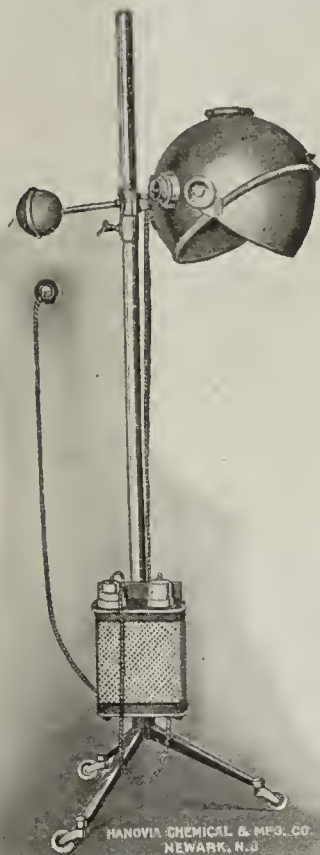
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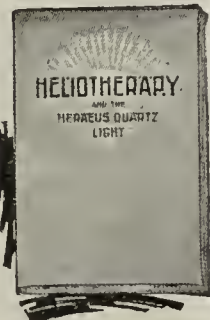
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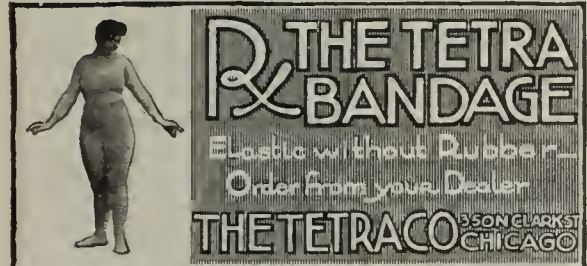
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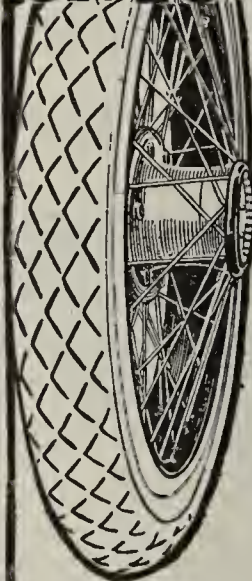
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30 x 3 1/2	10.95	12.20	2.95	34 x 4 1/2	23.80	26.00	5.10
31 x 3 1/2	11.60	12.76	3.00	35 x 4 1/2	24.95	27.20	5.20
32 x 3 1/2	12.65	14.25	3.10	36 x 4 1/2	25.35	27.65	5.35
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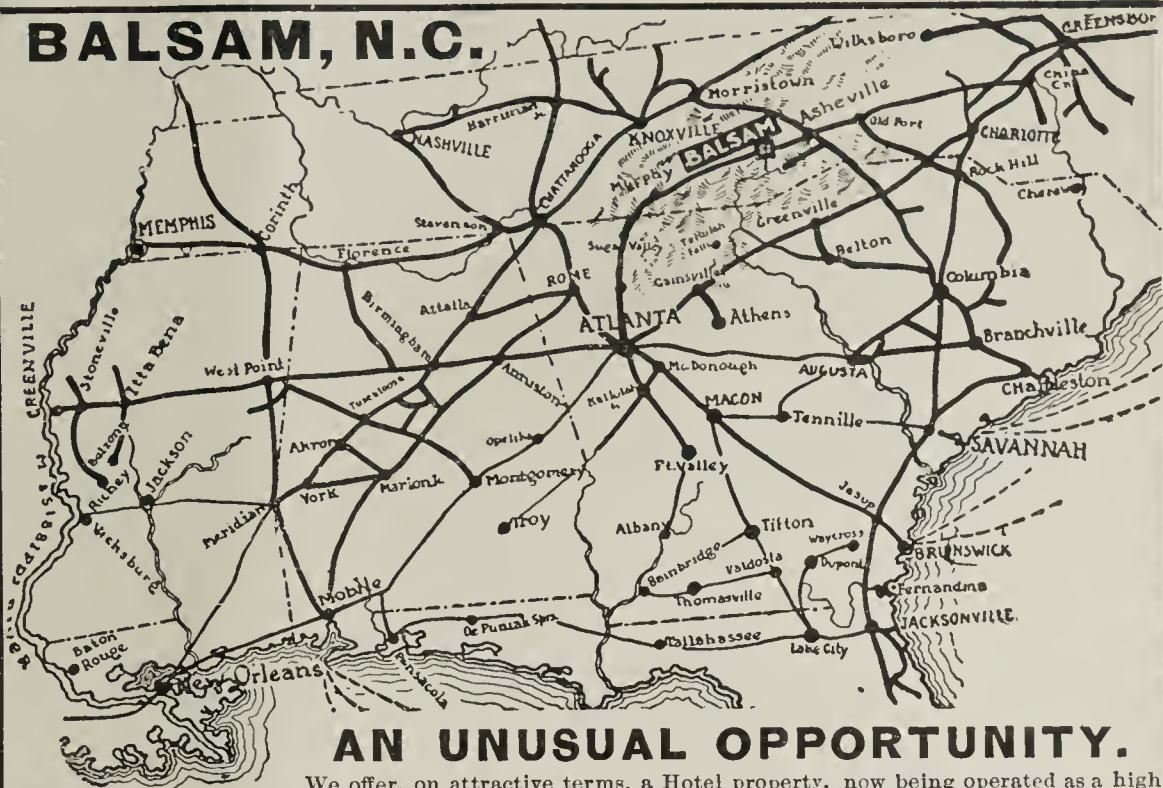
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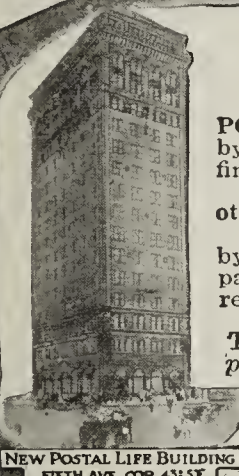
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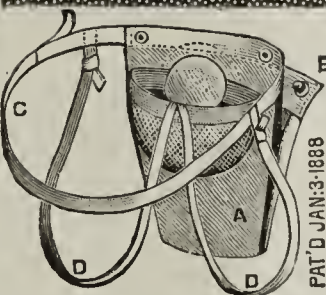


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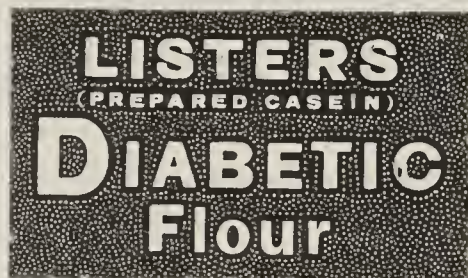
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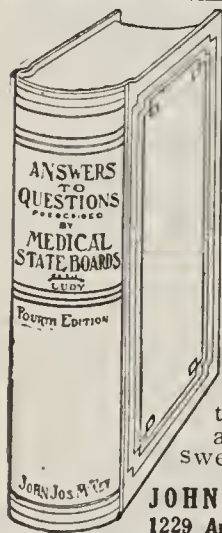
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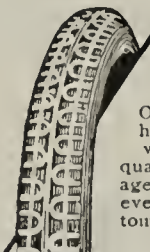
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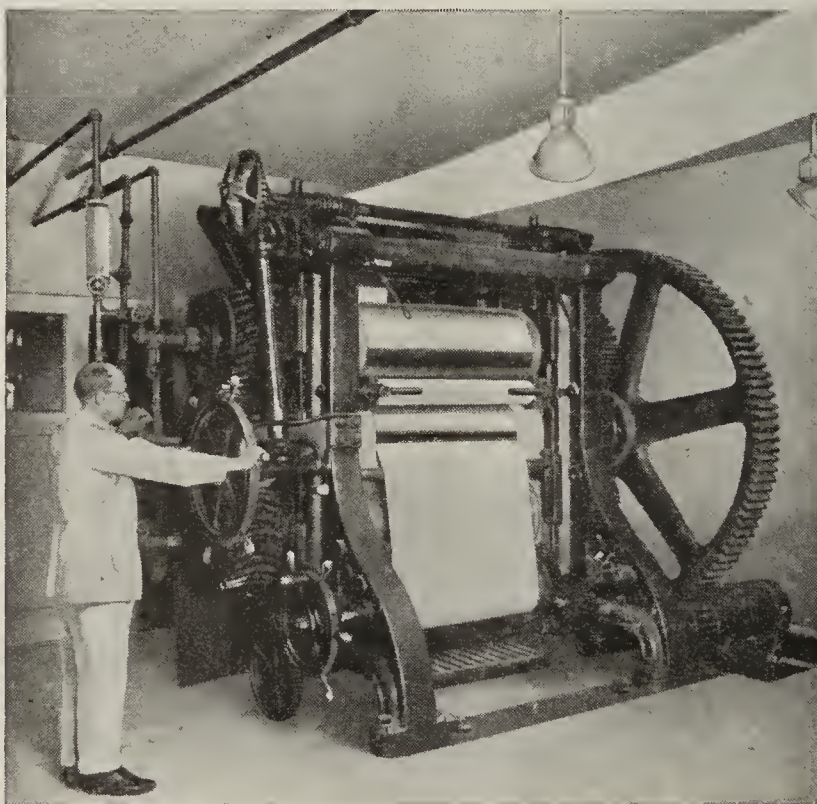
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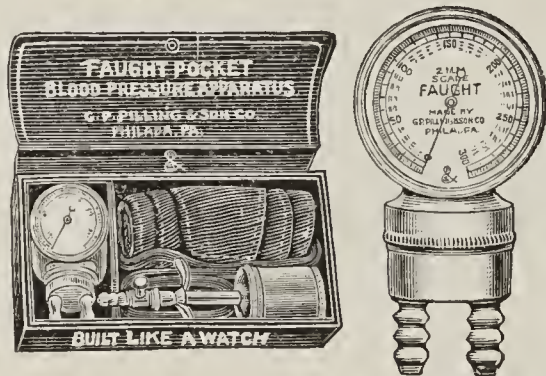
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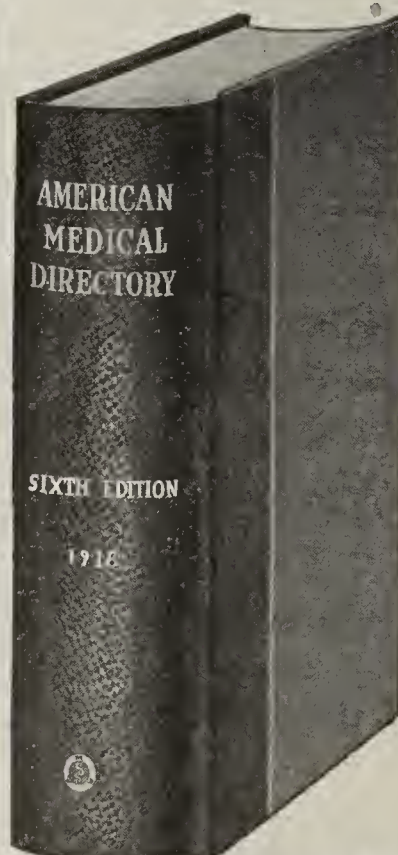
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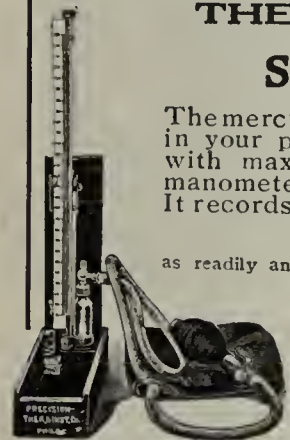
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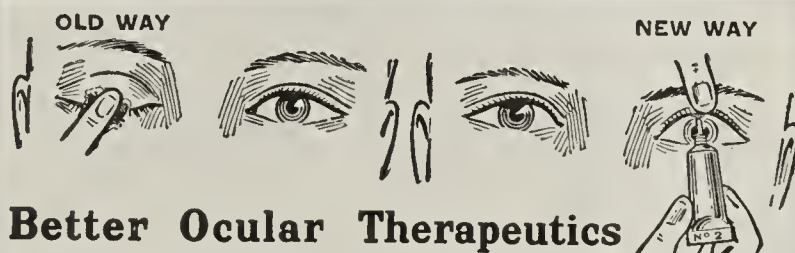
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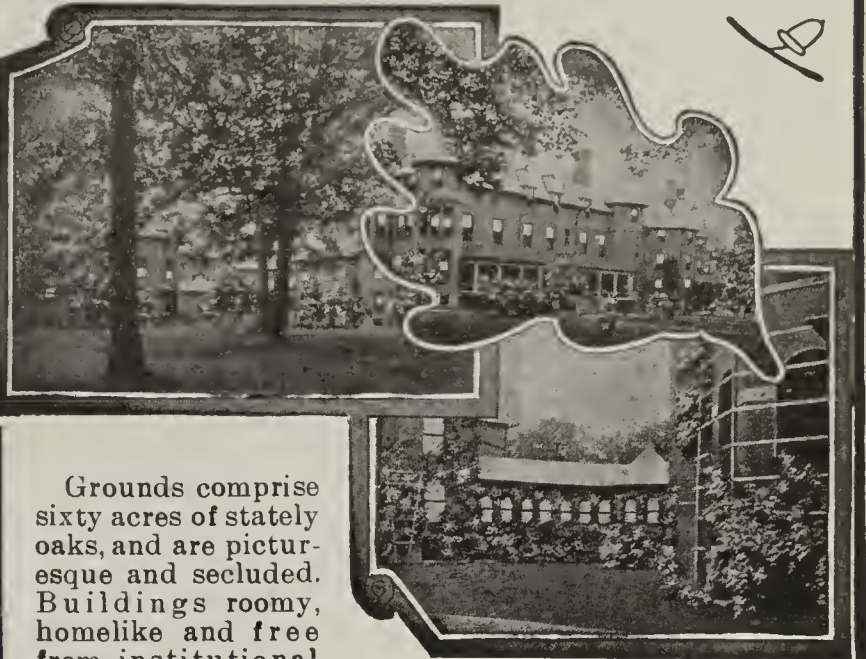


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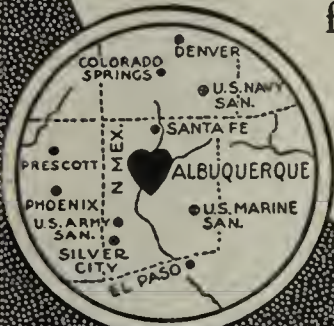
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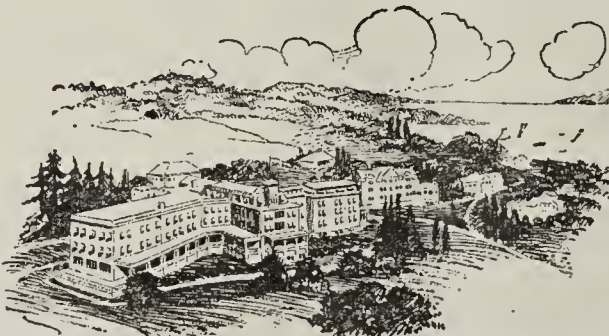
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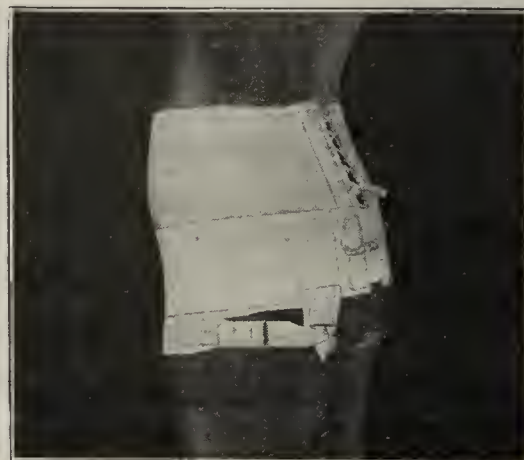
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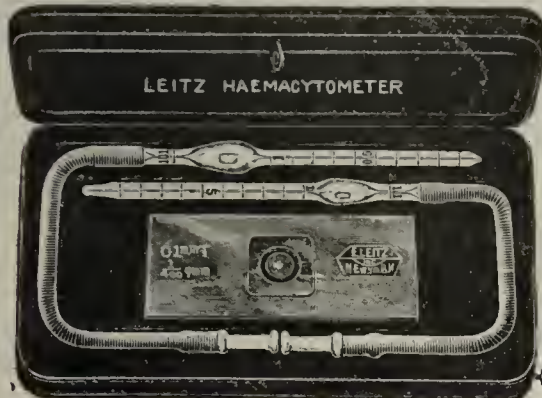
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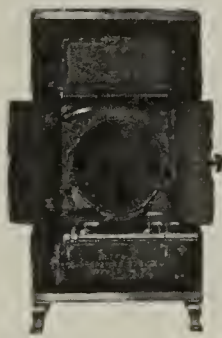
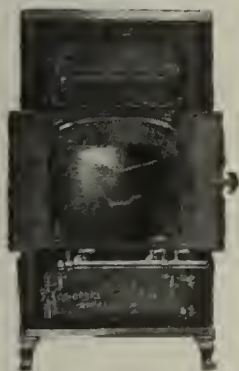
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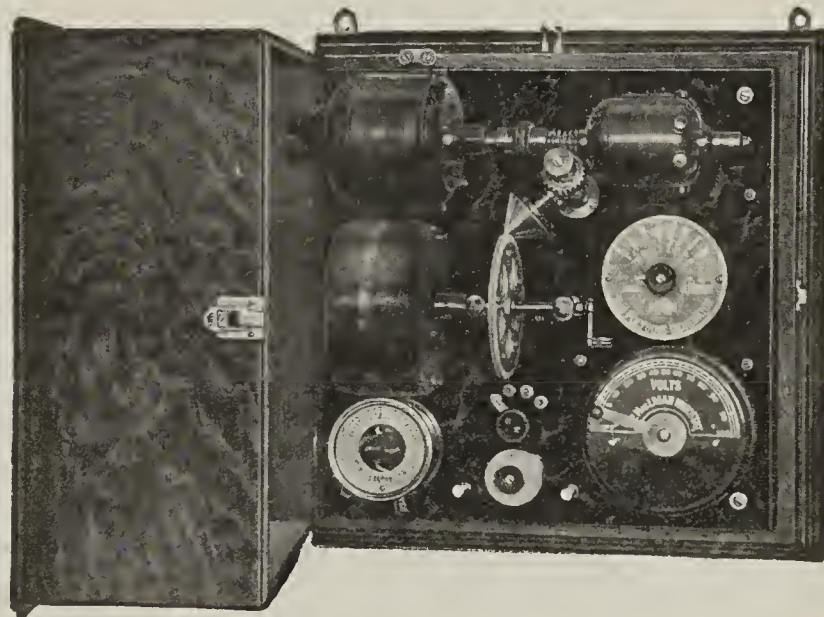
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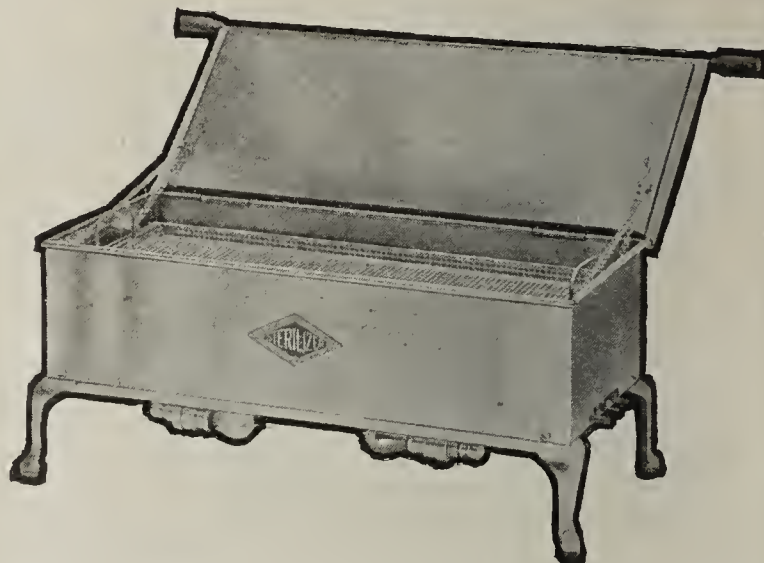
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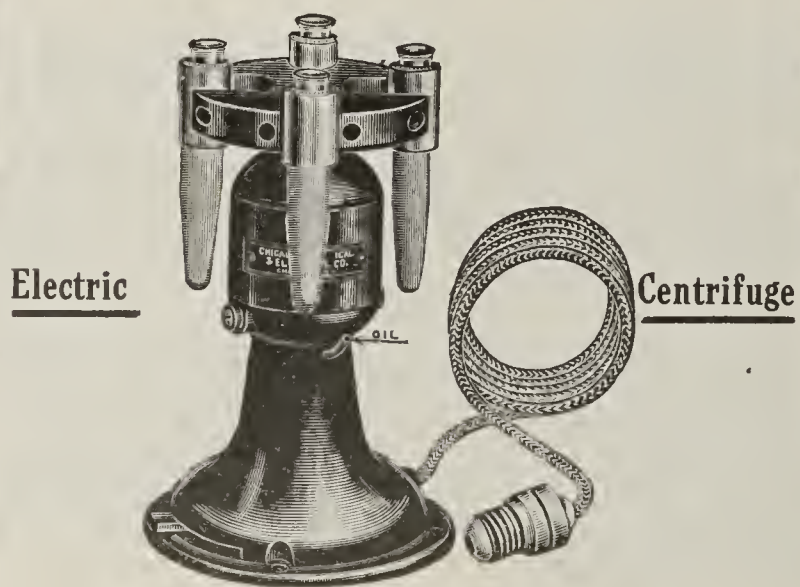
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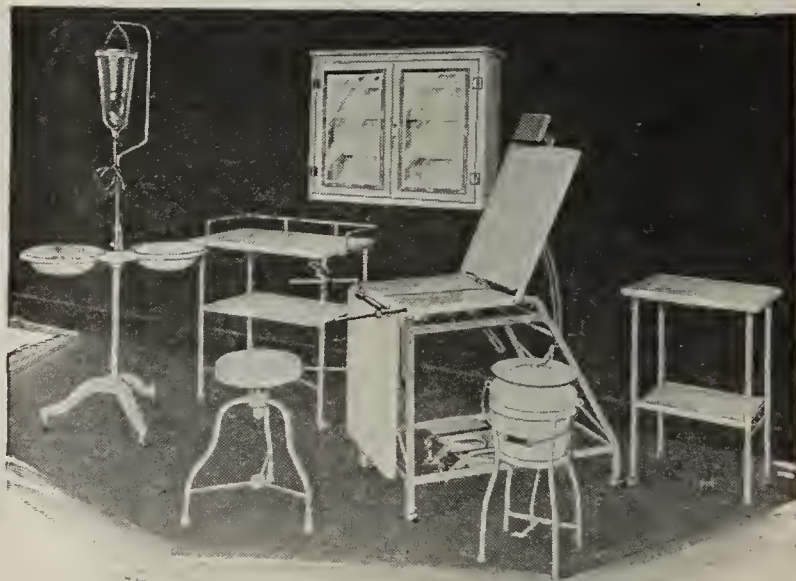


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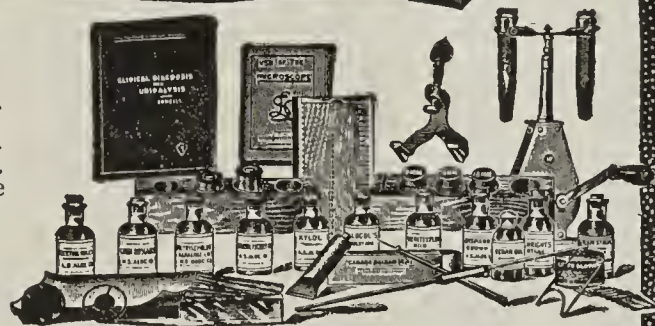
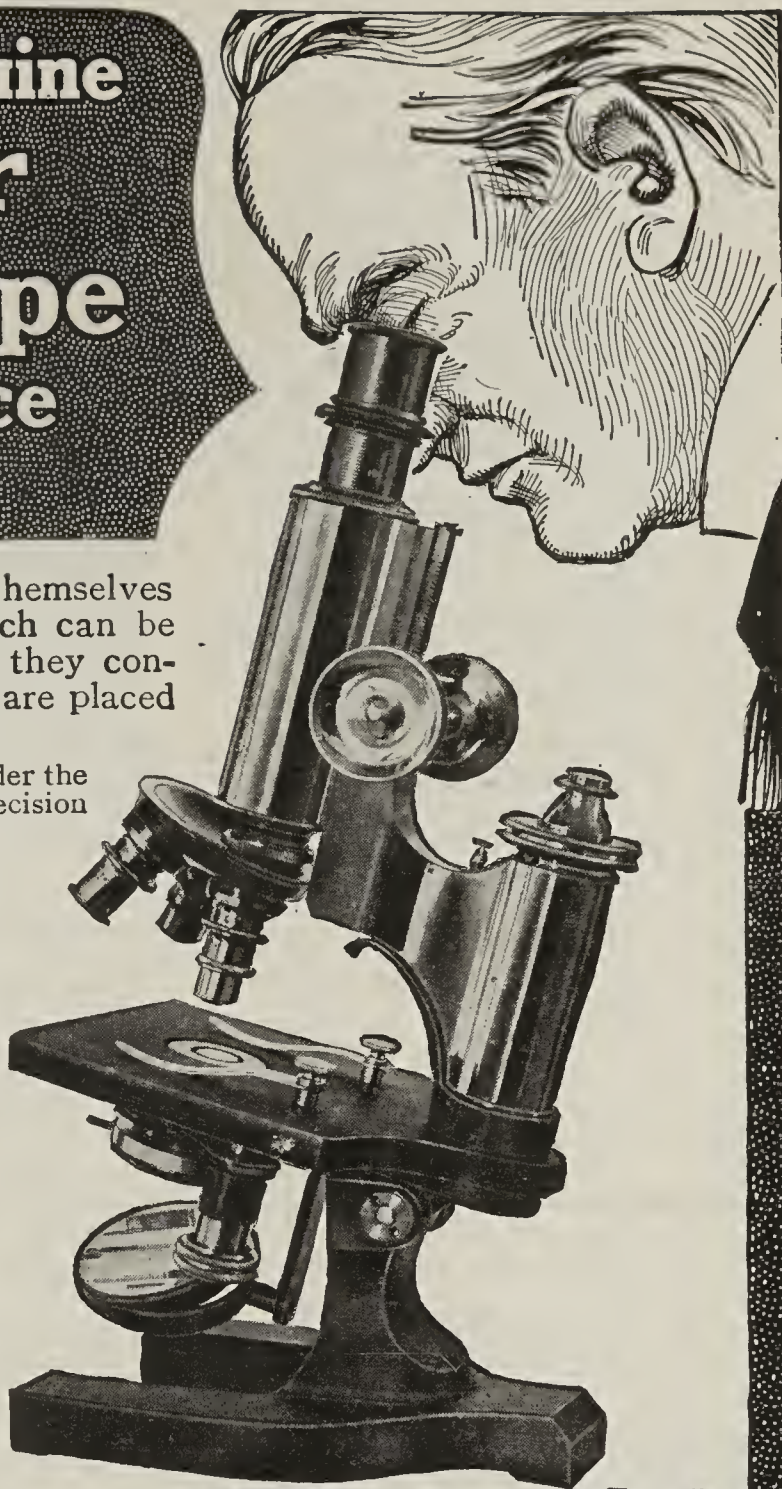
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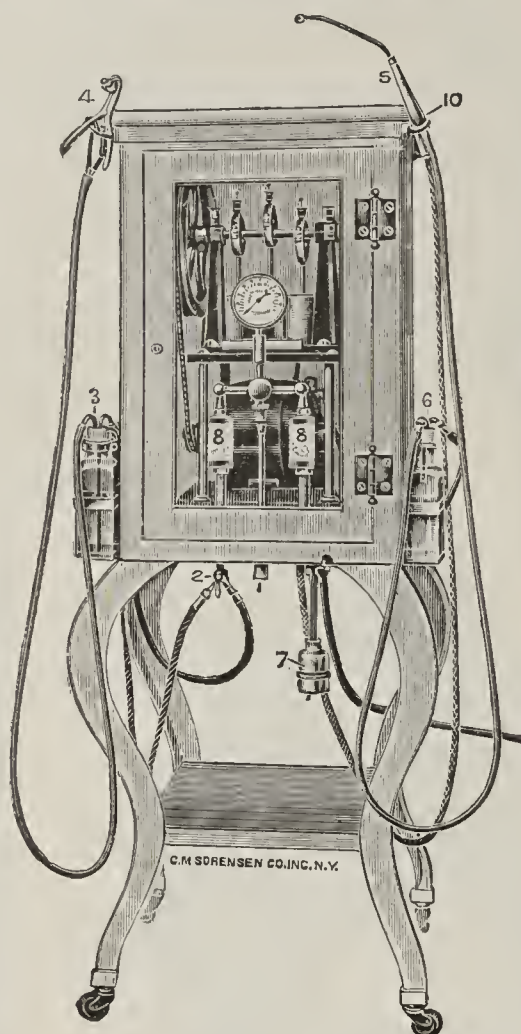
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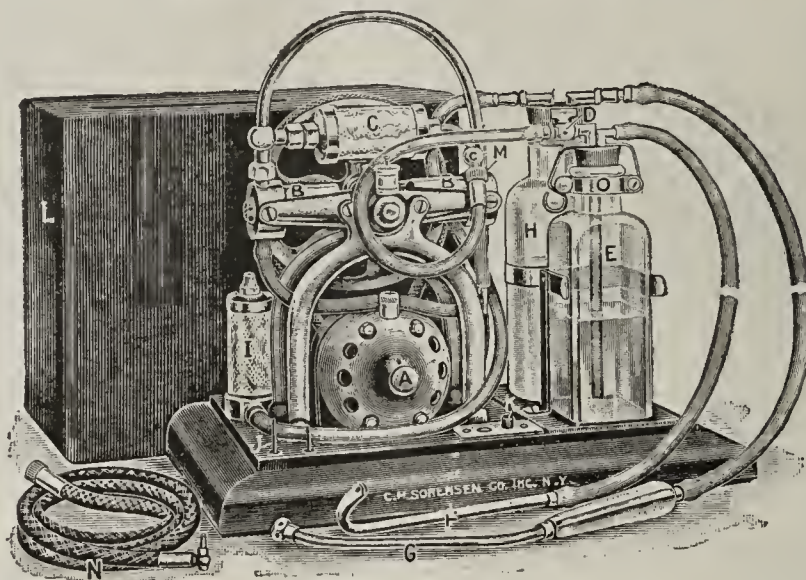
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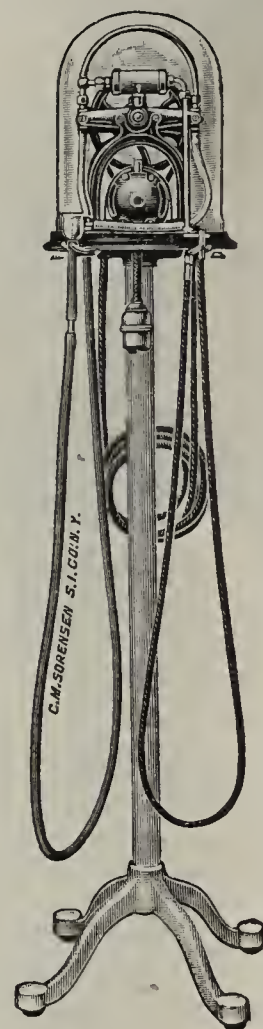
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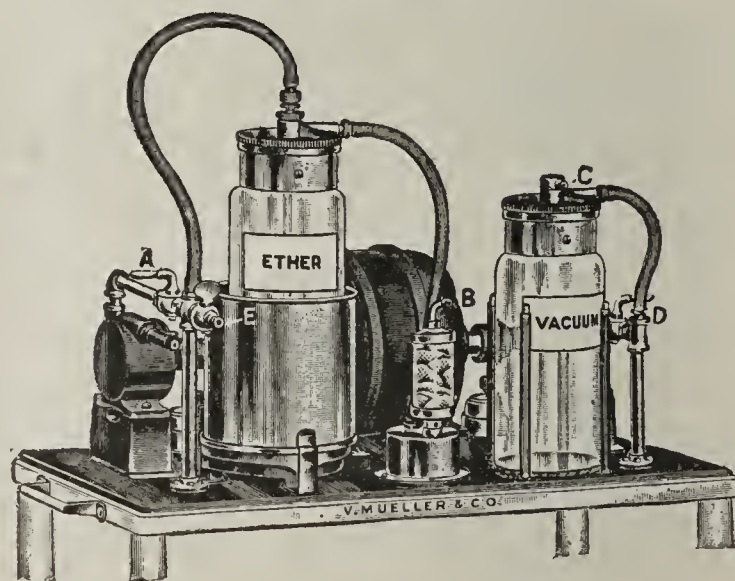
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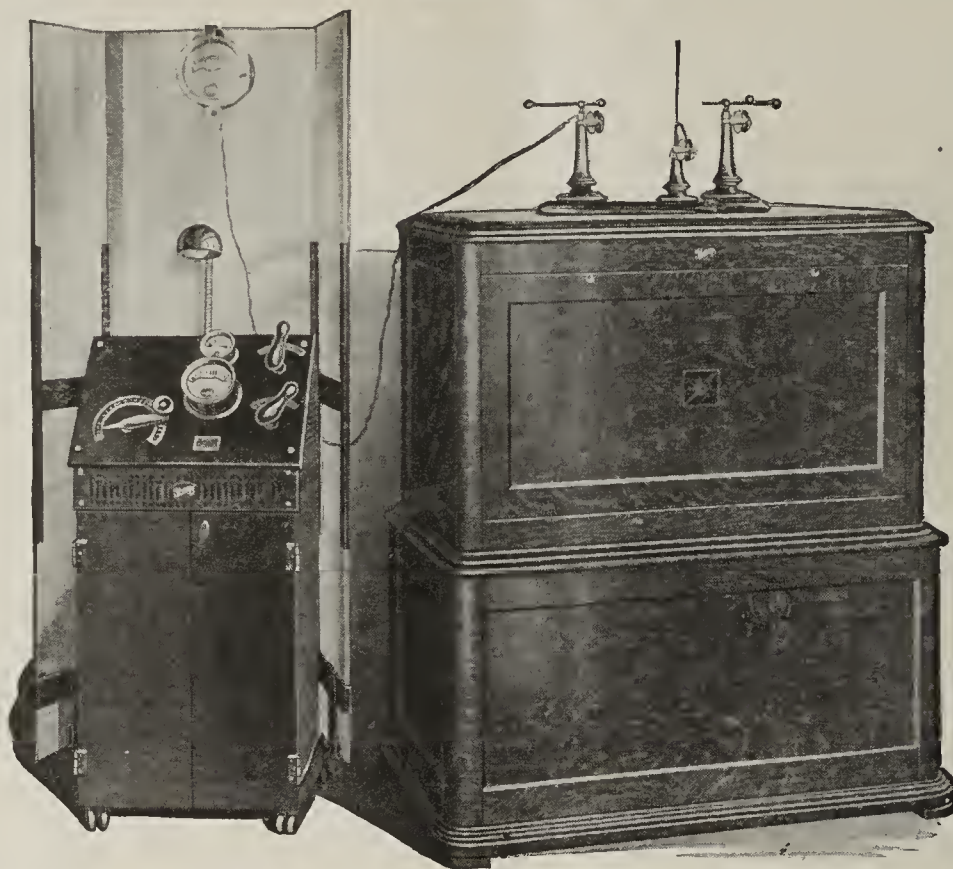
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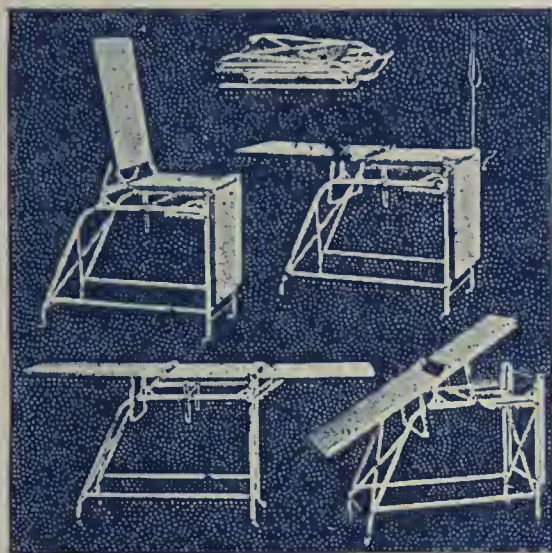
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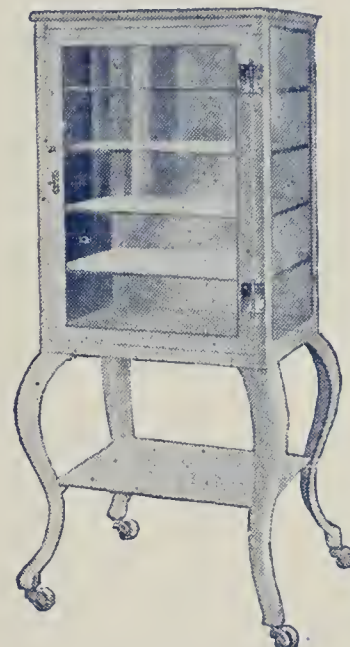
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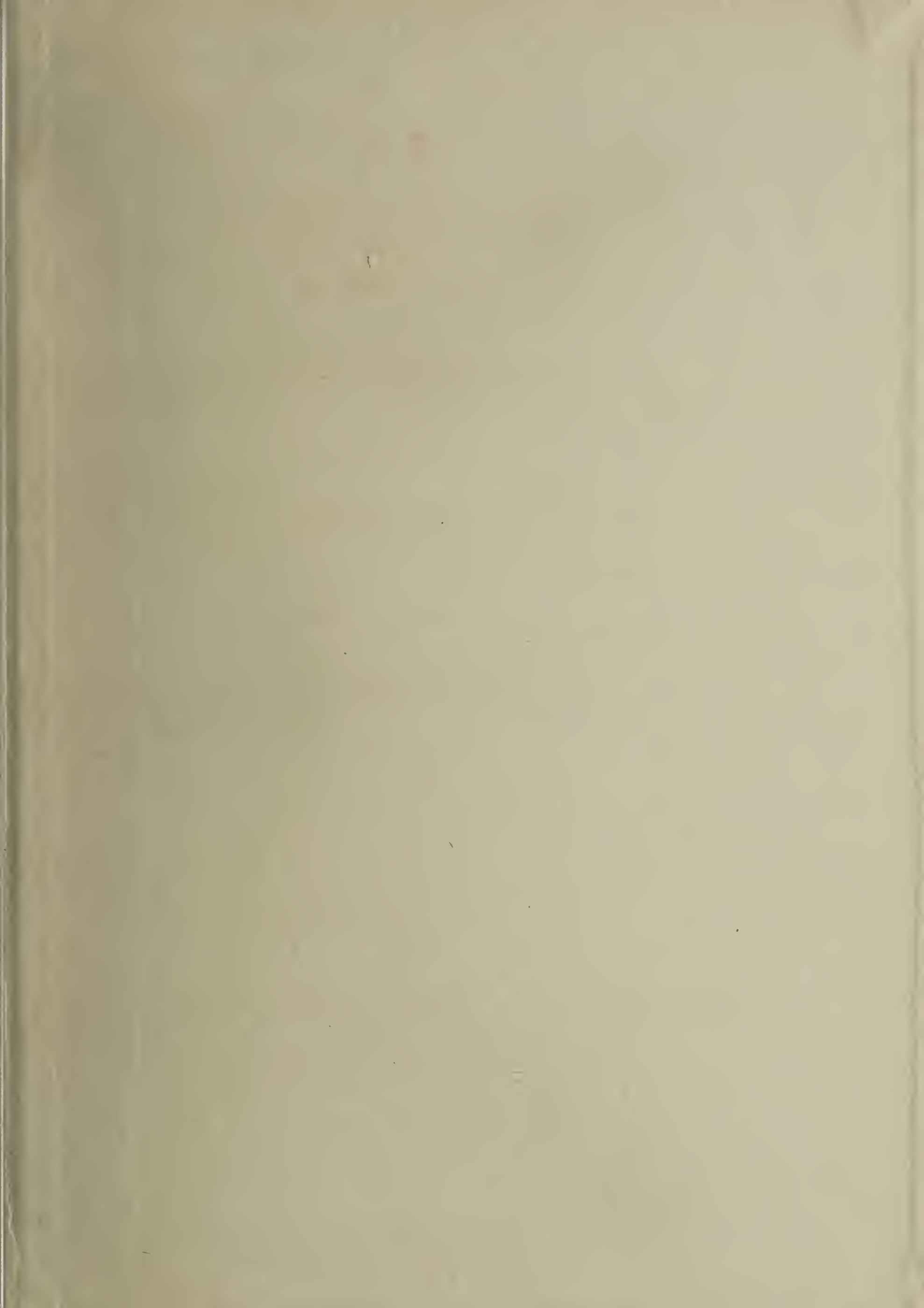
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